UNIT 13 POLITICAL RISK AND TAX ASPECTS

Structure

13.0 OBJECTIVES

After studying this unit you should be able to :

- explain political risk
- analyse how political risk is assessed and measured
- identify why multinational corporation invest in foreign countries
- examine how tax policy affects foreign investments.

13.1 INTRODUCTION

As you know there are different types of currency risks namely transaction risk, translation risk, economic risk, political risk and interest risk. In block 2 you learnt in detail about transaction risk, translation risk and economic risk. Let us now learn about political risk.

Political risk is the risk associated with doing business in or with other country having different culture, laws, traditions, customs and having a different currency. All international trade and investments face political risk though in different degrees. In this unit, you will learn about political risk and how this risk is assessed, measured and managed and what is the effect of tax policy on foreign investments.

13.2 POLITICAL RISKS IN TODAY'S WORLD

The fragmentation of the international political system, the entrenched parochial sentiments of national and supranational groups, and a community of nations where one-third of the national governments change every year, have all combined to make the life difficult for the international investors. At one time or another, multinational enterprises and individual investors have been negatively influenced by events in various countries from Afghanistan to Iraq, Indonesia to Uganda, Zaire, etc.

American companies alone may have lost billions of dollars or more as a result of the downfall of the Shah of Iran. Recently, the investment company of George Soros lost a couple of billions of dollars in the Russian debacle.

The political risks for international investors may be quite substantial, especially in the nations which have gained independence in the post-war era.

Political risk is defined as the possibility of unwanted consequences of political activity and events. There are three major categories of political risks. (a) forced disinvestment (b) unwelcome regulation and (c) interference with operations. Forced disinvestment occurs when a host government acquires assets of a company against company's will. It may confiscate or expropriate. In confiscation government does not pay any compensation. It happened in Cuba in 1960 for sugar industry and Venezuela for petroleum company. In expropriation there is some compensation though it may not be just compensation. In case of confiscation or expropriation the property may be nationalised or domesticated (control is given to nationals). Mexico, Libya, Hungry and Poland adopted nationalisation. In South Africa Barclays Bank, Coca Cola and General Motors were under domestication policy. Between 1960 and 1992, domestication acts were 575, of which alone 83 were in 1975 in different countries.

Another classification of political risk is given by Root. These are (1) general instability risk– Iran, Uganda, Afganistan and Fiji are the examples (2) ownership/control risk (3) operation risk and (4) transfer risk.

The indicators of political instability are social unrest, attitude of nationals and policies of host country.

The source of political risk is not always found in the host country. Sweden's giant electrical firm, ASEA faced intense criticism at home for proposing to take part in a power plant project in what was then the Portguese colony of Mozambique. After the nuclear testing by India and Pakistan, the U.S. investments in these countries are finding difficulties because of the U.S. sanctions against India and Pakistan.

However, in spite of the wholesale confiscation in Cuba in 1959 and 1960, as well as in other countries, most government interference in the foreign direct investment sector tends to be very selective and limited. There have been expropriation or nationalisations against a particular firm or an industry, in most cases some compensation is provided to former owners. In confiscations in Cuba or China under Mao, no compensation was given.

Experience shows that even in the case of forced disinvestments in the Third World nations, almost 90 per cent of the incidents had been very selective and did not represent wholesale nationalisations. Much more wide-spread but low-profile political risks to be faced by international investors in the future will probably emanate from governments limiting the strategic flexibility of multinational enterprises. Because of government regulations, firms will find it much more difficult to protect product lines and technological innovations, marketing and transfer strategies and profit margins. IBM, for example, withdrew completely from India in 1978 because it refused to comply with the then New Delhi government's insistence on a greater role in product development and equipment allocation. Local content and ownership standards, foreign exchange and export stipulations, and government export promotion and subsidy programmes which openly support home-grown firms as well as anti-dumping policies are among the tactical measures available to the most governments which may affect the foreign investment directly.

13.3 ASSESSMENT OF POLITICAL RISK

One of the major concerns for multinationals intending to invest in other countries is the assessment and measurement of political risk in these countries.

Most governments intervene in the national economies. For example, the Prime Minister of Malaysia imposed capital controls which have in effect rejected the earlier policies regarding the convertibility of currencies. Similarly governments kick-start their economies to get them out of depression. They may impose monetary and fiscal policies which go against the basic assumptions of the projects by multinational corporations in those countries, thus vitiating the considerations of viability on which these projects are based. Thus the interventionist policies of governments in their domestic economies increase the political risk faced by multinational firms.

Political risk takes various forms, from changes in tax regulations to exchange controls, from imposing conditions on local production to expropriation, from adopting measures to discriminate in favour of domestic companies against multinational companies (Swadeshi Morcha, for example). The governments may restrict the access of foreign controlled companies to local borrowings.

All these policies adopted by governments of various countries lead to the change in the value of an investment, making it less attractive than before. It may adversely affect the cash flow position of the foreign-controlled companies. This is a general definition of the political risk, where the value of a foreign investment, or its cash position is affected because of the policies and actions of local governments. This effect can be positive or adverse.

Though the political risk may affect the multinational companies, most companies undertake foreign investment without detailed planning for or systematic analysis of risk.

Thus a formal assessment of political risk has to be undertaken by the companies intending to invest in other countries. This involves the following steps :

a) The recognition of political risk and its likely consequence; this stage is concerned with measuring political risk.

b) The development of policies to cope with political risk; this stage is concerned with managing political risk.

c) Should expropriation occur, the development of tactics to maximise compensation; this stage is concerned with developing post expropriation policies.

State of the Art

Political risk forecasting is a relatively recent phenomenon. The analysts use a variety of approaches in their efforts to forecast political risks for businesses. Some even distinguish political "risk" from political "uncertainty". The political uncertainty is defined as an unmeasured subjective doubt about a political environment, while the political risk is defined as 'a relatively objective measurement, usually resulting in a probability estimate of that doubt'. Thus by converting political uncertainties into probability terms political risk provides a mechanism for the objective evaluation of political investment climates.

Rummel and Heenan identify at least five major approaches which are employed to assess political risk.

The **first** is the grand tour approach wherein a company engages in some preliminary market research towards a country by dispatching an executive or a team on an in-country inspection tour. Once the tour has been completed, the team meets with the top management and discusses the potential strengths and weaknesses of the proposed investment.

The **second** is a hands-on approach in which the company places great trust in the recommendations made by academicians, diplomats, business representatives and other outsiders who have knowledge about the target country.

The **third** approach uses the Delphi techniques. The potential investing firm initially lists selective elements which might influence a nation's political future, such as the size and composition of the armed forces or the history of leadership succession. The firm then asks a number of outside experts to rank the importance of these factors for the country under consideration. The data may then be aggregated and the country ranked on a high-moderate-or low risk basis.

The **fourth** method uses quantitative methods, somewhat akin to econometric forecasting of economic events. Multivariate analysis is used to predict political trends based on current and historical information. It analyses the relationship among underlying political, economic, sociological and cultural relationships.

The **fifth** approach combines both subjective and objective approaches and provides a systematic framework for both the qualitative and quantitative interpretation of data.

Almost all the professional forecasting services incorporate the major features of integrated analysis. The Frost and Sullivan World Political Risk Forecasts cover more than sixty countries and utilise the quantitative and qualitative analyses of 150 political scientists, business representatives, government officials and other country specialists. At least three experts evaluate a country every few months and the Frost and Sullivan permanent staff may also add its own input. An eighteen month forecast is provided for each country, with emphasis placed on the probability of regime change, political turmoil, expropriation and equity repatriation restrictions. A five-year forecast is also included, with each expert analysing the likelihood that political change will result in major losses to multinational enterprises, as a result of socio-economic conditions, factional or political activities or government decisions. Major domestic actors are identified, their position on issues crucial to businesses scrutinised and their potential for influencing change estimated. The Frost and Sullivan country-reports average thirty pages and each client is provided with a concise political risk forecast similar to the following, "There is a 25 per cent chance of a major business loss because of political developments in the next 18 months, a 45 per cent chance of a loss within five years".

Business International Corporation employs a panel of outside experts who rank more than seventy countries twice a year according to risk, opportunity and operating conditions. These specialists provide rating for fifty-five topics ranging from government attitudes toward the private sector to the composition, size and influence of the middle class.

The Business Environment Risk Index (BERI) was conceived by Professor F. Theadore Haner. BERI reviews more than forty-five countries three times a year. You will read about BERI in the next section, as this is a widely accepted index for its quantification.

Among other indices, can be mentioned the Political System Stability Index (PSSI) which is geared exclusively towards developing nations. Fifteen indicators of political stability are distributed among three equally weighted indexes -socio-economic, governmental processes and socialite conflict. The indicators for the societal conflict, for example, are public unrest, internal violence and the coercion potential of the society. Each country then is ranked according to its political system.

Almost without exception, each of these organisations and scholars is convinced that politics will play a progressively greater role in effecting global strategies.

13.4 MEASURING POLITICAL RISK

There are two approaches to measure the political risk. Firstly, there is the country-specific route (called the macro approach), and secondly, one can take the firm specific route (called the micro-approach).

A number of political risk forecasting models are used these days. These models supply country risk indices that quantify the political risk in each country. These indices consider political factors, economic factors as well as certain subjective factors relating to particular countries.

Political stability may depend on factors such as frequency of changes in government, the level of violence in the country (indicated by the violent deaths per 100,000 population), number of armed revolts, conflicts with other states etc. These factors are supposed to indicate the longevity of the government, and the ability of the government to enforce the guarantees given to foreign investors.

Economic Factors : Economic Factors include inflation, balance-of-payments deficits or surplus, and the growth rate of Per Capita Gross National Product. These factors indicate whether the country is economically strong, or whether the country is on the brink of a financial trouble that it would need to resort to measures like expropriation to increase government revenues or introduce current account deficit position.

More subjective measures of political risk consider the country's attitude towards private enterprise, more particularly private foreign enterprise; whether the government of the country thinks that foreign investment is to be banned or kept limited to certain specific sectors. (e.g. B.J.P. Government's National Agenda stating that the foreign investment will be encouraged in infrastructure sectors).

Business Environment Risk Index (BERI)

An index that tries to include political, economic and country related subjective factors is called Business Environment Risk Index. The political risk refers to uncertainty over property rights, which is caused if there is a risk of expropriation of the property or the stream of income from the property. This uncertainty can arise out of a threat of expropriation or the change in tax laws.

Another indicator of political risk is that of capital flight, when citizens of the country export their savings out of the country when they fear the safety of their capital. This happened in Latin American Continent, Iran, Afghanistan and is presently happening South Asian countries. Generally the "Errors and Omissions" entry in a country's balance of payments is useful in estimating how much capital has fled out of the country.

Capital flight mainly takes place because of inadequate economic policies. When the government regulations and controls and taxes lower the rate of investments in the home country, the capital tends to flee. High inflation and serious payments imbalance has the same effects. The political risk perceived by the residents because of the possible change in regime (e.g. Iran in 1980, Afganistan in early eighties, Hongkong in 1997) can have the same effects.

The flight of capital is the most obvious index of the political risk, because it indicates that the residents of the country themselves don't trust the government. Hence investment there must be unsafe.

The Table 13.1 shows the BERI Ranking, in November 1987 of some of the countries classified into low risk, medium risk and high risk countries. A few countries in that year carried high prohibitive risk, e.g. Egypt, Peru, Phillippines, etc.

Table 13.1 : BERI Rankings, November 1987

Low Risk	**Category***
Switzerland	82
Japan	80
Germany	78
United States	78
Singapore	74
Taiwan	70
Medium Risk	
Netherlands	69
Belgium	68
United Kingdom	68
Canada	67
Sweden	67

Norway	66
France	64
Ireland	64
Australia	62
Denmark	62
Korea (South)	61
Saudi Arabia	58
Spain	57
Malaysia	56
High Risk	**Category***
Greece	54
Israel	54
Thailand	54
South Africa	52
Turkey	50
Ecuador	49
Italy	49
Colombia	48
Cote d'Ivoire	48
Hungary	48
Brazil	46
Chile	46
India	46
Portugal	46
Indonesia	42
Argentina	40
Kenya	40
Mexico	40
Pakistan	40
Venezuela	40
Prohibitive Risk	
Egypt	39
Peru	39
Phillippines	39
Iraq	38
Morocco	38
Nigeria	38
Iran	34
Zaire	28

*BERI Categories :

100-86	Unusually stable and superior business environment for the foreign investor.
85-70	Typical for an industrialized economy. Any tendency toward nationalism is offset in varying degree by the country's efficiency, market opportunities, financial entities, etc.
69-56	Moderate-risk countries with complications in day-to-day operations. Usually the political structure is sufficiently stable to permit business without serious disruption.
55-41	High risk for foreign-owned businesses. Only special situations should be considered (e.g., scarce raw materials).
Below 41	Unacceptable business conditions.

SOURCE : Business Environment Risk Information, Geneva, 1987.

The Micro Approach

The BERI is a sophisticated index. However, there is no direct relationship between political instability and political risk. In Latin American countries governments changed frequently but foreign investors did not pull out. France and Italy had unstable governments for a long time. It would appear that foreign investment would depend more on risk-return trade-off of particular investments than on the considerations of political risk. Each firm in a country does not face the same degree of political risk. The extractive, utility and financial sector companies are more prone to risks of expropriation than companies in other sectors. Rarely governments expropriate foreign firms indiscriminately. Thus the political risk analysis has to pay more attention to the factors governing the firm, the industry, etc.

Hamer Rating Method (1979)

This method incorporates on a scale of 0 to 7, a number of factors which can cause internal political stress. These include :

a) Fractionalisation by language, ethnic or religious groups and the power of resulting factions;
b) Restrictive measures required to retain power;
c) Xenophobia, nationalism, inclination to compromise;
d) Social conditions, including extremes in population density and the distribution of wealth;
e) Organisation and strength of a radical left government.

Ratings arising from external factors are added to above. These include :

a) Dependence on/or importance to a hostile major factor.

b) Negative influence of regional political forces, possibilities of border wars and disruptions arising from such sources of conflict.

Additional ratings relating to estimated systems of problems are computed and added up; like:

a) Societal conflict.

b) Political instability

The scores available from above ratings are aggregated. They are updated as the world political environment changes. Countries are then rated as follows :

a)	Minimal risk	:	0 to 19 rating points.
b)	Acceptable risk	:	20 to 34 rating points.
c)	High risk	:	35 to 44 rating points.
d)	Prohibitive risk	:	45 rating points and above.

The Hamer Rating method is critically similar to BERI index. But the BERI index is comprehensive and aims at quantifying the factors responsible for political risk.

Euromoney System

A method similar to BERI is that of the financial magazine "Euromoney". Its monthly country-risk evaluation is based on the weighting given to various factors. Euromoney polls a section of experts. These specialists are asked to given their opinions on each country with regard to the factors. The three broad categories are considered :

a) analytical indicators (40 per cent),

b) credit indicators (2– per cent)

c) market indicators (40 per cent)

These indicators are further divided into more detailed components as shown in the Table 13.2.

Table 13.2 : Country-risk evaluation system used by Euromoney.

	Weighing (%) Analytical indicators
Economic Indicators	15
Debt service to export ratio	
Balance of payments to GNP	
External debt to GNP	
Politicall risk	15
Economic risk	10
Credit indicators	
Debt service record	15
Ease of rescheduling	5
Market indicators	
Access to bond market	15
Selldown of short-term paper	10
Access to forfeiting market	15
Total	**100**

Another financial monthly, 'Institutional Investor' also publishes country risk ratings based on scores by a panel of bankers, for credit worthiness. Other rating systems, which are also available for subscription, have broadly similar approaches with small variations. These depend on a combination of objective data and subjective estimates. Some rating systems incorporate some additional data as inflation rates, balance of payments deficits and surpluses and other macroeconomic factors. Basically the objective of all these exercises is to assess whether there is high risk involved, if adverse results happen because of government intervention. As can be expected. the level of research in this area is rudimentary and the conclusions of these ratings cannot always depended on.

The rating system developed by Morgan (1986) uses discriminant analysis to assess the influence of variables on the likelihood that a country would need to reschedule its debt repayments. In today's situation of international finance, technical or chronic insolvency can be a factor to consider. Thus Morgan considers the following factors important in its rating system :

a) A relatively high ratio of total debt to exports;

b) A relatively high proportion of floating rates loans to total loans;

c) A relatively low rate of growth in Gross Domestic Product (GDP).

Political risk has a different impact on different firms. A firm relying on imports will be adversely affected by trade restrictions, but an import-competing firm would be beneficiary of such regulations. However as a result of WTO restrictions, the scope of trade restrictions is getting reduced.

Multinational firms which invest abroad frequently factor the consequences of political risk in their investment decisions through :

a) Shortening the minimum pay back period.

b) Raising the required discount rate for investment.

c) Adjusting cash flows for the cost of risk reduction, for example, by charging a premium for overseas political risk insurance.

d) Using certainly equivalents in place of expected cash flows.

13.5 MANAGING POLITICAL RISK

Having analysed the political environment of a country and having assessed the risk to its operations, a firm should decide (a) whether to invest is that country, (b) if so, how to device coping strategies to minimise the risk. A few generalisations are possible here, as every firm, consistent with its field of activity, faces unique risk.

13.5.1 Pre-investment Planning

An MNC can follow each or all of the following policies.

1) avoidance

2) insurance

3) negotiating the environment

4) structuring the investment.

Avoidance

Many firms tackle the political risk by avoiding to invest in that country. The issue is what amount of risk, the company finds acceptable and is prepared to bear. If the firms avoid investing in a high risk country, it also foregoes the high returns possibly available on its investment. Thus most multinationals use avoidance strategy only rarely and try to recognise and assess the risk, e.g., investing in dictatorial China, or economically volatile South Asian countries is risky. However, if the risk does not materialise, the returns are considerable.

Insurance

Most developed countries sell political risk insurance to cover foreign assets of domestic companies. The U.S. Government, through the Overseas Private Investment Corporation (OPIC) provides such a cover. Many multinational corporations take advantage of it. However, the risk can arise from the U.S. Government itself if it refuses to extend such a cover to foreign investments in a particular country. For example, in the wake of sanctions after India's nuclear explosion, in May 1998, the OPIC has not given such a cover to U.S. investments in India.

The OPIC programme provides U.S. investors with insurance against the loss due to specific political risks of expropriation, currency inconvertibility, and political violence like war, revolution, or insurrection. To qualify, the investment must be new or a substantial expansion of existing facilities. Coverage is restricted to 90% of the equity participation. Similar OPIC protection is given for leases mainly for the inability to convert into dollars the local currency received as lease payments.

OPIC also provides business income coverage (BIC) to U.S. investors, if the income from foreign investments is disrupted because of political violence. OPIC coverage is also given to U.S. exporters of goods and services, etc.

The cost of the coverage is different for industries and risks insured. For example, the annual base rates per $ 100 of coverage in 1988 were $ 0.30 for currency inconvertibility, $ 0.60 for expropriation for manufacturing industries. The rate for political violence with civil strife were $ 0.60 for manufacturing projects and $ 0.75 for oil and gas projects. These are shown in the Table 13.3.

The Lloyds of London is the only private insurer against expropriation risks. The private sector insurance business did not develop in the expropriation because of the heavy losses if the damages have to be paid. Thus often the loss factor is reinsured with other insurance firms.

Mostly high-risk multinationals will seek insurance. Hence adverse incentives are built in by adjusting premiums in accordance with the perceived risks, screening out certain high-risk applicants and by providing reduced premium to the companies engaged in activities that are likely to reduce expropriation risk.

Adverse incentives sometimes can have the effect of increasing the riskiness of certain activities. Thus firms may neglect policies asked by host countries, thus the overseas projects may face thus problems including that of expropriation. Firms may undertake investments that were too risky and neglect certain policies responsive to the host country's needs. This would lead to what one perceptive writer has called the "Moral Hazard" (Keneeth Arrow) where the owner of a failing business might commit arson to collect on the fire insurance. In effect, purchasing political risk insurance is equivalent to purchasing a put option on the project. The MNC will seek to exercise this put option which effectively involves selling its foreign project to the insurance company for the amount of coverage in whenever the market value of the project falls below the insurance claim.

There are two fundamental problems with relying on insurance as a protection from political risk. First, there is an assymetry involved. If an investment proves unprofitable, it is unlikely to be expropriated. Since business risk is not covered, any losses must be borne by the firm itself. On the other hand, if the investment proves successful and is expropriated, the firm is compensated only for the value its assets. Thus, although insurance can provide partial protection from political risk, it is not a comprehensive solution.

Table 13.3 : OPIC Insurance Fees : Annual Base Rates per $ 100 of Coverage

	Manufacturing/ Services Projects		Natural Resource Projects Other Than Oil and Gas		Oil and Gas Projects		Institutional Loans		Business Income Coverage		Contractors and Exporters Guaranty Coverage	
Coverage	Current	(Standby)	Current	(Standby)	Exploration	Production	Current	(Unused Commitment)	Current	Standby)	Current	(Standby)
Inconvertibility	$0.30	$(0.25)	$0.30	$(0.25)	$0.30	$0.30	$0.25	$(0.20)	—	—	$0.30	$(0.25)
Expropriation	0.50	(0.25)	0.90	(0.25)	0.40	1.50	0.30	(0.20)	—	—	0.60	(0.25)
Political violence	0.50	(0.25)	0.50	(0.25)	0.60	0.60	0.60	(0.20)	(0.25)	(0.25)	0.50	(0.25)
With civil strife	0.60	(0.30)	0.60	(0.30)	0.75	(0.75)	—	—	—	—	0.60	(0.30)
Interference with operations	—	—	—	—	0.55	0.55	—	—	—	—	—	—
With civil strife	—	—	—	—	0.075	0.25	—	—	—	—	—	—
Inconvertibility and expropriation*	—	—	—	—	0.0075	0.0075	0.50	(0.30)	—	—	—	—
Inconvertibility, expropriation, and political violence *	—	—	—	—	—	—	0.90	(0.50)	—	—	—	—
With civil strife	—	—	—	—	—	—	1.00	(0.52)	—	—	—	—
Disputes	—	—	—	—	—	—	—	—	—	—	0.80	(0.25)
Bid, performance, and advance payment : guaranties	—	—	—	—	—	—	—	—	—	—	0.60	(0.25)
Primarystandby (per coverage)	—	—	—	—	0.075	(0.25)	—	—	—	—	—	—
With civil strife	—	—	—	—	0.09	(0.30	—	—	—	—	—	—
Secondary standby (per coverage)	—	—	—	—	0.75	(0.75)	—	—	—	—	—	—

*Combined coverage

SOURCE : *Investment Insurance Handbook*. Overseas Private Investment Corporation, March 1988.

Negotiating the Environment

At times firms try to reach an understanding with the host government before undertaking an investment. This is called a "concession agreement" in which rights and responsibilities of both parties are defined. These concession agreements are negotiated by multinational firms with developing countries. However, as the experience in developing countries shows, such concession agreements are difficult to implement, particularly in countries like Iraq, Iran, etc.

Structuring the Investment

Multinational firms try to increase the cost of interference by the host country to minimise its exposure to political risk.

This can be done by keeping the local affiliate dependent on sister companies for markets and supplies. Suzuki has not yet given the gear-box technology to Maturi Udyog. In addition, Maruti Udyog is yet purchasing key components from the Suzuki in Japan or its sister companies in other countries. Thus by keeping R&D facilities, proprietary technologies and key components under its control, a firm can raise the cost of nationalisation.

Another strategy is to establish a single global trademark that cannot be legally duplicated by a government. Control of transportation is user by some companies to prevent any adverse action on their projects by the lost government.

One strategy can be develop external financial stakeholders in the venture's success. Thus the capital is raised from the host and other governments, international financial institutions, customers etc. rather than employing funds supplied or guaranteed by the parent company. Thus not only this strategy provides additional funds, it also serves another purpose of motivating other stakeholders to come to the company's help in case the host country considers extreme steps like expropriation. The MNC and the other investors can then legitimately ask for potential sanctions against the foreign government, instead of relying on the uncertain of their home governments.

13.5.2 Operating Policies

In the realm of operating policies. multinational enterprises has less degrees of freedom than, say, available at the pre-investment stage. These operating policies relate to :

a) Planned dis-investmant,

b) Short-term profit maximisation,

c) Changing the benefit/cost ratio of expropriation,

d) Developing total stakeholders,

e) Adaptation.

Some authors have suggested that a multinational firm may phase out its ownership of foreign investment over a fixed time period by selling all or a majority of their equity interest to local investors. This may be difficult in practice. If the prices for buying out the MNC interest are settled in advance and if the project is less than successful, the host government or the strategic partner in the host government may be unwilling to buy.

The multinational enterprise may try to recover maximum amount of cash from the local operation. This can be done by deferring maintenance expenditures, producing lower-quality merchandise, setting higher prices and eliminating training programmes, This way, while cash will be generated during the short run, the long-term effects of such policies will harm the project. Without considering the ethical aspects, one would have to consider such a short-sighted hit-and-run strategy only when faced with the danger of losing everything.

If the government's objectives in an expropriation are rational, and provided the economic benefits more than compensate for the costs, the multinational firm can initiate programmes to reduce the advantages of local ownership. It gives the incentive on the part of the host government to expel the foreign promoter. Thus promoters of the foreign project can establish local R and D facilities, develop export markets for the products of the collaborator, training local workers and managers etc. to minimise the threat of confiscation.

However, if a country is determined to expropriate a foreign project, he would not think too much of the costs of replacing the foreign partner. He would be more interested in advantages of local ownership. This has happened in most developing countries during the last five decades. Thus the best possible strategy for the MNC would be to raise the cost of expropriation. If the host country is threatened with stiff sanctions as a consequence of their actions of expropriation, etc. the host country would think twice before attempting any such action.

The better strategy for the foreign project would be to cultivate local individuals and groups in such a way, that any adverse action against the project would affect the influential local investors as well. If the consumers get dissatisfied by the quality of the product of the local entrepreneur who displaced the foreign owner, their protests will influence the government policies. During Janta Raj, the coca-cola withdrew from India, but customers not quite satisfied by the substitute product welcomed the company back when it finally came.

Firms are also trying a more radical approach to the political risk. They accept the inevitability of a take-over or expropriation, and try to earn profits on the firm's resources by entering into licensing and management agreements.

13.6 POSTEXPROPRIATION POLICIES

Generally the firm has some indication that its foreign project or a subsidiary is likely to expropriated. Thus the multinational firm can open a dialogue with the host goverment before the confiscation takes place. However, if these talks do not work out, post-confiscation discussions would take place. These discussion go through the following four phases, hostility increasing at every stage.

Rational negotiations

This is to maintain contact with the host government to pursuade him that the expropriation was a mistake. This strategy may or may not work. If that host country was using the confiscation weapon only as a bargaining counter, then these negotiations can lead to a mutually acceptable solution.

Applying power

If these negotiations do not succeed, the firm can apply pressure on the host government. It may deny vital components, technology, export markets etc. If the host country already has this, the pressure may not bring in desired results.

Legal remedies

A basic rule of law is that legal relief must be sought in the host country. If that is not helpful, the foreign firm can go to the home country court or the international court. When the Enron power project at Debhol (Maharashtra) was sought to be closed or the terms of reference were to be re-opened, the Enron went to the international court.

In most developing countries, the judiciary is subservient to the government. So the legal redress is not possible. In India, where judiciary is quite independent of the executive, the affected party, the foreign firm can hope for the legal remedy. However delays in the court proceedings often make the resumption of the project non-feasible.

Suing the host country in the courts of the home country has two hurdles. According to the doctrine of sovereign immunity. a sovereign state cannot be tried in the court of + another state without its consent. The act of state doctrine states that a nation is sovereign in its own borders and connot be sued in the courts of another country, even if its actions violated international law.

Thus arbitration is another avenue. In 1966, the International Centre for settlement of Investment Disputes was established under the auspices of the World Bank. It provides an international forum for private investors to start action against a foreign nation. However the court decisions lack teeth and its influence is small in practice, when its judgements are against the foreign nation.

Management Surrender

Faced with overhelming odds, managements of foreign firms just give up and settle for whatever insurance payments are due to them.

Still the legal ownership of a facility is less important than the ability to derive cash flows out of it even ofter expropriation, some foreign firms do that by,

a) Handling exports as in the past, but under a commission arrangement,

b) Furnishing technical and management skills under a management contract,

c) Selling raw material and components to the foreign state.

13.7 MULTILATERAL INVESTMENT GUARANTEE AGENCY

One of the institutions at international level to provide protection against political risks is Multinational Investment Guaranties Agency (MIGA). It was started in 1988 and is a member of world bank group. It has its own Board of Governers. It has a capital stock of SDR dollars one billion. Its membershipis open to all world bank members.

MIGA was created to enhance the flow to developing countries of capital and technology for productive purposes and to supplement national and private agencies supporting foreign direct investment through their own insurance programmes. It provides viable alternatives in investment insurance against non-commercial risks in developing countries thereby creating investment and opportunities in those countries. Some of its niches for investment insurance in world market are :

1) augmenting capacity of other public or private insurers of political risks through co-insurance or reinsurance.

2) Insuring investment in countries restricted or excluded by the policies of other national insurers or through specific policies adopted by governments.

3) serving investors who do not have access to other official political risks insurer.

4) providing coverage to investors of different nationalities in a multinational syndicate, thereby affording convenience in insurance contracting and claim settlement and

5) providing coverage of forms of investment not offered by other insurers and on terms designed to be more effective in encouraging investment.

MIGA offers coverage against political risks relating to transfer restrictions, expropriation, breach of contract and war and civill disturbances. MIGA policies and practices can be divided into two classes:

a Investment Marketing Services

b Investment Guarantee Services

a **Investment Marketing Services :** Marketing Core services fall into three broad areas:

1) Capacity building
2) Information dissemination
3) Investment facilitation.

1) **Capacity building :** The aim is to strengthen the institutional activity of countries to formulate and execute effective investment production strategies. It develops and helps to enhance skills knowledge and tools available to investment intermediaries through training in cutting edge marketing and management techniques. It will made client agencies self sufficient by providing improved tools to internationalise knowledge.

2) **Disseminate information :** MIGA has taken a leadership role in utilising on live business information services to facilitate investment flows into developing nation. The information about a country or detailed profile of any enterprise or sector, technical assistance is provided.

3) **Investment Facilitation :** This is done by bringing together foreign investors, promotion departments in sectoral ministries and other Government or private sector organisations that are involved in promotion or facilitation of foreign direct investment. It has covered at least 100 countries and has partnership with public and private sector institutions.

b **Investment Guarantee Services :** MIGA provides investment guarantee against certain non-commercial risks i.e. political risk insurance to foreign investors in developing member countries. It affects long term upto 20 years political risk insurance coverage to eligible investors for qualified investment in developing member countries. It can insure new cross border investments originating in any MIGA member country destined for any developing member country. It insures investments in a wide range of industries. Types of foreign investments include equity, shareholders loans and shareholders loan guarantee. Technical assistance and managing contracts and franchising and licencing agreements can also be guaranteed by MIGA. It has provided investment facilitation in mining sector in Africa.

Check Your Progress A

1 Is there any difference between political risk and political uncertainty?

....

....

2 Name the approaches to assess and measure political risks.

....

....

3 Name any two countries where multinational corporations have lost investments due to political reasons.

....

....

13.8 INFLUENCE OF TAX POLICY ON FOREIGN INVESTMENTS

The tax policy influences investment decisions through its effects on the cost of capital and returns to different activities. Tax policies influence investment decisions of multinational firms through a complicated interaction of home-and-host country taxation and differences across countries in the treatment of debt and equity finance.

Foreign subsidiaries of U.S. firms that are financed by parent equity generally face higher costs of capital than do local firms in foreign markets.

The cost of capital is affected not only by the pre-tax financial costs but also by parameters in "home" (residence) and "host" (source) countries, such as tax-incentives created by the host-country's tax rates, investment incentives and depreciation rules, and variation (over time and across firms) in the tax costs of repatriated dividends of foreign subsidiaries. The tax rates can affect investment. Each percentage point increase in the cost of capital reduces by 1-2 percentage points a subsidiary's rate of investment. Here the rate of investment is measured by the investment during the year divided by the beginning of the year capital-stock.

It may be noted that only the rate of investment is considered alongwith the tax policy, not the decision to invest or not.

Alternative Minimum Tax (AMT)

Some countries impose Alternative Minimum Tax on all investments.

As it does in the tax systems, the alternative minimum tax (AMT) complieates the foreign investment incentives imposing such taxes. In the case of U.S. corporations, in 1990, 53% of assets and 56% of foreign-source income of U.S. multinationals was accounted for by firms subject to the AMT.

The AMT's restrictions on deductions, inclusion of income excluded under the regular tax, lower tax rate than that in the regular tax system and limitations on foreign tax credits modify the incentives for subsidiaries. The research shows that the AMT may strengthen the incentive for the AMT firms to invest abroad rather than in the U.S.

Effects of Accounting Practices

There is an assumption that firms exploit fully incentives for investment offered by the tax code, whether or not tax rules differ from those used to measure income for financial accounting purposes. Research on responsiveness in countries where tax accounting and financial accounting requirements are different ("two-book' countries i.e. the U.S.A.) as compared to the responsiveness in countries in which tax accounting and financial accounting are identical ("one-book" country, e.g. Germany) have yielded interesting results. It is shown that differences in accounting regimes generate significant differences in the differences in the responsiveness of investment to tax policy. In particular, firms operating in "pure" one-book systems behave as though they face additional costs when taking advantage of investment incentives.

13.9 INTERNATIONAL TAX RULES AND FINANCING AND INVESTMENT DECISIONS

Income from international investment is subject to several layers of taxation. Host countries typically increase corporate taxes on income earned within their jurisdictions regardless of the ownership of capital. Many countries subject foreign-source income to home country's personal income taxation. In some cases corporate surtaxes are imposed by the home government. Countries also impose withholding taxes on income repatriated from abroad.

Over lapping tax jurisdictions subject certain foreign-source income to both home-country and host-country taxation.

Some countries provide tax relief to foreign source income. The exact nature and extent of double taxation relief differs across countries and types of income.

One way to provide double tax relief is to exempt foreign-source income from the home-country taxation. In this case, only taxes charged for foreign-source income are the income taxes and withholding taxes imposed by the host government. Only a few countries (e.g. the Netherlands) adopt this "territorial" system under which there is no residence-based taxation of foreign-source income. As a result of bilateral tax treaties, the exemption method is widely prevalent. A pair of countries can agree to exempt from domestic taxation their resident's income earned in the other country.

Most countries assert their right to tax the income of their residents regardless of where the income is earned. However credit or deduction is allowed for taxes paid to the host government.

In practice, no country allows for unlimited foreign tax credits. Foreign tax credits are limited to the home-country tax liability on foreign-source income. Investors whose potentially creditable foreign taxes exceed the actual tax credit limits are said to be in an "excess credit" position. Thus foreign tax-credit limits are likely to be binding when the firm invests in a high-tax country. If the foreign taxes paid are less than the limitation on credits, the firmis said to be in a "deficit credit" or "full-credit" position.

When a multinational corporation invests in several foreign countries, it is normally allowed to pool the income repatriated from all these countries and credit against the domestic taxes due on this income. In doing so, it can use excess credits from operations in one country to reduce any domestic taxes due on operations in another country. If, in total, its credits are sufficient to wipe out its domestic tax liabilities on its worldwide foreign operations, then no domestic taxes are due. In this case, its final net income is the same as in the case of domestic one.

In addition to providing foreign tax credits, residence system countries typically allows their firms to defer home-country tax on certain types of foreign-source income until the income is repatriated.

In general, active business income belongs in this category. Income from passive investments (e.g. dividends and interest) is typically taxed on an accrual basis. Most countries do not allow tax deferral for foreign-branch income. Tax deferral can be an important source of tax benefits since under certain conditions, it may lower the tax rate on foreign investment.

The assymatric treatment of a given economic activity across different jurisdictions may significantly influence the way multinationals allocate capital between domestic and foreign operations.

13.10 POSSIBLE ISSUES IN THE TAXATION OF BUSINESS INVESTMENT ABROAD

As at present, the issues of business investment abroad by Indian businesses have not attracted much consideration, because stepping up exports in a priority in view of the urgent need of increasing the rate of economic growth.

Thus income earned by exports are given liberal treatment. Incomes earned by Indian businesses abroad are treated quite sympathetically.

However, if in the course of next five to ten years (or even twenty years) India becomes a major industrial nation with its businesses having spread their operations in many countries, the tax considerations for foreign investments and tax treatment of incomes earned abroad by Indian businesses may become an important issue.

The discussion of issues in the area of Indian taxation of business investment abroad, will not be out of context.

There are many factors responsible for a company's decision to invest abroad. Key raw materials being located abroad, an established market closed to everyone except local producers, radier access to markets or to suppliers, lower transportation costs or faster or more certain shipments, cheaper power, cheaper labour (with allowances for differences in productivity), access to national points of view useful in merchandising or in research skills, greater acceptability by private or government purchasers, and more advantageous terms of financing are among the familiar reasons for considering investment in a plant abroad.

Tax advantages are only one among many factors. Tax considerations are not likely to be decisive in determining whether to invest abroad. But they are likely to influence the decision as to the ways to invest abroad–whether as branch or subsidiary and with what capital structure, once the major decision to invest abroad has been made. One view is that the company should make the decisions on the basis of pre-tax rather than after tax returns, because, in one way or another over time, tax burdens tended to work about the same level in all the major countries.

It is also said that the general political and social climate controls investment in other countries. This is particularly true of developing countries. If the general climate is good, the tax structure will not be bad, but if the general climate is bad, the best tax system or tax exemptions would not make any difference. No tax law can induce investment in an inherrently unattractive climate.

Do the foreign tax credits or exemption, either fully or partially, of income from investments abroad encourage or discourage the country's foreign investment or if the effects of such measures on such investments are neutral?

One can say that the foreign tax credit relieves income receives from abroad from the domestic tax which it would ordinarily pay. On that basis, one could say that the foreign tax credit encourages investment abroad.

However, full domestic taxation of foreign-source income which has already been taxed by the country where it was earned would amount to double taxation and would therefore discourage investment abroad. The foreign tax credit merely removes a tax discouragement. Thus the foreign tax credit is thus necessary to secure the country's tax neutrality between domestic and foreign investment. To the extent that foreign investment is in addition to rather than an alternative to domestic investment, the comparison with taxes paid by other corporate investors in other countries seems more significant than the comparison with taxes on domestic investment.

13.11 LET US SUM UP

Political risk can be defined as the exposure to a change in the value of an investment or to the cash position resultant upon government action. Governments intervene in their national economies and in so doing, increase the level of political risk that the international firm faces. Political risk ranges from exposure to changes in tax legislation, through the impacts of exchange controlsl to restrictions affecting operations and financing in a host currency. Multinationals are concerned with the measurement and management of political risk. There are various approaches to the measurement of political risk – most of them are subjective in nature. As far as political risk is concerned, one way is to avoid it. Another approach is through insurance. Fees vary according to the country concerned and the type of risk insured. The MNC may reach an agreement with the host government prior to investment, though the successive governments may not honour such an agreement. Keeping the foreign subsidiary dependent on group companies for supplies and markets — the integrated operations approach — is a useful means of management of political risk. By surrendering the legal ownership, but by keeping the cash flows intact by other means, the adverse impact of the host country's actions can be circumsvented. The tax policy, both of home and host countries influences investment decisions of Multinational Corporation through its effects on the cost of capital and return to different countries.

13.12 KEY WORDS

Business Environment Risk Index (BERI) : It is an index that tries to include political, economic and country related subjective factors.

Euromoney : It is an financial magzine which evaluates country risk on the basis of weights.

One book system : A system in which tax accounting and financial accounting are identical.

Repatriation : Allowing income earned by Multinational Corporation in host country to home country.

13.13 TERMINAL QUESTIONS/EXERCISES

1. Explain the various ways of assessing and managing political risk by multinational corporation.
2. How does tax policy effect foreign investment? Do accounting practices of countries have any influence on it?
3. Discuss the possible issues in the taxation of business investment abroad.
4. What are the reasons for making investment abroad by Multinational Corporations?

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Table A1 : Present Value Interest Factor
$PVIF\ (k, n) = (1 + k)^{-n}$

Period n	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%
0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1..000	1.000
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909	0.901	0.893	0.885
2	0.980	0.961	0.943	0.925	0.907	0.890	0.873	0.857	0.842	0.826	0.812	0.797	0.783
3	0.971	0.924	0.915	0.889	0.864	0.840	0.816	0.794	0.772	0.751	0.731	0.712	0.693
4	0.961	0.924	0.889	0.855	0.823	0.792	0.763	0.735	0.708	0.683	0.659	0.636	0.613
5	0.951	0.906	0.863	0.822	0.784	0.747	0.713	0.681	0.650	0.621	0.593	0.567	0.543
6	0.942	0.888	0.838	0.790	0.746	0.705	0.666	0.630	0.596	0.564	0.535	0.507	0.480
7	0.933	0.871	0.813	0.760	0.711	0.665	0.623	0.583	0.547	0.513	0.482	0.452	0.425
8	0.923	0.853	0.789	0.731	0.677	0.627	0.582	0.540	0.502	0.467	0.434	0.404	0.376
9	0.914	0.837	0.766	0.703	0.645	0.592	0.544	0.500	0.460	0.424	0.391	0.361	0.333
10	0.905	0.820	0.744	0.676	0.614	0.558	0.508	0.463	0.422	0.386	0.352	0.322	0.295
11	0.896	0.804	0.722	0.650	0.585	0.527	0.475	0.429	0.388	0.350	0.317	0.287	0.261
12	0.887	0.788	0.710	0.625	0.557	0.497	0.444	0.397	0.356	0.319	0.286	0.257	0.231
13	0.879	0.773	0.681	0.601	0.530	0.469	0.415	0.368	0.326	0.290	0.258	0.229	0.204
14	0.870	0.758	0.661	0.577	0.505	0.442	0.388	0.340	0.299	0.263	0.232	0.205	0.181
15	0.861	0.743	0.642	0.555	0.481	0.417	0.362	0.315	0.275	0.239	0.209	0.183	0.160
16	0.853	0.728	0.623	0.534	0.458	0.394	0.339	0.292	0.252	0.218	0.188	0.163	0.141
17	0.844	0.714	0.605	0.513	0.436	0.377	0.311	0.270	0.231	0.198	0.170	0.146	0.125
18	0.836	0.700	0.587	0.494	0.416	0.350	0.296	0.250	0.212	0.180	0.153	0.130	0.111
19	0.828	0.686	0.570	0.475	0.396	0.331	0.276	0.232	0.194	0.164	0.138	0.116	0.098
20	0.820	0.673	0.554	0.456	0.377	0.312	0.258	0.215	0.178	0.149	0.124	0.104	0.087
25	0.780	0.610	0.478	0.375	0.295	0.233	0.184	0.146	0.116	0.092	0.074	0.059	0.047
30	0.742	0.552	0.412	0.308	0.231	0.174	0.131	0.099	0.075	0.057	0.044	0.033	0.026

(Contd.)

Table A1 (*Contd.*)

Period *n*	*14%*	*15%*	*16%*	*17%*	*18%*	*19%*	*20%*	*24%*	*28%*	*32%*	*36%*	*40%*
0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1	0.877	0.870	0.862	0.855	0.847	0.840	0.833	0.806	0.781	0.758	0.735	0.714
2	0.769	0.756	0.743	0.731	0.718	0.706	0.694	0.650	0.610	0.574	0.541	0.510
3	0.675	0.658	0.641	0.624	0.609	0.593	0.579	0.524	0.477	0.435	0.398	0.364
4	0.592	0.572	0.552	0.534	0.516	0.499	0.482	0.423	0.373	0.329	0.292	0.260
5	0.519	0.497	0.476	0.456	0.437	0.419	0.402	0.341	0.291	0.250	0.215	0.186
6	0.456	0.432	0.410	0.390	0.370	0.352	0.335	0.275	0.227	0.189	0.158	0.133
7	0.400	0.376	0.354	0.333	0.314	0.296	0.279	0.222	0.178	0.143	0.116	0.095
8	0.351	0.327	0.305	0.285	0.266	0.249	0.233	0.179	0.139	0.108	0.085	0.068
9	0.308	0.284	0.263	0.243	0.226	0.209	0.194	0.144	0.108	0.082	0.063	0.048
10	0.270	0.247	0.227	0.208	0.191	0.176	0.162	0.116	0.085	0.062	0.046	0.035
11	0.237	0.215	0.195	0.178	0.162	0.148	0.135	0.094	0.066	0.047	0.034	0.025
12	0.208	0.187	0.168	0.152	0.137	0.124	0.112	0.076	0.052	0.036	0.025	0.018
13	0.182	0.163	0.145	0.130	0.116	0.104	0.093	0.061	0.040	0.027	0.018	0.013
14	0.160	0.141	0.125	0.111	0.099	0.088	0.078	0.049	0.032	0.021	0.014	0.009
15	0.140	0.123	0.108	0.095	0.084	0.074	0.065	0.040	0.025	0.016	0.010	0.006
16	0.123	0.107	0.093	0.081	0.071	0.062	0.054	0.032	0.019	0.012	0.007	0.005
17	0.108	0.093	0.080	0.069	0.060	0.052	0.045	0.026	0.015	0.009	0.005	0.003
18	0.095	0.081	0.069	0.059	0.051	0.044	0.038	0.021	0.012	0.007	0.004	0.002
19	0.083	0.070	0.060	0.051	0.043	0.037	0.031	0.017	0.009	0.005	0.003	0.002
20	0.073	0.061	0.051	0.043	0.037	0.031	0.026	0.014	0.007	0.004	0.002	0.001
25	0.038	0.030	0.024	0.020	0.016	0.013	0.010	0.005	0.002	0.001	0.000	0.000
30	0.020	0.015	0.012	0.009	0.007	0.005	0.004	0.002	0.001	0.000	0.000	0.000

Table A2 : Present Value Interest Factor for an Annuity

$$PVIFA\,(k, n) = \frac{1 - \dfrac{1}{(1+k)^n}}{k}$$

Period n	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%
0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1..000	1.000
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909	0.901	0.893	1.885
2	1.970	1.942	0.913	1.886	1.859	1.833	1.808	1.783	1.759	1.736	1.713	1.690	1.668
3	2.941	2.884	2.829	2.775	2.723	2.673	2.624	2.577	2.531	2.487	2.444	2.402	2.361
4	3.902	3.808	3.717	3.630	3.546	3.465	3.387	3.312	3.240	3.170	3.102	3.037	2.974
5	4.853	4.713	4.580	4.452	4.329	4.212	4.100	3.993	3.890	3.791	3.696	3.605	3.517
6	5.795	5.601	5.417	5.242	5.076	4.917	4.766	4.623	4.486	4.355	4.231	4.111	3.998
7	6.728	6.472	6.230	6.002	5.786	5.582	5.389	5.206	5.033	4.868	4.712	4.564	4.423
8	7.652	7.325	7.020	6.733	6.463	6.210	5.971	5.747	5.535	5.335	5.146	4.968	4.799
9	8.566	8.162	7.786	7.435	7.108	6.802	6.515	6.247	5.995	5.759	5.537	5.328	5.132
10	9.471	8.983	8.530	8.111	7.722	7.360	7.024	6.710	6.418	6.145	5.889	5.650	5.426
11	10.368	9.787	9.253	8.760	8.306	7.887	7.499	7.139	6.805	6.495	6.207	5.938	5.687
12	11.255	10.575	9.945	9.385	8.863	8.384	7.943	7.536	7.161	6.814	6.492	6.194	5.918
13	12.134	11.348	10.635	9.986	9.394	8.853	8.358	7.904	7.487	7.103	6.750	6.424	6.122
14	13.004	12.106	11.296	10.563	9.899	9.295	8.745	8.244	7.786	7.367	6.982	6.628	6.302
15	13.865	12.849	11.938	11.118	10.380	9.712	9.108	8.559	8.060	7.606	7.191	6.811	6.462
16	14.718	13.578	12.561	11.652	10.838	10.106	9.447	8.851	8.312	7.824	7.379	6.974	6.604
17	15.562	14.292	13.166	12.166	11.274	10.477	9.763	9.122	8.544	8.022	7.549	7.120	6.729
18	16.398	14.992	13.754	12.659	11.690	10.828	10.059	9.372	8.756	8.201	7.702	7.250	6.840
19	17.226	15.678	14.324	13.134	12.085	11.158	10.336	9.604	8.950	8.365	7.839	7.366	6.938
20	18.046	16.351	14.877	13.590	12.462	11.470	10.594	9.818	9.128	8.514	7.963	7.469	7.025
25	22.023	19.523	17.413	15.622	14.094	12.783	11.654	10.675	9.823	9.077	8.422	7.843	7.330
30	25.808	22.397	19.600	17.292	15.373	13.765	12.409	11.258	10.274	9.427	8.694	8.055	7.496

(Contd.)

Table A2 (*Contd.*)

Period *n*	*14%*	*15%*	*16%*	*17%*	*18%*	*19%*	*20%*	*24%*	*28%*	*32%*	*36%*	*40%*
0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1..000
1	0.877	0.870	0.862	0.855	0.847	0.840	0.833	0.806	0.781	0.758	0.735	0.714
2	1.647	1.626	1.605	1.585	1.566	1.547	1.528	1.457	1.392	1.332	1.276	1.224
3	2.322	2.283	2.246	2.210	2.174	2.140	2.106	1.981	1.868	1.766	1.674	1.589
4	2.914	2.855	2.798	2.743	2.690	2.639	2.589	2.404	2.241	2.096	1.966	1.849
5	3.433	3.352	3.274	3.199	3.127	3.058	2.991	2.745	2.532	2.345	2.181	2.035
6	3.889	3.784	3.685	3.589	3.498	3.410	3.326	3.020	2.759	2.534	2.339	2.168
7	4.288	4.160	4.039	3.922	3.812	3.706	3.605	3.242	2.937	2.678	2.455	2.263
8	4.639	4.487	4.344	4.207	4.078	3.954	3.837	3.421	3.076	2.786	2.540	2.331
9	4.946	4.772	4.607	4.451	4.303	4.163	4.031	3.566	3.184	2.868	2.603	2.379
10	5.216	5.019	4.883	4.659	4.494	4.339	4.193	3.682	3.269	2.930	2.650	2.414
11	5.453	5.234	5.029	4.836	4.656	4.486	4.327	3.776	3.335	2.978	2.683	2.438
12	5.660	5.421	5.197	4.988	4.793	4.611	4.439	3.851	3.387	3.013	2.708	2.456
13	5.842	5.583	5.342	5.118	4.910	4.715	4.533	3.912	3.427	3.040	2.727	2.469
14	6.002	5.724	5.468	5.229	5.008	4.802	4.611	3.962	3.459	3.061	2.740	2.478
15	6.142	5.847	5.575	5.324	5.092	4.876	4.675	4.001	3.483	3.076	2.750	2.484
16	6.265	5.954	5.669	5.405	5.162	4.938	4.730	4.033	3.503	3.088	2.758	2.489
17	6.373	6.047	5.749	5.475	5.222	4.990	4.775	4.059	3.518	3.097	2.763	2.492
18	6.647	6.128	5.818	5.534	5.273	5.033	4.812	4.080	3.529	3.104	2.767	2.494
19	6.550	6.198	5.877	5.584	5.316	5.070	4.844	4.097	3.539	3.109	2.770	2.496
20	6.623	6.259	5.929	5.628	5.353	5.101	4.870	4.110	3.546	3.113	2.772	2.497
25	6.873	6.464	6.097	5.766	5.467	5.195	4.948	4.147	3.564	3.122	2.776	2.499
30	7.003	6.566	6.177	5.829	5.517	5.235	4.979	4.160	3.569	3.124	2.778	2.500