

GLOBAL FINANCIAL MARKETING

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SYLLABUS

Balance of Payment

Introduction, Basics of Accounting Conventions, Objectives, Process and Importance of accounting conventions, Components of Balance of Payments, Factors affecting the components, Indian Scenario.

Balance of Payment: Foreign Scenario

Foreign Exchange Markets, Export and Import of Goods and Services, Trade Balance, Merchandise Trade Balance.

A Frame work for Global Finance-I

Financial markets, Measures and Significance of Global Financial Markets, Domestic and Offshore markets and their significance

A Frame work for Global Finance-II

Measures and Significance of Euro Markets, Interest rates in the Global Money Markets, Overview of Money Market Instruments.

International Equity Investment

Introduction, Risk and Return from Foreign Equity Investment, Equity Financing in International Markets and its Mechanism.

International Capital Markets

Mechanism of International Capital Market, E- Money Market Instruments, and Major Market segments, International Financing Decision.

International Monetary Fund and European Monetary Unit

Fixed Exchange Rate Systems, European Monetary Systems, Exchange rate Mechanism, Economic and Monetary Union.

Financial Management in an MNC

Basics of Short term Financial Management in an MNC, Short term borrowings and Investments, Investing Surplus funds.

Unit 9: International Cash Management

Objective, Centralized and Decentralized cash Management, advantages and Disadvantages, Cash Transmission

Suggested Reading:

- 1. The Economic Environment of International Business by Raymond Vernon and Louis T Wells, Publisher: Prentice Hall College Division
- 2. International Business by Cznkota M R, Rankainen I A, and Moffett M H, Publisher: Dryden Press
- 3. International Business: Introduction and Essentials by Bull D A, Richard D Irwin and McCulloch Jr. Publisher: W H
- 4. International Business by Donald A. Ball, Wendell H. McCulloch, Jr., Paul L. Frantz, J. Michael Geringer, and Michael S. Minor, Publisher: Irwin Professional Publishing
- 5. The Challenge of Global Competition, by Donald Ball, Publisher: McGraw-Hill

GLOBAL FINANCIAL MARKETING (MBA)

COURSE OVERVIEW

Global Financial Markets has attained a larger significance especially in the era o "Liberalization", "Operating of the economy". The companies ignoring the importance of Global Financial Market are doing so at the risk of their existence. In fact even a company, who is trading only in the domestic markets, needs to know about the events taking place in International scenario since they may have an impact on its sales/profits due to operational exposure. As a consequence, importance of the rates of exchange and rates of interest need not be overemphasized. Hence the chapters contain the important aspects of the economics.

Global Financial Markets is a complex subject which calls for overall acumen and knowledge of Technical, Financial, commercial and Managerial fields. The success of any application depends on all these abilities woven with great finesse and casts a high degree of responsibility on the Treasury Manager and last but not the least the Chief Financial Officer.

This study material is a small effort to bring to fore this awareness and seeking to educate the student of Global Financial Market, budding Treasury Manager and people who have vision in making their career as Chief Financial Officer.

Students are requested to note that figures mentioned in this Book as far as Rates of interest and Rates of exchange are subject to change from time to time.

To achieve this unit a student must:

- Demonstrate an understanding of the Framework of international finance
- Identify and understand the concepts of the Balance of Payment on Global business environments encountered in the international marketplace
- Critically analyze the issues related to the various financial instruments and transactions available in the Foreign

Exchange Markets; the International Banking and Credit Markets

• Identify and understand the impact of Global Financial Markets, Interest Rates; International Capital Markets on international business and analyze and highlight the complexity of managing organizations.

GLOBAL FINANCIAL MARKETING LESSON PLAN

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Introduction and definition of Balance of Payment, SDR's

Objectives

Upon completion of this Lesson, you should be able to:

- Explain the Definition, Nature and Scope of
- Identify the Objectives and Process of
- Importance of Balance of Payments

Explain, Define, Discuss, Identify, Deduce, Indicate, Express, Distinguish between, Use knowledge of, Make decisions, Carry out

Introduction

Let me start with a quote

"No nation was ever ruined by trade." —Benjamin Franklin

The balance of payments is a continual source of misunderstanding and misconception. Yet it is no more than a simple accounting record of international flows.

Moreover, trade between two countries is exactly the same as trade between two individuals. Once seen in this light, interpreting external flows is no different from interpreting any other economic transactions.

The BoP account is the summary of the flow of economic transactions between the residents of a country and the rest of the world (ROW) during a given time period.

You must have studied "financial management" in your earlier sessions.

The BoP is for a country what a "statement of sources and uses of funds" is for a company. It measures the flow of international payments and receipts.

As it measures flows and not stocks, it records only the changes in the levels (and not the absolute level) of international assets and liabilities.

Balance of Payments is described by the IMF in its Balance of Payments Manual as a statistical statement for a given period showing -

- Transaction in goods, services and income between an economy and the rest of the world.
- Changes of ownership and other changes in the economy's monetary gold, special drawing rights (SDR's), and claims and liabilities to the rest of the world; and
- Unrequited transfers and counterparts entries that are needed to balance, in the accounting sense, and entries for the foregoing transactions and changes which are not manually offsetting.

Let me now explain some difficult words like SDR's, monetary gold etc.

What is Special Drawing Rights?

It is a form of international reserve created by the IMF in 1970. The purpose was to assist international liquidity by providing a complement to existing reserve vehicle such as

- gold
- the US Dollars, and
- the UK Sterling,

Supply of the first of which was determined by production factors and of the others by balance of payments outturns. SDR's are allocated by the IMF to its member countries in proportion

- To each country's quota and are used, as is the rest of the quota
- To acquire other national currencies when needed for balance of payments reasons.

SDRs are therefore a universally recognized claim on national currencies and thus have the effect, although not yet all the characteristics, of a new currency.

Let me explain the meaning of value:

SDRs were first given a value equal to 0.89 grammes of fine gold, or US \$1, which was the then dollar/gold parity. When the dollar came off the gold standard the SDR was fixed from 1974 in terms of a basket of 16 currencies, In 1981 the SDR was simplified to a weighted average of the five leading currencies according to their share in world trade. With the creation of the euro in 1999, the number of currencies was reduced to four.

With the subsequent devaluation of the dollar, the value was set to equal the sum of specified national currencies.

Let me explain, what is Quotas?

The IMF allocates to each member country a quota which reflects the country's importance in world trade and payments.

Any member with BoP difficulties may swap its SDRs for reserve currencies at IMF designated central banks. It can also use its own currency to buy (draw) foreign currency form the Funds pool.

The first chunk of currencies (the reserve tranche), amounting to 25 % of the members quota, may be taken unconditionally. Four additional credit tranche each worth another 25 % of the quota may be taken under progressively tougher terms and conditions. When these options are used up there are other borrowing facilities available. The IMF also arranges standby credits in terms of severe strain on a currency.

SDRs are used as the:

- Unit of account of the IMF and
- Since 1980 have been the denomination for many certificates of deposit and bond issues.

GLOBAL FINANCIAL MARKETING

Given below is the extract from the Annual Report of the RBI.

This is just to make you understand the Movement in Reserves and understand that the role of SDR in the FOREX reserves

				(US \$ million)
Date	FCA	SDR	GOLD	Forex Reserves
30-Sep-02	59,663	10 (7.4)	3,300	62,973
31-Dec-02	66,994	7 (5.0	3,444	70,445
31-Mar-03	71,890	4 (2.9)	3,534	75,428
30-Jun-03	78,546	1 (0.9)	3,698	82,244
30-Sep-03	87,213	4 (2.5)	3,919	91,136

Note:

- 1. **FCA** (Foreign Currency Assets): FCA is maintained as a multicurrency portfolio, comprising major currencies, such as, US dollar, Euro, Pound sterling, Japanese yen, etc. and is valued in US dollar.
- 2. **SDR:** Values in SDR have been indicated in parentheses.
- 3. **Gold:** Physical stock has remained unchanged at approximately 357 tones.

The SDR has some of the characteristics of a world currency. As mentioned earlier to you, it was introduced by the IMF in 1970 to boost world liquidity.

Advantages

The SDR is stable. It is used for accounting purpose by the IMF and even some multinational corporations. Commercial banks accept deposits and make loans in SDRs, and it is used to price some international transactions.

Disadvantages

Since the SDRs is an average of four currencies it is less valuable than the strongest and is among the first to go when reserves are sold off.

Notes -

Basics of Accounting conventions,

Objectives

Upon completion of this Lesson, you should be able to:

- Explain the Definition, Nature and Scope of
- · Identify the Objectives and Process of
- Importance of Accounting Conventions

Balance of payments accounts record financial flows in a specific period such as one year.

Financial inflows (such as receipts for exports or when a foreigner invests in the stockmarket) are treated as credits or positive entries.

Outflows (such as payments for imports or the purchase of shares on a foreign stockmarket) are debits or negative entries.

When a foreigner invests in the country, there is a capital inflow which is a credit entry. Conversely, the acquisition of a claim on another country is a negative or debit entry.

Debits = Credits

The accounts are double entry, that is, every transaction is entered twice. For example, the export of goods involves the receipt of cash (the credit) which represents a claim on another country (the debit). By definition the balance of payments must balance. Debits must equal credits.

Current = Capital

One side of each transaction is treated as a current flow (such as a receipt of payment for an export). The other is a capital flow (such as the acquisition of a claim on another country). Arithmetically current flows must exactly equal capital flows.

Let me now explain in detail the point mentioned above:

The foremost principle of BoP accounting is the use of the double entry bookkeeping system, i.e. every transaction has two aspects and hence enters the BoP account twice, once as a credit and once as a debit.

Since for every credit there is a corresponding debit, the balance of payments account always balances.

The logic underlying every transaction being entered twice is that whenever there is a transaction, whether purchase of sale, there would be a corresponding payment – either immediately or deferred and giving rise to two entries.

Let us now see, the case of transfer payments.

Since there is no compensation involved in the case of transfer payments, they are treated as trade in goodwill to satisfy the principle of double entry.

An outflow on account of transfer payment is regarded as a purchase of goodwill, while an inflow is regarded as a sale.

There is a clear rule for determining the side of a BoP account on which a particular transaction should be entered.

Any transaction which is a source of foreign currency is a credit entry, and any transaction which is a use is a debit entry. In accordance with these definitions, credit transactions are recorded with a plus sign, and debit transactions with a minus sign.

Let us take a small example:

As a country exports goods to another country, the demand for the domestic currency goes up as the foreign importer would need to buy the domestic currency to pay for the imports.

This would appear as a credit item in the BoP account as it is a source of foreign currency.

On the other hand, imports increase the supply of the domestic currency, as foreign currency would need to be bought in exchange for the domestic currency in order to pay for the imports. Since it is a use of the foreign currency, it would appear as a debit item.

There is a clear rule for determining the side of a BoP account on which a particular transaction should be entered. The rule is that any transaction which creates demand for the domestic currency in the forex markets enters the BoP account on the credit side, and any transaction increasing its supply enters the debit side.

Notes -			

Various components of Balance of Payments

Objectives

- Upon completion of this Lesson, you should be able to:
- Explain the Definition, Nature and Scope of
- Identify the Objectives and Process of
- Importance of various components of Balance of Payments

Components of the Balance of Payments Account

The BoP account has three main components:

- The Current Account
- The Capital Account
- Official Reserves

The Current Account

Trade in Goods

The current account records all the income related flows. These flows could arise on account of trade in goods and services and transfer payments among countries. Trade in goods consists of exports and imports.

As explained earlier, a country's export i.e., sales of goods to resident of another country, are a source of reserves. Similarly, a country's imports i.e., purchases of goods from another country are a use of reserves

Thus, they enter on the credit and the debit side of the BoP account respectively.

Trade in Services

Trade in services consists of payments and receipts on account of interest, dividend, professional services, income on assets like patents and copyrights, tourism, transport, insurance, income from other physical property, banking and other financial services, consultancy services and other factor services involving residents of two countries.

Transfer Payments

Transfer payments include all unilateral transfers, i.e., transfers without any corresponding exchange of goods and services. Examples are remittances and gifts to friends and relatives, private donations, scholarships, inter-governmental aids and grants, and pension.

The Capital Account

The capital account records movements on account of international purchase or sale of assets. Assets include any form in which wealth may be held – money held as cash or in the form of bank deposits, shares, debentures, other debt instruments, real estate, land, factories, antiques, etc.

Any purchase of a foreign asset by a resident is entered as a debit item in that country's BoP account, while any purchase by

a foreign resident of a domestic asset is recorded as a credit item.

Official Reserves

Official reserves include gold, reserves of convertible foreign currencies; SDR's and balances with the IMF, which is the means of international payment.

Foreign currencies may be held in the form of balances with foreign central banks, or as foreign government securities.

The official reserves account reflects the amount of these 'means of international payment' acquired or lost during the period for which the BoP account is constructed.

The Change In The Official Reserves Compensates The Balance Of Payments Deficit/Surplus.

Thus, all transactions appearing under the head "official reserves" are referred to as compensatory or accommodating transactions.

An accommodating transaction is a transaction undertaken to finance or settle a deficit/surplus arising out of other transactions.

An autonomous transaction (the transactions covered under the head "current account" and "capital account"), on the other hand, refers to a transaction undertaken on its own accord for financial reasons, without being affected by any other transaction in the BoP.

Thus, a BoP deficit/surplus means an imbalance in the autonomous transactions as a group.

Notes -

Factors affecting the components of BoP Account

Objectives

Upon completion of this Lesson, you should be able to:

- Explain the Definition, Nature and Scope of v Identify the Objectives and Process of
- Importance of The factors affecting components of Balance of Payments

Let us now see, what are the factors affecting the components of BoP Account

- **Exports of Goods and Services:** are effected by the following factors
 - **The prevailing exchange rate of the domestic currency:** a lower value of the domestic currency results in the domestic price getting translated into a lower international price.
 - **Inflation rate:** The inflation rate in an economy vis-àvis other economies affects the international competitiveness of the domestic goods and hence their demand.
 - **World prices of a commodity:** If the price of a commodity increases in the world market, the value of exports for that particular product shows corresponding increases. This would result in an increase in the demand for the domestic currency.
 - **Incomes of foreigners:** There is a positive correlation between the incomes of the residents of an economy to which the domestic goods are exported, and exports. Hence, other things remaining the same, an increase in the standard of living (and hence, an increase in the incomes of the residents) of such an economy will result in an increase in the exports of the domestic economy.
 - **Trade barriers:** Higher the trade barriers erected by other economies against the exports from a country, lower will be the demand for its exports and hence, for its currency.
- **Imports of Goods and Services:** are affected by the same factors that affect their exports. While some factors have the same effect on imports as on exports, some of them have an exactly opposite effect.
 - **Value of the domestic currency:** An appreciation of the domestic currency results in making imported goods and services cheaper in terms of the domestic currency, hence increasing their demand.
 - **Level of domestic income:** An increase in the level of domestic income increases the demand for all goods

and services, including imports. This again results in an increased supply of the domestic currency.

- **International prices:** The international demand and supply positions determine the international price of a commodity.
- **Inflation rate:** A domestic inflation rate that is higher than the inflation rate of other economies would result in imported goods and services becoming relatively cheaper than domestically produced goods and services.
- **Trade barriers:** Trade barriers have the same effect on imports as on exports higher the barriers, lower the imports, and hence, lower the supply of the domestic currency.
- **Income on Investments:** Both payments and receipts on account of interest, dividends, profit etc. depend on the level of past investments and the current rates of return that can be earned in an economy.
- **Transfer Payments:** Transfer payments are broadly affected by two factors. One is the number of migrants to or from a country, who may receive money from or send money to relatives. The second is the desire of a country to generate goodwill by granting aids to other countries along with the economic capability to do so, or its need to take aids and grants from other countries to tide over difficulties.



Notes -

Simple examples and case studies

Objectives

- Upon completion of this Lesson, you should be able to:
- Explain the Definition, Nature and Scope of
- Identify the Objectives and Process of
- Importance and effect of the Transactions

Balance of Payments compilation

The BoP account is compiled using various sources of information. The most important source is the R – Returns which the Authorized Dealers are required to submit to the RBI every fortnight.

Other sources of information are the Government of India (the Department of Economic Affairs, Ministry of Finance, and other government agencies located abroad.) and surveys conducted specifically to facilitate BoP compilation etc,.

Theoretically, each of these transactions recorded through the various sources have an impact on the BoP account of the country. In practices, however these transactions are not recorded individually in the BoP account. The transactions falling under different headings and sub headings of the BoP account are aggregated, and then the BoP account is prepared on the basis of these net figures. Yet, it is important to understand the impact of these individual transactions on the BoP account.

Here are the examples:

1. An Indian resident exports goods to an American resident and his payment is settled by a bill of exchange denominated in US dollars, having a maturity of 90 days. From India's point of view, two things have happened – exports of goods have taken place and a foreign asset has been acquired (as short-term claim on a foreign resident). This transaction will, hence, have the following impact on India's BoP.

Holdings of foreign asset (bill of exchange) Dr Merchandise Export Cr.

2. The bill of exchange mentioned in example 1 is presented for payment by the Indian exporter on maturity. He gets paid in US dollars which he retains in an account in a US bank. On one hand, this reduces the holdings of foreign assets (in the form of the bill of exchange), and on the other hand it increases the same (in the form of the deposit). The impact will be

Holdings of foreign assets (Deposits) Dr Holdings of foreign assets Cr (bill of exchange)

3. The exporter then converts the dollars into rupees by selling the dollars to his local clearing bank. The effect of this transaction would be to reduce the exporter's holding of foreign assets and increase that of the clearing bank to the same extent. Since the foreign asset holdings of Indian residents is totally remain the same, there will be no effect on the BoP account.

4. The clearing bank then sells the dollars to the central bank for the domestic currency. This results in the holdings of foreign assets going down and the official reserves going up (because a foreign currency held by a central bank is classified as a reserve asset rather than holding of a foreign asset). Hence, its impact on the BoP will be

Official reserves Dr

Holding of foreign assets

5. An Indian resident imports goods from Germany and signs a usance bill of exchange denominated in German marks for the amount due. It will result in an increase in imports and an increase in liabilities to foreign residents (from the point of view of the Indian BoP). The impact will be

Cr

Merchandise imports Dr

Liabilities to foreign resident Cr.

On maturity of the bill, the Indian importer would buy German marks from a bank and settle the payment. This will reduce the liabilities to foreign residents, as also the holdings of foreign assets (in the form of German marks – a foreign currency – held by the bank). This impact would be

Liabilities to foreign residents Dr

Holdings of foreign assets Cr

When the bank purchases German marks from the central bank to offset its earlier deal with the importer, the result will be an increase in the holdings of German marks by the bank (a foreign asset) and a reduction in the official reserves. It will have the following effect on the BoP.

Holdings of foreign assets (German marks) Dr Official reserve Cr

6. An Indian resident takes medical treatment in America and pays for it in US dollars. This is a purchase of service. For making the payment, the resident would need to buy dollars from a bank. The effect will be :

Trade in services	Dr.
Holdings in foreign assets	Cr.
(banks's holdings of dollars)	

If the bank buys dollars from the central bank to cover the sale, it will again have the following effect:

Holding of foreign assets

(bank's holding of dollars)	Dr
Official reserves	Cr.

7. X, and NRI , decides to come back to India. He sells off all his assets and converts the resultant dollars into rupees. He

would do this by selling the dollars to some bank. The effect would be

Cr

Holdings of foreign assets (dollars) Dr

Transfer payments

In accordance with the principles of BoP accounting, even that part of X's property which does not accompany him has to be accounted for. The impact will be similar to the one mentioned above. The debit would be on account of the increase in the holdings of foreign assets (which X would now hold as a resident) and the credit as an offsetting entry.

8. An Indian company issues ECB's denominated in French Francs. This involves buying of an Indian asset (in the form of debt instruments) by foreign residents. There would be a simultaneous increase in the foreign asset holding of the bank to which the Indian company sells the franc. The impact would be

Holdings of foreign assets Dr

Liabilities to foreigners Cr

9. IMF and SDRs to member countries from time to time. The allocation results in an increase in the official reserves of the country receiving the SDRs. The effect is

Official reserves Dr Allocation of SDRs Cr

Till now, there has been no incident of cancellation of SDR.s, cancellation would have a reverse effect on the BoP.

10. Suppose that some non residents hold a part of the equity of a resident enterprise. The part of their share of earnings of the company which is paid out as dividends would be recorded in the BoP as an import of services. According to the BoP accounting principles, even that part of the share in the earnings which is retained in the company has to be recorded in the BoP account. Such retained earnings are considered as income paid out and reinvested by the non residents. The effect is

Trade in services Dr

Holdings in foreign assets Cr.

(for notional payment of earnings in foreign currency)

Holdings of foreign assets Dr.

Liability to foreigners

(for the notional reinvestment of earnings and the resultant increase in the amount of foreign currency held.)

Cr.

Notes -

Topics Covered Indian scenario

Objectives

Upon completion of this Lesson, you should be able to:

- Explain the Definition, Nature and Scope of
- Identify the Objectives and Process of
- Importance and effect of the BOP from an Indian perspective

The Indian BoP broadly follows the principles laid down by the IMF manual for preparation of the statement.

The concepts of 'economic transaction' and 'resident', as well as the principle of double entry system are adopted totally in accordance with the recommendations of the manual.

The Income Tax Act and Foreign Exchange Regulation Act give different definitions for the term 'resident'. However, for BoP purposes, the definition given in the IMF manual is followed.

There is little deviation from the manual's suggestions for valuation of transactions. In India's BoP statement, the principle of recording transactions at market price is not always applied because of the practical difficulties involved.

Let me give you an example:

If a company pays for some machinery or for technical knowhow by allotting shares to the seller, ascertaining the market value of the transaction becomes difficult. Similarly, if a company buys form or sells to its subsidiary operating in another country, it becomes difficult to find out whether the price at which the transfer has taken place, reflects the market value or not.

All transactions other than merchandise trade are recorded in the Indian BoP at the actual price paid through the banking channel. In these circumstances, transactions might not get recorded at their actual market value.

The second significant deviation form the principles of valuation is that while exports are recorded at their f.o.b. value, imports are recorded in the Indian BoP statement at the c.i.f. value.

When the insurance and shipment costs are borne by the Indian importer, they are included in the cost of goods imported. Also, the transactions denominated in foreign currencies are converted into Indian rupees on the basis of the average exchange rate applicable to the specific transactions.

The recommendations of the IMF manual regarding timing of the transactions being recorded are followed totally for capital account transactions, transportation and insurance service, transfer payments and for undistributed income.

For other transactions, the conventions differ.

Exports are recorded when the customs authorities clear them for shipment and imports are recorded when they are paid for.

Due to this method of recording imports, those imports fail to get fully reflected in the period in which they occur, for which the Indian importer obtains trade credit from the foreign supplier.

Services other than transport and insurance are recorded when the payment takes place.

Similarly, interest and dividends are recorded when they are actually paid, not when they are due.

In India, foreign exchange transactions are regulated by the provisions of FEMA.

According to this Act, only Authorized Dealers are permitted to buy or sell any currency except through the authorized dealers.

Points To Ponder

By Definition, The balance of payments must always balance. How then is it possible to identify deficits and surpluses in balance of payments accounts?

Questions for Review

1. What are the items that are listed on the current and the capital accounts?

- 2. Distinguish between:
- Monetary movement of gold and non-monetary movement of gold
- Autonomous capital flow and accommodating capital flow
- Capital and current account.

3. Why should a corporate finance manager monitor balance of payments developments?



Balance of Payments

Phil Bryson Global Trade and Finance

Balance of Payments Accounting

Records of transactions among nations have not always been kept.

It is not clear that they are really necessary!

Balance of Payments Accounting

For example, who keeps track of California's balance of payments transactions with other US states? The nature of the record changes by what we are trying to find out.

(Do we have enough currency reserves, capacity to pay? Does trade promote full employment? And so on.)

Recording International Payments

- How is information recorded in balance of payments accounting?
- The basic technique is standard, double-entry accounting,
- a flow of funds statement that shows changes in assets, liabilities and net worth over time.

Balance of Payments Accounting

 All transactions between the citizens of a nation and those of other nations are recorded in the balance of payments for a given period of time,

Recording International Payments

• The balance of payments statement is to inform government authorities of the international position of the country to assist them with monetary-fiscal questions as well as trade and payments policies.

Debits, Credits, and International Payments

- What is the meaning of a debit in a balance of payments account? What is a credit?
- A debit records a transaction increasing assets or reducing liabilities.
- It results from some kind of transaction requiring an immediate out-payment.
- A debit arises from the purchase of goods, claims, or reserve assets and represents an inflow of value.

Sources and Uses of Funds

- The uses of funds, the demand for foreign exchange, are
- ∎ imports,
- investment income paid abroad,
- transfer payments,
- long-term and short-term lending and investing abroad, and
- increases in official reserve assets.

Sources and Uses of Funds

• The sources of funds, the supply of foreign exchange, are

∎ exports,

- investment income,
- transfer payments received,
- and long-term and short-term borrowing.

Sources and Uses of Funds

 Credit entries reflect the sources, debit entries indicate the uses of foreign exchange.

Part II The Balance of Payments Accounts

BALANCE OF PAYMENTS ACCOUNTS

2. GOODS AND SERVICES BALANCE: (Just add services)

3. NET UNILATERAL TRANSFERS (Gifts)

- > U.S. government transfers to foreigners
- > (E.g., Foreign aid or wheat from U.S. stockpiles)
- > Private remittances of wages earned abroad, and
- > other transfers.

BALANCE OF PAYMENTS ACCOUNTS

These accounts are to summarize payments a country receives from other nations and payments it must make to other nations. They consist of the following five categories:

1. MERCHANDISE OR TRADE BALANCE:

(Exports minus imports)

BALANCE OF PAYMENTS ACCOUNTS

To here, we are looking at the *CURRENT ACCOUNT BALANCE* (Net flows of goods, services and gifts).

Again: 1. MERCHANDISE OR TRADE BALANCE: 2. GOODS AND SERVICES* BALANCE: 3. NET UNILATERAL TRANSFERS

Balance of Payments

4. NET CHANGES IN FOREIGN HOLDINGS OF U.S. ASSETS

Flows of financial assets and similar claims, or Foreign direct and other investments in the U.S., or

"Private capital flows."

These asset flows are referred to as the CAPITAL ACCOUNT BALANCE (Including direct and portfolio investments).

All Together Now

- 1. MERCHANDISE OR TRADE BALANCE:
- 2. GOODS AND SERVICES* BALANCE:
- **3. NET UNILATERAL TRANSFERS**
- 4. NET CHANGES IN FOREIGN HOLDINGS OF U.S. ASSETS
- 5. NET OFFICIAL INTERNATIONAL RESERVE TRANSACTION

Balance of Payments

5. NET OFFICIAL INTERNATIONAL RESERVE TRANSACTION Foreign official holdings of U.S. assets, U.S. holdings of official reserve (gold and foreign exchange) assets or, "Official asset flows."



Services in the Balance of Payments

Note:

*Services include travel and tourism, trade transportation, insurance, education, financial, technical, telecommunications and other business and professional services.

In addition there are royalties, payments for capital services besides interest, such as dividends, payments for foreign labor, etc.



Overall Surpluses and Deficits

What is an overall balance of payments surplus? What is an overall deficit?

 If it is in deficit, the sum is counterbalanced by an accumulation of official net liabilities, so the country sees its official reserve assets decline.

Overall Surpluses and Deficits

• What is an overall balance of payments surplus? What is an overall deficit?

 A surplus is when the sum of the current account plus the private capital account is counterbalanced by an accumulation of official net assets, so official reserve assets increase.

Import of Goods and Services

Objectives

Upon completion of this Lesson, you should be able to:

• Understand the Measures and significance of the imports of Goods and Services

Let us first get the overview of the imports of Goods and Services.

A country imports goods and services because it cannot produce them itself or because there is comparative advantage in buying them from abroad.

Some commentators worry that all imports are a drain on national resources, which is a bit like saying you should not buy from a domestic neighbors who produces something better or cheaper than you do.

Of course, you can only buy to the extent that you can finance the purchase form income, savings or borrowings against future production.

Goods and Services

Merchandise or visible imports relate to physical goods. Imports of services are payments to foreigners for invisibles such as shipping, travel and tourism; financial services including insurance, banking, commodity trading and brokerage; and other items such as advertising, education, health, commissions and royalties.

In practice, many countries give prominence to visible trade figures because they are among the most reliable and rapidly available figures on external flows.

Even so, they are available only after a lag, are frequently revised as more information comes to hand and are subject to various errors and omissions.

Figures for invisibles are harder to collect, less reliable and are published only quarterly by some countries.

Value and Volume

Changes in import values reflect changes in foreign prices, exchange rates and quantity (volume). Real exchange rates are useful for identifying price and currency effects. Import volumes indicate "real changes" and value gives the overall balance of payments position.

Cyclical Variation

Import volumes tend to move cyclically. In general they increase when home demand is buoyant. For this reason imports might be seen as a safety valve which offsets the inflationary pressure that arise when domestic firms are operating at close to full capacity.

Link to Exports

Imports are also linked to exports. In increase in exports boosts GDP because the goods sold overseas are part of domestic

production. When GDP increases, demand and imported goods rises as well.

Import Penetration

Imports of goods and services as a percentage of GDP (or of total final demand) indicates the degree of dependence on imports; the higher the figure the more imports displace domestic output and the more vulnerable is the economy to changes in import prices. A sudden rise in import penetration may signal that domestic companies are operating at full capacity and cannot meet increases in demand.

Import Composition and Sources

Commodity Breakdown

A high volume of imports of intermediate and capital goods is generally good where these are used to manufacture other items or to generate invisible earnings. This adds value to GDP and perhaps contributes to future export growth. For example, a country buying aircraft form abroad records these as imports. In later years, the aircraft will be used to move passengers and generate profit which are invisible export earnings.

Note though that manufacturing output declines in the short term when imports displace locally processed or manufactured items. Developing countries increasingly export semi manufactured (such as cloth and refined petroleum products) rather than raw materials (such as cotton and crude oil) and the industrial countries import more semi-manufacturers and fewer raw materials.

Increases in the volume of imports of consumer goods are a direct signal of consumer demand. They imply that domestic produces cannot meet the required price, quality and quantity.

Compressibility

When examining a developing country it is important to check the compressibility of imports, that is, the extent to which there are non-essential goods which need not be imported in times of stress on the balance of payments. If all imports are essential such as foods and fuels it may not be possible to reduce the import bills.

Sources

A country which imports form just one or two main trading partners is vulnerable to economic shocks from its suppliers, especially if they cease to export those particular goods, if prices rise sharply or if there is some political disturbance.

Questions for Review:

1. Mention the macro-economic variables that influence balance of payments.

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Balance of Payments Accounting

Chapter 1 - Continued

Balance of Payments

- System of accounts which is a subset of the National Income and Production Accounts
- A double-entry bookkeeping system.
- Debit Entries: Transactions that generate a payment outflow (e.g., import).
- Credit Entries: Transactions that generate a payment inflow (e.g., export).
 - Balance of Payments

Balance of Payments

- The current account is the broadest measure of a nation's real sector trade.
- Includes:

2

- Goods
- Services
- Income Receipts and Payments
- Unilateral Transfers

Balance of Payments

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Current Account

• Goods: Exports and imports of tangible items.

- Services: Exports and imports of services, for example:
 - Typical business services such as banking and financial services, insurance, and consulting.
 - Tourism

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Current Account

- Income Payments: Includes items such as
 - Investment income on foreign-owned assets in the United States.
 - Payments of income on foreign direct investment in the United States
 - US Government income payments

Balance of Payments

Current Account

- Income Receipts: Includes items such as
 - Investment income on US-owned assets abroad.
 - Receipts of income on US direct investment abroad.

Balance of Payments

- Government income receipts

Current Account

• Unilateral Transfers: Includes items such as:

- Government grants abroad

Balance of Payments

- Private remittances
- Private grants abroad

	-		
		Current Accou United States (200	nt 1)
	Exports	Millions	1,281,793
		Goods	718,762
		Services	279,260
		Income Receipts	283,771
	Imports		-1,625,701
		Goods	-1,145,927
		Services	-210,385
		Income Payments	-269,389
	Unilatera	Transfers	-49,463
	Current A	Account Balance	-393,371
8		Balance of Payments	Daniels and VanHoose

Capital and Financial Accounts

- The new Capital Account includes items that were previously included in unilateral transfers, such as:

 Debt forgiveness
 - Migrants' transfers (as they leave the country).
- The new capital account is small for the US (< 0.1 percent of capital flows), but expected to grow.
 - Balanc

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Balance of Payments The Financial Sector

- In June 1999, US capital account definitions were modified to bring them more in line with definitions recommended by the International Monetary Fund.
- Now there are two accounts: The Capital Accounts and Financial Accounts.

Balance of Payments

Daniels and VanHoose

The Capital and Financial Accounts

- The Financial Account
 - Records international transactions in the financial sector
 - Includes portfolio and foreign direct investment
 - Includes changes in banks' and brokers' cash deposits that arise from international transactions.

Balance of Payments

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The Capital and Financial Accounts

- US-Owned Assets Abroad: Increase or decrease in US ownership of foreign financial assets.
- Foreign-Owned Assets in the US: Increase or decrease in foreign ownership of domestic assets.
- Reserve Assets: Primarily the assets of central banks.

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Balance of Payments

Capital and Financial Account (2001)

Capital Account, Net Financial Account	826
US-Owned Assets Abroad	-370,962
US Official Reserve Assets	-4,911
US Government Assets	-486
US Private Assets	-365,565
Foreign-Owned Assets	752,806
Foreign Official Assets	5,224
Other Foreign Assets	747,582
Net Financial Account Flows	381,844

Balance of Payments

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The Capital and Financial Accounts

- Portfolio Investment: Individual or business purchase of stocks, bond, or other financial assets or deposits. (An income strategy)
- Foreign Direct Investment: Purchase of financial assets that results in a 10 percent or greater ownership share. (A financial control strategy)

The Balance of Payments The Statistical Discrepancy

	Balance on Current Account	-393,371
1	Capital Account, net	826
1	Net Financial Flows	381,844
1	Statistical Discrepancy	10,701
1		
1		Daniels and VanHoos
	Balance of Payments	

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Payments

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GLOBAL
FINANCIAL
MARKETING

	Goods	Services	Income	UT	Capital Financia
Debits (imports)	-50,000				
Credits (exports)					50,000

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	U.S. ro	esident buy: Goods	s a UK Tbill Services	equivalent	in value to UT	\$1,000 Capital / Financial
	Debits (imports)					-1,000
	Credits (exports)					1,000
18		B	alance of Paymen	ts	Dani	iels and VanHoos

	U.S. government sends \$1 million in humanitarian supplies to Afghanistan					
		Goods	Services	Income	UT	Capital / Financial
	Debits (imports)				-1 million	
	Credits (exports)	1 million				
17		В	alance of Paymer	its	Dani	els and VanHoos

	Goods	Services	Income	UT	Capital Financia
Debits (imports)					-100
Credits (exports)			100		

	A Marquette University student goes to Mexico on break and spends \$500					
		Goods	Services	Income	UT	Capital / Financial
	Debits (imports)		-500			
	Credits (exports)					500
20	Balance of Payments Daniels and				els and VanHoose	

The Relationship Between the Current Account and the Capital Account

- Income Approach (national income is the sum of income derived from producing goods and services in the following categories):
 - $y=c + i^p + g + (x-m)$
- Let the current account, ca equal ca = (x - m)
- Then $y=c + i^p + g + ca$

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Total					
	Goods	Services	Income	UT	Capital / Financial
Debits (imports)	-50,000	-500		-1 mil	-1,000 -100
Credits (exports)	1 mill		100		1,000 50,000 500
СА	-50,400			KA	50,400
	В	alance of Paymen	ts	Dani	els and VanHoose

The Relationship Between the Current Account and the Capital Account

• Expenditures Approach (income has four possible uses) $y=c+s^p+t$ • So: $c + s^p + t = c + i^p + g + ca$ • or $s^p - i^p - (g - t) = ca$ Balance of Payments



The Relationship Between the Current Account and the Capital Account

- Private Saving:
 - $s^p = i^p + g t + fa$
- where fa is the (net) accumulation of foreign assets

Balance of Payments

Then

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 $s^p - i^p - (g - t) = fa$

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The Relationship Between the Current Account and the Capital Account

- Putting the two together:
 ca = s^p i^p (g t) = fa
- In words, private domestic saving less private domestic investment less the fiscal deficit (government saving) equals the current account balance which equals the (net) accumulation of foreign assets.

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Balance of Payments Daniel

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LESSON 8

Topics Covered

Export of Goods and Services

Objectives

Upon completion of this Lesson, you should be able to:

• Understand the Measures and significance of the Exports of Goods and Services

Exports of Goods and Services

Let us have an overview of Exports of Goods and Services

Exports generate foreign currency earnings. Export growth boosts GDP which in turn implies more imports, so exports should never be considered in isolation.

This brief should be read in conjunction with the previous briefs on imports.

Value and Volume

Demand for exports depends on economic condition in foreign countries, prices (relative inflation and the exchange rates) and perceptions of quality, reliability and so on. Real exchange rates help to identify inflation and currency effects. Export volume indicates "real changes" and value gives the overall balance of payments position.

Composition and Destinations

As with imports, dependence on a few commodities increases vulnerability to shifts in demand while dependence on a few countries increases vulnerability to their economic cycle.

The greater the proportion of exports in relation to GDP, the bigger the boost to domestic output when overseas demand rises. For example, the Netherlands exports account for over 50 % of GDP and it trades heavily with Germany. Consequently, if German imports rise by 10 %, Dutch GDP jumps by 1.5 %. A high exports/GDP ratio also implies a larger slump when foreign demand falls

Compatibility

Exports are always measured FOB (free on board) or FAS (free alongside ship) at a point of export, so they present fewer compatibility problems than imports which may be FOB or may include insurance and freight (CIF).

Questions for Review

1. "The adjustment in the balance of payments is automatic". Discuss this statement from the viewpoint of classical economists.

Trade Balance, Merchandise Trade Balance

Objectives

Upon completion of this Lesson, you should be able to:

• Understand the Measures and significance of Trade Balance, Merchandise Trade Balance

Let us see the overview of trade balance

The trade balance is the difference between exports and imports. It may measure visible (merchandise) trade only, or trade in both goods and services.

Invisibles are difficult to measure, so the balance of trade in goods and services is less reliable and more likely to be revised than the visible balance.

The brief should be read in conjunction with the previous briefs on exports and imports. Note especially the comments on goods and services and special factors.

Income Elasticity

The relationship of exports and imports to economic growth (their income elasticity) is important. For example, Japan's imports tend to increase by a relatively small amount when its GDP grows by 1 %.

At the same time its exports rise rapidly when its trading partners economies expand. Thus if Japan's economy grows at the same pace as the rest of the world, its trade surplus will tend to widen.

Supply Constraints

A large trade deficit may signal supply constraints, especially if it is accompanied by high inflation and/or the deficit has emerged recently owing to a rise in imports. This suggests that companies are unable to boost output to match higher domestic demand. This deficit may act as a safety valve and divert potentially inflationary pressure. Alternatively, an increased trade deficit may signal a loss of competitiveness by domestic companies.

Net Savings and the Resources Gap

The balance of trade in goods and services measures the relationship between national savings and investments. A deficit indicates that investment exceeds savings and that absorption of real resources exceeds output.

For developing countries, the difference between exports and imports of goods and services is more usually called the resource gap; that is, the extent to which the country is dependent on the outside world.

In the 1980s and 1990s many developing countries have had resource gaps equivalent to 20-30~% of GDP.

In 1998 Lesotho's was around 90 % of GDP.

Current Flows

For the industrial countries a trade imbalance is not necessarily a problem; it reflects choice as much as necessity.

For most of the past 200 years Britain has run a deficit on visible trade which has been more than offset by one of the world's largest surpluses on invisibles.

Countries with large manufacturing sectors, such as Japan and Germany, have tended to run visible trade surpluses and invisibles deficits. The current account is a better indicator of overall current flows.

Eliminating a Trade Deficit

There are two main ways in which an external trade deficit might move back into balance.

- A change in the volume of trade. If demand in the deficit country contracts or grows more slowly than that in the surplus country, the volume of exports will increase relative to the volume of imports.
- A change in relative prices through a change in the exchange rate or a change in domestic prices. Imports become dearer and exports cheaper if the deficit country's currency falls in value or if inflation is lower in the deficit country than in the surplus country. This will tend to depress the demand for imports and boost exports.

Attempt to regain balance through government export subsidies or import barriers such as quotas or tariffs are essentially imposed volume or price changes (which also cause market distortions). For example, a ban on imports will generate extra, possibly inflationary, demand for domestic goods.

Similarly, trade surpluses may be eroded by faster economic growth, a stronger currency or higher inflation in the surplus country.

Questions for Review

1. Explain elasticity approach to the adjustment in balance of payments.

Topics Covered Financial Markets

Objectives

Upon completion of this Lesson, you should be able to:

• Understand the Measures and significance of Global Financial Markets

The Euro is Slightly Higher Against the Yen

The Dow Jones Industrial Average is off 18 points in active trading. Regulators close a Honk Kong bank after it loses \$ 500 m on derivatives trading. Following the Bank of England's decision to lower its base rate, monthly mortgage payments are set to fall.

All of these commonplace events are examples of financial markets at work.

That markets exercise enormous influence over modern life comes as no news. But although people around the world speak glibly of "wall street", " the bond market", and "the currency market", the meaning they attached to these time worm phrases are often vague and usually out of date

This course pack explains the purposes different global financial markets serve and clarifies the way they work.

It cannot tell you whether your investment portfolio is likely to rise or to fall in value.

But it may help you understand how its value is determined, and how the different securities in it are created and traded.

Financial markets have been around ever since mankind settled down to growing crops and trading them with others.

After the bad harvest, those early farmers would have needed to obtain seed for the next season's planting, and perhaps to get food to see their families through.

Both of these transactions would have required them to obtain credit from others with seed or food to spare. After a good harvest, the farmers would have had to decide whether to trade away their surplus immediately or to store it, a choice that any 20th century commodities trader would find familiar.

The amount of fish those early farmers could obtain for a basket of cassava would have varied day by day, depending upon the catch, the harvest and the weather; in short, their exchange rates were volatile.

The independent decisions of all of those farmers constituted a basic financial market, and that market fulfilled many of the same purposes as financial markets do today.

What Do Markets Do?

Financial markets take many different forms and operate in diverse ways. But all of them, whether highly organized, like the London Stock Exchange, or highly informal like the money changers on the street corners of many African capital, server the same basic functions.

The Basic Functions are:

Price Setting:

LESSON 10

The value of an ounce of gold or a share of stock is no more, and no less, then what someone is willing to pay to own it. Markets provide price discovery, a way to determine the relative values of different items, based upon the prices at which individuals are willing to buy and sell them.

Asset Saluation

Market prices offer the best way to determine the value of a firm or of the firm's assets or property. This is important not only to those buying and selling businesses, but also to regulators. An insurer, for example, may appear strong if it values the securities it owns at the prices it paid for them years ago, but the relevant question for judging its solvency is what prices those securities could be sold for if it needed cash to pay claims today.

Arbitrage

In countries with poorly developed financial markets, commodities and currencies may trade at very different prices in different locations. As traders in financial markets attempts to profit form these divergences, prices move towards a uniform level, making the entire economy more efficient.

Raising Capital

Firms often require funds to build new facilities, replace machinery or expand their business in other ways. Shares, bonds and other types of financial instruments make this possible. Increasingly, the financial markets are also the source of capital for individuals who wish to buy homes or cars, or even to make credit card purchased.

Commercial Transactions

As well as long term capital, the financial markets provide the grease that makes many commercial transactions possible. This includes such things as arranging payment for the sale of a product abroad, and providing working capital so that a firm can pay employees if payments from customers run late.

Investing

The stock, bond and money markets provide an opportunity to earn a return on funds that are not needed immediately, and to accumulate assets that will provide and income in future.

Risk Management

Futures, options and other derivatives contracts can provide protection against many types of risk, such as the possibility that a foreign currency will lose value against the domestic currency before and export payment is received. They also enable the markets to attach a price to risk, allowing firms and individuals to trade risk until they hold only those that they wish to retain.

The Size of the Markets

Estimating the overall size of the financial markets is difficult. It is hard in the first place to decide exactly what transactions should be included under the rubric "financial markets", and there is no way to compile complete data on each of the millions of sales and purchases occurring each year. The OECD (the organization for Economic Co-operation and Development), to which 29 of the world's wealthier countries belong, sought to estimate the total size of the financial market by examining the amount of financing raised by firms and government.

Notes -

Global Financial Markets

Objectives

Upon completion of this Lesson, you should be able to:

• Understand the Measures and significance of Global Financial Markets

The last two decades have witnessed the emergence of a vast financial market straddling national boundaries enabling massive cross-border capital flows from those who have surplus funds and are in search or high returns to those seeking low-cost funding. The phenomenon of borrowers, including governments, in one country accessing the financial markets of another is not new; what is new is the degree of mobility of capital, the global dispersal of the finance industry, and the enormous diversity of markets and instruments which a firm seeking funding can tap.

The decade of eighties ushered in a new phase in the evolution of international financial markets and transactions. Major DE CD countries had began deregulating and liberalizing their financial markets towards the end of seventies. While the process was far from smooth, the overall trend was in the direction of relaxation of controls which till then had compartmentalized the global financial markets. Exchange and capital controls were gradually removed, non-residents were allowed freer access to national capital markets and foreign banks and financial institutions were permitted to establish their presence in the various national markets. The process of liberalizations and integration continued into the 1990s, with many of the developing countries carrying out substantive reforms in their economies and opening up their financial markets to nonresident investors. A series of crises-the Mexican crisis of 1995, the East Asian collapse in 1997 and the Russian meltdown the following year-threatened to stop the process in its tracks but by the end of 1999 some of the damage has been repaired and the trend towards greater-integration of financial markets appears to be continuing.

While opening up of the domestic markets began only around the end of seventies, a truly international financial market had already been born in mid-fifties and gradually grown in size and scope during sixties and seventies. This is the well known Eurocurrencies Market wherein a borrower (investor) from country A could raise (place) funds in currency of country B from (with) financial institutions located in country C. For instance, a Mexican firm could get a US dollar loan from a bank located in London. An Arab oil sheik could deposit his oil dollars with a bank in Paris. This market had performed a useful function during the years following the oil crisis of 1973, viz. recycling the "petrodollars"-accepting dollar deposits from oil exporters and channeling the funds to borrowers in other countries. During the eighties and the first half of nineties, this market grew further in size, geographical scope, and diversity of funding instruments. It is no more a "Euro" market but a part of the general category called "offshore markets".

(*This term should also include the so called "international banking facilities" wherein a bank, for instance in US is permitted to have a separate division located on US territory for carrying out business with non-resident entities and which is not subject to the usual domestic banking regulation.)

Alongside liberalization, other qualitative changes have been taking place in the global financial markets, Removal of restrictions led to geographical integration of the major financial markets in the OECD countries. Gradually this trend is spreading to developing countries many of whom have opened up their l11urkcts-at least partially-to non-resident investors, borrowers and financial institutions. Another noticeable trend is functional integration. The traditional distinctions between different kinds of financial institutions commercial banks, investment banks, finance companies and so on-are giving way to diversified entities that offer the full range of financial services. The early part of eighties saw the process of disintermediation get under way. Highly rated issuers began approaching the investors directly rather than going through the bank loan route. On the other side, the developing country debt crisis, adoption of capital adequacy norms proposed by the Basle Committee and intense competition, forced commercial banks to realize that their traditional business of accepting deposits and making loans was not enough to guarantee their long-term survival and growth. They began looking for new products and markets. Concurrently, the international financial environment was becoming more and more volatile-the amplitude of fluctuations in interest rates and exchange rates was on the rise. These forces gave rise to innovative forms of funding instruments and tremendous advances in the art and science of risk management. The decade saw increasing activity in and sophistication of financial derivatives markets which had begun emerging in the seventies.

Taken together, these developments have given rise to a globally integrated financial marketplace in which entities in need of short or long-term funding have a much wider choice than before in terms of market segment, maturity, currency of denomination, interest rate basis, and so forth. The same flexibility is available to investors to structure their portfolios in line with their risk-return tradeoffs and expectations regarding interest rates, exchange rates, stock markets and commodity prices. Financial services firms can. now design financial products to unique specifications to suit the needs of individual customers.

The purpose of this chapter is to provide an introduction to global financial markets and the linkages between domestic and international money markets. The focus will be on the shortmaturity segment or the money market. Global capital markets-equities, bonds, notes and so forth-will be discussed in later chapter

Domestic and Offshore Markets

Objectives

Upon completion of this Lesson, you should be able to:

• Understand the Measures and significance of Domestic and Offshore Markets

Domestic and Offshore Markets

Financial assets and liabilities denominated in a particular currency say the US dollar-are traded primarily in the national financial markets of that country. In addition, in the case of many convertible currencies, they are traded outside the country of that currency. Thus bank deposits, loans, promissory notes, bonds denominated in US dollars are bought and sold in the US money and capital markets such as New York as well as the financial markets in London, Paris, Singapore and other centers outside the USA. The former is the domestic market while the latter is the offshore market in that currency. Each of these in turn will have a menu of funding avenues.

While it is true that not both markets will offer all the financing options nor that any entity can access nil segments of a particular market, it is generally seen that a given entity has access to both the markets, (or placing as well as for raising fund_? Are they then really two distinct markets or should we view the entire global financial market as a single market?

There is no unambiguous answer to this question. On the one band, since as mentioned above, a given investor or borrower will normally have equal access to both the markets, arbitrage will ensure that they will be closely linked together in terms of costs of funding und returns on assets. On the other hand, they do differ significantly on the regulatory dimension. Major segments of the domestic markets arc usually subject to strict supervision and regulation by relevant national authorities such as the SEC, Federal Reserve in the US, the Ministry of Finance in Japan, and the Swiss National Bank in Switzerland. These authorities regulate non-resident entities' access to the public capital markets in their countries by laying down eligibility criteria, disclosure and accounting norms, and registration and rating requirements. Domestic banks are also regulated by the concerned monetary authorities and may be subject to reserve requirements, capital adequacy norms and deposit insurance. The offshore markets on the other hand have minimal regulation3, often no registration formalities and importance of rating varies. Also, it used to be the case that when a nonresident entity tapped a domestic market, tasks like managing the issue, underwriting and so on, were performed by syndicates of investment banks based in the country of issue and investors were mostly residents of that country.

Finally it must be pointed out that though nature of regulation continues to distinguish domestic from offshore markets, almost all domestic markets have segments like private place-

ments, unlisted bonds, and bank loans where regulation tends to be much less strict. Also, recent years have seen emergence of regulatory norms and mechanisms which transcend national boundaries. With removal of barriers and increasing integration, authorities have realized that regulation of financial markets and institutions cannot have II narrow national focusthe markets will simply move from one jurisdiction to another. To minimize the probability of systemic crises, banks and other financial institutions must be subject to norms and regulatory provisions that are common across countries. One example of such transnational regulation is the Basic accord under which the advanced OECD economies have imposed uniform capital adequacy norms on banks operating within their jurisdictions. In the near future, other segments of the financial markets may also be subjected to common "global" regulation which will reduce, if not eliminate the regulatory distinctions between domestic and offshore markets.

As mentioned above, the Eurocurrencies market is the oldest and largest offshore market. We now proceed to describe the essential features of this market.

Questions for Review

1. Explain the meaning of the term "offshore market"

2. A US dollar deposit belonging to a French company with a bank in New York is an offshore dollar deposit. True or false?

3. If a US corporation issues US dollar bonds in London, it
will not be called a Eurodollar bond issue but a Yankee bond
issue. True or False?

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Topics Covered Euro Markets

Objectives

Upon completion of this Lesson, you should be able to:

• Understand the Measures and significance of Euro Markets

Euromarkets

What are They

Prior to 1980, Eurocurrencies market was the only truly international financial market of any significance. It is mainly an interbank market trading in time deposits and various debt instruments. A "Eurocurrency Deposit" deposit is a deposit in the relevant currency with a bank outside the home country of that currency. Thus, a US dollar deposit with a bank in London is a Eurodollar deposit, a Deutschemark deposit with a bank in Luxembourg is a Euromark deposit. Note that what matters is the location of the bank neither the ownership of the bank nor ownership of the deposit. Thus a dollar deposit belonging to an American company held with the Paris subsidiary of an American bank is still a Eurodollar deposit. Similarly a Eurodollar Loan is a dollar loan made by a bank outside the US to a customer or another bank. The prefix "Euro" is now outdated4 since such deposits and loans are regularly traded outside Europe, for instance, in Singapore and Hong Kong (These are sometimes called Asian dollar markets). While London continues to be the main Euromarket centre, for tax reasons, loans negotiated in London are often booked in tax-haven centers such as Grand Cayman and Nassau [See Stigum (1990)].

Over the years, these markets have evolved a variety of instruments other than time deposits and shortterm loans. Among them are Certificates of Deposit (CDs), Euro Commercial Paper (ECP), medium to long-term floating rate loans, Eurobonds5, Floating Rate Notes (FRNs) and Euro Medium-Term Notes (EMTNs). Of these, the short-term instruments like ECP and CDs will be briefly discussed later in this chapter; the rest will be described in Chapter 19.

As mentioned above, the key difference between Euromarkets and their domestic counterparts is one of regulation. For instance, Eurobanks are free from regulatory provisions such as cash reserve ratio, deposit insurance and so on, which effectively reduces their cost of funds. Eurobonds are free from rating and disclosure requirements applicable to many domestic issues as well as registration with securities exchange authorities. This feature makes it an attractive source of funding for many borrower and a preferred investment vehicle for some investors compared to a bond issue in the respective domestic markets.

Evolution of Euromarkets

Eurocurrency markets, specifically the Eurodollar market, is said to have originated, ironically enough, with the Russian authorities seeking dollar-denominated deposits with banks in Britain and France. During the 1950s, the erstwhile USSR was earning dollars from the sale of gold and other commodities and wanted to use them to buy grain and other products from the West, mainly from the US. However, they did not want to keep these dollars on deposit with banks in New York as they were apprehensive that the US government might freeze the deposits if the cold war intensified. They approached banks in Britain and France who accepted these dollar deposits and invested them partly in US.

The subsequent enormous growth of the eurodollar market was however due to a number of other factors.

On the supply side, the impetus for growth derived from the various restrictions imposed by the US authorities on domestic banks and capital markets. Throughout the 60s and 70s American banks and other depository institutions had to observe ceilings on the rate of interest they could pay on deposits. 6 These restrictions did not apply to branches of American banks located outside the US, and a number of American banks began accepting dollar deposits in their foreign branches. The dollars so obtained were often reinvested in the US. Most of these restrictions had been lifted by mid seventies. Secondly, domestic banks in US (as in many other countries) were subjected to reserve requirements which meant that a part of their deposits were locked up in relatively low yielding assets. The requirement did not apply to dollar deposits held in foreign branches of American banks (except between 1969 and 1978). The result was banks outside US could offer better rates to depositors (slightly higher) and to borrowers (slightly lower) than their domestic counterparts. Absence of deposit insurance on deposits held outside was also an added factor. This absence of regulation continues to be a factor in favour of Euromarkets.

A third reason is that due to the importance of the dollar as a vehicle currency in international trade and finance, many European corporations have cash flows in dollars and hence temporary dollar surpluses. Due to distance and time zone problems, as well as their greater familiarity with European banks, these companies preferred to keep their surplus dollars in European banks, a choice made more attractive by the higher rates offered by Eurobanks.

These supply side the factors were reinforced by demand for Eurodollar loan by non-US entities and by US multinationals to finance their foreign operations. During the sixties as the US balance of payments dlfl1culties started _rowing, the US government imposed a series of restrictions which made it difficult and / or more expensive for foreign entities to borrow in the US. The voluntary foreign credit restraints of 1963. followed by mandatory controls on foreign lending, and the interest equalization tax (a tax on interest QI\I'n4ld by US residents from foreigners) induced channeling of funds through the Eurodollar markets where these regulations did not apply.

T0 summarise, the main factors behind the emergence and strong growth of the Eurodollar markets were the regulations on borrowers and lenders imposed by the US authorities which motivated both banks and borrowers to evolve Eurodollar deposits and loans? Added to this are the considerations mentioned above. viz. the ability of Eurobanks to offer better rates both to depositors and borrowers (which again can be attributed to existence of regulations) and the convenience of dealing with a bank closer to home who is similar with the business culture and practices in Europe's

The emergence of Euromarkets in currencies other than the dollar can also he attributed to similar considerations, though in these cases better rates and familiarity perhaps played a more important role, As exchange controls were eased and offshore banking was encouraged by authorities offshore markets developed in many other centers including the Far East.

It is difficult to obtain precise estimates of the size of the Euromarkets, particularly net figures, that is excluding interbank placement of funds. Table 6.1 below provides some recent data on the volume of international syndicated credit facilities and commercial paper.

Table 6.1 : International Syndicated Credits and Commercial

 Paper

Announced Sysndicated credit facilities	1999	2000 Q1
All countries	967.1	239.0
Developing country borrowers	44.3	7.7
Commercial paper (Net Issue)		1.9

Source: Bank/or International Settlements, Quarterly Report.

Multiple Deposit Creation by Euro banks Like any other fractional reserve banking system, Euro banks can generate multiple expansion of Euro deposits on receiving a fresh injection of cash.

The traditional approach to this issue treats Euro banks analogously with banks within a domestic monetary system except that the cash reserve ratio of the former is voluntarily decided, while for the latter it is often statutorily fixed. (Actually, even in the latter case, authorities specify only the minimum reserve ratio. Bunks can hold excess reserves). Following the traditional reasoning, deposits give rise to loans which in turn give rise to deposits perhaps with some leakages, at each stage a fraction being added to reserves, This process is examined in more detail in the appendix to this chapter.

A competing "modem" approach rejects the idea of a fixed reserve ratio and emphasizes the fact that Supply of Euro deposits on one hand and the demand for Euro loans on the other are both dependent upon the rate of interest. A fresh injection of cash will put downward pressure on the interest rate which will induce some marginal depositors to shift their deposits out of the Euro banks while it will increase the demand for loans. The total size of Euro banks' balance sheets will expand but the extent of the increase cannot be determined by any fixed multiplier formula as in the traditional approach; it depends on the elasticity's of the schedules of supply of and demand for funds in the Euromarkets, An exhaustive survey of the theoretical debate can be found in Johnston (1983).

Economic Impact of Euromarkets and Other Offshore Markets

The emergence and vigorous growth of Euromarkets and their (alleged) ability to create multiple deposit expansion without any apparent control mechanism, have given rise to a number of concerns regarding their impact on international liquidity, on the ability of national monetary authorities to conduct an effective monetary policy, and on the soundness of the international financial system. Among the worries expressed are:

- 1. The market facilitates short-term speculative capital flows-the so called "hot money"—creating enormous difficulties for central banks in their intervention operations designed to "stabilise" exchange rates.
- 2. National monetary authorities lose effective control over monetary policy since domestic residents can frustrate their efforts by borrowing or lending abroad. It is known that with fixed or managed exchange rates, perfect capital mobility makes monetary policy less effective. Euromarkets contribute to increasing the degree of international capital mobility.
- 3. The market is based on a tremendously large volume of interbank lending. Further, Eurobanks are engaged in maturity transformation, borrowing short and lending long. In the absence of a "lender of last resort" a small crisis can easily turn into a major disaster in the financial markets.
- 4. Euromarkets create "private international liquidity" and in the absence of a central coordinating authority they could create "too much" contributing to inflationary tendencies in the world economy.
- The markets allow central banks of deficit countries to borrow for balance of payments purposes thus enabling them to put off needed adjustment measures.
 Against these are to be set the obvious advantages of the markets such as

a. more efficient allocation of capital worldwide,

- b. smoothing out the effects of sudden shifts in balance of payments imbalances (e.g. recycling of petrodollars mentioned above without which a large number of oil importing countries would have had to severely deflate their economies after the oil crisis), and
- c the spate of financial innovations that have been created by the market which have vastly enhanced the ability of companies and governments to better manage their financial risks and so on.

On the question of whether the Euromarkets are really unbridled creators of international liquidity, the argument, as we saw above, is not settled. The connection between international liquidity and world inflation is also open to debate. Concerns pertaining to increased fragility of the financial system are quite legitimate particularly since the advent of securitization. Authorities in GECD countries have already taken certain steps towards tightening the regulatory provisions. Uniform capital adequacy. norms and tightening of bank supervision is
expected to render the financial system less vulnerable to systemic failures. The debate about the desirability of having completely open capital accounts and uncontrolled cross-border capital flow continues with a variety of proposals for redesigning the global financial system. We will briuf1y discuss some of These development toward the end of this chapter.





Multinational Financial Management

Alan Shapiro 7th Edition J.Wiley & Sons Power Points by Joseph F. Greco, Ph.D. California State University, Fullerton

<u>CHAPTER OVERVIEW:</u>

- I. THE EUROCURRENCY MARKETS
- II. EUROBONDS
- III.NOTE ISSUANCE FACILITIES AND EURONOTES
- IV. EUOR COMMERCIAL PAPER
- V. THE ASIA CURRENCY MARKETS

I. THE EUROCURRENCY MARKETS

THE EUROMARKETS

-the most important international financial markets today.

- A. The Eurocurrency Market
 - 1. Composed of eurobanks who accept/maintain deposits of foreign_currency
 - 2. Dominant currency: US\$

THE EUROCURRENCY MARKETS

- C. Eurodollar Creation involves
 - 1. A chain of deposits
 - 2. Changing control/usage of deposit

6

THE EUROCURRENCY MARKETS

B.Growth of Eurodollar Market caused by restrictive US government policies, especially

- 1. Reserve requirements on deposits
- 2. Special charges and taxes
- 3. Required concessionary loan rates
- 4. Interest rate ceilings
- 5. Rules which restrict bank competition.

THE EUROCURRENCY MARKETS

3. Eurocurrency loans

- a. Use London Interbank Offer Rate: LIBOR as basic rate
- b. Six month rollovers
- Risk indicator: size of margin between cost and rate charged.

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THE EUROCURRENCY MARKETS

- 4. Multicurrency Clauses
 - Clause gives borrower option to switch currency of loan at rollover.
 - b. Reduces exchange rate risk

- II. EUROBONDS
 - A. DEFINITION OF EUROBONDS bonds sold outside the country of currency denomination.
 - 1. Recent Substantial Market Growth -due to use of swaps.

a financial instrument which gives 2 parties the right to exchange streams of income over time.

THE EUROCURRENCY MARKETS

- 5. Domestic vs. Eurocurrency Markets
 - a. Closely linked rates by arbitrage
 - b. Euro rates: tend to lower lending, higher deposit

EUROBONDS

- 2. Links to Domestic Bond Markets arbitrage has eliminated interest rate differential.
- Placement underwritten by syndicates of banks

EUROBONDS

- 4. Currency Denomination
 - a. Most often US\$
 - b. "Cocktails" allow a basket of currencies
- 5. Eurobond Secondary Market -result of rising investor demand
- 6. Retirement
 - a. sinking fund usually
 - b. some carry call provisions.

THE EUROMARKETS

- B. Eurobond vs. Eurocurrency Loans1. Five Differences
 - a. Eurocurrency loans use variable rates
 - b. Loans have shorter maturities
 - c. Bonds have greater volume
 - d. Loans have greater flexibility
 - e. Loans obtained faster



- Moody's, Standard & Poor
- 8. Rationale For Market Existence
 - a. Eurobonds avoid government regulation
 - b. May fade as market deregulate

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III. NOTE ISSUANCE FACILITIES AND EURONOTES

- A. Note Issuance Facility (NIF)
 - 1. Low-cost substitute for loan
 - 2. Allows borrowers to issue own notes
 - 3. Placed/distributed by banks

15

NOTE ISSUANCE FACILITIES AND EURONOTES

- B. NIFs vs. Eurobonds
 - 1. Differences:
 - a. Notes draw down credit as needed
 - b. Notes let owners determine timing
 - c. Notes must be held to maturity

EURO-COMMERCIAL PAPER

- B. U.S. vs. Euro-CPs
 - 1. Average maturity longer (2x) for Euro-CPs
 - Secondary market for Euro; not U.S. CPs.
 - 3. Smaller fraction of Euro use credit rating services to rate.

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IV. EURO-COMMERCIAL PAPER I. SHORT-TERM FINANCING A. Euronotes and Euro-Commercial Paper 1. Euronotes unsecured short-term debt

- unsecured short-term debt securities denominated in US\$ and issued by corporations and governments.
- Euro-commercial paper(CP) euronotes not bank underwritten

Topics Covered

Interest Rates in the Global Money Markets

Objectives

Upon completion of this Lesson, you should be able to:

• Understand the Measures and significance of Interest Rates in the Global Money Markets

Interest Rates in the Global Money Markets

The purpose of this section is to examine the linkages between interest rates in the domestic and offshore markets on the one hand and, on the other hand, between interest rates for different currencies in the off shore market.

The spectrum of interest rates existing in an economy at any point of time is the result of the complex Interaction between several forces.

As seen in the figure, the short-term money market rates in a domestic money market are linked to the so-called risk-free nominal interest rate, usually the yield offered by short-term government securities like treasury bills.

In the Eurocurrency market, which is primarily an interbank deposit market, the benchmark is provided by the interbank borrowing and lending rates. The most widely known benchmark is the london interbank offer rate abbreviated LIBOR.9 This is an index of the rate which a "first class" bank in London will charge another first class bank for a short-term loan. Note that LIBOR is not necessarily the rate changed by any particular bank; it is only an indicator of demand-supply conditions in the interbank deposit market in London. Another rate often referred to is the LIBID-London Inter-Bank Bid Rate, the rate which a bank is willing to pay for deposits accepted from another bank.

Obviously, LIBOR would vary according to the term of the underlying deposit. Thus financial press normally provides quotations for 3-and-6 month LIBORS. In the Euromarket, deposits range in maturity from overnight up to one year. UBOR also varies according to the currency in which the loan or deposit is denominated. We will discuss below the link between LIBORS for different currencies.

Boxes 6.1 and 6.2 present selected short-term interest rates for the United Kingdom and the United States money markets respectively. Table 6.2 gives 6-month LIBORS for various currencies.

Short Term Rates-UK			Short Term Rates-US	
June 2000 (Averages)			End,June 2000	
(% per annum)			(% per annum)	
3-Month T -Bill:	5.85		Federal Funds	6.53
BOE Repo Rate:	6;00		3-Month T -Bill:	5.69
Discount Rate:	6.03		3-Month CP:	6.57
3-Month Bills			Prime Rate:	9.50
3-Month Interbank:	6.14		3-Month CD Rate:	6.67

|--|

(August 4, 2000 in % per annum)

Currency	3-Month LIBOR	6-Month LIBOR
US Dollar	6.71	6.87
Deutschemark	4.64	4.92
Japanese Yen	0.19	0,28
Pound Sterling	6.21	6.33
Swiss Franc	3.42	3.74
Euro	4.64	4.92

Sources: Box 6.1: Federal Reserve. Box 6.2: Bank of England (BOE). Table 6.2: HSBC Markets, India Treasury, as reported in Economic Times, August 5, 2000.

Let us now discuss the relationship between interest rates in the domestic and Euro segments of the money market. Table 6.3 and Figure 6..2 provide recent data on commercial paper and certificates of deposit rates in the domestic dollar segment and the 3-month Eurodollar rate. As can be seen the rates are very close and generally move together. This is not surprising since as said above, arbitrage by borrowers and investors with access to both the markets should serve to keep the rates close together. Why are the rates not identical? Two explanations are offered. The first emphasises the demand side, viz. investors (depositors) may not regard dollar deposits with banks in the US and banks outside the US as perfect substitutes. If Eurobanks are perceived to be more risky, depositors would demand a risk premium which would force Eurobanks to pay somewhat higher deposit rates. On the other hand, if depositors who are not residents of US might perceive a degree-however small-of political risk in placing their funds in US, Eurobanks can attract deposits even if they pay a somewhat smaller rate of interest. The second explanation emphasises the supply side. Banks in US are subject to reserve requirements and have to pay insurance premiums for Federal Deposit Insurance. This would mean a higher cost of funds for a given rate paid on deposits. Eurobanks are exempt from both these restrictions and can therefore afford to pay somewhat higher rates. Thus suppose, both pay interest at 10% per annum; assume that reserve requirements in the US are 5% and deposit insurance costs 0.1 % per annum. Then the effective cost of funds for the US bank would be

(10 + 0.1)/(1 - 0.05) = 10.63%

while for the Euro bank it is 10%.12 The US bank can pay interest only at the rate of 9.4% to achieve a cost of funds equal to 10%. There may also be a third factor at work though its influence is likely to be small. Depositors outside US may prefer offshore banks on account of the convenience of time zone and greater familiarity with banking practices.

	СР	CD	Euro S
Jan – 99	4.77	4.89	4.88
Feb-99	4.79	4.90	4.86
Mar-99	4.81	4.91	4.88
Apr - 99	4.79	4.88	4.87
May – 99	4.81	4.92	4.90
Jun – 99	4.98	5.13	5.09
Jul – 99	5.11	5.24	5.21
Aug – 99	5.25	5.41	5.36
Sep – 99	5.32	5.50	5.48
Oct - 99	5.88	6.13	6.09
Nov - 99	5.81	6.00	5.79
Dec – 99	5.87	6.05	6.06
Jan - 2000	5.74	5.95	5.94
Feb - 2000	5.87	6.01	6.02
Mar – 2000	6.00	6.14	6.13
Apr – 2000	6.11	6.28	6.25
May - 2000	6.54	6.71	6.70
Jun - 2000	6.57	6.73	6.73

Source: Federal Reserve Board

The cost-of-funds arguments would also imply that Eurobanks would charge slightly lower rates on loans than their domestic counterparts since their cost of fund is somewhat lower.

In practice, neither argument-risk premium or cost-of- funds-by itself is adequate to explain the interest differentials at all times. Both have to be invoked depending upon specific market conditions.

From time to time, for balance of payments reasons or to defend the exchange rate parity, national authorities may impose temporary controls which result in divided capital markets as arbitrage transactions are not permitted. Under these circumstances the close linkage between domestic and offshore rates is snapped. The most dramatic instance of such segmented credit markets is what happened to the Euro French Franc market in the early eighties when to prevent speculation against the French franc, the authorities imposed various controls on resident and non-resident borrowers and investors and banks. This led to the Euro French franc deposit rates being much higher than corresponding domestic deposit rates. For a brief history of this episode see Giddy (1994).

Next, let us examine the linkages between interest rates for different currencies in the Euromarket. As seen in earlier, at any point in time, LIBORS for different currencies differ substantially. Consider a depositor who on August 4, 2000 wished to place funds in the Euromarket for six months. Why would such a depositor put money in say a Swiss franc deposit earning 3.74% and not in a pound sterling deposit earning 6.33%?

Obviously this must have something to do with the expected behaviour of exchange rates. For concreteness, assume that the depositor's functional currency was deutschemarks (DEM). To make an investment in a Swiss franc (CHF) deposit, he would have converted his DEM into CHF in the so-called spot foreign exchange market. When the deposit matured, he would have liked to get back into DEM. Assume further that he wished to avoid any exchange rate riskl3. He could do this by entering into what is known as a forward contract at the time he deposited the funds. Under this contract, he would agree to deliver CHF six months later in return for DEM, at an exchange rate specified at the time of the contract. This is the forward exchange rate. A similar route would have been followed when making a pound sterling (GBP) investment. In choosing between a CHF and a GBP deposit, the depositor would have compared the end-of-period DEM cash inflows from both for a given DEM outflow. This comparison would have involved two factors viz. the interest rates to be earned and the forward exchange rate at which the currency of deposit was to be converted into DEM when the deposit matured. We will illustrate these calculations with an example. Suppose on August 4, 2000, the following rates were available to an investor whose functional currency was DEM

Euro £ 6-month LIBOR : 6.64% p.a.

Euro CHF 8-month LIBOR : 2.06% p.a.

Spot Exchange Rate DEM/CHF : 1.1000

(Rate for immediate conversion from DEM to CHF)

6-month forward exchange rate DEM/CHF: 1.1107

(Rate, fixed today, for converting CHF back to DEM, 6 months later)

Spot Exchange Rate DEM/GBP : 2.8000

6-month forward exchange rate DEMIGBP : 2.7475

a. 100 DEM put in a CHF deposit, maturity value of deposit sold forward. At the end of six months the depositor would have had:

DEM[(100/1.1)(1.0103)(1.1107)] = DEM(102.0128)14

b. 100 DEM p_t in a GBP deposit, matUrity value of deposit sold forward. At the end of six months the depositor would have had:

DEM[(100/2.80)(1.0332)(2.7475)] = DEM(l01.3827)

Thus despite the higher interest rate on sterling deposits, the depositor would have been better off putting money in a Swiss franc deposit. Why was this so? The key lies in the loss or gain made when converting the deposit proceeds forward. With a Swiss franc deposit, the depositor would have gained. The percentage gain would have been:

[(1.1107-1.1000)11.1000] x1O0 = 0.9727 for six months.

On an mialised basis, this gain is 1.9455%. Thus the effective return is 4.0055,% per annum or 2.0028%

for six months.15 With a sterling deposit, the depositor loses; the percentage loss would have been:

 $[(2.7475 - 2.8000)/2.8000] \times 100 = -1.875\%$ for six months or - 3.75% per annum. With annual interest at 6.64%, the effective

return is 2.89% per annum. Note also that this return is less than the return offered by DEM deposits.

Obviously, if all depositors- including those in UK-are free to place their funds in any currency, such a situation cannot last. In the present case, depositors who hold sterling deposits would liquidate them, buy DEM or CHF in the spot market, put these on deposit and simultaneously enter into forward contracts to convert the deposit proceeds back into sterling. This activity is known as Covered Interest Arbitrage. We will examine it in much greater depth in Chapter 8. When all or even a large number of investors attempt to put through such transactions, the market rates would change. For instance, deposit rates on sterling would rise, those on DEM and CHF would fall, spot price of sterling would fall and the forward price would rise. In equilibrium, the effective returns on all currencies-that is, interest plus any locked-in exchange gain or loss-would be equalized. You can convince yourself that the fact that we have assumed the functional currency of the depositor to be DEM is of no consequence.

Thus the differences in interest rates between different currencies in the Euromarket reflect the market's expectations regarding exchange rate movements as captured in the spot rate-forward rate differentials. On a covered basis all currencies should yield equal returns. As we will see in Chapter 8, empirically this

proposition is found to be valid.

To summarize, the relationship between the domestic and offshore market interest rates for a currency are governed by risk premia, reserve requirements and other regulations that apply to domestic deposits and the presence of capital controls. The differences in interest rates between currencies in the euromarket

(¹⁴ This calculation is as follows:

DM 100 converted to SFr at the spot rate gives

SFr(IOO/l.l). This is deposited at an annual interest rate of 2.06%. Including interest, at maturity the deposit is worth: SFr(IOO/ 1.1) [I + (0.026/2)1 = SFr[(IOO/1.1)(1.01O3)].

This, converted to DM at the forward rate, is worth:

DM[(100/l.l)(1.0103)(1.l107)].

¹⁵ The slight discrepancy between this and the six-month return calculated above (2:0128%) is due to the fact that this calculation ignores the exchange gain on interest. The correct return is 2.0128%. Note also that the effective return 0n1 SFr deposit is as the return offered by Euro DEM deposits.)

are explained by the differences in the spot-forward margins. In equilibrium, effective returns on all currencies would be equal.

Questions for Review

1. Commercial paper is a short term funding instrument issued by a non financial corporation: if the issuer is a financial firm, it should be called a certificate of deposit. A banker's acceptance is a commercial paper issued by a bank. Do you agree?



• An efficient money market is an absolute prerequisite for a well functioning bond market

Outline

- Framework for Monetary Policy
- Money market infrastructure
- Money market operations
- Criteria for market efficiency
- Treasury/MOF and Central Bank relationship
- Market surveillance

- We will present what in our view is an optimal monetary policy framework, considering monetary theory, the state of
- the art of CBs, based on experience of European central banks
- Today, the SECB comprises ECB and NCB
- So, these models will correspond better to NCB just before the euro started
 April. 9th. 2001
 Bank of Korea

Outline

- Framework for Monetary Policy
- Money market infrastructure
- Money market operations
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- Market surveillance

Basic principles (based on the recent advances in optimal monetary policy models and the European Monetary Union experience)

- Independent Central Bank (setting objectives, politically independent, free from government pressure, Board Members cannot be dismissed, accountability)
- Clearly defined nominal anchor
- Central Bank has complete freedom and all the instruments required to attain objectives
- Prohibition of government credit and buying directly bonds from the government
- All these rules should be enshrined on the Constitution and/or Central Bank Charter

. .

Monetary Programming

- Macroeconomic Forecasting Exercise (IS-MR, AD-IA)
- Or, more traditionally, fix intermediate monetary aggregates (LM compatible with MR)
- Control of bank reserves to reach a certain monetary aggregate, compatible with a given interest rate

Monetary Policy Rules

• Inflation targeting

- Inflation depends on real interest rate
- Real interest rate depends on nominal interest rate and inflation expectations
- Nominal interest rate can be manipulated thru bank reserves
 - P=a. (Real Interest Rate, GDP-Normal GDP)

• Exchange rate targeting

Policy pursued by most of EU countries in the 1990s,

April, 9th, 2001 Rate Parity Bank of Korea

Central Bank Instruments

- Setting key interest rates
- Money market interventions thru repo and reverse repo operations
- Money market interventions thru open market operations
- Money market interventions thru foreign exchange markets
- Set bank reserve requirements





- Framework for Monetary Policy
- Money market infrastructure
- Money market operations
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- Treasury/MOF and Central Bank relationship
- Market surveillance

April, 9th, 2001

Bank of Korea

In most of the EU countries All this platforms should be integrated and its functioning and integrity are responsibility of Central Bank or agencies that depend directly on Central Bank

11

Portuguese case

- SITEM is an electronic system for auctioning liquidity between participants and BP(ECB)
- Brokering liquidity among participants (handles all call market)
- Keeps track of all operations, e.g. informs participants of operations condition and warns of date of payment
- Informs of market conditions, rates and indices
- linked to RTGS, settlement of all operations
- is a central registrar and clearing/settlement for TBs. Other paper is registered at CVM linked to these systems in real time.
 April 9th 2001 Bank of Korea

- Regular money market intervention at beginning of reserve period
- Following closely market indicators (interest rate in spot markets for different terms), excess supply/demand of liquidity
- Following closely exchange rate developments
- If needed, non-regular interventions in the money markets

•

- Framework for Monetary Policy
- Money market infrastructure
- Money market operations
- Criteria for market efficiency
- Treasury/MOF and Central Bank relationship
- Market surveillance

April, 9th, 2001

Basic: good bank reserve programming

• Problem: Treasury operations

- in some European countries: Single Treasury account at CB
- in others: Treasury accounts with commercial banks

, 9th, 2001

orea

Money and exchange rate

- Money market and
- Exchange rate management - SHOULD GO HAND IN HAND
- In countries that give some importance to exchange rate stability, even more important than quantitative planning of monetary aggregates is

. .

Who should have access to Central Bank liquidity windows?

- All banking institutions (that can take deposits or make loans of liquidity) should have access to Central Bank liquidity window
- Moreover, all institutions that are subject to minimum reserve requirements

Interest Rate Parity

- Uncovered interest rate parity:
- Domestic Interest Rate=
- International Interest Rate +
- Expected Devaluation+
- Sovereign Risk

Conditions for participating in CB liquidity windows

- Fully compliant financial institution (RTGS, brokerage and/or dealership regulations)
- Be solvent and financially sound (supervisory institution certified)
- Signs a contract with Central Bank with rights and responsibilities
- Is subject to surveillance and timely audits by Money Market Department staff
 April, 9th, 2001
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- Most of European countries have abandoned rediscounting (too much risk taking, and risk assessment) - only France maintains important window
- Bulk of operations with Treasury Paper (mainly Tbills)
- But more recently, in order not to bias preference for public paper: use top grade Apricorporate bonds Bank of Korea

- Framework for Monetary Policy
- Money market infrastructure
- Money market operations
- <u>Criteria for market efficiency</u>
- Treasury/MOF and Central Bank relationship

Bank of Ko

• Market surveillance

Problem of risk assessment of paper

- Risk assessment is easy for TBs: usually very small hair cuts
- Hair cuts would be higher for long term bonds (10 year Tbonds)
- But id usually difficult to compute hair cuts for corporate bonds due to lack of liquidity (30% haircut was common in this case)
- At BP we have developed an interesting

Efficient money market

- Full market mechanisms, transparent and with frequent transactions
- Not excessive volatility of market interest rates, and market interest rates reflecting CB targeting
- But it should respond to shocks in real and monetary markets, as well as inflationary expectations
- Adjustment more thru quantity than price
- Settlement risk reduced to a minimum and well defined distribution of Korea

- Efficient and secure market infrastructure
- Market reference rates frequent and easily available
- Very small spreads in Interbank rates
- Articulation between wholesale and retail money markets
- Fluidity between money, foreign exchange and bonds markets

•prilEtxcellent market stability and surveillance 26

Money market reference rates

- All the money markets have an Interbank Money Rate that is used as a reference to money markets (LIBOR, PIBOR, MIBOR, LISBOR, etc.)
- These rates are quoted every business day by a set of relevant market participants, that subscribe a contract, bid and ask rates for 1 week, 1 month, 3 months, 6 months, 1 year.
- These rates are then publicized by Reuters, etc. (usually Central Bank encourages launching, but it April Should be seen as a purel yormarket rate)

In most of European markets

- Private contracts take the ?IBOR rates as a base for defining interest rates
- E.g. LIBOR, in dollars, is used in quite a number of countries to define banking rates (deposit and lending) for US dollars
- E.g. in mortgage indexed contracts, the 6month ?IBOR is used
- Most of these national rates have been
 April replaced by EURIBOR rates

Defining the yield curve

- The short-end (up to 1 year) is usually defined by ?IBOR, or/and TBs secondary market rates
- After 1 up to 10 years -by TBs in secondary active markets (importance of liquid markets, fungibility, etc.)
- Who publishes the data?

- Framework for Monetary Policy
- Money market infrastructure
- Money market operations
- Criteria for market efficiency
- <u>Treasury/MOF and Central Bank</u> <u>relationship</u>

Bank of Korea

• Market surveillance

But for Treasury to act tru the market and assure a steady and stable financing environment

- Needs to build trust with market participants, transparency, minimum regulation, need of trained operators and knowledgeable investors
- Create a sufficient array of instruments that allow risk diversification
- Promote savings (institutional and private)

Two conflicting objectives

- Central Bank wants monetary stability
- Treasury wants minimum cost for Treasury financing

But for Treasury to act tru the market and assure a steady and stable financing environment

- Develop appropriate derivative instruments for hedging, risk spreading and risk shifting (essential for efficient modern real sector)
- Efficient debt management (domestic and foreign)
- Markets have to be created and steadily nurtured (not to be tapped erratically, or when Treasury needs money)

April, 9th, 2001

Global markets: how to graduate from emerging market

- Treasury should establish a reputation of excellent borrower and capital market
- Thru
- Regular operations
- Good international rating (appropriate macro policies)
- Road shows
- Establish privileged relationship with major global banks (link external operations with April 19th 2001 April 19th 2001 April 19th 2001

To harmonize objectives and prevent market segmentation

- Al short term instruments issued are Treasury Bills (TB): 3, 6, 9 and 12 months.
- Treasury sets regular calendar for each issue
- But leaves the amounts and rates to be chosen by CB
- Central Bank issues TB and puts revenues in an account in Treasury name
- When Treasury needs the money, it can use <u>Ait but</u> pays the rate of the TB (LIFO)

- Central Bank-money markets: short end of the market- up to 1 year
- Treasury-capital markets: debt instruments with more than 1-year
- Central Bank can either issue TBs or make repos with TBs (that have not yet matured)
- Fiscal issue: TBs should be nontaxable
- TBs can be used outside the banking or financial system. In several countries they are extensively used even by firms and households.

Regulation of

- Framework for Monetary Policy
- Money market infrastructure
- Money market operations
- Criteria for market efficiency
- Treasury/MOF and Central Bank relationship

Bank of Korea

• Market surveillance

• Spot markets

- Derivatives and futures markets
- In Portugal all the basic regulatory instruments for these markets were drawnup by a commission with all supervisory agencies, plus Central Bank and MoF.
- Professional associations were consulted
- Regulations issued by Supervisory Commission (in Portugal: CMVM)
 And 9th 2001
 Bank of Korea

Basic regulatory framework

- Money market and banking regulation perspective (Central Bank)
- Bond, stocks and capital market regulation perspective (stock exchanges)
- Insurance industry (conglomerate or crossselling)

Some important principles

- Integration of supervision functions
- Conglomerates and global approach
- Strict collaboration in operational and supervision aspects
- Self-regulation and governance are fundamental

 eg. Need a code of conduct for brokers and dealers in bonds, stocks, mutual funds
 9th 2001
 Bank of Korea

: Bond market regulation: institutional responsibilities

- Basic principle: Supervisory Agency for Capital Markets is the main regulatory an supervisory body.
- To the extent that may influence liquidity markets: Central Bank should be consulted
- Institution that handles bond auctions (e.g. Central Bank) should maintain conditions for competitive behavior (e.g. NYFED is responsible for watching conditions that may led to cornering) April, 961, 2001

What are basic regulatory instruments

- Derivatives standard contracts: repo, shortsales, standard futures or forward contracts.
- Market indices on futures and forward interest and exchange rates (and stock futures)
- Be sure that all the codes of law and auxiliary regulations are compatible with international standard practices
 April, 9th, 2001
 Bank of Korea

Bond market regulation

- Obligation of maintaining full accounts of primary dealers, with rates offered and transactions made
- Sample supervision to avoid cornering market
- Professional examination
- Code of conduct: information of clients, unduly risk taking, etc.

Derivatives market regulations

- Regulations on margins
- Standard contracts

50

But markets will not develop if operators are not fully knowledgeable

- In Portugal we set up a Capital Markets Development Institute -linked to futures stock exchange, whose functions were
 - Make studies supporting basic contracts and best practices (review worldwide experience) hired about dozen PhDs and MAs in Finance

.

 Courses for market operators with foreign experts (mostly experts from English April, 9th, 2001 Versities at master or doctoral level)

But markets will not develop if operators are not fully

- knowledgeable
 Seminars for Central bank, commercial banks, at technical level
- Seminars at executive and management level to raise awareness on derivatives role and working
- Universities introduced courses on derivatives
- It took us 2 1/2 years of intensive training before negotiation in futures stock exchange was inaugurated (we know that other Asian countries like Malaysia did the same)

4/

Topics Covered

An overview of Money Market Instruments

Objectives

Upon completion of this Lesson, you should be able to:

• Understand the Measures and significance of the Money Market Instruments

An Overview of Money Market Instruments

During the decade of the eighties the markets have evolved a wide array of funding instruments. The spectrum ranges from the traditional bank loans to complex borrowing packages involving bonds with a variety of special features coupled with derivative products such as options and swaps. The driving forces behind these innovations have diverse origins. Some, such as floating rate loans and bonds, reflect investor preference towards short-term instruments in the light of interest rate volatility. Some, such as Note Issuance Facilities, permit the borrower to raise cheaper funds directly from the investor while having a fallback facility. Some, such as swaps, have their origins in the borrowers' desire to reshuffle the composition of their liabilities (as also investors' desire to reshuffle their asset portfolios). Some, such as medium term notes, were designed to fill the gap between very short-term instruments such as commercial paper and long term instruments such as bonds. Some - an example is swaps again - have their genesis in market participants' drive to exploit capital market inefficiencies and arbitrage possibilities created by differences across countries in tax regulations.

In this section we will briefly describe some of the common short-term funding instruments such as commercial paper (CP), bankers' acceptances (BAs) and Certificates of Deposit (CDs). In addition, there are banking products viz. deposits and loans ranging in maturity from overnight to one year and some underwritten facilities like Note Issuance Facility (NIF) and Revolving Underwriting Facility (RUF). Medium-to-long-term debt instruments like bonds, notes, NIFs and RUFs are discussed in chapter 19. International equity investment is discussed in chapter 18. Financial swaps are the topic of chapter 16. A comprehensive reference on money market instruments, players and regulatory aspects is Stigum (1990).

Commercial Paper

Commercial paper is a corporate short-term, unsecured promissory note issued on a discount to yield basis It can be regarded as a corporate equivalent of CD (Certificate of Deposit) which is an interbank instrument.

Commercial paper maturities generally do not exceed 270 days. Issuers usually roll over the issue and use the proceeds from the new issue to retire the old issue. The issue is normally placed through CP dealers or, in a few cases, large corporations have their own sales force. Commercial paper represents a cheap and flexible source of funds especially for highly rated borrowers, cheaper than bank loans. For investors, it is an attractive short-term investment opportunity compared to a time deposit with a bank. In addition to the high credit reputation of the borrowers, most CP programmes also require a back-up credit line from a commercial bank covering at least 50%, more often nearly 100% of the issue. While CPs are negotiable, secondary markets tend to be not very active since most investors hold the paper to maturity.

United States has the largest and long established dollar CP market. In recent years it has dwarfed the .markets for Certificates of Deposit and Bankers' Acceptances. It is used extensively by US corporations as well as some non-US corporations. Euro Commercial Paper (ECP) emerged in the 1980's. It evolved as a natural culmination of the Note Issuance Facility and developed rapidly in an environment of securitization and disintermediation of traditional banking. Investors in CP consist of money market funds, insurance companies, pension funds, other financial institutions and corporations with short-term cash surpluses.

After the initial flurry of activity, the growth in the number of new issues and issue volumes slowed down in the ECP markets. Also, as a result of some defaults, investor concern about creditworthiness increased dramatically. CP has also developed in the domestic segments of some European countries offering attractive funding opportunities to resident entities.

Certificates of Deposit

A Certificate of Deposit (CD) is a negotiable instrument evidencing a deposit with a bank. Unlike a traditional bank deposit which is non-transferable, a CD is a marketable instrument so that the investor can dispose it off in the secondary market when cash is needed. The final holder is paid the face value on maturity along with the interest. CDs are issued in large denominations - \$100,000 or equivalent or higher - and are used by commercial banks as short-term funding instruments. Occasionally, CDs with maturity exceeding one year are issued. When the maturity is less than a year, interest is paid along with redemption of principal; for maturity longer than a year, interest may be paid semiannually.,

Euro CDs are issued mainly in London by banks. Interest on CDs with maturity exceeding a year is paid annually rather than semiannually. There are floating rate CDs with maturities normally ranging from 18 months to five years on which interest rate is periodically reset, indexed to LIB OR, Federal Reserve CD composite rate, Treasury Bill rate and so forth.

Bankers' Acceptances

This is an instrument widely used in the US money market to finance domestic as well as international trade. In a typical international trade transaction, the seller(exporter) draws a time or "usance" draft on the buyer's (importer's) bank. On completing the shipment, the exporter hands over the shipping documents and the letter of credit issued by the importer's bank to its bank. The exporter gets paid the discounted value of the draft. The exporter's bank presents the draft to the importer's bank which stamps it as "accepted". A banker's acceptance is created. The exporter's bank may hold the draft in its portfolio, ask the importer's bank to rediscount it or sell it as a money market instrument. The investor might be a money market mutual fund. It is possible to draw BAs without a formal pre-authorization like a letter of credit as in this example.

In addition to these securitized instruments, short-term bank loans are also available. The euro currencies market is essentially an interbank deposit and loans market. Loans ranging in maturity from overnight to one year can be arranged with minimal formalities. Interest rates are indexed to LIB OR.

In the US money market, Repurchase Obligations (REPOS) are used by securities dealers to finance their holdings of securities. This is a form of collateralized short term borrowing in which the borrower "sells" securities to the lender with an agreement to "buy" them back at a later time.(Hence the name "Repurchase Obligations"). The repurchase price is the same as the original buying price, but the seller (borrower) pays interest in addition to buying back the securities. The duration for the borrowing may be as short as overnight or as long as up to a year. The former are called "overnight repos"; longer duration repos are "term repos". The interest rate is determined by the demand-supply conditions.

This concludes our brief survey of major short-term funding instruments. It must be stressed that what we have described are the basic prototypes. A bewildering variety of specific combinations of the basic types with exotic risk management products thrown in are seen in the market and new ones will continuo to evolve.

Summary

This chapter is designed to introduce the reader to the basic features of the global financial markets. Its muin purpose is to examine the interest rate linkages between the different segments of the global money II1urkets. On the one hand, there is the close link between interest rates in the domestic and offshore markets in a particular currency. These are explained partly by risk premium demanded by the investors and partly by regulatory considerations. On the other hand, there are linkages between interest rates on deposits denominated in different currencies in the euromarket. This linkage is explained by the covered interest arbitrage activity which will be examined in greater depth in Chapter 8. The chapter concludes with a brief survey of common short-term funding instruments in global money markets.

Questions for Review

1. Discuss the various factors responsible for the emergence and growth of the eurocurrency market.

2. "The eurocurrency markets have permitted countries to avoid monetary discipline and put off corrective action to address their BOP problems." Comment.

3. Explain the various factors that govern the divergence between interest rates in the onshore and off-shore markets in a currency.





- * Bank instruments
- Corporate instruments
- * Federal Government instruments
- * State and local instruments
- * Mixed instruments

Nature of the Money Market

- * Primary and secondary markets
- * Wholesale and retail markets
- * Money market interest rates
- * Role of the Federal Reserve
- * Tax status
- Market mechanics and intermediaries



State and Local Government Instruments ment Denomination Maturity Bisk

Anticipation notes	Primary: \$5,000 Secondary: \$100,000	Few weeks to several years	* Low default risk * Liq. depend on dealer * Interest rate risk function of maturity
VRDNs	Primary: \$5,000-\$1 00,000 Secondary: \$100,000	30 years with put. Interest rate reset	* Low default and liq. risk * Low liquidit risk due to rate reset
Tax-exempt CP	Primary: \$50,000-\$100,000 Secondary: \$100,000	Few days to several years	* Same risk a anticipation

Bank Inst	truments		
Instrument	Denomination	Matu rity	Risk
Certificates of Deposit	Primary: \$100,000 + Secondary: \$2-\$5m	7 days to 8 years	* FDIC * Fixed mat. *Expro risk of
Time deposits	Minimum set by bank	1 day to 3 months	Eurodolkar deposits
Bankers Acceptances	\$500,000 to \$1m	Up to 270 days	* Bank secured * 2ndary mkt
Loan participations	Varies	1 day to 3 years	* Most have guaranter * Illiquid
Securitized assets such as auto loans, credit cards	Varies	1 year to 10 years	* Diversified portfolio

Corporat	e Instruments		
Instrument	Denomination	Matun ity	Risk
Commercial paper	Primary: \$100,000 + Secondary: \$5m	1 to 270 days	* Usually low * Backup line * Liquidity function of issuer
Floating-rate notes	Primary: \$1,000-\$100,000 Secondary: \$5 million	9 months to 30 years	* Function of issuer
Common or preferred stock	No typical	No maturity days	*Function of issuer * Function of market

Mixed In	struments		
Instrument	Denomination	Maturity	Risk
MMMFs	810,000 for institutions	25- 60 days	* No FDIC * No liquidity risk * No interest rate rísk
Repurchase Agreements	Typical: \$1 million	Mostly overnite Term RP s generally 3 wks	* Depends on institution * Linked to collateral * Some Hq risk * Event risk
Sweep accounts	None	Overnight	* Depends on institution







- Instead of being close substitutes, securities with short, medium, and long maturities are seen by investors (fund suppliers) and issuers (fund demanders) as quite different.
- The markets are thus separated, or segmented, by the self-limiting behavior of institutions staying within their preferred habitats.



- * Yield spread analysis
- Safety ratings
- Assessing liquidity risk



- * Default risk
- & Liquidity risk
- Interest rate risk
- Reinvestment rate risk
- * Event risk
- * Foreign exchange and political risk



- * We surveyed the menu of short-term investment alternatives
- Investment objectives rank safety first, followed by liquidity and then yield.
- \div We studied possible explanations for the shape of the yield curve
- * We concluded with a discussion of the risk structure of interest rates

Topics Covered

An introduction to International Equity Investment

Objectives

Upon completion of this Lesson, you should be able to: Understand the International Equity Investment

Introduction

The twentieth century has seen massive cross-border flows of capital. However, till the 80s, it was predominantly debt capital in the form of bank loans and bond issues. The international new issues equity market with globally syndicated offerings emerged during the eighties and grew rapidly till the stock market crash of October 1987. While some emerging stock markets remained bullish despite the crash, institutional investors reduced their exposure to equities in general during 1988 and 1989. The trend turned upward again and after some initial hesitation the emerging economies of East Asia, and some in America became the darlings of global portfolio managers in developed economies. The years 1991-1996 saw a substantial increase in the flow of equity investment in emerging markets. The Asian currency crisis of 1997 followed by the Russian debacle in 1998 and an almost-crisis in Brazil put a damper on the enthusiasm shown by rich country investors towards emerging stock markets for much of 1998 and early 1999. By then, some of the Asian economies had recovered from the crisis and their domestic stock markets were booming. driven to some extent by the boom on US exchanges and investor euphoria over technology stocks. The long-feared slowdown in the US economy appeared to have finally struck during the close days of 2000. At the time of writing, the prospects of a serious slowdown in the US economy coupled with a none too bright picture in Japan and uncertainty in EMU 11. have induced a bearish mood in the stock markets around the world.

The initial thrust to cross-border flows of equity investment came from the desire on the part of institutional investors to diversify their portfolios globally in search of both higher return and risk reduction. Financial deregulation and elimination of exchange controls in a number of developed countries at the beginning of eighties permitted large institutional investors to increase their exposure to foreign equities

Table 18.1 presents some recent data on announced international equity issues by selected countries and country groups. The deceleration in equity flows to developing regions after the 1997 Asian crisis is quite evident from this table. The volumes appear to have recovered by 2000. Table 18.2 provides data on equity raised by Indian companies from global investors. This is either investment by foreign institution investors in Indian stock markets or by means of the depository receipts mechanism. The decade of 1990s witnessed the opening up of equity markets of developing countries like South Korea, Taiwan, Indonesia, and India to foreign investors albeit with some restrictions. A number of

TABLE 18.1 Announced International Equity Issues Selected Countries and Regions (Bullions of US S)

Country/Group	1997	1998	1999			
				Q1	Q2	Q3
All Countries	118.4	125.7	215.6	94.5	85.4	59.4
Developed Countries	86.6	111.2	180.0	78.1	68.3	45.4
Developing Countries	26.0	10.1	22.6	9.6	13.1	9.9
✤ Africa&	3.3	2.3	3.5	1.7	1.7]	2.5
Middle East						
✤ Asia & Pacific	14.6	4.9	17.0	6.1	8.1	2.5
China	9.4	1.1	3.3	4.5	5.9	0.2
India	1.0	0.1	0.9	0.5	0.2	0.1
S. Korea	0.6	0.5	6.9	0.5	-	0.3
 Europe 	3.2	2.7	1.4	0.5	1.1	1.7
 Latin America 	4.9	0.3	0.8	1.3	2.2	3.3
		1			1	1

Sources: Bank For International Settlements

TABLE 18.2 Foreign Equality Investment in India (US \$ Million)

				r			
	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00
Total	3,567	3,824	2,748	3,312	1,828	-61	3,026
GD Rs/AD	1,520	2,082	683	1,366	645	270	768
Rs	1,665	1,503	2,009	1,926	979	-390	2,135
FIIs	382	239	56	20	204	59	123
Offshore							
Funds							
	April.20	May200	June.	July.200	Aug.200	Sep.200	Oct.200
	00	0	2000	0	0	0	0
Total	597	264	-258	-121	54	148	-335
GD Rs/AD	275	146	-	172	75	11	17
Rs	322	95	-259	-299	-42	137	-375
FIIs	-	23	1	6	21	-	23
Offshore							
Funds							

Source: Reserve Bank of India Bulletin, January,2001

Companies from these countries have raised equity financing in developed country stock markets. The trend towards global integration of equity markets is unmistakable though it is punctuated by intermittent crises and consequent investor retreat. Equity capital can flow to a developing country in one or more of three ways. Developed country investors can directly purchase shares in the stock market of a developing country. Or, companies from developing countries can issue shares (or depository receipts) in the stock markets of developed countries. Finally, indirect purchases can be made through a mutual fund which may be a specific country fund or a multi-country regional fund. While stock markets in developing countries are quite small in size compared to the major developed country markets-the US, Japan, and the UK-turnover ratios of many of them are comparable to those in the latter. Later we will examine some further characteristics of these markets which have a bearing on their attractiveness as investment outlets for portfolio investors in developed countries.

The purpose of this chapter is to investigate the determinants of foreign equity investment decision and address the issues related to capital market integration and valuation of foreign equities.

Notes -

Topics Covered

Risk and Return from Foreign Equity Investment

Objectives

Upon completion of this Lesson, you should be able to:

- Risk from Foreign Equity Investment
- Return from Foreign Equity Investment

18.2 risk and Return From Foreign Equity Investment

18.2.1 Comparing Investments in a Risk-Neutral World

Consider a US investor who is comparing two equity investments-shares of a domestic company with shares of an Indian company. The expected annual dividend yields in the two investments are (jus and (jIN. the expected annual average rates of capital appreciation are a_{us} and a_{IN} . The (INRIUSD) exchange rate is So, dollars per rupee. After k years, a dollar invested in the US Company is expected to accumulate to

$$(1 + (\delta_{US} + \alpha_{US})k)$$

while a dollar invested in the Indian shares is expected to accumulate to

$$(1+\delta_{In}+\alpha_{In})^{k}(S^{e})_{k}$$

where $(S^{e})_{k}$ denotes the expected (INR/USD) exchange rate at the end of k years.

(We are assuming reinvestment of dividend earnings at a rate equal to the dividend yield).

Assume for the moment that the investor is risk-neutral. Also ignore differential taxation dividend income and capital gains. The investor would invest in the Indian stock, if

1

$$---\left(\frac{1}{S_o}\right)(1+\delta_{\mathrm{IN}}+\alpha_{\mathrm{IN}})^k (\mathrm{S}^{\mathrm{e}})_k > (1+\delta_{\mathrm{US}}+\alpha_{\mathrm{US}})^k$$
(18.1)

and in the US stock, if the reverse inequality holds. The condition can be further simplified. Let Se denote the expected annual proportionate rate of change of the exchange rate S. Then

$$[(S^{e})_{k}/S_{a}] = (1+S^{e})^{K}$$

and the Inequality (18.1) can be written as

$$(1+S^{ne}) (1+\delta_{IN} + \alpha_{IN}) > (1+\delta_{US} + \alpha_{US})$$

Ignoring the cross-products of $\,S^{\dot{U}\,e}\!,\,d^{}_{_{\rm IN}\!},\,a^{}_{_{\rm IN}}$ this can be approximated by

$$\begin{split} 1 + S^{\wedge e} + \delta_{IN} + \alpha_{IN} > \delta_{US} + \alpha_{US} \\ S^{\wedge e} > (\delta_{US} \cdot \delta_{IN}) + (\alpha_{US} \cdot \alpha_{IN}) \end{split} \tag{18.2}$$

Thus even with lower dividend yield and capital gains, foreign equities can be attractive if the foreign Currency is expected to appreciate strongly.

Presence of differential tax treatment of ordinary income and capital gains can reinforce the bias in favour of foreign equities if exchange gains are treated as capital gains, and capital gains are taxed at a lower rate. Let 8yand 8k be tax rates for ordinary income and capital gains respectively with $\theta y > \theta_k$. The after-tax returns on the US and Indian investments are, respectively,

 $(1-\theta y) \delta_{US} + (1-\theta_k) \delta_{US}$ and $(1-\theta y) \delta_N + (1-\theta_k) \delta_{IN} S^{\wedge e}$

The latter will exceed the former if

$$S^{A^{e}} > \frac{(1-\theta_{y})}{(1-\theta_{k})} \qquad (\delta_{US} \delta_{IN}) + (\alpha_{US} \alpha_{IN}) \qquad (18.3)$$

For a given S^{e} , (18.3) is more likely to hold than (18.2) when y exceeds q_k as assumed.

Of course, ignoring risk is a drastic simplification which makes the choice problem rather trivial. Foreign equities in contrast to domestic equities have the added risks of exchange rate fluctuations and the covariance of exchange rate with local returns, that is, the possibility that when the returns measured in local currency are low, the local currency is weak against the investor's home currency. For a US based investor, the risk of investing in Indian equities is compounded if rupee weakens against the dollar whenever the Indian stock markets are performing badly. How should these risks be factored into investor's decision? We turn now to that question.

18.2.2 Risk and Gains from International Diversification

In assessing the risk from a foreign equity investment, the investor must consider three components of risk, viz. variability of the return in local currency, fluctuations in the exchange rate, and the association between the two—the covariance risk mentioned above. Let R_{IN} denote the return in rupee terms from an Indian equity share.² From a US investor's point of view, the dollar re\ from this investment, denoted

Pus, is $(R_{IN} + S^{\wedge})$. Then

$$\begin{split} E(p_{us}) &= E(R_{IN}) + E(S^{\wedge}) = \delta_{IN} + \alpha_{IN} + S^{\wedge e} \\ Var(p_{us}) &= Var(R_{IN}) + Var(S^{\wedge}) + 2Cov(R_{IN}, S^{\wedge}) \end{split}$$

Eun and Resnick (1988) have studied these three sources of risk from a US investor's point of view for investments in some developed country stock markets. Table 18.3 presents some of their findings. It is seen that the contribution of the covariance term is generally small-less than 20% in most cases-whereas the relative importance of the other two sources of risk varies from country to country. While comparable findings are not available for developing country stock markets, Divecha et al (1992) find that these markets are significantly more volatile, that is, the variance of local returns in these markets is significantly higher than that in developed markets. Table 18.4 presents some of their findings.

TABLE 18.3 Decomposition of the Table Variance of USDollar Returns on Individual Foreign Stock Markets.

Country	% Contribution to Total Variance Form				
	Exchange Rate	Local Return	Covariance		
	Variance	Variance			
Canada	4.26	84.91	10.83		
France	29.66	61.79	8.55		
Germany	38.92	41.51	19.57		
Japan	31.85	47.65	20.50		
Switzerland	55.17	30.01	14.81		
UK	32.35	51.23	16.52		

Source: Eun and Resnick (1988).

Risk reduction through diversification is a well established result in portfolio theory. As long as returns on different risky assets are not perfectly (positively) correlated, risk can be reduced by spreading total wealth across a portfolio of assets. More generally, a given target expected return can be achieved at a smaller risk by combining risky assets than by investing the entire wealth in a single asset.

Within a single economy, different assets exhibit some degree of independence, that is, lack of perfect correlation in their returns. Risk reduction benefits from diversification within a single market are well established. However, due to the dependence of all industries in an economy on a common set of macroeconomic factors and uncertainties (e.g. weather, political events), there is some irreducible minimum amount

TABLE 18.4 Volatility of Returns on Selected Developing Country Stock Markets

	Annual Standard
Country	Deviation(%)
Argentina	108
Brazil	74
Chile	29
Hong Kong	31
India	31
Indonesia	39
Korea	29
Mexico	56
Singapore	33
Taiwan	63
Thailand	31
Developed Countries	
Japan	22
UK	19
US	17

Source: Divecha et al (1999)

of correlation between asset returns and a limit on risk reduction through purely domestic diversification. Intuitively, since countries differ in their economic and industrial structures, and since business cycles in different parts of the world are not synchronous, one would expect further risk reduction to be possible through diversification beyond national boundaries. For a given expected return, an internationally (optimally) diversified portfolio should afford smaller risk than a purely national optimal portfolio.

Note that this risk reduction is supposed to be achieved due to absence of perfect correlation between different national stock markets. However, as we have seen above, foreign assets have additional risks attached to them. On balance is it true that these added risks are more than outweighed by the reduction in overall risk due to imperfect correlations?

Divecha et al. (1992) present some estimates of correlations among developed country markets, among emerging markets, and between developed and emerging markets for the period February 1986 to March 1991. The lack of perfect correlations between markets is amply borne out by these data. 3 Also, the degree of association among the emerging markets, as well as between the emerging and developed markets is much smaller than that among the developed markets. Thus prima facie equity investment in emerging markets appears to present substantial opportunities for risk reduction from the point of view of investors in the developed countries.

Now consider an internationally diversified portfolio. The total risk of such a portfolio can once again be broken down into three components:

- **1.Exchange Rate Risk:** Variances of changes in exchange rates of the component currencies in terms of the base currency and covariance's among these.
- 2. Local Returns Risk: Variances of local rates of return and covariance among these.
- 3. Local Returns-Exchange Rates Covariance Risk: Covariance between each exchange rate change and each local return.

The extent of risk reduction due to exchange rate co-movements depends upon the investor's home currency and the composition of his portfolio. For instance, a US investor with a portfolio limited to say German, Japanese, Swiss, and Dutch equities may in fact be taking on added risk on this account as these currencies show similar movements against the dollar. Whether diversification across a broader group of currencies will significantly reduce exchange rate risk is an empirical issue. Some evidence presented by Eun and Resnick (op. cit) on decomposition of the variance of dollar returns on a portfolio of European and Japanese stocks (as against individual country stocks presented in Table 18.4) seems to indicate that significant reduction in exchange rate risk may not be possible via this route.⁴ Of course exchange risk can be hedged by using forward markets, currency options and futures and foreign currency borrowing. The covariances among local returns depend upon the extent of integration or segmentation among national capital markets, an issue we will return to later in this chapter. The correlations presented above seem to indicate that developed country markets are getting more and more integrated thus reducing the scope for risk reduction through diversification confined to these markets whereas the emerging markets offer considerable opportunities in that direction.⁵ The association between exchange rate movements and performance of a national market depends upon a complex set of economic factors and probably varies from one period to another. Thus during some period, a strong yen may go hand in hand with a booming Japanese stock market, while at other times it may be the reverse.⁶

On balance, it is impossible to assert on purely apriori grounds that international diversification can lead to significant risk reduction. We must look at empirical work.

A number of researchers have studied the problem of gains from international diversification. One of the earliest and oftquoted work is Solnik (1974). Solnik examines risk reduction from the point of view of a US investor, from pure domestic diversification versus international diversification with and without a hedge for exchange risk. His results seem to indicate significant gains even without hedging for exchange risk. You must bear in mind that estimates of risk reduction will vary considerably according to the period studied and whose viewpoint is considered^{7.}

One important problem with some of these studies is the fact that they used historical data on returns to form efficient internationally diversified portfolios rather than using distributions of expected future returns as called for by portfolio theory. This tends to give an upward bias to estimates of benefits of international diversification⁸.

Jorion (1985) has attempted to remove this bias by using statistical procedures that account for a sort oj "outlier" behaviour in past returns data. His estimates indicate that earlier studies have considerably over. estimated the benefits of international diversification.

Despite the differences in estimates and the technical problems, there is a general agreement that inter- national diversification does pay in terms of risk reduction. Availability of products to hedge exchange rate risk further reinforces this conclusion. However, it is not clear whether exchange risk hedging would reduce expected returns at the same time as it reduces risk.

18.3 THE INTERNATIONAL CAPITAL ASSET PRICING MODEL

One of the pillars of modem financial theory is the Capital Asset Pricing Model (CAPM) developed by Sharpe (1964), Lintner (1965), and Mossin (1965). It links the expected (excess) returns on a risky asset to its risk in an efficient portfolio. Its starting point is the mean-variance portfolio selection model due to Markowitz(1952).

The expected excess return on a risky asset or a portfolio of assets is its expected return over and above the risk-free return e.g. the return on a treasury bill. A portfolio is said to be efficient if among all possible portfolios with the same excess return it has the lowest variance. Consider a portfolio consisting of assets

 $i = 1, 2 \dots N$. As demonstrated in the appendix to this chapter, a necessary condition for a portfolio to be efficient is

where r_{1}^{*} and r_{p}^{*} denote, respectively return on asset i and the portfolio. The numerator is the contribution of asset i to the portfolio's excess return while the denominator is the contribution of asset i the portfolio's variance⁹ or of risk. The parameter qis known as the investor's relative risk aversion and is a measure of his or her attitude towards risk. Another result from the theory of portfolio selection is the "two fund theorem" which says that in equilibrium all investors will hold some combination of the risk-free asset and the so called "tangency portfolio".

One of the crucial ingredients in the CAPM is the notion of Market Portfolio. In principle, this is to be understood as the aggregate asset holdings of a given set of investors. In the usual one-country version of the CAPM, this set is identified with the set of resident investors while in empirical applications of CAPM, the market portfolio is proxied by a diversified stock index such as SENSEX or NIFTY in India or the S&P 500 in the United States. Equation (18.1) when applied to the market portfolio becomes

$$\frac{E(r_{i}^{*} r)}{Cov(r_{i}^{*} r_{m}^{*})} == 0 \text{ for all } i=1,2...N \quad (18.5)$$

where $r^{\ast}_{\ m}$ is the return on the market portfolio. This is rewritten as

$$E(r_{i}^{*}-r) = cov (r_{i}^{*}, r_{m}^{*})$$
(18.6)

And

$$E(r_{i}^{*}-r) = -q s_{m}^{2} - \frac{\alpha_{im}}{s_{m}^{2}}$$
(18.7)

where we have used the notation aim to denote the covariance between the returns on asset i and the market portfolio, and s_m^2 to denote the variance of the return on the market portfolio.

The expression[σ_{im} / σ_m^2] is the familiar "Beta" of the asset i, denoted β_i which measures the covariance of asset i with the market portfolio (scaled by the variance of the market portfolio).

The parameterb_i is estimated by means of a regression of realized historical returns on asset i on the realized historical returns on the market portfolio:

$$_{I}^{*} = \theta \alpha_{I} + \beta_{i} r_{m}^{*} + u_{i}$$

r

To arrive at the well-known Sharpe-Lintner-Mossin one-country CAPM we need to know the parameter

 $\theta.$ This is easily done. Let the weight of asset i in the market portfolio be $x_{j}.$ Multiply Equation (18.6) by x_{j} and sum over all i:

$$\Sigma_{i=1}^{I=n} x_i E(r_i^* - r) = \theta \Sigma_{i=1}^{I=n} x_i \cos(r_i^* - r_m^*)$$

The LHS of this equation can be written as

$$(Sx_{r_{i}}^{*}-r) = E (r_{m,r}^{*})$$

while the RHS can be written as

$$\theta \text{Cov} (\Sigma x_{i_{r_{i}}}^{r_{*}}, r_{m}^{*}) = \theta \text{ cov} (r_{m_{r_{m}}}^{*}r_{m}^{*}) = \theta s_{m_{r_{m}}}^{*} = \sigma_{m_{r_{m}}}^{2}$$

Thus we have

$$\boldsymbol{\theta} = \left[E(\mathbf{r}_{\mathrm{m}}^{*} - \mathbf{r}) / \boldsymbol{\sigma}_{\mathrm{m}}^{2} \right]$$
(18.9)

Now in equation (18.7), replace $[\theta\sigma_{\ m}^{2}]$ by $E(r_{\ m}^{*}\text{-}r)~$ and recall the defamation of the beta of asset i to get

 $E(r_{i}^{*}-r) = \beta E(r_{m}^{*}-r)$ (18.10)

This is the famous equilibrium Capital Asset Pricing Model for a single country. Using the market portfolio as the benchmark, it says that the excess return on any risky asset i, equals the excess return on the benchmark portfolio multiplied by the asset's beta which in turn measures the co-variation of the (return on) asset i with the (return on) the benchmark portfolio.

Suppose the SENSEX is being used as a proxy for the market portfolio and the expected (monthly) excess return on the index is 1.25%. If a stock has a beta of 1.5, its equilibrium expected excess return is 1.875%.

18.3.1 Extending the One-Country CAPM

The question we now wish to address is: "Can the one-country CAPM be extended to a multi-country version so that it can provide an equilibrium framework to price risky assets in a global context?"

The answer to this question has implications for the choice of cost of capital in project appraisal. Suppose an Indian firm is evaluating an investment project at home. It has carefully identified all the cash flows and analyzed their sensitivity to various parameters, for example sales forecasts and so on. It plans to finance the project solely by equity. What rate of discount should it use to find the NPV of these cash flows? The answer obviously is the rate of return the firm's shareholders expect from projects with similar risk characteristics. Can this be estimated with the CAPM applied to the Indian capital market using say the SENSEX as the market portfolio and data on historical returns on similar businesses?

Recall that the notion of "market portfolio" is to be understood as the aggregate of all assets held by a specified group of investors. A market index such as SENSEX is at best a proxy for all the stocks issued by firms resident in India. The two would be identical (at least to an approximation) only if resident investors hold exclusively assets issued by resident firms and foreign investors are not allowed to hold these assets. We then say that the Indian capital market is fully segmented from the global capital market. The one-country CAPM can then be utilized to price risky Indian assets.

In recent years legal and informational barriers to cross-border equity investments have been coming down, and investors from many countries are actively diversifying their portfolios globally. Even developing country capital markets-the so-called "emerging markets"-are attracting significant amounts of foreign equity capital both through the direct participation of foreign investors in their domestic capital markets-for instance, Fills in the Indian capital market-and through mechanisms like ADRs and GDRs. Capital markets of most countries are certainly not fully segmented.

Suppose we then go to the other extreme, and consider the case where there are no restrictions whatsoever on investors in a country holding foreign assets and foreign investors investing in domestic assets. In other words, we assume that global capital markets are fully integrated¹² Now consider the portfolio consisting of all the stocks issued by all the firms in such an integrated world. Can we replace the market portfolio of a single country by this "world market portfolio" and continue to use the one-country version of CAPM?

To answer this question, we need to carefully examine the assumptions underlying the traditional CAPM. Apart from the usual assumptions of perfect markets, it requires the further assumption that all investors must have identical expectations regarding the performance of any risky asset. In other words, their ex-ante probability distributions of returns from any asset must be the same ¹³ It is well known that if investor expectations are heterogeneous, they will not agree on the composition of the "tangency portfolio"; in other words, each investor would face an efficient set that is unique to him or her.

Under what conditions would this requirement be met? Let us consider an example. Suppose our "world" consists of three countries, viz. the USA, Germany, and the UK. Investors in all the countries are free to invest in any asset and there are no informational asymmetries. Consider the stock of say IBM. All investors agree that the expected nominal return on this stock measured in US dollars is 15% per annum. The starting price is US\$100, the expected year-end price is US\$110 and a US\$5.00 dividend is expected to be paid at the end of the year. The exchange rates at the start of the year are EUR/USD 0.8500 and GBP/USD 1.6000. Over the year, inflation is expected to be 5% in the US, 3% in Germany and 7% in the UK. The year-end expected exchange rates are EUR/USD 0.9200 and GBP/USD 1.5000. Investors would compare the real returns measured in their own currencies. For US investors, the IBM stock yields a 9.5238% real return. For German investors it is 3.1527% while for UK investors it is 14.6417%.14 It is easy to see that such wide differences are caused by the failure of the relative Purchasing Power Parity or changes in real exchange rates.¹⁵

Thus it is clear that having fully integrated capital markets is not enough; in addition there must be no real exchange rate risk, that is, relative PPP must hold. Since there is ample evidence that it does not hold (except approximately over the long-run), the asset pricing model must take account of exchange rate risk in addition to the covariance risk with the world market benchmark portfolio.

Investors in a given country would choose their portfolios in the light of their estimates of expected returns, variances of returns and covariances measured in their reference currency, their home currency. As we have seen above, in a multi-currency portfolio the following parameters are relevant:

1. Expected excess return on a portfolio, measured in some numeraire currency:

$$\Sigma x_i E(r_i^*-r)$$

Where X_i is the share of asset i, r_i^* is its return measured in the numeraire currency and r is the riskfree rate in the numeraire currency.

2. Variance of portfolio returns

$$\sigma_{p}^{2} = cov (\Sigma x_{i}r_{j}^{*}r_{p}^{*}) = \Sigma x_{i} cov(r_{j}^{*}r_{p}^{*})$$

3. Covariance of portfolio return and changes in the exchange rate between the numeraire currency and other currencies.

cov (($\Sigma x_i r^*, S_i^{\wedge}$) where Σ_i^{\wedge} is the proportionate change in the spot rate of currency i, with respect to the numeraire currency.

The remaining parameters, viz. expected values and variances of S $_{i}$ do not enter portfolio choice because the portfolio weights X_i are not affected by them.

18.3.2 Incorporating Exchange Rate Risk: A Two-Country Model

In the one-country version of CAPM, market risk is taken account of by the covariance of the asset or portfolio with the market portfolio. Let us extend this idea to exchange rate risk. In what follows, we will assume away inflation uncertainty so that real exchange rate risk and nominal exchange rate risk are equivalent. We will later see how to relax this restriction. Also we will assume that the "global" capital market consists of two countries say Germany and the US referred to as "GE" and "US". This restriction will also be relaxed later. Let S denote the USDIEUR exchange rate and S be the proportionate change in S over the relevant period.

Consider a German investor who is evaluating the return from a US T -bill, a risk free asset. The annualised return measured in USD is denoted r_{US} . The return measured in EUR, denoted r_{GE} ' is given by

$$r_{_{\rm GE}} = r_{_{\rm US}} + S^{\wedge}$$

Thus measured in EUR, the return from this asset changes onefor-one with the exchange rate.

Now consider the same investor contemplating investment in the stock of a US company. Unlike the US T -bill, the USD return on this stock may be influenced by the EUR/USD exchange rate. Suppose the firm is an exporter to Europe. A strong dollar-low value of S-may adversely affect the performance of this firm and reduce the dollar return on this stock. However, appreciation of the dollar may outweigh this factor. Thus measured in EUR, the return from this investment may still have a positive covariance with the exchange rate.

Finally, what about a German stock? Arguing along similar lines, a strong dollar may benefit a German firm and increase the return from its stock measured in EUR. This of course is by no means a certainty but only a strong probability. Once again, the covariance with exchange rate would be positive.

In general, suppose we estimate a regression equation as follows:

$$(r^*) iGE = a_i + Y_i S^{\wedge} + u_i$$
 (18.11)

where (r *) iGE denotes the EUR return on an asset i, the coefficient Yi will equal

which is a measure of asset i's covariation with the changes in exchange rate. For a US T -bill y_i will be 1.0; for a German stock, y_i is likely to be negative; for a US stock it may be positive or negative. Just as an asset's beta is a measure of its "market risk", its gamma can be interpreted as a measure of its exchange rate risk.

18.3.3 A Two-Country CAPM

Let us now posit an equilibrium asset pricing model in this two country world. Now for any asset, there are two sources of risk, viz. "world market risk" and "exchange rate risk". Extending the one-country CAPM, the equilibrium expected excess return on asset i measured in EUR is given by

E [(r^{*}) _{iGE} - r] = (θ) cov [(r^{*}) _{iGE}' (r^{*}) _w] + (δ cov [(r^{*}) _{iGE} S[^])] (18.12) The parameters q and d are prices of world market and exchange rate covariance risks, and (r^{*}) is the return on the world market portfolio measured in EUR. [The excess return is being measured with respect to the risk-free return in Germany.]

In the one-country CAPM, the excess return on an asset was determined by its covariance with a benchmark portfolio, viz. the market portfolio of that country. We now have two benchmark portfolios: (1) The world market portfolio and (2) The foreign risk less asset. The first of these should be obvious; the second will be brought in below. These two portfolios take account of the market risk and the exchange rate risk of an asset.

To operationalise the two-country CAPM, Equation (18.9), we need to know how to measureq and d. We will use the same approach that we used in the standard CAPM. First consider the world market portfolio. From *

$$E[(r^*)_{W^{-}}r_{GE}] = (\theta) \operatorname{cov} [(r^*)_{W}(r^*)_{W}] + (\delta \operatorname{cov} [(r^*)_{W}, S^{\wedge}]]$$

= $\theta \operatorname{var} [(r)_{W}] + (\delta \operatorname{cov} [(r^*)_{W}, S^{\wedge}]$ (18.13)

Now consider a foreign (i.e. US) T -bill.

$$E [r_{us} + S^{\wedge} - r] = \theta \operatorname{cov} [\delta, rw] + \delta \operatorname{cov} (S^{\wedge}, S^{\wedge})$$
$$= \theta \operatorname{cov} [S^{\wedge}, r_{w}] + \delta \operatorname{var}(S^{\wedge})$$
(18.14)

Note that the only random element in the excess return on US T-bill (from a German investor's point of view) is the change in exchange rate. In the appendix we demonstrate how to use these equations to get q and d The resulting two-country CAPM is:

$$E[(r^*)_{iGE} - r_{GE}] = \beta_i [(r^*)_{w} - r_{GE}] + Y_i E[r_{us} + S^{\wedge} - r_{GE}]$$
(18.15)

The assets' beta and gamma have to be jointly estimated from a multiple regression with historical data:

$$(r^*)_{iGE} = \alpha_i + \beta_i(r^*)_w + Y_i(r^*) + Ui$$
 (18.16)

Let us consider an example. Suppose the risk-free rate in Germany is 6%, and in the US it is 8%. A US T -bill is expected to outperform a German T -bill by 2% when measured in EUR. The world market portfolio is expected to outperform German T-bill by 10%. Historical regression of (EUR) returns on a US stock X gives the following estimated equation:

$$(r^*)_{\mu} = 0.05 + 1.2(r^*)_{\mu} 0.20 \text{ S}^{-1}$$

Here $\beta x = 1.2$ and Yx = -0.20 The equilibrium expected return on the stock is given by

$$E [(r^*)_x] = r_{GE} + 1.2 [(r^*))_w r_{GE}] - 0.20 (r_{us} + S^{-} r_{GE})$$

= 0.06 + 1.2 (0.10) - 0.20 (0.02) = 0.176 or 17.6%

To use the international CAPM, we need (1) the estimates of the asset's beta and gamma (2) the estimate of excess return on the world market portfolio, and (3) the excess return on a foreign risk-tree asset measured in the investor's currency. Later we will briefly discuss how to obtain these estimates.

Extension to a multi-country CAPM is straightforward. We now need to take account of exchange rate risk from several exchange rate changes in addition to the covariance risk with the world market portfolio. Using a more general notation

$$E [(\mathbf{r})_{iH} \mathbf{r}_{H}] = \beta_{i} E [(\mathbf{r}^{*})_{W} \mathbf{r}_{H}] + Y_{il} E [S^{\wedge} + \mathbf{r}_{Fl} \mathbf{r}_{H}]$$

$$A A$$

$$+ Y_{i2}E [S^{\wedge}_{2} + \mathbf{r}_{F2} \mathbf{r}_{H}] \dots + Y_{iK}E [S^{\wedge}_{K} + \mathbf{r}_{FK} \mathbf{r}_{H}]$$
(18.17)

Here ${\bf r}_{\rm H}$ denotes risk tee rate in investor's currency, rFl' . .

r $_{FK}$ are risk free rates in foreign currencies $1 \dots K$ and $S^{\wedge}_{1} \dots S^{\wedge}_{k}$ k are the changes in exchange rates of these currencies measured as units of home currency per unit of foreign currency. The parameters β_{i} ' y_{i1} ... Y_{iK} have to be obtained from a multiple regression with historical data:

$$(r^{*})_{iH} = \alpha_{i} + \beta_{i}'(r)_{w} + Y_{i1}S^{\wedge} + \ldots + Y_{iK}S^{\wedge}K + u_{i}$$
(18.18)

If inflation risk is to be accounted for, all returns must be deflated with the reference currency inflation rate and the gammas must be obtained with respect to real exchange rate changes. Adler and Dumas (1983) or show how this can be done. Also, their empirical work provides some evidence that this adjustment may not be very important in practice.16

18.3.4 Global Capital Markets: Segmented or Integrated?

The validity and usefulness of the International Capital Asset Pricing Model (ICAPM) can be viewed from two different angles. First we examine whether the underlying assumption of no constraints on cross-border capital flows are valid. Obviously the prima-facie answer is "no". A number of countries have restrictions on how much non-residents can invest in the equity of resident companies as well as on what proportion of residents' portfolio can be invested in foreign stocks. Such restrictions exist even in developed countries like Japan and Spain and certainly in most emerging markets like India. Of course, a more pertinent question might be whether these restrictions are binding, that is, left to themselves, non-resident investors would like to go beyond these constraints. ¹⁷ There is some evidence that such constraints may have been binding prior to 1980 among the developed capital markets but are gradually weakening.18

Apart from legal restrictions, informational asymmetries can and do create barriers to cross-border capital flow. Foreign investors may not be familiar with things like local accounting standards, disclosure requirements arid institutional structure, trading and settlement procedures of the local capital markets. If the cost of acquisition of such information is high, then their holding of local equity may be suboptimal. Such barriers however can be expected to come down with the passage of time.

Second we examine the evidence from empirical testing of the ICAPM. There have been a number of empirical investigations to determine whether the markets are segmented or integrated. In one type of tests, attempt is made to isolate the dependence of security returns on world market versus domestic factors. If

the markets are completely integrated, domestic factors would be irrelevant, while if they are completely segmented, only domestic market return would be relevant. Jorion and Schwartz (1986) in an investigation of Canadian stocks found evidence of some segmentation. An early test by Solnik (1973) supported his version of ICAPM which is a special case of(18.14). Stehle (1976), like Jorion and Schwartz, examines whether US stocks are priced with reference to world market portfolio or domestic portfolio. He ignores the exchange risk. Dumas and Solnik (1991) using data from major developed countries find evidence of non-zero exchange risk premia loin Equation (18.14)] and also evidence against one-country CAPM. Thus their results appear to support ICAPM at least for major OECD countries.

Other researchers have employed indirect tests of the segmentation hypothesis. All tests lead to the conclusion that international capital markets are not fully integrated.

A number of recent empirical studies have examined transmission of volatility across national stock markets and across forex and stock markets. It has been an accepted fact for a long time that stock market volatility is not constant over time. Volatility clustering has been observed in almost all national stock markets and financial economists have estimated models with time varying volatility-the so called ARCH and GARCH models which allow conditional volatility to vary in response to abnormal returns and past volatility. A new twist to this is the possibility that abnormal returns in NASDAQ may impact on the volatility of BSE or NSE and, abnormal behaviour of the rupee-dollar exchange rate may also impinge on the conditional variances and covariances of exchange rate changes and stock market returns which affect the variance of a multi-currency equity portfolio. These findings will force a reworking of the international asset pricing models. We will not pursue these matters here. The interested reader will find some references in the bibliography.

18.3.5 Estimation of the Risk Premia

As mentioned above, to use the ICAPM for asset pricing we need to estimate the beta and gammas for the asset and the risk premia $E[(r^*)_{w} r_H]$, $E[S_1 + r_{F1} r_H] \dots E[S_K + r_{FK} r_H]$. This is by no means an easy task. Expected excess returns on world market portfolios vary substantially over time though we can safely say that there is a positive risk premium. Exchange risk premia are also time variant and possibly close to zero in the long run. In practice they are often ignored. However, the estimates of betas are still obtained from a regression like (18.18)

Points to Ponder



CHAPTER OVERVIEW:

- I. THE BENEFITS OF INTERNATIONAL EQUITY INVESTING
- II. INTERNATIONAL BOND INVESTING
- III.OPTIMAL ASSET ALLOCATION
- IV. MEASURING THE TOTAL RETURNV. MEASURING EXCHANGE RISK ON FOREIGN SECURITIES



- I. THE BENEFITS OF INTERNATIONAL EQUITY INVESTING
 - A. Advantages
 - 1. Offers more opportunities than a domestic portfolio only
 - 2. Larger firms often are overseas
THE BENEFITS OF INTERNATIONAL EQUITY INVESTING

- B. International Diversification
 - 1. Risk-return tradeoff: may be greater
 - basic rule-

the broader the diversification, more stable the returns and the more diffuse the risk.

THE BENEFITS OF INTERNATIONAL EQUITY INVESTING

 While there is systematic risk within a nation, it may be nonsystematic and diversifiable outside the country.

THE BENEFITS OF INTERNATIONAL EQUITY INVESTING

- 2. International diversification and systematic risk
 - a. Diversifying across nations with different economic cycles

THE BENEFITS OF INTERNATIONAL EQUITY INVESTING

- 3. Recent History
 - a. National stock markets have wide differences in returns and risk.
 - b. Emerging markets have higher risk and return than developed markets.
 - c. Cross-market correlations have been relatively low.

THE BENEFITS OF INTERNATIONAL EQUITY INVESTING

- C. Correlations and the Gains From Diversification
 - 1. Correlation of foreign market betas

oreign market = beta	Correlation with U.S. market	х	Std dev for. mkt. std dev U.S. mkt.
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THE BENEFITS OF INTERNATIONAL EQUITY INVESTING

 Theoretical Conclusion
 International diversification pushes out the efficient frontier.

THE BENEFITS OF INTERNATIONAL EQUITY INVESTING

2. Past empirical evidence suggests international diversification reduces portfolio risk.

THE BENEFITS OF INTERNATIONAL EQUITY INVESTING

4. Calculation of Expected Return:

$$r_{p} = a r_{US} + (1 - a) r_{rw}$$

where $r_p = portfolio expected return$

 r_{US} = expected U.S. market return r_{rw} = expected global return

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$\begin{aligned} & \overbrace{P} \\ \hline \textbf{THE BENEFITS OF INTERNATIONAL} \\ & \underline{FORDERERTING} \\ \hline \textbf{S}. \quad \textbf{Calculation of Expected Portfolio Risk} = (\sigma_{P}) \\ & \sigma_{P} = [a^{2}\sigma_{US}^{2} + (1-a)^{2}\sigma_{rW}^{2} + 2a(1-a) \\ & \sigma_{US}\sigma_{rW}\sigma_{US,rW}]^{1/2} \\ & \underbrace{P} \\ \hline \textbf{where} \quad \sigma_{US,rW} = & \underbrace{The cross-market}_{correlation} \\ & \sigma_{US}^{2} = & U.S. returns variance \end{aligned}$

 $\sigma_{rw}^2 =$

World returns variance

THE BENEFITS OF INTERNATIONAL

EQUITY INVESTING

- D. Investing in Emerging Markets
 - a. Offers highest risk and returns
 - b. Low correlations with returns elsewhere
 - c. As impediments to capital market mobility fall, correlations are likely to increase in the future.



EQUITY INVESTING

- 6. Cross-market correlations
 - Recent markets seem to be most correlated when volatility is greatest
 - b. Result: Efficient frontier retreats

THE BENEFITS OF INTERNATIONAL EQUITY INVESTING

- E. Barriers to International Diversification
 - 1. Segmented markets
 - 2. Lack of liquidity
 - 3. Exchange rate controls
 - 4. Less developed capital markets
 - 5. Exchange rate risk
 - 6. Lack of information
 - a. readily accessible b. comparable_____

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THE BENEFITS OF INTERNATIONAL EQUITY INVESTING

- F. Methods to Diversify
 - Trade in American Depository Receipts (ADRs)
 - Trade in American shares
 - Trade internationally diversified mutual funds: a. Global

 - International Single-country

INTERNATIONAL BOND **INVESTING**

- Empirical Evidence Α.
 - Foreign bonds provide higher returns
 - Foreign portfolios outperform purely domestic

II. INTERNATIONAL BOND *INVESTING*

II. INTERNATIONAL BOND INVESTING -internationally diversified bond portfolios offer superior performance

III. OPTIMAL INTERNATIONAL ASSET **ALLOCATION**

- **III. OPTIMAL INTERNATIONAL ASSET** ALLOCATION
 - -a diversified combination of stocks and bonds
 - Offered better risk-return tradeoff
 - Β. Weighting options flexible







Topics Covered

Equity Financing in the International Markets

Objectives

Upon completion of this Lesson, you should be able to:

- Understand the mechanism of Equity Financing in the
- International Markets

Equity Financing in the International Markets

As mentioned in the introduction, the volume of new equity issues in the international markets increased dramatically between 1983 and 1987. During the 1990s, institutional investors from developed countries increased their exposure to equity from emerging markets though there was a setback to this trend after the Asian currency crisis. From the side of the issuers, the driving force was the desire to tap low cost sources of financing, broaden the shareholder base, acquire a springboard for international activities such as acquisitions and grant of ESOPs to foreign employees and generally improve access to long-term funding. From the point of view of investors the primary motive has been diversification. The technology boom of the 1990s has also attracted investors from developed markets towards technology stocks from emerging markets.

Since many companies have accessed the global equity market primarily for establishing their image as global companies, the major consideration has been visibility and post-issue considerations related to investor relations, liquidity of the stock (or instruments based on the stock such as depository receipts which are listed and traded on foreign stock exchanges) in the secondary market, and regulatory matters pertaining to reporting and disclosure. Other relevant considerations are the price at which the issue can be placed, costs of issue and factors related to taxation (such as withholding tax which can affect the attractiveness of the issue to investors).

As we have seen above, if the international markets were integrated, a given stock would be priced identically by all investors, and there would be no advantage in choosing one market over another apart from cost of issue considerations. However, with segmented markets, the price that can be obtained would vary from one market to another. Countries with high saving rates such as Japan (and those like Switzerland with access to others' ingestible funds) would normally have low cost of equity. 20 However, some of these markets may not be readily accessible except to very high quality issuers. When the issue size is large, the issuer may consider a simultaneous offering in two or more markets.21 Such issues are known as Euroequities.

Issue costs are an important consideration. In addition to the underwriting fees (which may be in the 3-5% range), there are substantial costs involved in preparing for an equity issue

particularly for developing country issuers unknown to developed country investors. Generally speaking, issue costs tend to be lower in large domestic markets such as the US and Japan.

Starting way back in 1970s, a number of European and Japanese companies have got themselves listed on foreign stock exchanges such as New York and London. Shares of many firms are traded indirectly in the form of depository receipts. In this mechanism the shares issued by a firm are held by a depository22, usually a large international bank, which receives dividends, reports and so on and issues claims against these shares. These claims are called depository receipts with each receipt being a claim on a specified number of shares. The depository receipts are denominated in a convertible currencyusually US dollars. The depository receipts may be listed and traded on major stock exchanges or may trade in the OTC market. The issuer firm pays dividends in its home currency which is converted into dollars by the depository and distributed to the holders of depository receipts. This mechanism originated in the US-the so called American Depository Receipts or ADRs. Recent years have seen the emergence of European Depository Receipts (EDRs) and Global Depository Receipts (GDRs) which can be used to tap multiple markets with a single instrument. The early Indian issuers such as Reliance preferred the GDR route since listing and disclosure requirements are less onerous. In recent years, many Indian IT companies have preferred to use the ADR route with listing on major US exchanges such as NASDAQ and NYSE. The main reason for this is that their mergers and acquisition activity and foreign subsidiaries are mostly in US. Hence it was crucial for them to get listed on US exchanges and use the dollar-denominated instruments as "currency" for acquisitions in US and grant of ESOPs. Also, the US capital markets are-the largest and most prestigious and a listing on US exchanges gives the company a highly visible global image. The strict US standards pertaining to disclosure and reporting are also said to improve corporate governance. Transactions in depository receipts are settled by means of computerized book transfers in international clearing systems such as EUROCLEAR and CEDEL.

After a hesitant start in 1992 following the experience of the first ever GDR issue by an Indian corporattf3, a fairly large number of Indian companies have taken advantage of the improved market outlook to raise equity capital in international markets. As mentioned above, the initial issues were GDRs made in the European centers. More recent issues have been ADRs with listing on major US exchanges. The structure of a typical GDR issue is shown in Figure 18.1.

From the point of view of the issuer, GDRs and ADRs represent non-voting stock with a distinct identity which do not figure in its books. 24 There is no exchange risk since dividends are paid by the issuer in its home currency. Apart from impart-

ing global visibility, the device allows the issuer to broaden its capital base by tapping large foreign equity markets. The risk is that the price of GDRs may drop sharply after issue due to problems in the local markets and damage the issuer's reputation which may harm future issues. From the investors' point of view, they achieve portfolio diversification while acquiring an instrument which is denominated in a convertible currency and is traded on developed stock markets. Of course the investors bear exchange risk and all the other risks borne by an equity holder (Dividend uncertainty, capital loss). There are also taxes such as withholding taxes on dividends and capital gains taxes. For instance, the Indian government imposes a 10% withholding tax on dividends, and a 65% maximum marginal capital gains tax on short-term capital gains (tax on long-term capital gains is only 10% thus encouraging the investor to hold on to the stock). 25

A major problem and concern with international equity issues is that of flowback, that is, the investors will sell the shares back in the home stock market of the issuing firm. ²⁶ Authorities of some countries have imposed a minimum lock-in period during which foreign investors cannot unload the shares in the domestic market. ²⁷

Withholding taxes on dividends paid to non-residents reduce the attractiveness of the asset to foreign shareholders and consequently raises the cost to the issuer. Some giant multinationals have used the device of a finance subsidiary located in: a tax haven country like the Bahamas to issue shares in the international markets. The usefulness and feasibility of this vehicle depends upon the tax laws and other regulations in the issuer's home country.

During 1993-94, GDR issues were a very popular device for many large Indian companies. Yields in developing country markets were rather low and many Indian issues offered attractive returns along with diversification benefits. The economic liberalisation policy of the government made Indian issues an attractive investment vehicle for foreign investors. In subsequent years, a variety of problems with the workings of the Indian capital markets-lack of adequate custodial and depository services, long settlement periods, delivery and payment delays, suspicions of price rigging and so' on-led to the wearing off of investor enthusiasm. Added to these factors was increasing political uncertainty as the elections were approaching. From roughly mid-l 994 to nearly the end of 1995, market for Indian GDR issues remained luke warm. There was a brief revival in 1996 but the Asian crisis again turned rich country investors away from emerging markets. Sing in 1999, a number of Indian IT companies have been successfully listed on US stock exchanges and their ADRs had been performing quite well till the NASDAQ nose-dived in late 2000-early 2001. The global stock markets are becoming increasingly integrated at least as far as investor sentiment is concerned and the NASDAQ appears to drive markets around the world. In the appendix to this chapter we have provided a brief description of the salient features of the ADR/GDR mechanism and its use by Indian companies.

Notes -

Topics Covered

Equity Financing in the International Markets

Objectives

Upon completion of this Lesson, you should be able to:

Understand the mechanism of Equity Financing in the International Markets

Equity Financing in the International Markets

As mentioned in the introduction, the volume of new equity issues in the international markets increased dramatically between 1983 and 1987. During the 1990s, institutional investors from developed countries increased their exposure to equity from emerging markets though there was a setback to this trend after the Asian currency crisis. From the side of the issuers, the driving force was the desire to tap low cost sources of financing, broaden the shareholder base, acquire a springboard for international activities such as acquisitions and grant of ESOPs to foreign employees and generally improve access to long-term funding. From the point of view of investors the primary motive has been diversification. The technology boom of the 1990s has also attracted investors from developed markets towards technology stocks from emerging markets.

Since many companies have accessed the global equity market primarily for establishing their image as global companies, the major consideration has been visibility and post-issue considerations related to investor relations, liquidity of the stock (or instruments based on the stock such as depository receipts which are listed and traded on foreign stock exchanges) in the secondary market, and regulatory matters pertaining to reporting and disclosure. Other relevant considerations are the price at which the issue can be placed, costs of issue and factors related to taxation (such as withholding tax which can affect the attractiveness of the issue to investors).

As we have seen above, if the international markets were integrated, a given stock would be priced identically by all investors, and there would be no advantage in choosing one market over another apart from cost of issue considerations. However, with segmented markets, the price that can be obtained would vary from one market to another. Countries with high saving rates such as Japan (and those like Switzerland with access to others' ingestible funds) would normally have low cost of equity. 20 However, some of these markets may not be readily accessible except to very high quality issuers. When the issue size is large, the issuer may consider a simultaneous offering in two or more markets.21 Such issues are known as Euroequities.

Issue costs are an important consideration. In addition to the underwriting fees (which may be in the 3-5% range), there are substantial costs involved in preparing for an equity issue particularly for developing country issuers unknown to

developed country investors. Generally speaking, issue costs tend to be lower in large domestic markets such as the US and Japan.

Starting way back in 1970s, a number of European and Japanese companies have got themselves listed on foreign stock exchanges such as New York and London. Shares of many firms are traded indirectly in the form of depository receipts. In this mechanism the shares issued by a firm are held by a depository22, usually a large international bank, which receives dividends, reports and so on and issues claims against these shares. These claims are called depository receipts with each receipt being a claim on a specified number of shares. The depository receipts are denominated in a convertible currencyusually US dollars. The depository receipts may be listed and traded on major stock exchanges or may trade in the OTC market. The issuer firm pays dividends in its home currency which is converted into dollars by the depository and distributed to the holders of depository receipts. This mechanism originated in the US-the so called American Depository Receipts or ADRs. Recent years have seen the emergence of European Depository Receipts (EDRs) and Global Depository Receipts (GDRs) which can be used to tap multiple markets with a single instrument. The early Indian issuers such as Reliance preferred the GDR route since listing and disclosure requirements are less onerous. In recent years, many Indian IT companies have preferred to use the ADR route with listing on major US exchanges such as NASDAQ and NYSE. The main reason for this is that their mergers and acquisition activity and foreign subsidiaries are mostly in US. Hence it was crucial for them to get listed on US exchanges and use the dollar-denominated instruments as "currency" for acquisitions in US and grant of ESOPs. Also, the US capital markets are-the largest and most prestigious and a listing on US exchanges gives the company a highly visible global image. The strict US standards pertaining to disclosure and reporting are also said to improve corporate governance. Transactions in depository receipts are settled by means of computerized book transfers in international clearing systems such as Euroclear and Cedel.

After a hesitant start in 1992 following the experience of the first ever GDR issue by an Indian corporattf3, a fairly large number of Indian companies have taken advantage of the improved market outlook to raise equity capital in international markets. As mentioned above, the initial issues were GDRs made in the European centers. More recent issues have been ADRs with listing on major US exchanges. The structure of a typical GDR issue is shown in Figure 18.1.

From the point of view of the issuer, GDRs and ADRs represent non-voting stock with a distinct identity which do not figure in its books. 24 There is no exchange risk since dividends are paid by the issuer in its home currency. Apart from imparting global visibility, the device allows the issuer to broaden its capital base by tapping large foreign equity markets. The risk is that the price of GDRs may drop sharply after issue due to problems in the local markets and damage the issuer's reputation which may harm future issues. From the investors' point of view, they achieve portfolio diversification while acquiring an instrument which is denominated in a convertible currency and is traded on developed stock markets. Of course the investors bear exchange risk and all the other risks borne by an equity holder (Dividend uncertainty, capital loss). There are also taxes such as withholding taxes on dividends and capital gains taxes. For instance, the Indian government imposes a 10% withholding tax on dividends, and a 65% maximum marginal capital gains tax on short-term capital gains (tax on long-term capital gains is only 10% thus encouraging the investor to hold on to **thestock).**²⁵

A major problem and concern with international equity issues is that of flowback, that is, the investors will sell the shares back in the home stock market of the issuing firm. ²⁶ Authorities of some countries have imposed a minimum lock-in period during which foreign investors cannot unload the shares in the domestic market. ²⁷

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Notes -



Topics Covered

International Capital Market

Objectives

Upon completion of this Lesson, you should be able to:

Understand the mechanism of International Capital Market

"For us here at the World Bank, the last 10 years have been the equivalent of the financial industrial revolution. We began 1980 having never issued a Eurobond. And 1980 was the same as 1970, only bigger. The 1990 programme bears no similarity at all-today we are borrowing in 20 different currencies, using interest rate and currency swaps, reverse currencies, zero coupons and perpetuals. The 1980s have exploded".

(Don Roth, treasurer at the World Bank quoted in Capital Markets: The New Order, A Supplement to EUROMONEY, May 1991).

The above quote dramatically underscores the phenomenal changes that have swept financial markets around the world during the 1980s and the 1990s. The "financial revolution" has been characterised by both a tremendous quantitative expansion and an unprecedented qualitative transformation in the institutions, instruments, and regulatory structures.

Global financial markets are a relatively recent phenomenon. Prior to 1980, national markets were largely isolated from each other and financial intermediaries in each country operated principally in that country. The foreign exchange market and the Eurocurrency and Eurobond markets based in London were the only markets that were truly global in their operations.

Financial markets everywhere serve to facilitate transfer of resources from surplus units (savers) to deficit units (borrowers), the former attempting to maximise the return on their savings, while the latter looking to minimise their borrowing costs. An efficient financial market thus achieves an optimal allocation of surplus funds between alternative uses. Healthy financial markets also offer the savers a wide range of instruments enabling them to diversify their portfolios.

Globalisation of financial markets during the eighties has been driven by two underlying forces. Growing (and continually shifting) imbalance between savings and investment within individual countries, reflected in their current account balances, has necessitated massive cross-border financial flows. For instance, during the latter part of seventies, the massive surpluses of the OPEC countries had to be recycled, that is, fed back into the economies of oil importing nations. During the eighties, the large current account deficits of the US had to be financed primarily from the mounting surpluses in Japan and Germany. During the nineties, developing countries as a group have experienced huge current account deficits and have also had to resort to international financial markets to bridge the gap between their incomes and expenditures, as the volume of concessional aid from official bilateral and multilateral sources has fallen far short of their perceived needs. Table 19.1 presents some data on global savings-investment balance. Tables 19.2 and 19.3 provide some illustrative data on current account balances of, respectively, the industrial and the developing countries and, for the latter, the financing of these deficits. ¹

	1986-96	1995	1999	2000	2001
Category and Group	(Average)				
Saving					
Advanced Economics	21.0	21.4	21.8	21.6	21.8
N.I. Asian Economies*	35.6	33.7	32.9	33.1	34.0
Developing countries	23.4	26.3	25.4	26.2	26.2
World Total	22.8	23.2	23.2	23.4	23.5
Investment					
Advanced Economies	21.8	21.5	21.8	22.3	22.5
N.I.Asian Economies	29.9	32.7	25.3	27.6	29.0
Developing Countries	25.4	28.7	25.7	26.2	26.5
World Total	24.0	24.2	23.2	23.8	24.1

Note: World savings and investment differ because of statistical discrepancies in the national data sources. 2000 and 2001 figures are IMF projections.

• Newly Industrialised Asian Economies Source:

World Economic Outlook, May 2000, IMF, Washington DC.

Source: World Economic Outlook, May 2000, IMF, Washington DC.

Country/Group	1992	1995	1996	1997	1998	1999	2000	2001
US	-50.6	-113.6	-129.3	-143.5	-220.6	-338.9	-419.4	-460.9
Japan	112.3	114.4	65.8	94.1	121.0	107.0	102.4	112.6
Euro Area	-51.3	56.6	89.9	112.5	86.5	43.7	64.9	95.8
AdvancedEconomics	-10.5	56.5	43.4	93.9	43.1	-133.7	-212.9	-215.5
Developing	-84.0	-111.4	-74.2	-59.1	-89.9	-32.7	-11.6	-49.2
Countries								

Sources: World Economic Outlook, May2000, IMF, Washington DC.

The other motive force is the increasing preference on the part of investors for international diversification of their asset portfolios. This would result in gross cross-border financial flows even in the absence of current account imbalances though the net flows would be zero. Several investigators have established that significant risk reduction is possible via global diversification of portfolios.

These demand-side forces by themselves would not have sufficed to give rise to the enormous growth in cross-border financial transactions if they had not been accompanied by liberalisation and integration of financial markets. Virtually in all the major industrial economies, elimination or significant relaxation of

TABLE 19.3 Deficits and External Financing-DevelopingCountries (in billion of US\$)

	1992	1995	1999	2000	2001
1.Current Account Balance	-84.0	-111.4	-32.7	-11.6	-49.2
2.Changes in Reserves	-45.4	-67.6	-42.3	-77.1	-73.9
(-=increases)					
3.Asset Transactions*	-15.4	-25.5	-54.6	-78.4	-59.4
4.Total External Financing					
(net) $[=-(1+2+3)]$	144.8	204.5	129.6	167.1	182.5
5. Non-debt Creating	44.6	101.6	136.8	143.9	135.5
Flows**	100.5	90.8	-8.9	28.0	47.7
6. Net External Borrowing**					

- Includes changes in private external assets, export credits, collateral for debt reduction operations and errors and omissions.
- Includes official transfers and direct investment
- Net disbursement of long- and short-term credit by both official and private creditors.

2000 and 2001 figures are IMF projections

Source: World Economic Outlook, May 2000 IMF, Washington DC.

Regulations governing the operations of financial markets have been already effected or are under way. Exchange controls, functional and geographical restrictions on financial institutions, restrictions on the kind of securities they can issue and hold in their portfolios, interest rate ceilings and withholding taxes, barriers to foreign entities accessing national markets as borrowers and lenders and to foreign financial intermediaries offering various types of financial services, have been already dismantled or are being gradually eased away. Finally, the markets themselves have proved to be highly innovative, responding rapidly to changing investor preferences and increasingly complex needs of the borrowers by designing new instruments and highly flexible risk management products.

The combined result of these processes has been the emergence of a ,vast, seamless global financial market transcending national boundaries. It is by no means true that controls and government intervention have entirely disappeared. In some countries, e.g. Italy, the government continues to exercise strict control over pension funds, insurance companies, mutual funds and unit trusts restricting much of the outward flow of capital. Capital markets of the newly industrialising South East Asian economies, for instance, Korea, Taiwan permit only limited access to foreign investors. Even in an advanced economy -like that of Germany, the structure of corporate financing is such that most of the companies rely on loans from domestic banks for investment and investors do not appear to show much interest in foreign issues. However despite all these reservations it can be asserted that the dominant trend is towards globalisation of financial markets.

Table 19.4 gives a breakup by instrument and by two broad groups of borrowers, of the total debt raised on the international markets in recent years. There are fluctuations in the relative importance of different types of instruments as markets respond to changing investor/borrower needs and changes in financial environment. It is clear that for developing countries, as far as debt finance is concerned, external bonds and syndicated credits are the two main sources of funds.

Indian entities began accessing external capital markets towards the end of seventies as gradually the amount of concessional assistance became inadequate to meet the increasing needs of the economy.

TABLE 19.4 Borrowing on International Capital Markets (in billion of US \$)

Type Country /Group	1998	1999	2000
1. Syndicated Credit Facilities	905.3	1025.9	1460.3
Borrowers Forms			
(i) Developed Countries	820.1	957.9	1328.6
(ii) Developing Countries	76.8	58.8	93.4
2. Debt Securities (Net Issues)	681.1	1215.1	1138.2
Issuers Form			
(i) Developed Countries	573.5	1083.7	1008.9
(ii) Developing Countries	41.4	36.0	32.4
2a. Money Market Instruments	10.1	66.4	122.0
2b. Bonds and Notes	670.9	1148.8	1016.2

Source: International Banking and Financial Market Developments, Quarterly Review, March, 2001, Bank for International Settlements, Basle.

The initial forays were very low-key. The pace accelerated somewhat around mid-eighties, but even then, the authorities adopted a selective approach and permitted only a few select banks, all India financial institutions, and large public and private sector companies to access the market. Further liberalisation took place as a part of the reform package initiated in 1991. Table 19.5 provides some data on net external commercial borrowings by Indian entities on the global markets. After a sharp rise in 1993-94, the rising trend continued till the end of the decade when partly as a result of Asian crisis and partly due to economic slowdown there was a sharp decline. There has been a strong revival thereafter.

TABLE 19.5 India's Net External Commercial Borrowings(in million US \$)

Year	Amount
1992-93	-366
1993-94	685
1994-95	1124
1995-96	1285
1996-97	2856
1997-98	4010
1998-99	4367
1999-00	333
2000-01*	5000

Source: Monthly Review of the Indian Economy, January 2001, CMIE

• Figure for 2000-01 is CMIE projection

By and large, India's borrowings have been by way of syndicated bank loans, buyers' credits and lines of credits. Other instruments such as foreign and Eurobonds, EMTNs have been employed much less frequently though a number of companies made issues of Euro convertible bonds after 1993. Prior to that, only apex financial institutions and the public sector giant ONGC had tapped the German, Swiss, Japanese and Eurodollar bond markets.

Throughout the eighties, there was a steady improvement in the market's perception of the creditworthiness of Indian borrowers. This is manifested in the steady decline in the spreads they had to pay over LIBOR in the case of Euro loans. The 1990-91 crisis sent India's sovereign rating below investment grade and the foreign debt markets virtually dried up to be opened up again after 1993. The Asian crisis resulted in a slowdown again during the closing years of the last millennium. At the time of writing things are looking up again.

The purpose of this chapter is twofold. First, we wish to provide an overview of the major segments of the global debt markets in terms of funding avenues, general regulatory framework, accessibility and some procedural aspects. It is not our intention to provide an in-depth treatment since such a task would necessitate a separate volume in itself. There are several excellent sources dealing with each of the major market segments and periodic updates are provided by financial periodicals.3 An excellent, comprehensive treatment particularly valuable from the point of view of potential borrowers from India can be found in Joshi (2001). Second, we wish to examine the analytics of the international fmancing decisions from the borrower's point of view and risk-return considerations from the investor's point of view.

19.2 The Major Market Segments

The funding avenues potentially open to a borrower in the global capital markets can be categorised as follows:

A. Bonds

- AI. Straight Bonds
- A2. Floating Rate Notes (FRNs)
- A3. Zero-coupon and deep discount bonds
- A.4. Bonds with a variety of option features embedded in them.

B. Syndicated Credits

These are bank loans, usually at floating rate of interest, arranged by one or more lead managers (banks) with a number of other banks participating in the loan. A number of variations on the basic theme are possible. We will discuss these in some detail below.

C. Medium-Term Notes(Mtns)

Initially conceived as instruments to fill the maturity gap between short-term money market instruments like commercial paper and long-term instruments like bonds, these subsequently evolved into very flexible borrowing instruments for well-rated issuers, particularly in their "Euro" version, viz. Euro-Medium Term Notes (EMTNS).

D. Committed Underwritten Facilities

The basic structure under this is the Note Issuance Facility (NIF). We will discuss this and some of its variants below. Introduced in 1980s these instruments were popular for a while before introduction of riskbased capital adequacy norms rendered them unattractive for banks.

E. Money Market Instruments

These are short-term borrowing instruments and include commercial paper, certificates of deposit and bankers' acceptances among others.

In addition to these, export related credit mechanisms such as buyers' and suppliers' credits, general purpose lines of credit, forfeiting are other sources of medium-to-long-term funding.

Another innovation to have emerged during the last decade or so is Project Finance. While it uses one or more of the funding instruments mentioned above, its novelty lies in the way the financing package is put together including the rights and obligations of the parties involved, allocation of various operating and financial risks to those who are best equipped to bear them, incorporation of various guarantees and so forth. Designed to finance single large projects such as the Eurotunnel it has been applied to infrastructure development and other projects (e.g. building prisons). By now it has become a highly specialised field. We will discuss it briefly below.

Like in the case of banking and money markets discussed in Chapter 6, most of the funding instruments discussed above also have their "domestic" and "offshore" segments. The main differentiating dimension is regulatory requirements which in turn influence the disclosure, accounting, and rating discipline a potential borrower must subject itself to. The legal framework governing the rights and obligations of the borrower and the lenders also differs. Public issues in the domestic segment have to be registered with the appropriate securities regulatory body while issues made in offshore segments are like bearer bonds.4 Of course, within the domestic segment, as we shall see below, funding avenues such as private placements are available which have less stringent requirements and therefore are easier to access.

The designation of an instrument such as a bond varies according to the segment tapped and the nationality of the issuer. Thus when a non-resident company issues a dollar denominated bond in the US capital market it is called a Foreign Dollar Bond, whereas a dollar bond issued outside the US may be referred to as a Eurodollar Bond or more generally as an "international" dollar bond. Foreign and international bonds taken together are referred to as External Bonds.5

Borrowers often access a currency-market segment which offers ease of access, cheaper all-in cost or some other attractive feature and then use swaps to reconfigure their liabilities in terms of currency and interest rate basis. We have seen examples of this in Chapter 16.

Bond Markets

A bond is a debt security issued by the borrower, purchased by the investor, usually through the intermediation of a group of underwriters.

The traditional bond is the straight bond. It is a debt instrument with a fixed maturity period, a fixed coupon which is a fixed periodic payment usually expressed as percentage of the face or par value, and repayment of the face value at maturity. (This is known as bullet repayment of the principal). The market price at which such a security is bought by an investor either in the primary market (a new issue) or in the secondary market (an existing issue made sometime in the past) is its purchase price, which could be different from its face value. When they are identical the bond is said to be selling at par, when the face value is less than (more than) the market price, the bond is said to be trading at a premium (discount). The difference could arise because the coupon is different from the ruling rates of interest on bonds with equal

perceived risk and maturity, or because market's perception of creditworthiness of the issuer is different. The yield is a measure of return to the holder of the bond and is a combination of purchase price and the coupon. However there are many concepts of yield (See appendix A at the end of the book). Coupon payments may be annual, semi-annual or some other periodicity. Maturities can be upto thirty years or in rare cases even longer. Bonds with maturities at the shorter end (4-10 years) are often called notes.

A very large number of variants of the straight bond have evolved over time to suit varying needs of borrowers and investors.

A callable bond can be redeemed by the issuer, at issuer's choice. prior to its maturity. The first call date is normally some years from the date of issue; for example, a 15-year bond may have a call provision which allows the issuer to redeem the bond at any time after 10 years. The call price, that is, the price at which the bond will be redeemed is normally above the face value with the difference shrinking as maturity is approached. This feature allows the issuer to restructure his liabilities or refund a debt at a lower cost if interest rates fall. In an environment of high interest rates (i.e. when they are expected to fall) the callable bond will have to give an incentive to the investor in the form of a higher yield compared to an otherwise similar non-callable bond. A puttable bond is the opposite of a callable bond. It allows the investor to sell it back to the issuer prior to maturity, at investor's discretion, after a certain number of years from the issue date. The investor pays for this privilege in the form of a lower yield.

Sinking fund bonds were a device, often used by small risky companies to assure the investors that they will get their money back. Instead of redeeming the entire issue at maturity, the issuer would redeem a fraction of the issue each year so that only a small amount remains to be redeemed at maturity.

A Floating Rate Note (FRN) is, as its name implies, a bond with varying coupon. Periodically (typically every six months), the interest rate payable for the next six months is set with reference to a market index such as LIBOR. In some cases, a ceiling may be put on the interest rate (capped FRNs), while in some cases there may be a ceiling and a floor (collared FRNs).6

Zero coupon bonds (called simply "Zeros") are similar to the cumulative deposit schemes offered by companies in India. The bond is purchased at a substantial discount from the face value and redeemed at face value on maturity. There are no interim interest payments. One possible advantage can arise from tax treatment if the difference between the face value and the purchase price, realised at maturity is deemed to be entirely capital gains and taxed at a rate lower than the rate applicable to regular interest received on coupon bonds. 7 In addition, there is no reinvestment risk as in the case of coupon bonds where the intermediate coupon cash flows must be invested at rates ruling at the time coupons are paid. Deep Discount Bonds do pay a coupon but at a rate below the market rate for a corresponding straight bond. Bulk of the return to the investor is in the form of capital gains.

Convertible bonds are bonds that can be exchanged for equity shares either of the issuing company or some other company. The conversion price determines the number of shares for which the bond will be exchanged; the conversion value is the market value of the shares which is less than the face value of the bond at the time of issue. As the share price rises, the conversion value rises. There is generally a call provision attached which allows the issuer to redeem the bond when the share price rises above a certain level which forces the holder to convert in order to avoid losing the premium on the bonds. Convertible bonds carry a coupon below that of a comparable straight bond, thus reducing cash outflow on account of interest. Small but rapidly growing companies find it an attractive funding device. It is a form of deferred equity, effectively sold above the current market price. One motivation might be that the issuer believes that the market is currently under-pricing its shares.

Warrants are an option sold with a bond which gives the holder the right to purchase a financial asset at a stated price. The asset may be a further bond, equity shares or a foreign currency. (Currency warrants were particularly popular in the Euromarkets during the eighties). The warrant may be permanently attached to the bond or detachable and separately tradable. Initially warrants were used by speculative issues as an added incentive to the investor to keep the interest cost within reasonable limits. Recently even high grade companies have issued warrants. 8

A large number of other variants have been brought to the market. Among them are drop-lock FRNs, convertible FRNs, dual currency bonds, bonds with exotic currency options embedded in them, bonds denominated in artificial currency units such ECU or SDR and so on. Short descriptions of some of these are given in the appendix to this chapter. An illustrative example is provided in the appendix to this chapter.

Bonds with embedded options will be priced to include the value of the option. If the issuer gets the option (for instance, a callable bond), the yield would have to be higher than a comparable straight bond; if the option is being granted to the investors, for instance, a puttable bond or a convertible bond, its value will be reflected in the lower yield.

The largest international bond market is the Eurobond market which is said to have originated in 1963 with an issue of Eurodollar bonds by Autostrade, an Italian borrower. The market has since grown enormously in size. It is still dominated by issuers from the OECD area. Supranational institutions and developing country borrowers constitute the rest of the market. As to currency composition of the issues, .US dollar still accounts for the largest share though over the years its share has shown a declining trend. Eurobond markets in all currencies, except yen, are quite free from any regulation by the respective governments. The Euroyen bond market, which really came into existence as late as 1984, is closely controlled and monitored by the Japanese Ministry of Finance. Straight bonds are priced with reference to a benchmark, typically treasury issues. Thus, a Eurodollar bond will be priced to yield a YTM (Yield-to-Maturity) somewhat above US treasury bonds of similar maturity, the spread depending upon the borrower's rating and market conditions.

While a formal credit rating such as S&P or Moody's is not absolutely mandatory for Eurobonds, it helps in placing the issue at terms attractive to the borrower. The straight bonds segment is accessible only to highly rated borrowers. The FRN segment and the segment comprising of convertibles and other types of option embedded bonds provide easier access to lesser rated issuers.

Many Eurobonds are listed on stock exchanges in Europe. This requires that certain financial reports be made available to the exchanges on a regular basis. However, secondary market trading in Eurobonds is almost entirely over-the-counter by telephone between dealers. Quotes are available on the exchange where the issue is listed.

Floatation costs of Eurobond issues are generally higher than costs associated with syndicated Euro credits. In the appendix to this chapter we have provided a brief description of the issue process. More details can be found in Fisher (1987) and Joshi (2001).

Among the national capital markets, the US market is the largest in the world. It is complemented by world's largest and most active derivatives markets, both OTC and exchange-traded. It provides a wide spectrum of funding avenues. It is in some ways a very strictly regulated market but at the same time offers a lot of flexibility to potential borrowers in terms of structuring their financing activities.

From a non-resident borrower's point of view, the most prestigious funding avenue is public issue of Yankee Bonds. These are dollar denominated bonds issued by foreign borrowers. It is the largest and most active market in the world but potential borrowers must meet very stringent disclosure, dual rating and other listing requirements. Option features like call and put can be incorporated and there are no restrictions on size of the issue, maturity and so forth. Syndication structures and fees are flexible and borrowers who satisfy the registration requirements and rating norms can get very fine terms. Shelf registration is possible for selected borrowers. Under this facility, the issuer can register the necessary documentation in advance of the issue of securities.

Yankee bonds can also be offered under rule 144A ofth_ SEC. These issues are exempt from elaborate registration and disclosure requirements but rating, while not mandatory, is helpful. Finally, low rated or unrated borrowers can make private placements. Higher yields have to be naturally offered and the secondary market is very limited. For more details see Joshi (2001).

It is also possible to float bonds denominated in foreign currencies in the US market. In the past, the commonly used currencies have been the Australian dollar, the Canadian dollar, the New Zealand dollar, and the ECU. These are almost always swapped into US dollars via a currency swap. The Japanese market was tightly regulated till 1980. Thereafter, the government implemented a series of (de)regulatory reforms designed to integrate the Japanese financial markets with the global markets. Foreign institutions were allowed entry, and regulations on cross-border borrowing and investment were relaxed. Within a span of fifteen years, Japanese capital markets have developed enormously both quantitatively and qualitatively.

Bond finance in yen available to foreign borrowers includes in addition to the euroyen segment, Samurai Bonds and Shibosai Bonds. Samurai bonds are publicly issued yen denominated bonds and like Yankee bonds are the most prestigious funding vehicle. The Japanese Ministry of Finance lays down the eligibility guidelines for potential foreign borrowers. These specify the minimum rating¹⁰, size of the issue, maturity and so forth. Syndication and underwriting procedures are quite elaborate and so is the documentation. Hence flotation costs tend to be high. Pricing is done with reference to the Long-Term Prime Rate (L TPR). Shibosai bonds are private placement bonds with distribution limited to institutions and banks. While eligibility criteria are less stringent, the MOF still controls the market in terms of rating, size, and maturity of the issue.

In addition to these two, other vehicles are available to nonresident borrowers. Shogun Bonds are publicly floated bonds denominated in a foreign currency, while Geisha Bonds are their private placement counterparts.

Indian entities have tl1Pped the Japanese market to a considerable extent starting with the Shibosai issue made by IDBI in 1984. The strength of yen implies substantial exchange rate exposure for Indian borrowers who avail of yen finance. Correspondingly, the nominal interest rates are low. For details of bond issue procedures the reader can consult Joshi (2001).

Non-resident deutschemark bond issues in the German market are all structured as Euro bonds. These can be public issues or private placements depending upon the size of the issue and whether the issuer wishes the bonds to be listed on exchanges. Are some activity in the late eighties, Indian borrowers have not approached the German bond market.

The Swiss capital market also provides bond finance avenues. . Swiss investors do not attach great importance to formal rating preferring to rely on their own assessment of the borrower's creditworthiness. They tend to be quite selective. Public Bonds are floated through a prospectus, are fixed rate bullet redemption bonds, and are normally used for large funding requirements in excess of Sft 100 million. Issuers need to get approval from the Swiss National Bank (SNB). Issue costs tend to be rather high. Unlisted Bond?; (referred to as Notes and not' bonds) are for smaller financing and also for shorter maturities, sometimes as short as eighteen months. They are not private placements since the issue is publicised as much as a public offering. Unlike other foreign bonds, these can be amortised with annual repayments of principal. For still smaller amounts (less than CHF 10 million), Mini issues are available which are exempt from SNB approval. Convertible bonds or bonds with equity warrants also constitute a significant segment. India's recourse to the Swiss foreign bond market has been quite limited.

In addition to these, there are other smaller foreign bond markets. The UK market has developed the Bulldog Bond, a sterling denominated foreign bond, priced with reference to UK gilts. Fixed rate and floating rate bonds (FRNs) denominated in French franc as well as convertible bonds are available to nonresident borrowers in the French market. The Dutch market has Rembrandt Bonds, denominated in Dutch guilder. For details regarding regulation and historical evolution of these markets see, among others, Joshi (2001), Foley (1991).

Table 19.6 presents data on the bond market and itsselected segments.

International Bonds and Notes Issues (in Billion US \$)

Type, Sector and Currency	Net Ismes				
	1998	1999	2000		
Total Issues	670.9	1148.8	1016.2		
Floating Rate	173.4	333.1	333.2		
Straight Fixed Rate	481.6	784.5	674.5		
Equity Related	16.0	31.1	8.4		
Major Currencies					
US Dollar	404.5	543.6	473.7		
Euro"	84.9	517.6	407.1		
Pound Sterling	54.9	79.1	92.1		
Yen		-83	36.0		
Deutschemark	68.6	_			

Source: International Banking and Financial Market Developments, Quarterly Review, March, 2001, Bank for International Settlements, Basle.

• The figure for 1998 under "Euro" is in ECU.

Syndicated Credits

We have briefly mentioned this mode of financing in Chapter 6. Here we explore some further characteristics and procedural aspects related to this form of funding. A useful reference on Euroloans is the monograph by Melnik and Plaut (1991) which we have drawn upon in what follows.

A traditional Eurosyndicated loan is usually a floating rate loan with fixed maturity, a fixed drawdown period, and a specified repayment schedule. One, two or even three banks may act as lead managers and International Financial Management distribute the loan among themselves and other participating banks. One of the lead banks acts as the agent bank and administers the loan after execution, disbursing funds to the borrower, collecting and distributing interest payments and principal repayments among lending banks and so on. A typical Eurocredit would have maturity between five and 10 years, amortisation in semiannual instalments, and interest rate reset every three or six months with reference to LIBOR. II .

In some cases, when the parties-lenders and the borrower-do not wish to publicise the deal, standard practice is dispensed with and a credit is arranged on a private basis between the group of lending banks and the borrower. These are knowns as Club Loans [Joshi (2001)].

A revolving credit is similar to the above but permits greater flexibility in the drawdown and repayment schedules, allowing the borrower to repeatedly draw the loan or a portion thereof and to repay what it has drawn at its discretion or according to a formula [Melnik and Plaut op.cit.].

In a standby facility, the borrower is not required to draw down the loan during a fixed, prespecified period. Instead, he pays a contingency fee till he decides to draw the loan at which time interest begins to accrue.

Syndicated credits can be structured to incorporate various options. As in the case ofFRNs, a drop-lock feature converts the floating rate loan into a fixed rate loan if the benchmark index hits a specified floor. A

multicurrency option allows the borrower to switch the currency of denomination on a rollover date.

Security in the form of government guarantee, bank guarantee or mortgage on assets is required for borrowers in developing countries like India. ¹²

A brief description of some of the procedural aspects of negotiating a syndicated loan is given in the appendix to this chapter. Much greater detail can be found in specialised works on the subject such as joshi(2001)

The cost of a loan consists of interest and a number of fees – management fees, participation fess ,agency fees and underwriting fees when the loan is underwritten 'by a bank of a group of banks. Spreads over LIBOR depend upon borrower's creditworthiness, size and term of the loan,14 state of the market (e.g. the level of LIBOR, supply of non-bank deposits to the Eurobanks,) and the degree of competition for the loan. IS Table 19.7 gives some idea about average spreads over LIBOR for international bank loans for different borrower groups.

Apart from the Euromarkets, syndicated credits can be arranged in some of the national capital markets too. These are the socalled "foreign loans". In the Japanese market, yen finance can be raised via bank loans. Syndication and documentation are less expensive than bond issues and MOF criteria are less demanding. Syndicated Eurodem loans can be arranged from German banks, though this form of fmancing is not very common. In the Swiss market too these are very rare and the SNB does not favour the use of CHF for Euro CHF credits.

		Weighted dw	erage Spreads		
Вогточит Group	1995	1996	1997	1998	
Developed Countries				and the second	
1. Public Sector	8	19	20	9	
2. Corporate Sector	57	65	69	107	
3. Financial Institutions	38	30	46	67	
Developing Countries					
J. Public Sector	192	82	60	136	
2. Corporate Sector	129	105	114	143	
3. Financial Institutions	73	69	94	102	

Source: International Banking and Financial Market Developments, Quarterly Review, March, 1999, Bank for International Settlements, Basle.

Some partial data from Indira Rajaraman (1992) indicate that Indian borrowers have accessed this funding route since 1980 for financing ranging from as little as \$4.2 million to \$680 million, with maturities ranging from 3 years to 15 years in case of floating rate loans. The mean spread over LIBOR which was as high as 107 basis points in 1980 had come down to a little over 15bp by 1989. Subsequently, the trend was reversed and during the period 1990-93 the only known syndications were some short-term oil import finance facilities arranged for the Indian Oil Corporation at spreads considerably higher than the average paid during the eighties [Joshi (2001)].

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MTNs and EMTNs

Medium-Term Notes (MTNs) represent a medium-term, nonunderwritten, fixed interest rate source of funding. This form of funding originated in the US capital market and was introduced to the Euro market -Euro Medium-Term Notesduring the eighties. It was a part of the disintermediation process in which borrowers were approaching investors directly rather than go through the bank loan route.

The main advantage of borrowing via an MTN or EMTN programme is its flexibility, arid much less onerous formalities of documentation compared to a bond issue. Documentation for a borrowing programme of a given size can be prepared once for all and then the borrower can issue notes in several tranches, timing each issue to take advantage of favorable "windows of opportunity". Each tranche may carry a different couponl6 and have a different maturity date. Mutli-currency option allows different tranches to be issued in different currencies. While dollar remains the most popular currency, EMTNs have been issued in other currencies including the ECU.

Euromarkets have also come up with Global MTNs (GMTNs) which are designed to tap both the American and other markets. A beginning has been made in floating rate EMTNs.

The market is accessible only to issuers with good credit rating. So far, banks, supranational institutions and sovereigns have been the predominant borrowers. Corporate borrowers have not used this market very much.

NIF and Related Facilities

During the eighties, several novel trends emerged in the financial markets. A process of disintermediation began in which highly rated borrowers decided to short circuit the banks and raise financing directly from investors by issuing their own paper. Investor preferences shifted towards short-term commitments. Due to enforcement of capital adequacy norms and intense competition in the traditional business of taking deposits and making loans, banks started looking around for ways of making money without inflating their balance sheets. The combined result of these factors was the emergence of whole new ways of arranging funding for borrowers with good track record and reputation. Note Issuance Facilities (NIFs) and its variants was one of them.

According to the BIS definition, "A NIF is a medium-term legally binding commitment under which a borrower can issue short-term paper in its own name, but where underwriting banks are committed either to purchase any notes which the borrower is unable to sell, or to provide standing credit" [Joshi (1996)]. The borrower obtains medium-term funding by repeatedly rolling over its short-term notes. If at any rollover the borrower is unable to place the entire issue with the market, the underwriting banks either take up the remainder or provide a short-term loan. The arrangement under which the banks provide credit to make up the shortfall is known as a Revolving Underwriting Facility (RUF).

Cost of funding with an NIF includes interest and participation and underwriting fees where relevant. The interest rate is set as a margin over LIBOR.¹⁷

A number of flexible structures emerged after the NIF made its entry in 1981. These relate to different ways of "placing" the notes with the investors-sole placing agency, tender panel system and continuous tender panel. For details of these arrangements as well as the mechanics of issue, documentation and so on, the reader is advised to consult Joshi (2001). Another innovation was the Multi Option Facility (MOF). Under this the borrower could draw funds in a number of different ways as a part of a given NIF programme. With the imposition of capital adequacy norms against such commitments as well as thinning fees, NIFs and related devices have lost their popularity.

Project Finance

Since early eighties, specialised funding packages have been developed to finance large projects such as power projects, road construction, port and harbour development, hotels, theme park developments and so forth. Two of the most famous such projects are the Eurotunnel linking France and England, and the EuroDisney amusement park near Paris. A very comprehensive reference on project financing is Nevitt (1989). Pollio (1999) also deals with project finance in addition to appraisal of international projects.

The central idea in project fmancing is to arrange a fmancing package which will permit the transfer or sharing of various risks among several parties, including project promoters with a no recourse or limited recourse feature. The lenders evaluate the project as an independent entity and have claims on the cash flows generated by the project for their interest payments and principal repayments. They have no claims on any other assets or cashflows belonging to the sponsors or promoters. The borrowing may be in one or more of the forms described above, viz. bank loans, bond issues and so on.

In a pure project finance transaction, the lenders would naturally wish to control all aspects of the execution and subsequent operation of the project till their money is recovered. For instance they will have a substantial say in the choice of the contractor(s) to build the project and may insist on giving the contract on a turnkey basis to a reputed construction firm to minimise construction delays. Also such limited recourse finance will generally be available only in cases where the lenders are satisfied that the project output has a ready market, assured supplies of raw materials, energy and so on and are satisfied with the technological feasibility of the project. Some of these risks can be reduced or eliminated by devices such as unconditional take-or-pay contracts18, requiring the project contractors to put in some equity stake into the project and bringing in export finance agencies who will finance part of the acquisition of project equipment.

In other cases, the lenders may require guarantees. An obvious choice of guarantor is the project's sponsors. This implies that the project's debt appears as a liability on the sponsor's balance sheet. In some circumstances, third party guarantees can be arranged, for example from the government of the project's host country, user of the project's output, a major supplier to the project, the project contractor or a multilateral institution such as the World Bank or a regional development bank. A reputed financial institution may agree to provide a guarantee for a fee. Such guarantees cover a variety of risks. For some types of risks, insurance may be available. The guarantees need not always cover the entire borrowing but may be limited in amount or time of coverage. For instance, guarantees only to cover project cost overruns or a guarantee which provides cover only till the start-up time. Depending on the nature of the project, lenders may be satisfied with such limited guarantees.

The sources of equity and debt finance for projects have been numerous. Commercial banks, institution all lenders, finance and leasing companies, project contractors, suppliers of raw materials and users of project output, multilateral institutions and government export financing agencies such as EXIM banks have all been involved in project finance.

An innovation in project finance is the BOT device which stands for Build, Own and Transfer (some times also called BOOT -Build, Own, Operate and Transfer). Under this arrangement, a foreign company undertakes to design, finance and construct the project, operate it for a specified number of years and then transfer the ownership to a local agency such as the host government. During the last few years, a number of projects in/countries such as Turkey have been initiated using such a structure. See Barrett (1987) for a brief description of some BOT deals.

In the context of project finance, mention must be made of the concept of co-finance. Introduced by the World Bank in the mid-seventies, it refers to an arrangement in which funds provided by supranational development institutions such as the World Bank, the Asian Development Bank and so on, are combined with other sources of external finance to fund a major project or programme. Apart from providing funds, the development institution also provides its expertise in appraising the project which the other providers of funds may not possess. The other sources of funds may be government departments, export credit agencies and private financial institutions. All the lenders pool their information and agree on a common set of procedures for appraising the project and subsequently administering the loan. There are a number of alternative forms of co-financing. The reader can consult Joshi (2001) for further details.

Project finance has become a very complex area in recent years. A variety of funding techniques, risk sharing strategies, and risk management tools such as swaps and options are packaged together for a large project. Apart from Nevitt's work cited above, the interested reader may also consult the special supplement on project financing published by Euromoney [Euromoney (1988)].

This completes our brief survey of markets and instruments which potential borrowers can employ to raise medium- and long-term funding in the global debt markets. The reader is reminded that aside from these, medium-term funding facilities related to exports of capital goods, project exports and so forth are also available. Some of these were discussed in the appendix to Chapter 4. It should also be kept in mind that the nature of all these markets and instruments is very dynamic. Different market segments undergo cycles of boom and bust. New products and variations of existing products are continually emerging. Regulatory changes and changes in financial norms and practices keep these markets in a constant state of flux. Our treatment here is no more than an introductory 'perspective. References cited at the end of the chapter will enable the reader to gain more in-depth knowledge of this topic. Even then, at any given point of time, the best source of up-to-the-minute knowledge and information are the practitioners who are operating in these markets on a day-to-day basis. In the Indian context, another aspect to bear in mind is the Indian government's regulatory stance on accessing these funding avenues. This too is subject to frequent changes. In the appendix to this chapter we have provided the salient features of the most recent (July 1999) guidelines issued by the MOF, Government of India.

The International Financing Decision

The previous section provided a broad picture of the funding options open to a corporation in the global debt market. In the present section, we proceed to analyse the various issues involved in the financing decision.

The issue of the optimal capital structure and subsequently the optimal mix of funding instruments is one of the key strategic decisions for a corporation. Our aim is to bring out the critical dimensions of this decision in so far as it involves international financing and examine the analytics of the cost-return tradeoff. The actual implementation of the selected funding programme involves several other considerations such as satisfying all the regulatory requirements, choosing the right timing and pricing of the issue, effective marketing of the issue and so forth. We only touch upon some of these aspects. Exhaustive treatments can be found in specialist works on the subject such as Joshi (2001). Figure 19.3 presents a schematic view of the international fmancing decision.

The optimal capital structure for a form in other words corporate debt policy has been a subject of a long running debate in the finance literature since the publication of the seminal paper by Modigliani and Miller (1958). The reader can consult anyone of a number of texts on corporate finance to get a flavour of this controversy. We assume here that the finn has somehow resolved the issue of what is the appropriate level of debt it should carry.

Next comes the issue of the optimal composition of a finn's liability portfolio. The finn usually has a wide spectrum of funding avenues to choose from. The critical dimensions of this decision are discussed below.

- 1. Interest rate basis: Mix of fixed rate and floating rate debt
- 2. Maturity: The appropriate maturity composition of debt.
- 3. Currency composition of debt.
- 4. Which market segments should be tapped?

Note that these dimensions interact to determine the overall character of the finn's debt portfolio. For instance, long-term financing can be in the form of a fixed rate bond or an FRN or short-term debt like commercial paper repeatedly rolled over. Each option has different risk characteristics. Further, the possibility of incorporating various option features in the debt instrument or using swaps and other derivatives can enable the finn to separate cost and risk considerations. Individual financing decisions should thus be guided by their .impact on the characteristics of the overall debt portfolio such as risk and cost as well as possible effects on future funding opportunities. Next let us address the question: "What should be the overall guiding principles in choosing a debt portfolio?" Giddy (1994) provides the following answer:

"The nature of financing should nonnally be driven by the nature of the business, in such a way as to make debt-service payments match the character and timing of operating earnings. Because this reduces the probability of financial distress, it allows the finn to have greater leverage and therefore a greater tax shield.19 Deviation from this principle should occur only in the presence of privileged information or some other market imperfection. Market imperfections that provide cheaper financing exist in practice in a wide range of circumstances".

Let us discuss this recommendation in a little more detail. What it seems to say is that there should be some correspondence between, on the one hand, the sensitivity of the finn's operating cash flows to environmental risk factors such as exchange rates and interest rates and the sensitivity of debt-service payments to the same factors. Also, the time profile of debtservice payment should be similar to that of operating cash flows. Deviations from this are justified either when the finn possesses superior information so that it can "beat the market" or some market imperfection allows it to raise cheaper funding.

Let us see how this principle should be applied to the different dimensions of the borrowing decision mentioned above. Consider the choice between fixed and floating rate financing. Finns such as utilities, manufacturing finns and so on have relatively stable earnings or at least their operating cash flows are not highly sensitive to interest rate fluctuations. Such firms should naturally prefer fixed rate funding. On the other hand, financial institutions with floating rate assets would be natural floating rate borrowers. If a finn has stable revenues in US dollars, it can reduce the probability of financing distress by borrowing in fixed rate dollars. Companies undertaking long gestation capital projects should ensure that sufficient fmancing on fixed tenns is available for long periods and hence should prefer to stretch out their debt servicing obligations by borrowing for long terms. A factoring company on the other hand should finance itself with short-term borrowings.

Note however that this principle should not be followed blindly. Suppose for instance that the yield curve is currently steeply sloping upward; a manufacturing firm is convinced (on the basis of superior information or analysis) that it will flatten out fairly soon. It may choose to borrow short-term and roll over such funding rater than lock itself into high-cost long-term debt. Or consider another example. Borrowing cost for Swiss franc loan is 5% whereas a dollar loan would cost 9%. The VIP condition _ells us that this reflects market's expectation that the CHF is likely to appreciate with respect to the dollar at roughly 4% per annum. A firm has export revenues in dollars but believes that the strength of the CHF is overestimated. It may choose to borrow in Swiss francs despite the additional exposure it is subjecting itself to. Sometimes, such a decision may be motivated by considerations of market access or special factors such as availability of concessional fiancing from state supported export finance agencies. At other times, some

peculiar features of tax legislation may render borrowing in a particular currency more attractive even though the firm has no natural hedge against fluctuations in that currency.²⁰ There have been cases where firms have been able to raise cheap funding by offering the investors some options embedded in the debt instrument which were otherwise inaccessible to them because of regulatory restrictions.²¹ Recall the discussion in Chapter 16 where we saw that many swap deals are motivated by the various imperfections in global capital markets which allow a borrower to tap one market and then swap the liability to achieve the desired structure.

Overriding these considerations are issues of regulation and market access. Governments in some countries impose restrictions which prevent a firm from tapping a particular market segment even though that may be the optimal borrowing route under the circumstances. For instance, during the first half of 1990s Indian government decided to discourage recourse to external debt fiancing and in particular did not permit short-term borrowing in foreign currency. On the other side, a particular market segment may be closed to a firm either because of its inadequate credit rating, investor unfamiliarity or inability of the firm to meet all the requirements-accounting standards, disclosure and so on-specified by the regulatory agency supervising the market.

In viewing the risks associated with funding activity, a portfolioapproach needs to be adopted. Diversification across currencies and instruments enables the firm to reduce the overall risk for a given funding cost target. It also helps to increase investors' familiarity with the firm which makes future approaches easier.

Finally, it should be kept in mind that currency and interest rate exposures arising out of funding decisions should not be viewed in isolation. The firm should take a total view of all exposures, those arising out of its operating business and those on account of financing decisions.

In evaluating a particular borrowing alternative the following parameters have to be examined underalternative scenarios.

- a. The all-in cost of a particular funding instrument. The term "all-in" means that among the costs should be included not just the interest but all other fees and expenses. We will illustrate below how to compute the all-in cost for a specific funding alternative.
- b. Interest rate and currency exposure arising from using a particular financing vehicle. Floating rate borrowing or short-term borrowing repeatedly rolled over exposes the firm to interest rate fluctuations. In the latter case even the spread the firm will have to pay over the market index becomes uncertain. On the other hand, a long-term fixed rate borrowing without a call option locks the firm into a given funding cost so that the firm is unable to take advantage of falling rates. Funding in a foreign currency exposes the firm to all forms of currency exposure-transactions, translation and operating.

We will now look at an example of how to evaluate competing borrowing alternatives. This example will serve to illustrate computation of all-in cost as also the dependence of these GLOBAL FINANCIAL MARKETING

computations on the assumptions made about evolution of exchange rates and interest rates.

- A firm needs 5-year funding of amount \$25 million or equivalent. The following three options have been proposed by the investment bank which is rendering advice:
 - a. A five-year, fixed rate bond issue with a coupon of 7.5% p.a. payable semiannually. The floation costs would be 2% of the face value up-front and in addition there will be administrative expenses related to servicing of the bond which will amount to \$50,000 every six months, payable with the coupon. Bonds will be denominated in US dollars.
 - b. A five-year FRN at 6-month LIBOR plus a spread of 150 basis points, semiannual payments and reset. Flotation costs will amount to 2.5% up-front and there will be administrative expenses of \$50,000 every six months. The currency of denomination of the FRNs will be US dollars.
 - c. A five-year, fixed rate Euro loan, face amount EUR 27 million at 9% p.a., interest payable semiannually on balance outstanding, principal to be amortised in five after a 21/2 years grace period. Up-front fees and costs will amount to UR 250,000, and servicing costs will be EUR 75000 every six months.

The current spot exchange rates are:

USD/INR: 46.50 EUR/INR = 43.0555

On the basis of past trends and current inflationary forecasts, the dollar is expected to appreciate at the rate of 5% per year against the rupee and the DEM at the rate of 3.5% per year. The current 6-month Eurodollar LIBOR is 5%. The following interest rate scenario is considered to be reasonable:

Period	Expected LIBOR
6mo-12mo	6.00%
12mo-18mo	7.00%
18mo-24mo	7.25%
24mo-30mo	8.00%
30mo-36mo	9.00%
36mo-42mo	9.00%
42mo-48mo	10.50%
48mo-54mo	10.75%
54mo-60mo	13.00%

Table (a) lays out the various dollar cash flows for the fixed rate bond issue alternative. Table (b) gives the net cash flows in dollars and rupees assuming a per period (6 months) appreciation rate of 2.5%. Tables (a) and (b) do the same for the dollar FRN option and Tables (a) and (b) for the Euro loan option. For the FRN option the interest rate scenario depicted above has been used to compute dollar interest payments and the same rate of dollar appreciation as in the case of the bond issue.

Time	Proceeds	Floatation	Interest	Administration	Redemption
		Expenses	Payments	Expense	
0	25.00	0.50	-0.9375		
1	-	-	-0.9375	0.50	-
2	-	-	-0.9375	0.50	-
3	-	-	-0.9375	0.50	-
4	-	-	-0.9375	0.50	-
5	-	-	-0.9375	0.50	-
6	-	-	-0.9375	0.50	-
7	-	-	-0.9375	0.50	-
8	-	-	-0.9375	0.50	-
9	-	-	-0.9375	0.50	-
10	-	-	-0.9375	0.50	-

TABLE (b) Net Cash Flow Of USD Bond Issue

Time		Net Cash flow
		(Million INR)
0	24.50	1139.25
1	-0.9875	-47.066718750
2	-0.9875	-48.243386719
3	-0.9875	-19.449471387
4	-0.9875	-50.685708171
5	-0.9875	-51.952850876
6	-0.9875	-53.251672148
7	-0.9875	-54.582963951
8	-0.9875	-55.947538050
9	-0.9875	-57.346226501
10	-0.9875	-1546.878164792
		IRR : 6.80 %

TABLE (a) Cash Flow of the US Dollar FRN (Million USD)

Time	Proceeds	Floatation	Interest	Administration	Redemption
		Expenses	Payments	Expense	
0	25.00	0.625	-	-	
1	-	-	0.8125	0.50	-
2	-	-	0.9375	0.50	-
3	-	-	1.1625	0.50	-
4	-	-	1.09375	0.50	-
5	-	-	1.1875	0.50	-
6	-	-	1.3125	0.50	-
7	-	-	1.3125	0.50	-
8	-	-	1.50	0.50	-
9	-	-	1.53125	0.50	-
10	-	-	1.68750	0.50	25.00

TABLE (b) Net Cash Flows of US Dollar FRN Issue

Time		Net Cash flow
		(Million INR)
0	24.375	1133.4375
1	-0.8625	-41.108906250
2	-0.9875	-48.243386719
3	-1.1125	-55.708898145
4	-1.14375	-58.705598705
5	-1.23750	-65.105471351
6	-1.36250	-73.473826128
7	-1.36250	-75.310671781
8	-1.5500	-87.816388838
9	-1.58125	-91.826552562
10	-26.7375	-1591.521113271
		IRR : 7.98 %

TABLE (a) Cash Flow of the Euro Fixed Rates Loan(Million Euro)

Time	Proceeds	Floatation	Interest	Administration	Redemption
		Expenses	Payments	Expense	
0	27.00	0.25	-	-	
1	-	-	1.2150	0.075	-
2	-	-	1.2150	0.075	-
3	-	-	1.2150	0.075	-
4	-	-	1.2150	0.075	-
5	-	-	1.2150	0.075	-
6	-	-	1.2150	0.075	5.40
7	-	-	1.2150	0.075	5.40
8	-	-	1.2150	0.075	5.40
9	-	-	1.2150	0.075	5.40
10	-	-	1.2150	0.075	5.40

International Financial Management

The all-in costs, conditional upon the assumed interest rate and exchange rate scenarios are calculated by computing the IRRs of the rupee net cash flows in tables (b), (b), and (b) respectively. Note that these are semiannual rates. They have to be annualised using the formula:

Effective Annual Cost = (1 + Semiannual Rate)2 - 1

The computed IRRs are shown in the bottom rows of Tables 19.8(b), 19.9(b) and 19.10(b). The corresponding effective annual costs are, respectively, 14.06%, 16.60% and 16.0%. Based on these calculations, the fixed rate dollar bond issue appears to be the least cost alternative. However, remember that this conclusion is contingent upon a particular set of assumptions about the future evolution of interest rates and exchange rates. A more rigorous examination would require that we repeat the calculations under different scenarios and look at the expected cost and the variance in the cost of borrowing.

Consider a firm which is contemplating a fixed rate foreign currency loan (or a fixed rate foreign currency bond issue). The nominal rate of interest is I (expressed as a traction not percentage), the maturity is N years, interest is paid annually, and repayment is bullet. The principal amount is A. The rate of exchange at time t is denoted St expressed as units of home currency per unit of foreign currency.

The real cost of this loan consists of three components, viz. the -nominal interest, appreciation of the foreign currency and domestic inflation:

R=I+S-n

Where 8 denotes proportionate change in the spot rate and n is the domestic rate of inflation.

The variance of the real cost therefore is.23

Var(R) = Var(8) + Var(n) - 2Cov(8, n)

To compare loans denominated in alternative currencies, since the domestic inflation rate enters in both, expected real cost comparison can be based on comparison of effective nominal costs. However, to compare the variances of real costs, the covariance term is important. Between two currencies, if the variance of both is nearly equal, the one which obeys PPP with the home currency more closely will have a lower variance of real cost of borrowing.

If the real cost risk is ignored, the choice of currency should be based on a comparison of effective interest rates which consist of the nominal interest rate I, and the expected rate of appreciation of the foreign currency

When the nominal interest rate itself is not fixed-as with a floating rate loan or FRNs-an additional source of risk is introduced, viz. the variance of the nominal interest rate and its covariance's with the exchange rate and domestic inflation rate. The volatility of nominal interest rates during the decade of nineties has been more moderate compared to the eighties but still represents a source of considerable risk.

It is possible to cast the problem of choosing an optimal currency portfolio of foreign borrowing in the standard meanvariance framework. To operationalise the framework however, one needs estimates of variances and covariance of exchange rates, interest rates, and inflation rates. Invariably, these have to be obtained from past data and one has to assume that the' structure of variances and covariance remains unchanged overtime.



market

Chapter 11

Chapter 11: 1. The nature of the The Global Capital Market international capital market (A) Players: Learning objectives: · Investors and borrowers: Individuals, companies, and 1. Appreciate the nature and the growth of this governments • Market makers: Commercial and investment bankers 2. Gain a basic understanding of the interna-(B) Instruments: tional Eurocurrency, bond, and equity • Equity: An unspecified claim on a firm's profit markets • Debt (bond): A right to receive a specified payment 3. Understand the managerial implications when the debt matures © Mike W. Peng (The Ohio State University) 1 Chapter 11 © Mike W. Peng (The Ohio State University)

Outline

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2

- 1. The nature of the international capital market
- 2. The growth of this market
- 3. The Eurocurrency market
- 4. The international bond market
- 5. The international equity market
- 6. Managerial implications

Chapter 11

Main players in a generic capital market

3



1. The nature of the international capital market (II)

(C) Attractions:

Chapter 11

- For the *borrower*: A lower cost of capital
 - A limited pool of domestic investors implies that borrowers must pay more to persuade investors to lend their money
 - Internationally, the availability of a large pool of "hot money"

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- For the *investor*: Portfolio diversification
 - It is less risky to "put eggs in different baskets"

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The borrower: Market liquidity and the cost of capital







3. The Eurocurrency market

1.5 Trillion

4. The international bond market

- (A) Foreign bonds: Example: A Chinese firm issuing bonds in the U.S. denominated in \$
- (B) Eurobonds: Example: A Chinese company issuing bonds, denominated in \$, sold to global investors (not necessarily in the U.S.)

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- (C) Attractions of the Eurobond market:
- No regulatory interference
- Few disclosure requirements
- Favorable tax status

Chapter 11

13

Trading in non-U.S. stocks in the U.S.



5. The international equity market

- (A) Listing a company's stock abroad
- (B) Internationalization of corporate ownership
- (C) Taps into foreign financial resources
- (D) Increase visibility abroad
- (E) Facilitates foreign acquisitions
- (F) Stock exchanges (e.g., NYSE): Competing to win foreign listing

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Chapter 11

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6. Managerial implications

(A) Obvious: broadening companies' "financial" horizon in terms of

- borrowing: Eurobond, foreign listing
- investing: Portfolio diversification
- (B) More specifically:
 - currency in which the capital will be raised
 - long-term estimate of exchange rates
 - debt-equity distribution
- costs and sources of capital Chapter 11 0 Mike W. Peng (The Ohio State Unive

16

Topics Covered

International Monetary Fund and International Finance Markets

Objectives

- Upon completion of this Lesson, you should be able to:
- Understand the mechanism of International Monetary
- Fund and International Finance Markets.

The International Monetary Fund

The IMF was established in 1945. Under its aegis an exchange rate system was evolved and followed for 25 years up to 1971, its aims were:

- I. To promote international monetary cooperation through a permanent institution which provided the machinery for construction on international monetary problems,
- ii. To facilitate the expansion and balanced growth of institutional trades and to contribute thereby to the promotion and maintenance of high levels of employment and real income and to the development of productive resources of all members as a primary objectives of economic policy,
- iii. To establish an international monetary system with stable exchange rates and to maintain orderly exchange arrangements among members and to avoid competitive exchange depreciation;
- iv. To assist in the establishment of a multi national system of payments in respect of current transactions between members and in the elimination of foreign exchange restrictions between the members and in the elimination of foreign exchange restrictions which may hamper the growth of world trade?
- v. To give confidence to members by making the funds resource\$ available to them with the opportunity to correct adjustments in their balance of payments without resorting to measures destructive of national or international prosperity.
- vi. In accordance with the above, to shorten the duration and lesson the degree of disequilibria in the international balance of payments of members.

The major objectives behind setting up the IMF were restoring Multinational trade and establishing a state of exchange rate. The funds resources primarily consist of "Quotas" subscribed by the member countries. A member country of the IMF has a "quota" in the IMF's capital. The quota represents the voting power of the member country and in the decision making process of the fund. Initially half the quota contribution was in the. Currency of the member countries and the other half was in gold or dollars. At present member is generally required to pay about 25% of its quota in SDR, (Special Drawing Rights) or in currencies of other members selected by the IMF, with the concurrence, the reminder is in the member's own currency. The initial quotas of the original members of the IMF were related to, but not strictly determined by the Bretton Woods formula, which included such basic variables as average import and export flows, gold holdings and dollar balances and national income. This formula served as the basis for determining initial quotas for new members until the early 1960s.

In April 1963, a number of other quota formulae were introduced_ which, taken together, were used in determining initial quotas of new members and increases in the quotas of new members. These formulae employ economic data relating to GDP, current account transactions, the variability of the current receipts and official reserves i.e. the quotas were based on the country's Gross Domestic Product (GDP) and its share of world trade. The quotas were reviewed once in 5 years.

The quotas also given the access of the member concerned to borrowings under the different facilities extended by the fund to its members. The eleventh quota review, authorizing a 45% increase in the fund quotas from SDR 146 bn to SDR 212 bn was completed in January 1998. The quota increase became effective w.e.f. 22.1.1999.

The SDR mechanism essentially was in two parts:

- A member country experiencing a deficit could sell its SDR to a surplus country, which was, up to a limit, obliged to buy SDRs in exchange for its own currency. The deficit country could thus improve its liquidity.
- The SDR was a unit for all IMF Transactions.

Funding Facilities

These depend on the nature of the macroeconomic and structured problems faced by a member and the degree of condition ability. These may be segregated in to four types:

Regular Facilities	Special Facilities		
(i)Tranche Policies	(i) Compensatory and Contingency financing facity (CCFF)		
Restore Tranche Credit Tranche			
(ii) Extended Arrangement (Extended Fund Facility EEF)	(ii) Buffer stock Financing Facility		
(iii) Standard Arrangement (Enlarged Arrears Policy)	(iii) Supplemental Reserve Policy (SRP)		

Now let us proceed to know few details of above named facilities.

i. Reserve Tranche: A member has a reserve tranche position of the "IMF" holdings in its currency in the General Resources Account, excluding those holdings that reflect the member's use of IF resources, are less than its quota. A member draws full amount of its resent tranche position at anytime but subject to

only to the member's representation of a balance of payments need. A resent tranche drawing does not constitute a use of , IMF credit and is not subject to charges or to an expectation or obligation to purchase.

ii. Credit Tranches: The funds credit may be made available under four tranches, each equal to 25% of the member's quota. Purchases under the first Tranche have no performance criteria the purchases under next trenches are normally associated. With stand by arrangements covering one to two years and focus on macroeconomic policies like fiscal, monetary and exchange rate policies. Performance criteria too are laid down and implementation monitored. Drawings under credit trenches are repayable over 3.25 to 5 years.

iii. Stand-By Arrangement: Or the enlarged access _policy is used to increase resources available under this arrangement. This arrangement gives members the right to draw up to a specified amount of IMF resources during a prescribed period. The access is limited to annual limit of 68% of "Quota". (204 % over three years) and cumulative (i.e. under all policies limit of 300% of quota). The new limits expressed are broadly intended to maintain potential access to IMF financing for the membership as a whole. The limits are not targets and access to TMF financing within limits will continue to vary in each case. In exceptional circumstances, the IMF may approve stand-by or extended arrangements for amounts in excess of these limits. The new limits are intended to be temporary and will be review annually. The quota increase under the 11 th Review has enabled the IMF to finance its lending operations without recourse to borrowing. Accordingly, the General Arrangements to Borrow (GAB) in effect since 1981, under which the IMF used to supplement its quota resources with borrowed funds has been terminated. Under this drawings are normally phased on a quarterly basis with conditional release to performance criteria and the periodic review. This arrangement covers a 12-18 months period but can be extended up to three years. Repayments are to be made in 3.25 to 5 years.

Extended Arrangements or Extended Fund Facilities (EFF)

These are in support of medium term programmes extending up to three years, aimed at overcoming balance of payment difficulties arising from macroeconomic and structural problems. In this programme the performance criteria is applicable and repayments are permitted to be made over 4.25 to 10 years. It is an arrangement for longer periods and for larger amounts of financing.

Special Facilities: These include the compensatory and contingency financing facility (CCFF) and the Buffer Stock Financing facility (BSFF - not in vogue since 1984) and the Supplemental Reserve Facility (SRF) . Now let us proceed to see these facilities in some details: -

a. CCFF: Compensatory and contingency financing facility gives assistance to member countries suffering from temporary shortfalls in export earnings or excess in general import costs, arising from events beyond their control and financing problems in maintaining the momentum of reforms because of other contingencies. Repayment extends over 3.25 to 5 years. Particularly commodity exporters have used this facility. The

contingency element help members with IMF arrangements keep their adjustment programmes on track when faced with unforeseen adverse external problems.

b. Buffer Stock Financing Facility (BSFF): This provides resources to Finance contributions to approved buffer stock schemes. Repayment in this scheme is also over 3.25 to 5 years. Under this facility, the IMF helps whenever the member shows a balance of payment needs. This facility is not used for 18 years.

c. Supplemental Resource Facility (SRF): This was introduced in 1997; for member countries experiencing exceptional balance of payment problems due to large short term financing need arising out of sudden and disruptive loss of market confidence reflected in pressure .on the capital account and the member's reserves. This is normally used in cases where the size of the outflows may create risk that could threaten the international monetary system. This is an additional resource under the standby arrangement. Repayments within 1 to 1 .5 years.

d. Enhanced Structural Adjustment Facility: (ESAF) - This is mainly for low-income countries. The Structural Adjustment Facility (SAF) and Enhanced Structural Adjustment facilities are medium term programmes and are at a concessional rate of interest. While drawls can be made over three years, repayment is spread over 5.5 to 10 years. These facilities abreact strict performance criteria and quarterly monitoring. This is given by way financial support, with highly concessional rated loans, to low-income member countries facing protracted balance of payment problems.

Chapter 2

International Financial Markets

The purpose of this section is to provide a perspective on the major segments of the global financial market. We will discuss only the broad characteristics of the principal segments in terms of institutions, regulatory and supervisory features, and commonly available borrowing instruments.

For each major currency, we will look at the domestic segment and, where relevant, its offshore or euro counterpart.

The U.S.Dollar Market

The US financial market is the largest and the most versatile financial system in the world. It has the broadest range of funding options to offer and some of the most sophisticated and innovative financial institutions. The importance of this market is further enhanced by the dominant role played by the US dollar as the vehicle currency in' international transactions though over the years this has declined somewhat. At the same time, it is not a market, which is readily accessible by borrowers from developing countries like India except perhaps those with the highest ratings and sovereign guarantees.

In some ways the US financial system is perhaps the freest system. Institutions enjoy complete operational freedom in terms of products and instruments offered, pricing etc. In other ways, it is subject to a host of supervisory regulations both from the Federal and State authorities. The core of this regularity apparatus is protection of depositors and investors. The financial system consists of a network of commercial banks, domestic and foreign, investment banks and a variety of non-bank financial institutions - insurance companies, pension funds, mutual funds, savings and loan associations.

American banks are subject to perhaps the world's most stringent regulatory framework both at the Federal and state levels. The three regulatory I supervisory authorities are the Comptroller of Currency, the Federal Reserve Board (the Central Bank of US) and Federal Deposit Insurance Corporation. The strict demarcation between commercial and investment banking is still in force but likely to be removed in the near future. Deposit insurance designed to provide protection to small depositors is also a unique feature of the American banking system. Geographical expansion of branches of commercial banks is also strictly regulated.

Capital markets are subject to regulation by the Securities Exchange Commission (SEe); the emphasis is on full disclosure for investor protection. All public issues have to be registered with the SEC and the required information must be fully disclosed at the time of issue and periodically update thereafter. "Shelf registration" is possible under which the issuer prepares all the necessary documentation in advance of the issue. (Supplemental documentation must b_ provided at the time of issue)

In terms of funding options, the dollar sector, both domestic and Eurodollar offers a wide choice and considerable depth. However, due to strict regulation and disclosure requirements, the domestic dollar market is not easily accessible while the Eurodollar segment is more freely accessible.

The Japanese Yen Market

Prior to the late 1970s, the Japanese financial markets were among the world's most strictly regulated and underdeveloped market. Since then, steady expansion and deregulation of various segments has led to integration of the financial system with the international markets. Even then the Japanese financial system retains some vestiges of earlier rigidities. On the other hand, there is considerable flexibility both in the attitudes of the bankers and occasionally even in the application of rules and guidelines.

The Japanese Ministry of Finance (MoF) monitors the system closely. In the matter of laying down criteria for deciding who is eligible to borrow as well as in deciding the financial terms of an issue the MoF has substantive say. Even the European segment is monitored and to an extent regulated by the MoF.

In the domestic yen market, funding options available to foreign borrowers are bonds and loans. Samurai bonds are foreign yen bonds issued by non-resident entities in the Japanese market by way of public offering. The MoF lays down eligibility criteria in terms of minimum rating from a Japanese or U.S. rating agency, the amount and tenure of the issue. It also regulates the timing of the issue. Pricing of the issue is done in the light of market conditions and with reference to the Long Term Prime Rate (LTPR) and the yield from the seasoned Samurai Bonds with equal credit rating. Elaborate underwriting and selling arrangements have to be made and documentation prepared. The cost of the issue therefore tends to be quite high when all the underwriting fees, selling commissions and other expenses are worked in. Some reform proposals are in the offing to reduce issue costs to foreign borrowers.

The Sterling Market

London was the international capital market throughout the 19th century and first part of the 20th century. After World War II, its importance declined as exchange controls and controls on capital exports prevented the reopening of the foreign sterling bond sector, which, prior to the war, used to be accessed by a large number of foreign governments and their agencies.

The Euro sterling market can be said to have emerged in meaningful way after 1979, when exchange_ controls were lifted. However, the market remained volatile reflecting the underlying uncertainties about the British economy and gyrations of sterling against major OECD countries. The market is gradually gaining in strength since Britain's entry into the Exchange Rate Mechanism of EMS and the consequence stabilization of pound. Though in principle there are no restrictions on who can borrow and invest in sterling market, Bank of England governs access and enforces certain procedures.

In the Euro sterling sector, short term (up to five years), and medium term (between 5 and.10 years) bonds constitute one market segment while long-term bonds extending up to 20 years constitute the other market segment. In the former, a number of issues are linked to currency swaps. Sterling FRNs are also an important market particularly in combination with interest rate swaps. An equity-linked convertible bond is another vehicle.

Borrowers in all these markets have been supranational, sovereign governments, financial institutions and non-financial corporations. Borrowers with high ratings have found considerable investor interest at very attractive margin over UK government securities (Gilts). Lesser-rated corporations have also been successful in issuing short and medium term bonds.

Foreign issues in the domestic sterling market (called "Bulldog" bonds) have largely come from sovereign borrowers

The EURO market has been discussed in the next chapter.

Recent developments in International Financial Markets How did financial markets fare in this recent period? It seems sensible to rely on the latest annual report of the Bank for International Settlements. As it says, the global economy and financial system have shown enormous resilience in the face of successive shocks. Markets have had to cope with the fall in share prices, the attacks of September 11, the war against terrorism, the failure of Enron, and the collapse of Argentina's currency board. Each on its own might have had unpleasant economic side effects. Taken together their impact might have been far more serious. And these events came on top of one of the worst post-war years for world economic growth.

But the system has coped remarkably. well and a recovery is in progress, led by the United States. The financial system has responded flexibly to these recent developments. Payment and settlement systems were even able to cope effectively with the terrorist attack on the New York financial district. The operations of the US equity, fixed income and repo markets were affected for a week or so but the global system operated effectively." After the collapse of Enron, one of the world's largest energy traders, the energy market continued to function normally.

Markets responded more soberly to these developments than they had to some of the eve its of 1998. After the collapse of L TCM (Long Term Capital Management) and the Russian crisis there was a panic flight to liquidity. There was no such reaction to the events of last year and this year.

Credit has continued to flow freely, although the cost has risen to less credit-worthy borrowers. The corporate bond market was a willing provider of funds and bond market issues rose to record levels. Although this was a more costly source of funding than short-term loans, the bond issues will help ease corporate concerns for some time ahead.

The Bank for International Settlements draws attention to two other remarkable, and welcome, developments. The first was the extent to which consumers in many industrial countries gained greater access to consumer and mortgage credit. This access was used to pay down more expensive debt as well as to increase consumer spending. This development could also be observed in some of the large emerging market economies including China. In some cases the financing of the consumer credit required inflows from abroad.

The second remarkable development was also related to international capital flows. In such conditions of uncertainty, one might have expected international capital funding to be harder to obtain, but this was not the case. Among industrial nations the external funding needs of the United States were easily met. This was generally true for emerging market economies as well although, as with domestic markets, bank finance was replaced by bond finance. Also foreign direct investment continued to. Flow into a number of favored countries, including Brazil, China and Mexico. It was particularly encouraging that the serious problems in Argentina and Turkey did not cause contagion elsewhere.

As described above, this resilience to unexpected shocks was greatly helped by a rapid and appropriate policy response, particularly in the United States. But there were also undoubtedly benefits from the many years dedicated to improving financial stability. In many countries there are varied and flexible financial markets thanks to deregulation over many years. The general move towards flexible exchange rates has also helped insulate countries from problems arising elsewhere. Markets have also become much more capable of distinguishing between the credit risks attached to different borrowers. They have also become more risk averse. It is notable that the banks, in particular, behaved much more sensibly and cautiously during the 1990s, years of recovery than they had in the 1980s. There has also been an improvement in the infrastructure underpinning the global financial system. Also the associated plans for continuity and backup were vastly improved in the previous years.

So one can say that the international financial system has responded well to some severe tests.

Securitization forces banks to compete with institutional investors and other financial institutions for the business of prime borrowers. In response, banks are beginning to provide borrowers with a range of fee-earning services that facilitate the sale of debt instruments to investors. For example, banks offer borrowers note-issuing or underwriting facilities instead of loans and agree to help borrowers sell their debt instruments to investors as and when needed. Banks may also agree to purchase only the unsold portion of the debt issue. Thus, securitization is moving banks away from performing traditional banking functions, such as extending credit in exchange for periodic interest payments. In addition, securitization provides the creditor two significant benefits. Because the lender can choose whether to trade the notes or to hold them to maturity, the lender can better manage its credit limits and asset portfolio. The bank also earns a major part of its income on the underwriting facility from fees paid for its services, rather than from periodic interest payments.

Securitization is attractive to borrowers because it gives them increased financir19 flexibility. Borrowers can time the issuance of their securities to coincide with their financing needs. In addition, because more investors are willing to purchase debt securities than participate in syndicated or term loans, borrowers have more financing options available. This lowers the overall cost of financing, provided the issuer can sell the securities at an acceptable price.

But securitization also raises legal issues for borrowers. Because debt is now issued in the form of tradeable securities, debt issues are affected by applicable securities regulations as well as banking regulations. Debtors must contend with complicated and expensive registration procedures in some countries, such as the United States. Failing to satisfy these regulatory requirements results in restrictions on security sales, which can affect the price of the security.

Recent financial market developments have also blurred the distinction between different segments of the financial markets. Creditors and investors now compete with each other for good financial transactions. In addition, borrowers can now structure the best deals available in the entire market rather than focusing on specific market segments. By borrowing in the most accessible market segment and then swapping aspects of the debt to other markets, successful borrowers tailor the currency, cost, maturity, and form of their financial transactions to their financial needs.

These developments do entail some adverse consequences for developing country borrowers. Lenders and investors can be more selective in choosing their financial transactions, using swaps and other hedging techniques to pass on unacceptable risks. Given the present shortage of available financing, securitization provides flexibility and more accessible financing to creditworthy borrowers, limiting the options available to less creditworthy borrowers, such as developing countries. Borrowers can mitigate this impact by structuring financing proposals that address the risk concerns of specific groups of financial actors. It is easier for investors to assess specific project-related risks than the numerous categories of risk that can affect general purpose financing. Borrowers should also structure their funding proposals to link the timing, amount, and currency of their repayment obligations more directly to cash flow.

If developing countries are to gain access to international financing, they will need to ascertain how investors perceive the risks associated with their debt issue in relation to the risks associated with other debt issues. Investor perception can be influenced by commercial and political risk assessments of the borrower and the anticipated marketability of the debt instruments. All developing country borrowers, regardless of their dealings with international financial markets, should make an effort to understand some of the new financing techniques. By doing so, borrowers with access to international financial markets can maximize the benefits they derive from funds raised in these markets, while borrowers with no present access to these markets can apply these techniques to renegotiate existing commercial bank debt. Debt managers and their lawyers who understand the new financing techniques. May also be able to use this information in developing overall international borrowing strategies.

Notes -









International corporate finance issues

- Transactions exposure to exchange rates
- Discounted cash flow analysis in an international context
- Operating exposure to exchange rates
- Foreign direct investment and political risk
- Pricing a global IPO with foreign exchange exposure

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F825 - International Financial Management: 1

- ♦ Goals for international financial management
- Shareholder wealth maximization is our goal.
- This does not mean that we only need to be concerned about shareholders!
- The value of the firm will be affected by the actions of a broader set of stakeholders (Jensen and Meckling, JFE (1976)):
 - Shareholders
 - Bondholders
 - Management
 - Employees
 - Customers
 - Suppliers

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- Managing international risks?
- We should only consider taking actions to reduce risks ("hedge") that arise from operating in an international environment if we truly believe that this will enhance the value of the firm.
- The value of the firm is the discounted value of expected future net cash flows, where net means after the firm has paid all stakeholders (e.g., employees).
- If managing risk is going to increase the value of the firm, it either has to:
 - Reduce the discount rate (cost of capital)
 - Increase the expected future cash flows _

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F825 - International Financial Management: 1

- + History of the monetary system:
- Classic gold standard: 1875-1914
 - Gold alone is assured of unrestricted coinage There is a two-way convertibility between gold and national currencies at a stable ratio Gold may be freely exported and imported

 - The gold standard provided a 40 year period of unprecedented stability of exchange rates which served to promote international trade (U.S. dollar r emained in a \$4.84 4.90 range!).
- Interwar period: 1915-1944
- Trade in gold broke down, and countries started to "cheat."
- B retton Woods system: 1945-1972
 - U.S. dollar was pegged to gold at 335.00/oz. Other major currencies established par values against the dollar. Deviations of $\pm 1\%$ were allowed, and devaluations could be negotiated.

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F825 - International Financial Management: 1

• Flexible exchange rate regime: 1973-Present

- Jamaica Agreement (1976) » Central banks were allowed to intervene in the foreign exchange markets to iron out unwarranted volatilities.
- rron out unwarranted volatilities. » Gold was officially abandoned as an international reserve asset. Half of the IMF's gold holdings were returned to the members and the other half were sold, with proceeds used to help poor nations. » Non-oil exporting countries and less-developed countries were given greater access to IMF funds.
- Plaza Accord (1985)
- » G-5 countries (France, Japan, Germany, the U.K., and the U.S.) agreed that it would be desirable for the U.S. dollar to depreciate.
 Louvre Accord (1987)
 - G-7 countries (Canada and Italy were added) would cooperate to achieve greater exchange rate stability.
 G-7 countries agreed to more closely consult and coordinate their macroeconomic policies.

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- Current exchange rate arrangements:
- 48 major currencies, such as the U.S. dollar, the Japanese yen, the Euro, and the British pound are determined largely by market forces.
- 25 countries, including the Czech Republic, Russia, and Singapore, adopt some forms of "Managed Floating" system.
- 37 countries do not have their own national currencies!
- 8 countries, including China, Hong Kong, and Estonia, do have their own currencies, but they maintain a peg to the U.S. dollar or the German mark.
- The remaining countries have some mixture of fixed and floating exchange-rate regimes.

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F825 - International Financial Management: 1

- Will the UK join the Euro Club?
- The Mini-Case can be found in E&R, p. 55.
 Please read E&R pp. 41-47 in preparation for the discussion next time.
- Think about:
 - Potential benefits and costs of adopting the euro.
 - Economic and political constraints facing the country.
 - The potential impact of British adoption of the euro on the
 - international financial system, including the role of the U.S. dollar.
 The implications for the value of the euro of expanding the EU to include, e.g., Eastern European countries.

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F825 - International Financial Management: 1

♦ The Euro:

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- Product of the desire to create a more integrated European economy.
- Eleven European countries adopted the Euro on January 1, 1999:
 - Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal, and Spain.
- The following countries opted out initially:
 Denmark, Greece, Sweden, and the U.K.

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F825 - International Financial Management: 1

The FX market encompasses:

- Conversion of purchasing power from one currency to another; bank deposits of foreign currency; credit denominated in foreign currency; foreign trade financing; trading in foreign currency options & futures, and currency swaps
- ◆ No central market place
 - Worldwide linkage of bank currency traders, non-bank dealers, and FX brokers—like an international OTC market
- Largest financial market in the world
 - Daily trading is estimated to be US\$1.5 trillion
 - Trading occurs 24 hours a day
 - London is the largest FX trading center

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F825 - International Financial Management: 1 F825 - International Financial Management: 1 EBS-Spot 2**0** -Sep 25 14.58 • The FX market is a two-tiered market: **@**". 0 - Interbank Market (Wholesale) 10 09 11 20.20 . 22 » Accounts for about 82% of FX trading volume-mostly speculative or bid 10 EUR/USC 0.97 arbitrage transactions 89 **∢⊗⊳** \$2 JSD JSD 92 1.5611 1.5610 1.4955 91 » About 100-200 international banks worldwide stand ready to make a market in foreign exchange 6 USD/CH » Non-bank dealers account for 19% of the interbank market 52 57 123 » FX brokers match buy and sell orders but do not carry inventory and FX specialists 27 - Se - Client Market (Retail) 17 10 15 » Accounts for about 18% of FX trading volume EUR/J Market participants include international banks, their customers, non-0.97 89 bank dealers, FX brokers, and central banks 10 D 48 EUR/CH 1.46 27 - Se 10 15 17 10 10 18 a 1. © Professor Ingrid M. Werner Fisher College of Business © Professor Ingrid M. Werner Fisher College of B







Direct quotes

- US dollar price of 1 unit of foreign currency—\$ are in the numerator (foreign currency is priced in terms of dollars)
 » \$/€= 1.05 (1€costs \$1.05)
 - » \$/£ = 1.56 (1£ costs \$1.56)
- Currency changes
 - » Suppose that today, \$/€= 1.05 and in 1 month, \$/€= 1.10.
 The \$ has depreciated in value
 - Alternatively, the €has appreciated in value
 - » Suppose that today, \$/£ = 1.56 and in 1 month, \$/£ = 1.25.
 The \$ has appreciated in value
 - Alternatively, the £ has *depreciated* in value

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F825 - International Financial Management: 1

- The spot market involves the immediate purchase or sale of foreign exchange
 - Cash settlement occurs 1-2 days after the transaction
- ◆ Currencies are quoted against the US dollar
- Interbank FX traders buy currency for their inventory at the *bid price*
- Interbank FX traders sell currency for their inventory at the ask price
- Bid price is less than the ask price
- Bid-ask spread is a transaction cost

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F825 - International Financial Management: 1

Indirect quotes

- Foreign currency price of \$1—\$ are in the denominator (US dollar is priced in terms of foreign currency)
 - » €\$ = 0.9524 (\$1costs €0.9524)
 - » £/\$ = 0.6410 (\$1 costs £0.6410)
- Currency changes
 - » Suppose that today, €\$ = 0.9524 and in 1 month, €\$ = 0.9400.
 - The \$ has depreciated in value
 Alternatively, the € has appreciated in value
 - * Alternatively, the Chas appreciated in value » Suppose that today, $\pounds/\$ = 0.6410$ and in 1 week, $\pounds/\$ = 0.8000$.
 - The \$ has appreciated in value
 - The \$ has appreciated in value
 - Alternatively, the £ has depreciated in value

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- Cross-rates must be internally consistent; otherwise arbitrage profit opportunities exist.
- Suppose that:

$$\frac{\varepsilon}{\mathtt{\pounds}} \, \phi \, \frac{\varepsilon}{\mathtt{\$}} \! \times \! \frac{\$}{\mathtt{\pounds}}$$

- A profit opportunity exists. Either S(€£) is too high or S(€\$) or S(\$/£) is too low.
- How does this work?
- Sell high and buy low.

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F825 - International Financial Management: 1

- Forward market involves contracting today for the future purchase or sale of foreign exchange
- Forward prices are quoted the same way as spot prices
- ♦ Denote the forward price maturing in N days as F_N - i.e. $F_{30}(\$/\pounds)$, $F_{180}(\$/\bigoplus)$, $F_{90}(€ ¥)$, etc
- The forward price can be:
 - Same as the spot price
 - Higher than the spot price (at a premium)
 - Lower than the spot price (at a discount)

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F825 - International Financial Management: 1

- You observe the following quotes at 3 banks
 Bank1: S(\$/¥)=0.0084; Bank2: S(\$/€)=1.0500; Bank3: S(€/¥)=0.0081
 - The implied cross rate between Bank 1 and 2 is: S(€¥)=0.0080.
 - You have ¥1,250,000. What should you do?
 - » Go to Bank 3. Convert ¥1,250,000 to €10,125.00 @ 0.0081.
 - » Go to Bank 2. Convert €10.125 to \$10.631.25 @ 1.0500.
 - » Go to Bank 1. Convert \$10,631.25 to ¥1,265,625.00 @ (1/0.0084).
 - The initial ¥1,250,000 becomes ¥1,265,625. You earn a risk-free
 - profit of ¥15,625, or 1.25%.
 - This is a simplified example

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F825 - International Financial Management: 1

♦ Wrap-up:

- Increased globalization offers valuable investment opportunities for firms, but comes at the cost of a operating in a more complex and turbulent environment.
- The foreign exchange market is by far the largest financial market in the world.
- Currency traders trade currencies for spot and forward delivery.
- Exchange rates are by convention quoted against the U.S. dollar, but cross-rates can easily be calculated from bilateral rates.
- Triangular arbitrage forces the cross-rates to be internally consistent.
 The euro has enhanced trade within Europe, and the currency has the potential of becoming a major world currency.

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International Monetary Fund and Finance Systems

Objectives

Upon completion of this Lesson, you should be able to:Understand the mechanism of International Monetary Fund and Finance Systems.

International Monitary and Financial System

The economics of most Countries suffered heavily as a result of the World Wars in the twentieth century. There was severe unemployment and depression and large adverse balance of payments in respect of most countries. Many countries adopted the route of devaluation to give a face lift to their sagging economies. As many countries adopted the route of devaluation, there was no desired effect and international trade suffered very badly. In order to restore international trade and the confidence of the countries, United States made a proposal at a conference held at a place called Bretton Wood, New Hampshire in USA. The country heads of 45 governments accepted this. Thus, a foundation was laid for International Monetary System. They agreed up on the Articles of Agreement of a new international Organization in July 1944. The International Monetary fund came in to existence in Pec- 1945. The World Bank (International Bank for Reconstruction and Development) was also formed as a part of deliberation held at Bretton Woods.

The Conference took place while the Second World War was still on and most of the European Countries' economies were affected very badly, they were devastated. The US was the major industrial power whose economy was not affected. It was on in this background that the World Bank and the International Monetary Fund (IMF) was formed for international Monetary Cooperation.

Apart from the damage done to the word economy by the War, the experience of the pre-war decades showed the need for international monetary Co operation. The Gold Standard, under which a country's Value of Currency was fixed in terms of gold (and money in circulation was limited to the availability of gold with the country's treasury or the Central Bank), had worked reasonably well from the 19th Century of the first Word War. Even the exchange rates between currencies were decided on the basis of gold exchange standard. Gold was the means of international settlement for all transactions of receipts and payment between the countries. A country was said to be adopting to Gold Standard provided: -

i. The Country's Central Bank agreed to buy back their currency at a certain rate of gold,

ii. Melting down of gold was freely allowed

iii. There was unrestricted movement of gold (i.e. import and/ or export) $% \left(\left({{{\mathbf{r}}_{i}}} \right) \right)$

iv. The total money supply in the country was determined by the quantum of gold reserves in the country.

Under Gold Standard each country had to redeem its currency for gold. The essential feature of this system was that Governments gave an unconditional guarantee to convert their currency (including paper currency) or fiat money in to gold at a predetermined rate at any point of time, on demand.

The Gold Standard was followed in its classical form from 1870 to 1914. While United Kingdom and United States were on the Gold Standard from 1821 and 1834 respectively, most of the countries had joined the system by 1870.

During the period of 19th Century to World War era, UK was the world's main trading and lender country. However, the war weakened its economy so much that it could not play this role any longer. The USA, whose economy was not affected by the war, became the topmost economy in the world. It accumulated huge stocks of gold and took over the prominent role played earlier by U.K. But the USA got a big jolt when in late 1920 Stock Market crash pushed the economy in the recession. American imports fell and the consequent trade deficits in European countries had to be financed by export of gold. This resulted in a drop in domestic money supply and deflation (reverse of inflation). In order to protect their own domestic economies, many countries adopted competitive devaluation, multiple exchange rates, and other economic measures. The final blow came in the form of the Great Depression of the late 1920s and 1930s that started in the U.S. and spread to other parts of the world. The effect of USA raising interest rates and trying to deflate its economy was devastating for other countries. The capital started flying from UK to USA and other countries economies dependent on export to USA found their income falling drastically due to economic barriers put up by USA and this reduced the demand. These countries got into a vicious circle low employment -low earnings-low demand - still lowers employment. The European countries started exchanging their holding of Pound in to gold. As a result, UK's gold reserves started depleting fast. Everyone started a run on United Kingdom's gold reserves (i.e. trying to exchange its pound holding in to gold) and UK was not able to fulfill everyone's commitments and it therefore abandoned the system in 1931 so as to save its economy from disaster. As UK came out of Gold Standard System, pressure mounted on USA's Dollar, which was the only currency convertible on to Gold. The pressure ultimately resulted in the USA also going out of the Gold Standard in 1933. This experience of the 1930, underlined the importance of International Monetary Co-operation.

Thus, the state of the world economy towards the end of the Second World War and the experience of the previous decades emphasized a greater degree of international monetary cooperation than before. Hence the situation was ripe for the success of the Bretton Woods conference which evolved a new international monetary system which lasted without much change for the next two and half decades. Only the unique set of circumstances at that time could have persuaded the sovereign governments to give up a part of their sovereignty in the interest of international monetary co-operation.

As a result of the Bretton Woods system two new institutions were established, namely the IMF (International Monetary Fund) and the IBRD (International Bank for Reconstruction and Development), popularly known as World Bank. IMF was supposed to be more powerful and important than World Bank. It was decided that the member countries would meet under this institutions and take decisions together on important issues, which might affect world trade and the world monetary system. The other very important function of these institutions was to provide funds to member countries to help them tide over temporary balance of payments default.

Notes -

Points to Ponder

The International Monetary Environment

International Financial Management

Dr. A. DeMaskey

Learning Objectives

- * What different exchange rate systems are used by various governments?
- * What are the characteristics of an ideal currency?
- * What currency regime choices do emerging market countries have?
- * How was the euro created and what are j
- * What are the origins and proposed memanisms to deal with various emerging market currency crises?

The International Monetary System (IMS)

- * Official Part of the International Financial System
- * Presents a Structure within which
 - \downarrow Exchange rates are determined
 - \checkmark Trade and capital flows are accommod
 - \downarrow Balance of payments adjustments are made
- Includes instruments, institutions, and agreement which link together the vertice financial and commodity markets

History of the International Monetary System

- * Gold Standard (1821-1914)
- * Gold Exchange Standard (1925-1931)
- * Bretton Woods System (1944)
- ◆ Fixed Rate System (1945-1973)
 ↓ Fixed Rates with Narrow Bands
 ↓ Fixed Rates with Wider Bands
- Eclectic Currency Arrangement present

Eclectic Currency Arrangement

- * Free or Clean Float (March 1973)
- * Managed or Dirty Float (January 1976)
- * Joint Float European Monetary System (March 1979)



Gold Standard (1821-1914)

- * Gold is the dominant international money
- Currencies are valued in terms of a gold equivalent
- * All players had to adhere to the rules of the game
- * Government intervention
- International reserves
- * Limited growth of the money su
- * Automatic balance of payment ad

Gold Exchange Standard (1925-1931)

- * Each currency is freely convertible into gold at a fixed rate but also into other currencies at relatively stable prices.
- * Greater convenience for international traders and investors.



Smithsonian Agreement (1971-1973) Fixed Rates with Wider Bands

- * Dollar per gold value was changed to \$38.02
- * Allow currencies to fluctuate within a wide band of ±2.25%.



Eclectic Currency Arrangement

- * Free or Clean Float (March 1973)
- * Managed or Dirty Float (January 1976)
- * Joint Float European Monetary System (March 1979)



Eclectic Currency Arrangement

- * Free or Clean Float (March 1973)
- * Managed or Dirty Float (January 1976)
- * Joint Float European Monetary System (March 1979)





Currency Board System

- * Argentina (1991)
- Fixed Rate System
- *100% Reserve System
- * Monetary Policy and Money Supply
- * Dollar-Denominated Accounts (in endifferential)
- * End of Argentine Currency Boar

Dollarization

- ✤ Use of U.S. dollar as the official currency
 ↓ Panama, Ecuador, Liberia
- * Requires change in structure and responsibilities of monetary policy authorities
- * Arguments for:
 - ↓ Removes currency volatility against dollar
 ↓ Expectations of greater economic integration
- Argument against:
 - ↓ Loss of sovereignty over monetary police
 - ↓ Loss of power of seignorage
 - \checkmark Loss of role of lender of last resort

Currency Board System

- Characteristics
 - ↓ No Central Bank
 - ↓ No Discretionary Monetary Policy
- * Advantages
 - ↓ Promotes price stability
 - ↓ Responsible fiscal policy
- Disadvantages
 - \checkmark Sharp contraction in money supply
 - ↓ High interest rates



The Birth of a European Currency: The Euro

* European Monetary System

- ↓ Target Zone Arrangement
- ↓ Pegged Exchange Rate System
- ↓ Joint Float Agreement
- ✤ European Monetary Union
 ↓ Why Monetary Unification
 - why Monetary Unit
 - \downarrow Launch of the Euro
 - \checkmark How to Achieve Monetary Unific

Target Zone Arrangement

- * Member countries maintain fixed exchange rates within a flexible range, called <u>target</u> <u>zone</u>, among themselves.
- * Each member's currency is <u>pegged</u> to all the other members' currencies.

again

* The group as a whole <u>floats joint</u> the rest of the world. Summary of Historical Events Leading Up to EMU



The EMS: A Joint Float Agreement

- * EMS members peg their currencies to each other.
- Exchange outside the EMS is subject to a managed float.
- * Objective: Exchange rate stabili



Maastricht Treaty (December 1991)

- * Common European Currency Euro
 - ↓ Fixed rate system
 - \downarrow Replaces individual national currencies
- ★ European Central Bank (ECB)
 ↓ Issues common currency
 ↓ Conducts monetary policy



The Maastricht Treaty Criteria

- Inflation not to exceed that in three EU states with the lowest rate by more than 1.5%.
- Long-term interest rates not to exceed that in three EU states with the lowest inflation rates by more than 2%.
- * The annual fiscal deficit not to exceed 3% of GDP
- * Cumulative **public debt** not to exceed 60[°] cor GDP.
- A country must have maintained its membership in the EMS for two years without having initiat devaluation.

Monetary Unification

- * Why Monetary Unification?
 - ↓ A single currency area called *euro zone*↓ Competing globally
- * How to Achieve Monetary Unification
 - ↓ Fiscal policy
 - ↓ Monetary policy
 - \downarrow Fixing the value of the euro
- * Performance of The Euro

Milestones on the Road to Monetary Union

* Dec. 31, 1999

Euro exchange rates are fixed. ECB takes over monetary policy for all eleven EMU nations.

all EMI

- * Jan. 4, 1999
- Stock and bond markets convert to euro.
- 1999-2001
 Foreign exchange transactions denominated in a
 Jan. 1, 2002 (E-Day)
- Euro notes and coins must be in circulation member states. **July 1, 2002**
 - National currencies no longer legal tender.

Useful Websites

- A table showing the currencies of the world and their exchange rate arrangements can be found at:
 ↓ <u>http://pacific.commerce.ubc.ca/xr/currency_table.html</u>
- $\ensuremath{\ast}$ For more information on the euro, visit:
 - ↓ <u>http://www.euro.ecb.int/en.html</u>
 - ↓ <u>http://www.ecb.int/</u>
 - ↓ <u>http://pacific.commerce.ubc.ca/xr/euro/</u>



Emerging Market Currency

Crises

- Currency Crises
 - ↓ Mexican crisis of 1994-1995
 - ↓ Asian crisis of 1997
 - ↓ Russian crisis of 1998
 - ↓ Brazilian crisis of 1998-1999
- * Transmission Mechanisms
 - ↓ Trade Links
 - ↓ Financial System



Emerging Market Currency Crises

* Origins

- ↓ Moral Hazard
- ↓ Fundamental Policy Conflict
- * Policy Proposals
 - ↓ Currency Controls
 - ↓ Free Float
 - ↓ Fixed Exchange Rates



Fixed Exchange Rate System

Objectives

Upon completion of this Lesson, you should be able to:

Understand the mechanism of Fixed Exchange Rate System.

The Fixed Exchange Rate System

The exchange rate is defined as the value of one currency in terms of another. There are different ways in which the exchange rates can be determined. Exchange rates may be fixed, floating or with limited flexibility. Different systems have different methods of correcting the disequilibrium between international payments and receipts; one of the basic functions of these mechanisms is to correct the disequilibrium.

The IMF drew up a detailed code of conduct for member countries, which included rules about exchange rates. Article IV of the IMF provided for fixed exchange rates and member countries agreed not to change these rates except in consultation with the IMF and the fund would agree to such a change only in the event of a fundamental (i.e. not temporary) disequilibria in the external payments position of a member country. The initiative for changing the exchange rate had to be taken by the member country. The code of conduct also aimed at furthering a liberal multinational system of international payments and convertibility rate regime of currencies.

In pursuance of the fixed exchange rate regime, each country agreed upon a certain par value for its currencies measured in terms of gold. The United States as the strongest economy at the end of the World War, undertook to convert dollars in to gold at a fixed price of US dollars 35 per ounce of gold.

One of the first achievements of the IMF was to get member countries a par value for their currencies and to eliminate over the first two decades the multiple exchange rate systems, which some of the member countries have earlier adopted. The fixed exchange rate system brought in to being by the IMF gave considerable stability to the international monetary system and led to an unprecedented growth in world trade.

Currencies other than the dollar, while having a national or theoretical, gold content, were not "convertible" in to gold. However, the gold content established a par value for each currency against the US dollar and the Central Bank of each member country was obliged to intervene in the foreign exchange market (by buying or selling dollars against local currency) to ensure that the actual rate stayed within 1 % of the parity.

In case of the fixed exchange rate system, as the name itself suggests the value of the currency in terms of other is fixed. The Governments or the Central Banks of the respective countries determine these rates. The fixed exchange rates result from countries pegging their currencies to either some common commodity or to some particular currency. There is generally some provision for correction of these fixed rates in case of a fundamental disequilibrium. Example of this system is the gold standard of the Bretton Wood System.

Problems Faced by the Fixed Exchange Rate System

- i. The world liquidity measured in terms of the aggregate reserves of the member countries, was not keeping pace with the growth in world trade. This led to apprehensions that the growth in world trade would be hampered if measures were not taken to improve and increase liquidity.
- ii. Another problem was due to the sharp increase in dollars held by other member countries of the IMF as a result of the serious doubts about the ability of the U.S Government to meet its commitment to convert dollars into gold at a fixed rate of US \$ 35 per ounce of gold. By 1960, the U.S. external liabilities exceeded its sharp increase in out flow of dollars from U.S. Thus Central Banks of other countries were worried about U.S government's ability to convert dollars in to gold, if all these approached for conversion.
- iii. The third problem was the result of the liquidity imposed by the fixed exchange rate system adjustments in the par values not affected rapidly enough to reflect changes in economic fundamentals. In case of countries having continued current account surplus, this was very much common - i.e. delay in adjustment in par values & the proposal for exchange in the par values had to come from the concerned member country.

Failure of Fixed Rate System

The above referred problems in the fixed rate system were not found for any easy solutions. A liquidity problem of a member country could be solved by creation of special drawing rights (SDR) but finding solutions for above referred problems were not easy. The ability of the U.S government to exchange dollars for gold was under tremendous pressure and though U.S government could exert some pressure on them to refrain away from conversion, some others like France insisted for conversion. In 1968, U.S restricted its commitment to convert dollars into gold at a fixed rate and later in 1971 the convertibility was totally withdrawn. This saw the end of fixed rate system after in operation for almost 25 years. No efforts to succeed in revival of the system. An attempt was even made in 1971 to bring back this system without the balancing of gold. But it was not successful and it gave rise to floating rate system.

European Monetary System

Objectives

Upon completion of this Lesson, you should be able to:

Understand the mechanism of European Monetary System.

The European Monetary System (EMS)

One of the more important developments in the international monetary scene in the floating rate era was the emergence of the European Monetary System (EMS) in 1979. For the European countries, particularly by the 12 countries who are the members of the European Community (EC), intra-community trade was very important. Freely floating exchange rates would have an adverse impact on the growth of community trade.

The first response of the European countries to the collapse of the fixed exchange, rate system was the so called "currency snake" limiting inter se movements of currencies. This expression came into vogue to emphasis that inter se movements could be on either side of the parity, or within a" tunnel" of permitted changes - hence the term '_snake in the tunnel" to describe the mechanism. However, the oil price slide of 1973 led to higher inflation differentials and current account imbalances in the European countries with the result that several countries withdrew from the "snake". The EMS was in effect an evolution of the earlier currency snake, but unlike the snake, limited to members of the EC.

One distingui9hing feature of the EMS was the introduction of the European Currency Unit (ECU). The ECU, like the SDR, is a basket of the member countries currencies. The weights given to different EC currencies reflect the proportion of the country's GNP in the EC gross product and its share of the intra-community trade. The .EMS arrangements provide for a quinquennial review of the composition of the ECU basket. (It is of course ensured that the change in composition would not affect the value of an ECU) The ECU has since been replaced by the "EURO" but the last basket was:

1 ECU = DM 0.6242 + French Franks 1.332+ British Pound 0.08784 + Dutch Guilder 0.2198 + Italian Lira 151.8 + Belgian Franc 3.301 + Luxemburg Franc 0.13 + Danish Kroner 0.1976 + Irish Punt 0.00852 + Greek Drachma 1.44 +Spanish Peseta 6.885 + Portuguese Escudo 1.393. (Currencies of newer member of the EEC like Sweden. Austria and Finland were not in the ECU basket.)

While all the EC currencies were represented in the composition of the ECU, not all currencies participated in the exchange rate mechanism (ERM) The ERM established a party grid with a band for the permissible movement of exchange rates between each pair of currencies. The band was +/- 2.25% for most currencies; a few had opted for a wider +/- 6% band. The Matrix was in force at that time, which was related to be band. If an exchange rate between ERM and participating currencies reaches either limit, both the Central Banks were obliged to buy (and sell) the two currencies for unlimited amounts to ensure that the limit is not breached. If, for example the French Franc fell to a level below the matrix Demark both the Bank of France and the German Bundesbank were required to buy francs and sell DM to ensure that rate remains within the band.

While the grid showed the theoretical band of permitted fluctuations in existence before Sept. 1992 (4.5% for narrow band currencies and 12% for wide band currencies). in practice the permitted bilateral band was narrower; this is because the effective limits were set by the strongest and weakest currencies in the grid, the former limiting the fall and the latter capping the rise. For example the theoretical band for the pound as shown in the grid is DM 3. '1320/ DM 2.7780. Consider that abound is equal to say DM 2.9390 and Spanish Peseta (PST) 185 (either case it is below the party), giving a PST/DM rate of 62.94658. (At these hypothetical rates, the Peseta is stronger than its par level against the Mark). If the Peseta is the strongest currency in the ERM Grid, the effective floor rate for the pound becomes DM 2.86894 it tails below level (and there is no change in the Peseta! Mark rate) the pound will breach its floor against the Peseta (180.59). In short, for the countries participating in the ERM, the EMS was a system of relatively' stable but adjustable exchange rates. Such adjustment of the Central Value can be done with the government of all member countries. While the number of changes in par values had a larger frequency in the earlier years of the EMS, by 1991 the situation had changed and the EMS had succeeded in creating an environment of interest stability to the EC currencies necessary for the growth of trade and further integration of the community.

The exchange rate mechanism also monitors the so called "Indicator of Divergence" in terms of the ECU well before the theoretical fluctuation limits were reached. The indicator was "on" when a currency changed its value in ECU terms by +/-0.75 %. It is expected that, when this happens, the authorities in the country concerned would begin to take steps to correct the situation (e.g. by offering changes in the interest rate).

In practice, quite often currencies touched the mandatory intervention points before the divergence indicator gets turned on because of the way the mechanism operates as described in the above paragraphs.





CHAPTER OVERVIEW

- I. ALTERNATIVE EXCHANGE RATE SYSTEMS
- II. A BRIEF HISTORY OF THE INTERNATIONAL MONETARY SYTEM
- III. THE EUROPEAN MONETARY SYSTEM AND MONETARY UNION
- IV. EMERGING MARKET CURRENCY CRISES



ALTERNATIVE EXCHANGE RATE SYSTEMS

- 2. Forces influenced by
 - a. price levels
 - b. interest rates
 - c. economic growth
- 3. Rates fluctuate randomly over time.

ALTERNATIVE EXCHANGE RATE SYSTEMS

- C. Target-Zone Arrangement 1. Rate Determination
 - Market forces constrained to upper and lower range of rates.
 - b. Members to the arrangement adjust their national economic policies to maintain target.

ALTERNATIVE EXCHANGE RATE SYSTEMS

- B. Managed Float ("Dirty Float")
 - Market forces set rates unless excess volatility occurs.
 - 2. Then, central bank determines rate.

ALTERNATIVE EXCHANGE RATE SYSTEMS

- D. Fixed Rate System1. Rate determination
 - a. Government maintains target rates.
 - b. If rates threatened, central banks buy/sell currency.
 - c. Monetary policies coordinated.

ALTERNATIVE EXCHANGE RATE SYSTEMS

- E. Current System
 - 1. A hybrid system
 - a. Major currencies: use freelyfloating method
 - Other currencies move in and out of various fixed-rate systems.

A BRIEF HISTORY

- II. The Classical Gold Standard (1821-1914)
 - Major global currencies on gold standard.
 - Nations fix the exchange rate in terms of a specific amount of gold.

1

PART II. A BRIEF HISTORY OF THE INTERNATIONAL MONETARY SYSTEM

I. THE USE OF GOLD

- A. Desirable properties
- B. In short run: High production costs limit changes.



A BRIEF HISTORY

- 2. Maintenance involved the buying and selling of gold at that price.
- Disturbances in Price Levels: Would be offset by the pricespecie*-flow mechanism.
- * specie = gold coins

GLOBAL FINANCIAL MARKETING

A BRIEF HISTORY

- a. Price-specie-flow mechanism adjustments were automatic:
 - When a balance of payments surplus led to a gold inflow; 1.)
 - 2.) Gold inflow led to higher prices which reduced surplus;
 - 3.) Gold outflow led to lower prices and increased surplus.

A BRIEF HISTORY

- Currencies devalued in 1931 C. - led to trade wars.
- Bretton Woods D. Conference
 - called in order to avoid future protectionist and destructive economic policies



A BRIEF HISTORY

- III. The Gold Exchange Standard (1925 - 1931)
 - Only U.S. and Britain allowed to hold gold reserves.
 - Others could hold both gold, dollars Β. or pound reserves.

A BRIEF HISTORY

V. The Bretton Woods System (1946-1971)

- U.S.\$ was key currency; valued at \$1 - 1/35 oz. of gold.
- All currencies linked to that price in a fixed rate system.

A BRIEF HISTORY

- Exchange rates allowed to fluctuate by 1% above or below initially set rates.
- B. Collapse, 1971
 - 1. Causes:
 - a. U.S. high inflation rate
 - b. U.S.\$ depreciated sharply.

A BRIEF HISTORY

B. OPEC and the Oil Crisis (1973-774)

- 1. OPEC raised oil prices four fold;
- 2. Exchange rate turmoil resulted;
- Caused OPEC nations to earn large surplus B-O-P.

1

A BRIEF HISTORY

V. Post-Bretton Woods System (1971-Present)

 A. Smithsonian Agreement, 1971: US\$ devalued to 1/38 oz. of gold.
 By 1973: World on a freely floating exchange rate system.

A BRIEF HISTORY

- 4. Surpluses recycled to debtor nations which set up debt crisis of 1980's.
- C. Dollar Crisis (1977-78)
 - 1. U.S. B-O-P difficulties
 - 2. Result of inconsistent monetary policy in U.S.

A BRIEF HISTORY

- 3. Dollar value falls as confidence shrinks.
- D. The Rising Dollar (1980-85)
 - 1. U.S. inflation subsides as the Fed raises interest rates
 - 2. Rising rates attracts global capital to U.S.

A BRIEF HISTORY

- Louvre Agreement (1987) G-7 agree to support the falling US\$.
- F. Recent History (1988-Present) 1. 1988 US\$ stabilized
 - Post -1991 Confidence resulted in stronger dollar
 - 3. 1993-1995 Dollar value falls



A BRIEF HISTORY

- 3. Result: Dollar value rises.
- E. The Sinking Dollar: (1985-87)
 - Dollar revaluated slowly downward;
 - Plaza Agreement (1985)
 G-5 agree to depress US\$ further.



I. INTRODUCTION

- A. The European Monetary System (EMS)
 - 1. A target-zone method (1979)
 - 2. Close macroeconomic policy coordination required.

THE EUROPEAN MONETARY SYSTEM

B. EMS Objective:

to provide exchange rate stability to all members by holding exchange rates within specified limits.

THE EUROPEAN MONETARY SYSTEM

- 1. Exchange rate mechanism (ERM)
 - each member determines mutually agreed upon central cross rate for its currency.

THE EUROPEAN MONETARY SYSTEM

- C. European Currency Unit (ECU)
 - a "cocktail" of European currencies with specified weights as the unit of account.

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THE EUROPEAN MONETARY SYSTEM

 Member Pledge: to keep within 15% margin above or below the central rate.

THE EUROPEAN MONETARY SYSTEM

- 2. Currency Crisis of Sept. 1992
 - a. System broke down
 - b. Britain and Italy forced towithdraw from EMS.

THE EUROPEAN MONETARY SYSTEM

- H. Maastricht Treaty
 - 1. Called for Monetary Union by 1999 (moved to 2002)
 - 2. Established a single currency:

the euro

THE EUROPEAN MONETARY SYSTEM

 G. Failure of the EMS: members allowed political priorities to dominate exchange rate policies.

THE EUROPEAN MONETARY SYSTEM

- 3. Calls for creation of a single central EU bank
- 4. Adopts tough fiscal standards

THE EUROPEAN MONETARY SYSTEM

- I. Costs / Benefits of A Single Currency
 - A. Benefits
 - 1. Reduces cost of doing business
 - 2. Reduces exchange rate risk

PART IV. EMERGING MARKET CURRENCY CRISES

- I. Transmission Mechanisms
 - A. Trade links contagion spreads through trade
 - B. Financial System
 -more important transmission mechanism
 - -investors sell off to make up for losses

THE EUROPEAN MO

THE EUROPEAN MONETARY SYSTEM

B. Costs

1. Lack of national monetary flexibility.

EMERGING MARKET CURRENCY CRISES

- II. Origins of Emerging Market CrisesA. Moral hazard
 - B. Fundamental Policy Conflict

EMERGING MARKET CURRENCY CRISES

- III. Policy Proposals for Dealing with Emerging Market Crises
 - A. Currency Controls
 - B. Freely Floating Currency
 - C. Permanently Fixed Exchange Rate

Economic and Monetary Union

Objectives

Upon completion of this Lesson, you should be able to:

Understand the mechanism of Economic and Monetary Union.

Let us see the definition of EMU

Definitions of Economic and Monetary Union (EMU) on the Web:

The irrevocable fixing of exchange rates between member currencies and their replacement by a single European currency, the euro. The euro is to be issued by a future European central bank, to be independent of political control and federal in nature. All countries which fulfil the five convergence criteria in 1998 will proceed to EMU in 2000. The UK and Denmark have secured opt-outs from EMU. Sweden's joining is subject to ratification by parliament.

www.ozforex.com.au/Glossary2.htm

The formation of a single European Currency on 1 January 1999 for most countries within the EU, but excluding the UK, among others.

www.apacs.org.uk/about_apacs/htm_files/chaps9.htm

Responsible for economic integration of the EU member states by lifting restrictions on movements of capital across internal EU borders.

www.historyteacher.net/EuroProjects/DBQ1998-1999/ Glossary26-99.htm

The process of economic and monetary integration within the EC. Economic Union focuses on the coordination of Member States' economic policies. The third and final stage of Monetary Union started on 1 January 1999 with the irrevocable locking of the exchange rates of the currencies of the EU Member States and the introduction of a single currency, the euro. Within EMU, monetary policy is determined and implemented by the ESCB. The formation of EMU has been provided for in the EC Treaty.

www.dnb.nl/english/e_woordenlijst/e_woordenlijst.htm

Economic and Monetary Union

Bolstered by the successful operations of the ERM - parities had almost remained unchanged for 5 years from early 1987, the EC started considering a major structured change, namely Economic and Monetary Union, or a single currency for all EC countries, far reaching proposals on transition to a single currency were adopted at a summit meeting of the EC heads of government held in Maastricht in the Netherlands in Dec. 1991. The proposals envisaged achievement of monetary union in three stages. Stage I began on 1 st July, 1990 (i.e. even before Maastricht) with the free movement of capital in EC. Stage II began in 1 st January, 1994 and envisaged the establishment of a European Monetary Institute (Precursor to the eventual formation of a European System of Central Banks). Over stages I & II, member governments would seek to achieve greater convergence of their economies under designated criteria, inflation, interest rate, exchange rate stability within the ERM, and the sustainability of the fiscal balance. At the start of Stage III (earliest in 1997 but not later than January 1 st, 1999), member States, which would meet the convergence criteria, would irrevocably fix inter se exchange rates and proceed towards a single currency. Other members should join later as and when they meet the criteria under Maastricht, the U.K. has retained the right not to join the monetary union.

Recent Developments

(Post - Maastricht Developments)

It appeared that the political leaderships in European countries were too far ahead of the people in these countries in setting the ambitious goals in Maastricht. In mid 1992, Denmark rejected ratification of Maastricht treaty. U.K. had already reserved its right to opt out and had not joined the monetary union. They had chosen to join ERM at a very high rate of D.M. 2.95. All these developments showed that monetary union might have difficulties.

In 1992, the strains in the system worsened, as the cost of German unification mounted and led to higher budget deficits. The resulting inflation led the Bundesbank to adopt a tight monetary policy and high interest rates. The ERM had not allowed for such major structured shocks, particularly in the biggest European economy, whose currency was also the anchor for the system. At the political level, the finance ministers forgot that, after all, the ERM was a system of fixed but adjustable parities and put political prestige behind defending the parities. This meant that European countries had to allow the German monetary policy of keeping interest rates high and in country after country this led to show lower growth, recession and growing unemployment.

The speculators observed the contradictions within the system very clearly and in 1992, first targeted the two currencies weakest on the fundamentals i.e. British Pound and the Italian Lira. There was lot of intervention from Central Bank of these countries at very high levels. When this did also not succeed, the Lira and the Pound were forced to withdraw from the ERM and speculators were benefited. Withdrawal of the pound and the Lira only seemed to help the spectaculars.

The key exchange rate was between the French Franc and D.M. The French I German combination was the foundation of ERM as well as the move towards a single European currency. Besides on, economic fundamentals, there was absolutely no reason why the French should come under pressure against the mark; inflation was low and the current account in surplus. Unemployment was at politically unacceptable levels and speculators were indicating that French Franc had no political will to contribute with the highest interest rates and continue its policy of a strong Franc. Both, Central Banks of France and Germany had successfully defended the parity for a higher time from speculative pressures, In late July 93 the position became unsustainable. The trigger for the speculative frenzy was the failure of the Bundesbank to cut discount rate in July 93 as expected by most analysts and players in the market. The big difference rendered the ERM futile.

Emergence of Euro

In 1996 inter se exchange rate stability got restored and governments in the European Union countries made serious efforts to meet the convergence criteria by 1997. Financial markets had started considering EMU as a concluded deal. 'As the inflation was falling, so also fall in interest rates in various currencies started converging. In 1998 out of 15 member countries in EU, eleven (Germany, France, Belgium, Netherlands, Luxemburg, Italy, Spain, Portugal, Austria, Finland, Ireland) declared that they have met the convergence criteria and committed themselves for a single currency. The remaining four Le. UK, Sweden, Denmark and Greece were not participating either by choice or due to non-compliance of convergence criteria (e.g. Greece). However the 11 countries have agreed for single currency as EURO and it was introduced from 1.1.99. Euro conversion rates as agreed up on were as under:

Conversion 1 Euro =

Country	Currency	Conversion rate
Austria	Schilling -ATS	13.7603
. Belgium	Franc - BEF	40.3399
Finland	Markka - FIM	5.94573
France	Franc - FF	6.55957
Germany	Mark- DM	1.95583
Ireland	Punt - IEP	0.787564
Italy	Lira- ITL	1936.27
Luxemburg	Franc - LUF	40.3399
Netherlands	Guilder - NLG	2.20371
Portugal	Escudo - PTE	200.482
Spain	Peseta - ESP	166.386

All the obligations have now been converted in Euro. The currency notes & coins of participating countries were continued up to June 2002 and new Euro coins/ notes has started circulation from Jan, 2002. After 30/6/2002, the currency notes and coins of individual participating countries have ceased to be legal tender.

The Group of Seven

As mentioned earlier, the IMF administered fixed exchange rate system collapsed in the early 1970s. In effect, since then, roughly

up to the mid 1980s, there was no international control over exchange rate movements. The 1970s were also witness to the unprecedentally large flows of money internationally, caused primarily by the very large and successive increases in the price of oil, engineered by the OPEC countries. In theory, the IMF's responsibility for surveillance over exchange rate movements continued, but in practice the organization was left with little power to influence the movements. The floating rate era consequently witnessed huge gyrations in the exchange rates for the major currencies.

In the 1980s, while the price of oil eased, the large movements in exchange rates continued as the forex markets grew in size very rapidly. With the removal of exchange controls over the movement of capital in most of the industrial countries, and aided by the communications revolution, capital movements fast moved the international trade in goods and services and led to continued volatility in exchange markets. The tight monetary policies introduced in the early 1980s in the United States (USA) to squeeze out inflation, led to very high interest rates and a flood of non-resident money into dollars. As a consequence, by early 1985, the dollar had reached dizzy heights on the world markets, way beyond its purchasing power parity or other fundamentals. Many industries in USA became uncompetitive with imports and there were growing political pressure towards trade protectionism. To stop the tide of protectionism throughout, measures had to be taken to do something about the exchange rates. In 1985, therefore the United States took the lead in convening a meeting of the finance minister's and Central Bank governors of the five major industrial countries namely, the USA. Japan, West Germany, France and U.K. The so-called group of five had been in existence since 1974 but had not been very active on exchange rate issues. The GS (became Group 7 after the inclusion of Italy and Canada) gave a call for bringing the exchange rate of the US \$ down and promised to intervene in the market in order to achieve the objectives. In the Second half of the 1980s, the group of seven has been broadly successful in achieving its objectives, firstly to bring the external values of the US currency down and after this was achieved to bring some stability to exchange rates.

Special Drawing Rights (SDRs): The Liquidity Problems: (SDRs)

The liquidity problem was tackled reasonably well through the creation in 1969, after six years if intensive effort of a reserve asset "to be allocated by the fund in proportion to members quotas". This was called the special Drawing Rights (SDR) mechanism. (We have earlier studied in detail about SDR). Under the SDR mechanism a member country, experiencing a deficit could well, with the approval of IMF, its SDR allocation to a surplus country designated by the IMF which was up to certain limits, obliged to buy the SDRs in exchange for its own country. The deficit country could therefore use the SDR allocation to improve its international liquidity. Successive allocations of SDRs under the scheme totaled SDR 21.4 bn. as of June 1992 (this figure to be rechecked with date if available).

For determining the value of one SDR, a basket of currencies, which is subject to quintessential review, was used. The basket currently used was based on the last review as on 1/1/1996.

(With DEM and FRF replaced by the euro after introduction of the single European currency on 1/1/1999) as under:-

SDR 1.00 = US \$ 0.582 + Euro 0.3519 + JPV 27.2 + GBP 0.1050

The current basket was to remain in effect until 31/12/2000

At the exchange rates ruling on 31/12/1998 SDR 1.00 was equal to US\$ 1.4080.

The SDR is also the unit of account for all IMF transactions.

The World Bank Group

The Bretton Woods conference also gave birth to the International Bank for Reconstruction and Development (DBRD) also commonly known as the World Bank. As the name itself suggests, the World Bank was floated in order to give loans to member countries initially for the reconstruction of their waraffected economies and thereafter for the development of the economies of the poorer member countries. Normally majority of the World Bank loans are for financing specific projects but in recent years, it is also giving structural adjustment loans to heavily indebted countries thereby blurring the difference between the Bretton Woods twins.

The World Bank Group consists of naturally the World Bank itself and the International Development Association (IDA), the International Finance Corporation (IFC) and the Multinational Investment Guarantee Agency (MIGA) Besides the World Bank Group these are also multinational regional development banks for Latin America, Africa and Asia. Though these are technically different from World Bank, their functioning is similar to that of World Bank.

The World Bank

It generally makes medium and term loans for infrastructure projects. Lately it has started lending to countries having BOP problems, if they are willing to adopt growth -oriented economic policies. It requires government guarantee for making these loans. For these activities, it raises funds through subscriptions from member countries and by issuing bonds, which are generally meant for private subscription.

The World Bank operates on a very conservative 1: 1 debt equity ratio and as such commands an excellent credit rating on the World's Capital Markets where the bulk of its resources are raised.

The standard rate of interest charged by the World Bank is half per cent over its own borrowing cost. The effective rate is revised every six months. The World Bank lends in a basket of currencies representing its own borrowings in the international capital markets. The projects financed by the World Bank generally require the borrower to call for worldwide tenders.

International Development Agency (IDA)

This can be termed as the Soft lending arm of the World Bank. It gives loans to poorer member countries, with zero interest and levies a small_handling fee. The repayment Schedule is very long extending to 10 years, 35 years or even to 40 years. The IDA raises its resources through donations from the rich member countries of the World Bank Group. It either lends to Governments or against their guarantee. The IDA loans are particularly suitable for infrastructure projects, which have long gestation periods, in view of its very low rate of interest and loan repayment schedules. The IDA distributes its funds on the basis of the per capita income and population of the borrowing country.

International Finance Corporation (IFC)

This was incorporated in 1956 to help the development of private enterprise in different countries. It supplements the activities of the World Bank. IFC helps the private sector in many ways. Financing their projects through loans and by way of subscription to equity. It also provides technical assistance to private enterprise. It also tries to bring private capital and private management together by creating conditions conducive to the flow of private capital. It does not insist upon government guarantee and generally takes up more risks than its counter parts.

The Multinational Investment Guarantee Agency (MIGA)

insures cross-boarder investments from one member country into another member country, charging a fee for the cover provided by them. Our country has recently become a member of MIGA.

The regional development banks: like the Manila based Asian Development Bank (ADB) also functions more or less on the same lines as the World Bank Group. The ADB gives project finance, out of resources raised on the capital markets. It also has a soft loan fund whose resources come from donor countries in the IDA. Since the formation of the ADB, for many years, as a matter of policy, India had agreed not to borrow funds so that the resources are available to the smaller ADB members. However, in recent years our country has started availing ADB loans, but both India and China have agreed not to ask for ADB funds under the soft loan.

Points to Ponder

Economics of Monetary Union

Paul De Grauwe (2000). "Economics of Monetary Union"

- What the economic costs and benefits of having one currency?
- Where should the Process of Monetary integration stop?
- How is the European Central Bank (ECB) designed to conduct a single monetary policy?
 - How does the ECB make a choice between the different targets a central bank should pursue?
 - What are the most appropriate instruments to achieve these targets?
 - Can the ECB deal with financial crises and how?
 - How should the ECB react to different business cycle developments in Euroland?
 - What are the relations between monetary and budgetary policies?

Economic adjustment

1. Price flexibility

- French goods would became less expensive and international demand will grow
- 2. Wage flexibility
 - wage in France would become lower which would reduce production costs and make supply more competitive
- 3. Flexible unemployment and labour mobility
 - Unemployed workers would move from France to Germany. This will stabilise employment, wages and prices

4. Devaluation of French currency

 made French goods more attractive in international market without changes in prices or wages or reallocation of labour (not available for Monetary Union)

5. Inter-budget subsidy

- German authorities could increase taxes and reduce aggregate demand in Germany
- and transfer tax revenue to France, which will increase aggregate demand in France

The Costs of a Common Currency A nation joining a monetary union will not be able any more to change the price of its currency by devaluation or revaluation, or to determine the quantity of the national money in circulation.





Different preferences of countries about inflation and unemployment

Philips curve is a negative relation between inflation and employment

- It aly may prefer higher inflation and lower unemployment
- Purchasing power parity condition

&= p\$x − p\$x

If PPP is satisfied the competitiveness is maintained Italian authorities may have to accept less inflation and more unemployment

This may lead to shift in Italian Philips curve due to the dec rease in expectations of inflation

Difference in labour market institutions

The centralisation of labour Union

- External shocks lead to different effects on domestiprices and wages
 - More centralised bargain leads to lower increase in wages as the reaction on positive shocks in demand. Central sed unions take care about externalities and price reaction on increasing wages.
 - If labour unions are very decentralised wage increasing demand will affect firm competitiveness and reduce employment. Therefore the union may exhibit a considerable degree of wage restraint.

Countries with different labour market institutions may find it costly to form a monetary union. With each supply shock, wages and prices in these countries may be affected differently, making it difficult to correct for these differences when exchange rate is irrevocably fixed.

Different fiscal systems and the seigniorage problem

Different combination of debt and monetary financing of the government budget deficit

G - T + rB = dB + dM

- G-non-interest expenditure
- B government debt
- T-tax revenue
- M- Monetary base
- Countries with less developed tax system will find i more ad vantageous to raise revenue by seigniorage
- those have to increase taxes after joining the monetary union, which will reduce welfare

Difference in Financial Systems

- Mortgage rate
 - fixed
 - floating

An increase of the interest rate by European Central Bank is transmitted very differently across the member states of the monetary union

- · The development of capital market is very different
 - GB: Firms tend to directly to the capital market
 if interest rate increase lowers stock and bond prices,
 - so that the wealth of consumers is likely to decline – Germany: Firms attract financial resources mainly through the banking system
 - A suffic iently high increase in interest rate will induce

banks to start credit rationing

How relevant are the differences between countries?

- The trade will become more intra-industrial
 - Different shocks in demand occur less frequently
 - · Both Spain and Germany import cars from each other
 - Firms in same industry operates developing their core competence
 - The shocks will be more symmetric in a monetary union
- Increase in specialisation may lead to regional industrial concentration and asymmetric shocks
 - It is confirmed by comparison of industrial concentration in USA and Europe
 - Industry specific shock may become country specific
 Industry may become concentrated in close geographical area rather then in one country
 - Empirical study concludes that a loser trade linkage between two countries is strongly and consistently associated with more tightly correlated economic activity between the two countries





Different legal systems and financial markets

- Some of the differences are explained by different monetary policies
 - Higher inflation make investor more reluctant to buy long term bonds
 - the long -term bonds are rarely exist in high -inflation country.
 - The Government debt has a very short term structure and very vulne rable to the changes in interest rate
 - Banks have to invest in more risky projects and face adverse selection problem
- Those differences will be eliminated in Monetary Union.

Nominal and real depreciation

- Whether nominal exchange rate change can permanently alter the real exchange rate?
 - shift in supply
 - · Devaluation raises the price of imported goods
 - Worker may ask for compensation, which would raise wages
 - Increase in prices and decrease in output
 - Real exchange rate will increase and domestic goods will loss competitiveness
 - Devaluation destroys creditability in Domestic currency.
 - Reduces saving rate
 - · increases interest rate
 - · increases inflationary expectations

Devaluation, Time consistency and Credibility Philips curve **β**− inflation $U = U_N - \mathbf{a}(\mathbf{p} - \mathbf{k})$ U - unemployment E - is the only equilibrium in static game Equilibrium inflation depends on F ernment preference the flatter the indifference curve the lower inflation A Ī Two countries р р H

The benefit of Common Currency

- Less uncertainty in prices
 - People are risk averse
 - Interest rates are higher, investment are lower...
 - Moral hazard: very risky investment
 - Adverse selection: only very risky project are financed
- Direct gain from the elimination of transaction cost - Currency Exchange commission is about 0.5% of GDP - 5% of banks' revenue
- Reduction of price discrimination
 - Price discrimination can take place only if there is some transaction costs for resale
- Size of Monetary Union and Currency strength - USD is used for many foreign transactions
- Forcing Cooperation



How CBR supports ER

Exchange rate policy

- By buying and selling currency on currency exchange
- If shock is temporary the government reduces uncertainty
- It it is permanent, CBR will just spend up its foreig resources (currency, assets, gold)
- Currency peg
 - For whole domestic currency, CBR has coverage.
 - This policy sustainable
 - But may lead to deflation and GDP fall

Stabilization

- Inflation
 - High inflation in a member country may reduce creditability to the Union policy
- Fiscal policy
 - Deficit (3% of GDP)
 - debt (60% of GDP)
 - Should be financing, no seigniorage are available
 - The only possibility to rise interest rate
- Interest rate
 - Interest parity condition should be satisfied, interest rates have to be equal (adjusted for risks and transaction costs)

Problems

Debt default expectations Regional transfers Adjustments: prices for non-tradable goods (Housing) Coordination of Fiscal policies

Introduction

Objectives

Upon completion of this Lesson, you should be able to:

Understand the basics of short term financial management in a Multinational Corporation

Introduction

This chapter focuses on the critical issues involved in discharging the cash management function in a multinational corporation. Within the constraints imposed by the exchange control and other regulations, a MNC has access to a much wider menu of funding avenues and investment vehicles for short-term funding and investment decisions, the currency of short-term borrowing and investment decisions, the currency of short-term borrowing and investment is irrelevant from the point of view of cost of funding or return on investment. There may however be other factors such as political risk and taxation which may influence this decision.

Apart from funding and investment avenues, the mechanics of efficient cash transmission and configuration of bank accounts is an important aspect of cash management in a MNC.

Finally, the decision to centralize cash management in a separate cash management centre needs to be carefully evaluated. There are significant gains from centralizing the cash management and exposure management functions particularly when substantial intra-corporate payments are involved. There are however a few disadvantages especially from the local subsidiary point of view which must be clearly understood and incorporated in the overall performance appraisal framework.

Management of short-term assets and liabilities—cash, investments, inventories, receivables, payables—is an important part of the finance manager's job. Funds flow continually in and out of a corporation as goods are sold, receivables are collected, short-term borrowings are availed of, payables are settled and short-term investments are made. The essence of short-term financial management can be stated as:

- 1. Minimize the working capital needs consistent with other policies (e.g. granting credit to boost sales, maintain inventories to provide a desired level of customer service etc.)
- 2. Raise short-term funds at the minimum possible cost and deploy short-term surpluses at the maximum possible rate of return consistent with the firm's risk preferences and liquidity needs.

In a multinational context, the added dimensions are the multiplicity of currencies and a much wider array of markets and instruments for raising and deploying funds.

This chapter will focus on cash management in a multinational corporation. Other aspects of short-term financial management,

for instance inventories, receivables and so on are not discussed since there is no substantive difference between a multinational and a purely domestic firm when it comes to management of these assets. Cash management can be considerably more complex because of the possibility of raising and deploying cash in many currencies, may locations, and profit opportunities presented by imperfections in international money and foreign exchange markets.

Even a purely domestic firm or a firm with imports and exports but no cross-border manufacturing facilities can "internationalize" its cash management if the government of the country permits free capital inflows and outflows. Thus an American firm serving largely domestic markets can, if it wishes to, raise short-term funding in offshore markets to meet its working capital needs as also park its temporary cash surpluses in foreign securities or Euro deposits.

In India as of now, the capital account has not been opened up. It is the avowed policy of the government to discourage shortterm foreign borrowing and capital outflows we regulated. There has been a gradual trend towards liberalization of the capital account. Indian firms have been permitted access to foreign money markets (through domestic banks) for pre shipment credits for exports and settlement of import payments. The Exchange Earners Foreign Currency (EEFC) account facility, allows exporters to maintain up to 50% of their foreign currency earnings in a foreign currency denominated account balances with domestic banks which can be used for all permissible current account transactions. However, they do not as yet have full freedom to access foreign money markets for their day-to-day cash management purposes. The foreign subsidiaries of Indian companies are of course governed by the exchange controls regulations of the host country, and may be in a position to employ some of the techniques discussed in this chapter.

The distinction between a passive, defensive approach and an active, opportunistic approach applies to cash management too. The passive approach confines itself to minimizing cash needs and currency exposure as well as optimal deployment of cash balances arising out of the firm's operating requirements. The active approach deliberately creates cash positions to profit from perceived market imperfections or the firm's supposedly superior forecasting ability.

Short term Borrowings and Investments

Objectives

Upon completion of this Lesson, you should be able to:

Understand short term borrowings and Investments.

17.2 Short-Term Borrowing and Investment

International money markets particularly in well developed financial centers like London, New York, and Tokyo offer a variety of instruments to raise short-term financing as well as place short-term funds. The principal dimensions of the borrowing-investment decisions are the instrument, currency, location of the financial center, and any tax related issues. Between them they decide the cost of or return on funds, extent of currency exposure, the ease with which funds can be moved from one location and currency to another, and thus the overall efficiency of the cash management function. In this section we will focus on the cost/return dimension. The other considerations—location, currency and so on—will be taken up later.

Apart from bank loans, the other major instruments for shortterm funding are commercial paper and, in the US domestic money market, bankers' acceptances. Commercial paper as a funding device is accessible only to corporations with high creditworthiness. For such entities, it is a cheaper form of funding than a bank loan.

We have seen in Chapter 8 that on a covered basis, yields are equal (apart from transactions cost) across Eurocurrencies. Hence on a covered basis, the choice of currency of borrowing does not matter. Only when the borrower firm holds views regarding currency movements which are different from market expectations as embodied in the forward rate, does the currency of borrowing become an important choice variable.

The international Fisher open condition discussed in Chapter 11 says where

$$\mathbf{i}_{\mathbf{A}} - \mathbf{i}_{\mathbf{B}} = \check{\mathbf{S}}^{\mathrm{e}} \left(\mathbf{A} / \mathbf{B} \right) \tag{17.1}$$

where

 \check{S}^{e} (A/B): Expected depreciation of currency A against currency B

However if speculators are risk averse, a risk premium must be incorporated in the above relationship:

$$i_{A} - i_{B} = \check{S}^{e} (A/B) + RP$$
 (17.2)

where RP denotes the risk premium.

This coupled with the interest parity relation implies

 $F(A/B) = S^{e}(A/B) + RP$ (17.3)

where F(A/B) is the relevant forward rate and $S^{e}(A/B)$ is the expected future spot rate.

Note that the risk premium can be negative or positive depending upon whether speculators as a group are required to be net short or long in the forward market. Thus the forward rate can on average equal the future spot rate even in the presence of a constant risk premium. However, in a particular instance, a firm may have reasons to believe that the forward rate is in an underestimate or overestimate of the future spot rate. In such cases, the firm should compare the effective expected cost of borrowing across different currencies and choose the least cost alternative. Note that this involves risk, and any saving on borrowing cost reflects compensation for the added risk.

Following the same reasoning, on a covered basis the firm should be indifferent between various currencies when it comes to placing temporary excess funds since the covered yields are identical. Considerations such as availability of various investment vehicles—deposits, CDs, CP, treasury bills and as on—and their liquidity may lead to one currency being favoured over another. A firm willing to take on added risk, can make uncovered investments hoping to profit from its superior forecasting ability.

Notes -

Management of Working Capital

Key Issues:

- What is working capital?
- Objectives of working capital management.
- Working capital cycle.
- Working capital policy of a company.
- Cash Management.
- Debtors, Credit, & Stock management.



What is Working Capital?

- Excess of current assets over current liabilities.
- Also called 'net current assets'.
- Funds which are continually in use & are turned around many times in a year.
- Capital used to finance production, support levels of stock, and provide credit for customers.
- Cash + Debtors + Stock short-term liabilities
- Equity + long-term debt fixed assets



Working Capital Policy

- Aggressive: company chooses to operate with lower levels of stock, debtors, & cash for a given level of sales.
 - Increases profitability since less cash will be tied up in current assets.
 - Risky because likely to run out of stock or cash.
- Conservative: flexible policy -- company maintains a larger cash balance, possibly investing in short-term securities, offering more generous credit terms to customers, and holding higher levels of stock.
 - Low risk of financial or stock problems.
 - Low profitability



Working Capital Policy (con't)

- Moderate: company treads a middle path between 'aggressive' and 'conservative' approaches.
- In general, there are no absolute benchmarks of what may be regarded as aggressive, conservative or moderate.

Cash Management

- There are three main reasons why a company would wish to hold some of its assets in the form of cash or cash equivalents
- Transaction motive: cash is used by company in conducting its business i.e. to pay wages, suppliers, etc.
- Precautionary motive: Since cash inflows and outflows cannot be predicted with certainty, a company might keep some cash in reserve in case of unanticipated fluctuations.
- Speculative motive: e.g. cash held in anticipation of making future investment decisions

Cash Management: Float

- **Float**: the amount of money tied up in the period between the initiation of payment and the point at which the money appears in the bank account.
- Float can vary between 4 and 9 days due to:
 - Transmission delay (time for payment to pass from payer to payee).
 - Lodgement delay (delay in banking payments received)
 - Clearance delay.
- Good cash management will take steps to minimise float.

Management of Debtors

Key objective is to minimise the risk of bad debt.

- Credit analysis:
 - New customers asked to provide bank references.
 Analysis of company's annual report to determine credit worthiness.
 - Company's own experience of similar companies.
 Credit reference agency (e.g. Infocheck or Dunn & Bradstreet).
- Credit control system
- Debt collection system
- Discounts

Short-term Investment of Surplus Cash

Use cash budgets or cash flow forecasts to determine cash needs. Any surplus can be invested in:

- Deposit accounts: Flexible investment with low risk but interest rates are low.
- Term deposits: Interest rates are higher & depend on the length of deposit but investment cannot be withdrawn except on maturity.
- Certificate of deposit: similar to term deposit but they form a marketable security.
- Government securities: e.g. treasury bills with low risks of default.

Management of Debtors (con't)

• Factoring companies offer a range of services in sales administration



Take over the administration of client company's sales invoicing & accounting: Collect payment from debtors; chase slow Payers etc

Offer cash advance against security of accounts receivable, allowing company ready access to cash as soon as credit sales are made.

GLOBAL FINANCIAL MARKETING

Management of Debtors (con't)

Advantages of factoring

- Reduction in the amount of working capital tied up in debtors.
- Savings on sales administration costs.
- Company benefits from factor's specialised knowledge and experience in credit analysis and control

Where should surplus cash be held

Objectives

Upon completion of this Lesson, you should be able to: Know where should cash be held

Where Should Surplus Cash be Held

In a multinational corporation with production and selling subsidiaries spread around the world, cash inflows and outflows occur in diverse currencies. Apart from cost and return considerations, several other factors influence the choice of currencies and locations for holding cash balances.

The bid-ask spreads in exchange rate quotations represent transaction costs of converting currencies into one another. There may of course be other costs such as telephone calls, telexes, and other paperwork and so on. Minimizing transaction costs would require that funds be kept in the currency in which they are received if there is possibility that they might be needed later in the same currency. A related but distinct consideration is that of liquidity, viz. funds should be held in a currency in which they are most likely to be needed. This may not be the same as the currency in which that cash comes in. Militating against these factors is the political risk dimension. The parent firm may want to hold all surplus cash in its home currency to minimize the risk of its assets being frozen by a foreign government. However this consideration would influence the location of the financial center where the funds are held, rather than the currency and is likely to be of some importance only in the case of politically highly unstable countries.

Availability of investment vehicles and their liquidity is another important factor. Major money market centers such as London, New York, Zurich and so forth offer a wide variety of highly liquid money market instruments so that the firm does not need to hold practically any idle cash balances.

Finally, withholding taxes may influence the choice. If balances are held in interest bearing assets in a country which has a withholding tax on non-resident interest income, and the tax rate exceeds the parent's home country tax rate, the parent may not be able to get full credit for the foreign tax paid and such a location may therefore become unattractive for holding funds.

17.3.1 Investing Surplus Funds

Once the treasurer has identified the cash flows and determined how much surplus funds are available in which currencies and for what durations, he or she must choose appropriate investment vehicles so as to maximize the interest income, while at the same time minimizing currency and credit risks and ensuring sufficient liquidity to meet any unforeseen cash requirements. The major investment vehicles available for short-term placement of funds are (1) short-term bank deposits, (2) fixed-term money market deposits such as CDs, and (3) financial and commercial paper. The main considerations in choosing an investment vehicle can be summarized as follows:

- 1. **Yield:** Total return on the investment including interest income and any capital gain or loss. Very often, security and liquidity considerations may take precedence over yield.
- 2. **Marketability:** Since liquidity is an important consideration, the ease with which the investment can be unwound is important. Instruments like CDs have well developed secondary markets while Cps and trade related paper have limited liquidity.
- 3. **Exchange Rate Risk:** If funds eventually required in currency A are invested in currency B, there is exchange rate risk. If covered, then as we saw above, there is no advantage to switching currencies.
- 4. **Price Risk:** If a fixed-term investment such as a CD or a Tbill has to be liquidated before maturity, there is the risk of capital loss if interest rates have moved up in the meanwhile.
- 5. **Transactions Costs:** Brokerage commissions and other transactions costs can significantly lower the realized yield particularly on short-term investments.

Money-market investments are often available in fixed minimum sizes and maturities, which may not match the size of the available surplus and the duration for which it is available. For instance consider the case of a treasurer who has a surplus of USD 180,000 for 90 days. 90-day USD CDs are an attractive instrument offering 10% return but the denomination is USD 100,000 per CD. The treasurer can purchase one CD and invest 80,000 dollars in a bank deposit earning 6% or borrow USD 20,000 via an overdraft facility at 13% and purchase two CDs. Which course of action is preferable?

Let us cast the problem in more general terms. Let M denote the minimum size of the investment instrument, S the surplus funds, i the interest on the instrument, d the interest rate on the bank deposit, and b the interest rate on borrowing or overdraft. Then the breakeven size of excess funds is given by

$$M x I - (M - S^*) x b = S^* x d$$

S^{*} = M [(b - i)/(b - d)]

that is,

If excess funds on hand exceed S*, money should be borrowed to invest in the money market instrument; otherwise the excess funds should be left in a bank deposit.

In the example at hand, M = 100,000, i = 0.10, d = 0.06, and b = 0.13. The breakeven size of surplus funds is 100,000 [(0.13 - 0.10)/(0.13 - 0.06)] = 42,857.14
Since the treasurer has USD 80,000 excess, it is preferable to borrow USD 20,000 and purchase two CDs.

A similar problem arises when the duration for which surplus funds are available does not match the term of a money market investment. Suppose a treasurer has EUR 250,000 available for 10 days. A 30-day fixed deposit is paying 7% p.a.. Thus the gap is 20 days. The money can be placed in a current account earning 2% p.a. Overdraft facility can be availed of for 20 days at a cost of 9 % p.a. Here we can define a "breakeven" period such that if the actual period exceeds the breakeven, money should be borrowed to take advantage of the higher return on the fixed deposit. (Alternatively, define a breakeven gap and if the actual gap is shorter than the breakeven gap, funds should be borrowed for the duration of the gap). We leave this as an exercise for the reader.

17.3.2 Financing Short-term Deficits

Just as judicious management of short-term surplus funds can earn extra income for the firm, careful handling of short-term deficits can lead to significant savings. The treasurer's objective in this regard should be to minimize the overall borrowing requirement consistent with the firm's liquidity needs, and to fund these at the minimum possible all-in cost.

One of the cheapest ways of covering short-term deficits in internal funds. In a multinational firm with several subsidiaries, it often happens that while one division has a short-term funds requirement, another has surplus funds. While the former may have to take an expensive bank loan or overdraft facility, the latter may not have very attractive investment opportunities beyond bank deposits. A centralized cash management system with cash pooling described below can efficiently allocate internal surpluses so as to optimize interest earnings net of interest costs for the corporation as a whole. However cross-border inter-company loans are a complex area. These are issues related to differences in tax regimes, existence of double taxation treaties, differences in accounting norms, and exchange risk. Specialist advice is usually necessary to exploit these opportunities in an optimal fashion.

External sources of short-term funding consist of overdraft facilities, fixed-term bank loans and advances and instruments like commercial paper, trade and bankers' acceptances. Apart from the all-in cost of funding, consideration such as collateral or security requirements, flexibility in terms of repayment schedule, speed with which a new facility can be arranged, effect on firm's credit rating and so forth also play a role in evaluating the funding options. The size and maturity mismatch problems arise here, too. For instance, suppose a treasurer determines that he has a requirement of USD 60,000 for 30 days. An overdraft facility would cost him 12% while a 30-day term loan is available at 9 % but the minimum amount is USD 100,000. Surplus funds can be kept in a deposit earning 5%. The problem again is to determine the "breakeven" size of funding requirement such that if the actual need is larger than this, it is preferable to go in for the term loan rather than an overdraft facility. In other case, an amount of USD 100,000 is needed for 18 days whereas a term loan is.0 for a minimum of 30 days. Once again the reader can determine the breakeven gap

above which it is preferable to take the loan and place the funds in a deposit during the days they are needed.

All-in cost must be determined on a post-tax basis. Withholding taxes, deductibility of interest, fees and other charges related to a funding facility, tax treatment of inter-subsidiary interest payments, and tax treatment of exchange gains and losses if funding is availed of in a different currency are among the issues which must be carefully analyzed.

Notes -



Points to Ponder

Working Capital Management for the Multinational Corporation

International Financial Management

Dr. A. DeMaskey



- Funds Availability
- \circ Additional Risks
- Movement of Capital
- Decisions
- Taxes

Learning Objectives

- How does multinational working capital management differ from domestic working capital management?
- What are the objectives of international cash management?
- What techniques are used by MNCs for making cross-border payments?
- What key factors are associated with a firm's funding strategy?
- What short-term financing options are available?

International Cash Management

A set of activities, which consists of:

- Cash management the levels of cash balances held throughout the MNC -
- Cash settlements and processing the facilitation of its movement across borders

Cash Management

- Cash levels are determined independently of working capital management decisions
 - Cash balances, including marketable securities, are held partly for day-to-day transactions and to protect against unanticipated variations from budgeted cash flows
 - These two motives are called the transaction motive and the precautionary motive.

Cash Positioning Decision

- Currency of location
- Type of liquid asset held
- o Maturities, yields, and liquidity characteristics

International Cash Management

- o Goal: Minimize cash balances without reducing operations or increasing risk.
- o Steps:
 - Cash Planning anticipating cash flows over future days, weeks, or months.
 - Cash Collection getting cash into the firm as soon as possible.
 - ${\sf Cash}$ Mobilization moving cash within the firm to the location where needed.
 - Cash Disbursements planning procedures for distributing cash.

 - Covering Cash Shortages managing anticipated cash shortages by borrowing locally. Investing Surplus Cash managing anticipated cash surpluses by investing locally or controlling them centrally.

Objectives of an Effective Cash Management System

- Minimizing overall cash requirements
- Minimizing currency exposure risk
- Minimizing political risk
- Minimizing transactions costs
- Taking full advantage of economies of scale

Complexities of the International Cash **Positioning Decision**

- o Conflicting nature of cash management objectives
- Government restrictions
- Multiple taxation systems
- Multiple currencies

Wire Transfers

- o Variety of methods but two most popular for cash settlements are CHIPS and SWIFT
 - CHIPS is the Clearing House Interbank Payment System owned and operated by its member banks
 - SWIFT is the Society for Worldwide Interbank Financial Telecommunications which also facilitates the wire transfer settlement process
 - Whereas CHIPS actually clears transactions, SWIFT is purely a communications system

International Cash Settlements and Processing

- o Four techniques for simplifying and lowering the cost of settling cash flows between related and unrelated firms
 - Wire transfers
 - Cash pooling
 - Payment netting
 - Electronic fund transfers

Cash Pooling and Centralized **Depositories**

- o Key: Centralizing the cash positioning function to gain operational benefits.
 - Subsidiaries hold minimum cash for their own transactions and no cash for precautionary purposes All excess funds are remitted to a central cash depository
- Centralized depositories provide the following 0 advantages:
 - Information advantage is attained by central depository on currency movements and interest rate risk
 - Precautionary balance advantages as MNC can reduce pool without any loss in level of protection

 - Interest rate advantages as funds can be borrowed at a lower cost and invested at a more advantageous rate.
 - Location can provide tax benefits, access to international communications, clearly defined legal procedures.

Multilateral Netting

- Netting involves offsetting receivables against payables so that only the net amounts are transferred among affiliates.
- o Types
 - Bilateral netting
 - Multilateral netting
- Payments netting is useful primarily when a large number of separate foreign exchange transactions occur between subsidiaries.

Financing Working Capital

- Financing working capital requirements of a MNC's foreign affiliates poses a complex decision problem.
- Financing options for a subsidiary include:
 - Intercompany loans from the parent or a sister affiliate.
 - Local currency financing.

Payments Netting

- Example: A Belgian affiliate owes an Italian affiliate \$5,000,000, while the Italian affiliate simultaneously owes the Belgian affiliate \$3,000,000.
 - Bilateral settlement calls for \$2,000,000 payment from Belgium to Italy and cancellation of the remainder via offset.
 - Multilateral netting is an extension of bilateral netting.
 - Assume that payments are due between Apex's European operations each month.
 - Without netting Apex de France would make three separate transactions each way.

Key Factors Underlying the Funding Strategy

o Interest Rate

- Without forward contracts
- With forward contracts
- o Exchange Risk
- Degree of Risk Aversion
- o Taxes
- Political Risk

Financing Objectives

- Minimize covered after-tax interest costs
- o Minimize expects costs
- Trade-off between expected cost and reducing the degree of cash flow exposure

Local Currency Financing

- Bank Loans
 - Term Loans
 - Line of Credit
 - Overdraft
 - Revolving Credit Agreement
 - Discounting
- o Commercial Paper

Intercompany Loans

• The cost of an intercompany loan is determined by the following factors:

- Opportunity cost of funds
- Interest rate
- Tax rates and regulations
- Currency of denomination
- Expected exchange rate change

Effective Interest Rate on Bank Loans

- o Simple interest loan
- o Discount Ioan
- Loan with compensating balance requirement
 - Simple interest loan
 - Discount loan

Effective Annual Percentage Cost Illustration

 The Olivera Corporation, a manufacturer of olive oil products, needs to acquire €1 million in funds today to expand a pimiento-stuffing facility. Banca di Roma has offered them a choice of an 11% loan payable at maturity or a 10% loan on a discount basis. Which loan should Olivera choose?

Effective Financing Rate: No Taxes

- Suppose that Ford has an affiliate in Mexico, which can borrow pesos at 80% or dollars at 12% for one year.
 - If the peso is expected to devalue from MP\$ 7.50/\$ at the beginning of the year to MP\$ 10.23/\$ at the end of the year, what is the expected before-tax dollar cost of the peso loan?
 - What is the cost of the dollar loan to Ford?
 What is the breakeven rate of currency change at which the dollar cost of borrowing pesos is just equal to the cost of dollar financing?

Calculating the Dollar Costs of Alternative Financing Options

- In deciding on a particular financing option, a firm needs to estimate and then compare the effective after-tax dollar costs of local currency financing and dollar financing.
 - In reality, the value of the currency borrowed will most likely change with respect to the borrower's local currency over time.
 - *Breakeven analysis* can be used to determine the least expensive financing source for each future exchange rate.

Effective Financing Rate: No Taxes

- Dollar cost of local currency (LC) loan
 r_H (LC) = r_L (1 + c) + c
- Cost of dollar loan (HC)
 r_H (HC) = r_H
- Breakeven rate of currency change • $r_L (1 + c) + c = r_H$

Effective Financing Rate: With Taxes

 $\circ\,$ Suppose the Mexican corporate tax rate is 53%.

- What is the expected after-tax dollar cost of borrowing pesos?
- What is the expected after-tax cost of the dollar loan?
- What is the breakeven rate of currency change at which the after-tax dollar cost of local currency financing is just equal to the after-tax cost of dollar financing?

Effective Financing Rate: With Taxes

After-tax dollar cost of borrowing local currency
r_H (LC) = r_L (1 - T_a)(1 + c) + c

• After-tax cost of dollar loan • r_H (HC) = r_H (1 - T_a) + cT_a

• Breakeven rate of currency change • $r_L(1 - T_a)(1 + c) + c = r_H(1 - T_a) + cT_a$

Topics Covered

Centralized v/s Decentralized Cash Management

Objectives

Upon completion of this Lesson, you should be able to:

Differentiate between Centralized v/s Decentralized Cash Management

Centralised Versus Decentralised Cash Management

A multinational corporation with subsidiaries in different parts of the world has cash flows in a variety of currencies and countries. It can leave cash management to individual subsidiaries (who will also manage their currency exposures) or have a centralized cash management system. In the latter case it can create a "Cash Management Centre" which may be a part of the parent company, located at one of the subsidiaries or a separate entity incorporated fore that purpose. Centralised cash management has several advantages which we will discuss below. Some examples of real-life cash management systems can be found in the references cited in the bibliography. Many international banks such as Chase Manhattan, CitiCorp offer their own cash management systems often suitably modified to take into account a particular corporation's needs.

Netting

In a typical multinational family of companies, there are a large number of intra-corporate transactions between subsidiaries and between subsidiaries and the parent. If all the resulting cash flows are executed on a bilateral, pairwise basis, a large number of currency conversions would be involved with substantial transaction costs. With a centralised system, netting is possible whereby the cash management centre (CMC) nets out receivables against payables, and only the net cash flows are settled among different units of the corporate family.

Consider the case of an American multinational with subsidiaries in France, Switzerland, and the UK. The parent operates a cash management center. By a specific date each month—say the 15 th—all units, the subsidiaries as well as the parent report their receivables and payables among themselves to the CMC. The CMC uses the current spot rates to convert all cash flows into a common denominator, viz. US dollars. Figure 17.1 shows the positions reported by the various units. The spot rates are assumed to be USD/CHF = 1.5000, GBP/USD = 1.6000 and EUR/USD = 0.9000.



Fig. 1 Intra-corporate obligations before netting

The CMC nets out the receivables against payables of each unit and informs the net payers to pay designated amounts tot eh net receivers. The actual settlement take place at a specified date—say the 25 th of the month—for which the net payers acquire the necessary currencies at the spot rate ruling at that time (two days before the settlement date). Any exchange gains or losses are attributed to the individual units. The net positions of the various units, in millions of dollars, are as follows (+ sign indicates inflow and a – sign an outflow):

US Parent: +2 + 1 - 4.8 = - 1.8

UK Subsidiary: + 4.8 + 3.2 + 1.6 - 2.25 - 6.0 = + 1.35

France Subsidiary: +4.5 + 2.25 - 1.0 - 3.2 - 2.0 = 0.55

Switzerland Subsidiary: +1.0 + 6.0 - 4.5 - 1.6 - 1.0 = -0.1

Figure 17.2 shows the net positions between each pair of units (the dashed lines) and the actual payments (the solid lines).



Fig. 2 Intra-corporate net positions and payments after netting Netting need not be confined to intra-corporate transactions. Transactions with third parties can also be incorporated.

More flexibility can be achieved in cash management if netting can be combined with leading and lagging as discussed in Chapter 13. Payments to cash surplus units can be lagged (with appropriate compensation at the ruling rates of interest), and those to cash deficit units can be accelerated to manage overall cash needs and minimise the use of bank credit lines.

Exposure Management

If individual subsidiaries are left to manage their currency exposures, each will have to access the forward market (or other appropriate hedging devices), once again increasing transactions costs. The CMC can adopt a corporate perspective and look at the overall currency composition of receivables and payables. Since the overall portfolio will be fairly diversified, currency risk is considerably reduced. The CMC can match and pair receivables and payables and exploit the close correlations between some currencies—for instance, EUR and GBP—to achieve some degree of natural hedge.

Cash Pooling

The CMC can act not only as a netting center but also the repository of all surplus funds. Under this system, all units are

asked top transfer their surplus cash to the CMC, which transfers them among the units as needed and undertakes investment of surplus funds and short-term borrowing on behalf of the entire corporate family. The CMC can in fact function as a finance company which accepts loans from individual surplus units, makes loan to deficit units and also undertakes market borrowing and investment. By denominating the intra-corporate loans in the units' currencies, the responsibility for exposure management is entirely transferred to the finance company and the operating subsidiaries can concentrate on their main business, viz. production and selling of goods and services. Cash pooling will also reduce overall cash need since cash requirements of individual units will not be synchronous.

The concept of CMC can be combined with that of a reinvoicing center. Under this system, notionally all subsidiaries sell their output to the reinvoicing center which is located in a low-tax country. The sales are invoiced in the selling company's currency. The reinvoicing center takes title to the goods and in turn sells to third party customers, as well as other members of the corporate family which may be production and/or sales subsidiaries. The actual deliveries are made from the selling units to the buying units. For intra-corporate sales, the buying units are invoiced in their respective currencies. Thus the entire currency exposure is transferred to the reinvoicing centre which can use matching and pairing to minimise resource to forward markets or other hedging devices. Also, the reinvoicing centre can access foreign exchange markets more efficiently than individual subsidiaries. Leading and lagging can be used to transfer funds from cash-surplus units to cash-deficit units.

CMCs, finance companies, and reinvoicing centres are generally located in major money market centres where active markets in foreign exchange and a variety of money market instruments are available. Also, the presence of an efficient banking system can facilitate speedy settlement of receivables and payables.

The concepts and applications of netting centres, reinvoicing centers and the finance company have been discussed in greater detail by Borenstein [see Antl (1989) Chapters 19-21].

Some important issues have to be sorted out before setting up a centralised cash management system with netting and cash pooling. If the CMC uses a single currency as the common denominator to compute net positions, this will lead to transactions exposure for individual subsidiaries. Hence, the choice of the common currency must be made in the light of cool currencies of the individual divisions, existence of sufficiently active forward markets and other hedging products between these currencies and the common currency and so forth. The second issue is related to rules governing settlement of debts within the system. If an individual subsidiary has a net debtor position, how much time should it be given to settle, how much interest should it charged on overdues, how to prevent a subsidiary from arbitraging between its local money market and the CMC (e.g. if a subsidiary can earn a much higher rate in the local money market than what it has to pay on overdues to the centre, it will have incentive to delay payments) are among the considerations which must be thoroughly analysed.

Disadvantages of Centralised Cash Management

Despite these advantages, complete centralisation of cash management and funds holding will generally not be possible. Some funds have to be held locally in each subsidiary to meet unforeseen payments since banking systems in many developing countries do not permit rapid transfers of funds. Also, some local problems in dealing with customers, suppliers and so on, have to be handled on the spot for which purpose local banks have to be used and local banking relationships are essential. Each corporation must evolve its own optimal degree of centrlisation depending upon the nature of its global operations, locations of its subsidiaries and so forth. Further, conflicts of interest can arise if a subsidiary is not wholly owned but a joint venture with a minority local stake. What is optimal with regard to cash and exposure management from an overall corporate perspective need not be necessarily so from the point of view of local shareholders.

International Cash Management

- · Capital budgeting ,Capital structure, cash managementsequencing
- For MNC the sequencing is different because
- ROR is different in different countries so long term cash borrowing & short term cash borrowing must be differentiated
- · Inflation levels are different so return on assets differ
- **Different exchange Rate regimes**

Corporate Objectives

- Optimizing cash holdings •
- Minimize Finance & transaction cost
- Avoiding forex losses : Mobilizing forex for deposit in strong currency & reducing forex holding in weak currency
- Impact of cash management on tax liabilities eg dividend remittance
- Impact of political & regulatory conditions to be explored & resultant loss to be minimized



- Individual Approach
- Regional financial H. Quarter
- Centralized depository
- Payments netting
- Intrasystem Loan
- **Transfer Pricing** •
- Dividends & remittances
- Reinvoicing center

Problems & Risk

currency Rate exchanges

- Cash forecasting
- Leads & Lags Local money Market Operation
- Local credit practices
- Problems & Risk Interest rate Exchanges Blocked Funds Political Risk

- Government Action
- Tax Incidence
- Inflation

Two Perspective of cash Management

- system view of cash management
 - Fund generators (Old established cash cows)
 - Fund Users (new expanding)
 - Fund coordinators
- need of Overseas affiliates eg 15.2

	Centralized Vs	Decentralized
1	More efficient levels of cash	1. Complete centralization is
	Held in operating affiliates	not possiblebecause of
		uniform circumstances
2.	Better management of risk	2. Rapid transfer of fund
	generated by cross border	may not be possible
	currency flows & Better	· ·
	exposure management	
3.	Ability to accelerate or	3. Local problems in
	decelerate collection	handling suppliers
	disbursement to meet	customers etc have to be
	System need &	dealt on spot ,local
	market operation	bankers relationship
4.	To minimize borrowing	4. conflict of interst may
	0	cost arise if subsidiary is
		not wholly owned
5.	Enhancing profitability	5. Point of view of optimal
	by transfer differ	may each shareholder to
	pricing	corporate perspective

Notes -

Topics Covered

Cash Transmission

Objectives

Upon completion of this Lesson, you should be able to: Understand Cash Transmission

Cash Transmission

An important but easy to overlook aspect of cash management is minimising the unnecessary costs in the process of collecting cash from debtors and making payments to creditors. These costs arise from the so called "float". A debtor issues a cheque or a draft in favour of the firm, but funds do not become available to the firm till the instrument is cleared through the banking system. This delay is the float. The treasurer must try and minimize the float in the cash collection cycle and take advantage of the float in the cash payment cycle.

The banking systems in various countries have evolved clearing mechanisms which aim at reducing the delays between a payment instruction being received and the payee actually being able to apply the funds. The CHIPS in the US, CHAPS in the UK are examples of such systems. SWIFT is an electronic network for cross-border funds transfers. A treasurer operating in a multinational framework needs a good working knowledge of these systems. Similarly banks around the world offer various facilities to their clients to speed up funds transfers. Direct debits, lock-box facilities and other such devices can help in cutting down these delays often enabling realization of value the same day. A good exposition of efficient cash transmission techniques can be found in Austen and Reyniers (1986). With the rapid strides in technology of banking and innovations like Internet banking, it may be possible to virtually eliminate the delays and effect instant cash transfers from the payer to the payee.

Notes -

Points to Ponder



The Cash Flow Timeline					
Order Bewitzed	Sal	le			Cash
< Inventory >		Accounts Receivable >	Col < F	lection loat >	>
Agooupta		Dichurgor	t		Time ==>
< Payable :	>	< Float	>		
Invoice Received		Payment Sent		Cash Paid	
	he Cash Flo Order Received < Inventory > Accounts < Payable : Invoice Received	he Cash Flow Order Received < Inventory > < I Accounts < Payable > Invoice Received	he Cash Flow Timeline Order Received <inventory> Accounts <payable> Invoice Received Sent</payable></inventory>	he Cash Flow Timeline Order Sale Received Accounts < Inventory > Accounts Disbursement < Payable > Float Invoice Payment Received Sent	Order Received Sale Collection < Inventory > Accounts Collection Accounts Receivable > Float Accounts Disbursement Float Accounts Payable > Float Invoice Payment Cash Received Sent Paid



- * To understand the various options firms have to collect customer payments
- * To differentiate between the various collection system and choose that system best suited for the company
- \star T o collect the basic data necessary for a lockbox study
- * To understand how a lockbox model works

Collection Float Components

Mail Float
Processing Float
Availability Float



Mobilize Funds
Accessing Information
Updating Accounts Receivable
Providing Audit Trails



Check	Check	Ch	eck	Good Funds	
Mailed Receiv	ved	Deposited	Re	ceived	
Mail ← Float →	Proces — Flo — Collect	ssing at → ↓ ion Float ‐	Availability —— Float —	Time =	>

Collection Float Measurements

Average Daily Float
Average Daily Receipts
Average Delay
Annual Cost of Float

Considerations in Selecting a Collection System

- * Commonly used payment practices.
- * Nature of the payment system.
- * Nature of the business.
- * Characteristic of the payment instrument used.
- Cost of float and system administration.
- * Differences between wholesale and retail businesses.

Cost of Float								
Remittances	x Col	lection Float		Dollar-Day Float				
\$ 50,000		2		\$ 100,000				
1,200,000		5		6,000,000				
500,000		7		3,500,000				
1,000		10		10,000				
\$1,751,000				\$9,610,000				
Average Dollar-Day Float = Dollar-Day Float/Days in month - \$320,333								
Average Collection Float = Dollar-Day Float/ Remittances – 5.49 days								
Annual Cost of Float = Average Dollar-Day Float x Rate - \$16,016								

Types of Collection Methods

- * Over-the-Counter/Field Deposits
- * Mail
- ***** Electronic (ACH or wire transfers)

Over-the-Counter System: Crigeria to Select Deposit or Collection Banks

- * Location of the bank for convenience and security reasons.
- * Banks with branches to reduce administration and cash concentration costs.
- * Means of compensation.
- Benefits for processing of check deposits and cash processing.



- ***Decentralized collection systems**
- *****Centralized collection systems



*****Company processing centers

- *Lockbox systems
- *Choice depends on volume of checks processed and the amount of the checks



- ***Home Banking**
- *** Telephone Payment**
- ***Internet Payment**
- ♦Wire Transfers
- ***ACH Business-to-Business**
- *Preauthorized Payments



*Retail *Wholesale *Wholetail

Retail Lockbox Features

- ***** Large volume of small-dollar remittances.
- * Objective is to minimize processing costs.
- * Highly automated operation.
- * A standard remittance advice (return document) accompanies payments.
- * Information on the return documents and checks are captured and data is transmitted electronically to update A/R.

Wholesale Lockbox Features

- $\boldsymbol{\ast}$ Small to moderate volume of large-dollar remittances.
- * Objective is to minimize collection float and to provide timely and accurate information on payments.
- $\boldsymbol{\ast}$ Involves manual and labor intensive processing.
- * Payments are made for specific invoices and one payment can cover different invoices.

Site Selection Criteria

- * Locations with faster availability.
- ***** Locations with mail centers.
- * Locations close to high concentration of customers.
- ***** Service quality of processors.

Lockbox Location Study

*****Customer groups

*****Remittance sample

*Mail availability schedule

Collection Studies

- * Determine number and location of collection points and assign payors to these points to minimize float.
- * Studies should also include an analysis of processing costs.
- * Mail time studies provide input for the selection of sites.



*****Complete enumeration

***Other techniques**



*Consortiums

- *****Multiple processing centers
- *****Movement toward nationwide branching

Lockbox Service Features

- * Mail Time Performance
- * Unique Zip Codes
- * Deposit Deadlines
- * Availability Schedules and Availability
- Adjustments
- * Ledger Cutoff Time and Total Collection Time

Other Settlement Systems

- * Net Settlement Systems
- * Credit Cards
- * Debit Cards
- * Automatic Teller Machines (ATMs)
- * Telephone Banking
- * Bill Paying Services
- * Home Banking
- * Agents
- * Smart Cards

Alternative Collection Systems

&Credit/Debit /Smart Cards

- ***ATM Machines**
- ***Bill Paying Services**



Learning Objectives

- \div T o understand the need for a cash concentration system
- * To formulate a cash transfer decision model
- * To understand the advantages and disadvantages of the different cash transfer tools

Objectives of Cash Concentration

- * Simplify Cash Management
- * Improved Controls
- * Pool Funds
- * Minimize Excess Balances
- * Reduce Transfer Expenses







- * Collection System
- * Disbursement System
- * Funds Transfer Alternatives
- * Banking Network

Lockbox Collection System: Concentration System Considerations

* Relatively Few Banks

- * Regional and Money Center Banks and Third Party Processors
- * Corporate Services
- * Deposit Availability

Over-the-Counter Collection System: Concentration System Considerations

- * Multiple Banks
- * Local Banks
- * Limited Need for Daily Deposit and Balance Information
- * Local Deposits

Electronic Collection System: Concentration System Considerations

No Mail Float
Bank Location Unimportant
Few Banks



Disbursement Systems: Concentration System Considerations

- * Centralized Check Issuance
- *** Decentralized Check Issuance**
- * Efficient concentration system is important with centralized check issuance.

Initiation of the Transfer

- * Decentralized
- * Centralized



* ACH

 $\ensuremath{\diamond}$ Wire transfer



* Administrative costs



- * Enhanced visibility and control of balances
- * Dual balance possibilities



- * Complicating factors
- ***** Objective: minimize transfer costs
- * Transfer rules





- * Availability of deposits vs clearing of transfer instrument
- * Weekends



- * Daily transfer: transfer the daily deposit
- * Managing about a target:
 - one-time transfer out to earn interest
 - reduces the number of transfers
- * Anticipation: initiate transfer prior to deposit

Reducing Transfer Cost: Transfer Mechanisms Target and Threshold Concentration

- * <u>Target Concentration</u>-transfer all funds above set target.
- * <u>Threshold Concentration</u>-transfer funds only after funds have built up to a predetermined level.
- $\boldsymbol{\ast}$ Target concentration may involve daily transfers.
- * Threshold concentration helps minimize number of transfers.



- \star Is the initiation of a transfer before cash becomes available at the deposit bank
- * Availability Anticipation is based on ledger balances.
- * <u>Deposit Anticipation</u> is based on expect deposits. Requires a good forecasting system.

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