Chapter 14

Country and Political Risk

*O*n May 1, 2007, which is a traditional day for celebrating socialist causes, Venezuelan President Hugo Chavez announced that operating control of Venezuelan oil fields would transfer from international oil companies, such as Exxon Mobil and ConocoPhillips of the United States, France's Total, Norway's Statoil, and Britain's BP, to Venezuela's government-owned oil company, Petroleos de Venezuela S. A. (PDVSA). This action was a realization of **political risk**, which is the risk that a government action will negatively affect a company's cash flows. In its most extreme form, governments seize property without compensating the owners in a total **expropriation** (or **nationalization**). Venezuela offered some compensation, but Exxon Mobil and ConocoPhillips rejected the terms and filed compensation claims with the World Bank's arbitration panel. The outcome is still uncertain.

Country risk is a broader concept that encompasses both the potentially adverse effects of a country's political environment and its economic and financial environment. Understanding country risk and political risk is an important aspect of international capital budgeting and managing operations in other countries, especially developing countries.

This chapter discusses these risks and examines how they can be measured. It also explains which risks are diversifiable and which are not. Finally, it explores how multinationals, such as the international oil companies, manage the risks.

14.1 COUNTRY RISK VERSUS POLITICAL RISK

This section explores the general differences between country risk and political risk. We begin with the broader concept of country risk.

Country Risk

Country risk includes the adverse political and economic risks of operating in a country. For example, a recession in a country that reduces the revenues of exporters to that nation is a realization of country risk. Labor strikes by a country's dockworkers, truckers, and transit workers that disrupt production and distribution of products, thus lowering profits, also qualify as country risks. Clashes between rival ethnic or religious groups that prevent people in a country from shopping can also be considered country risks.

Country risk also affects investors who buy emerging market securities and the banks that lend to countries. In international bond markets, country risk refers to any factor related to a

country that can cause a borrower in that country to default on a loan. The narrower risk associated with a government defaulting on its bond payments is called **sovereign risk**. Usually, the abilities of a private firm and its government to pay off international debt are highly correlated.

Financial and Economic Risk Factors

What factors enter a country risk analysis? Let's first focus on sovereign risk and consider the benefits and costs of a country defaulting on its international debt. The benefit to a government of defaulting on debt to foreigners is that the country is wealthier today. It no longer has to make interest and principal payments to foreign creditors. The chief cost to a country that defaults is loss of reputation, which undermines its future access to international capital markets. Because this reputation cost is large, a country is likely to repay its debt as long as it generates enough cash flow to do so.

Of course, if an international debt is denominated in the currency of the borrowing country, the borrowing country can always repay the debt by printing more money. But this action depreciates the local currency and is effectively equivalent to a partial default from the perspective of international investors. Thus, most developing-country debt is denominated in developed-country currencies, such as the U.S. dollar. Hence, the capacity to repay foreign debt and, consequently, the probability of default ultimately depend on the country's ability to generate foreign exchange. Nevertheless, governments sometimes refuse to pay their debts, even when they have foreign exchange available. This lack of willingness to pay is a form of political risk.

Investors use a number of economic variables to discriminate between financially sound and financially troubled countries including the following:

- The ratio of a country's external debt to its gross domestic product (GDP)
- The ratio of a country's debt service payments to its exports
- The ratio of a country's imports to its official international reserves
- A country's terms of trade (the ratio of its export to import prices)
- A country's current account deficit or its current account deficit to GDP ratio

These variables are directly related to the ability of the country to generate inflows of foreign exchange.

The ongoing European sovereign debt crisis highlights the importance of government budget deficits and public debt to GDP ratios as determinants of sovereign risk. Also, in assessing the sustainability of the fiscal situations of countries like Greece, Ireland, and Portugal, financial markets are keenly aware of the still precarious situations of various financial institutions following the 2007 to 2010 global financial crisis. Investors understand that private liabilities of failing financial institutions may be shifted to federal governments.

Factors such as inflation and real economic growth are useful as well. A country's economic health directly affects the cash flows of a multinational firm, and it may also be informative about political risk in a narrow sense. The better a country's economic situation, the less likely it is to face political and social turmoil that will inevitably harm foreign (and domestic) companies.

Political Risk Factors

This section lists the most important factors a multinational corporation (MNC) should be aware of in assessing political risk.

Expropriation or Nationalization

The most extreme form of political risk is the possibility that the host country takes over an MNC's subsidiary, with or without compensation. This is the worst-case scenario for firms. Outright expropriations used to be common: Regimes in Eastern Europe (after World War II)

and in Cuba (in 1960) expropriated private businesses, both domestic and foreign. More recently, Venezuela has systematically expropriated foreign businesses as part of President Chavez's socialist revolution. In 2010, the Venezuelan government expropriated the equipment of the U.S. oil services company Helmerich & Payne, the Venezuelan operations of Owen-Illinois, a U.S. glassware manufacturer, and the Spanish agricultural firm Agroisleña.

Contract Repudiation

Governments sometimes revoke, or repudiate, contracts without compensating companies for their existing investments in projects or services. Governments default on the payments associated with the contracts, cancel licenses, or otherwise introduce laws and regulations that interfere with the contracts to which the government and the MNC agreed. For example, in 1996, Mexico's Instituto Nacional de Ecologia (INE), an agency of the federal government, awarded Tecmed, a Spanish multinational corporation, a renewable license to operate a hazardous waste landfill in Mexico. In 1998, however, the INE suddenly refused to renew the license, a realization of political risk.

In 2010, Pakistani authorities halted all operations of the $3 billion Reko Diq copper and gold project, led by Canada's Barrick Gold and Chile's Antofagasta, citing that the contract substantially undervalued the value of the project. The Supreme Court of Pakistan should come up with a decision in 2011, but existing contracts will almost surely be repudiated.

Taxes and Regulation

Governments can dramatically change the "rules of the game" that were in place when an MNC first made its investment in the host country. Examples include unexpected increases in taxes, restrictions on hiring and firing local workers, and sudden stricter environmental standards. Some industries may be more susceptible than others, especially if the foreign corporation is dominating its local competition. MNCs are also sometimes forced by governments to sell their equity stakes in local subsidiaries because of foreign ownership restrictions.

In 2010, Chile, the world's main copper producer, increased royalty rates on copper producers changing to a progressive tax from 5% to 14% rather than a flat 5% tax. Peru is now also considering an increase in royalties on mining companies.

Regulations that MNCs find particularly problematic are regulations restricting the transfer of their profits earned abroad back to their home countries. Governments not only have the power to change the tax rates on these earnings, but they can also completely block their transfer. This essentially forces the MNC to invest its funds locally, even if doing so is less profitable. Finally, governments often make decisions that can indirectly affect the cash flows of MNCs.

Exchange Controls

Another political risk factor relates to exchange controls. Governments have been known to prevent the conversion of their local currencies to foreign currencies. In general, doing business in countries with inconvertible currencies puts an MNC at considerable risk.

An interesting case is the 2002 collapse of the Argentine currency board, which effectively ended the one-for-one convertibility of pesos into dollars. The Argentine government also curtailed bank deposit withdrawals and prohibited the unauthorized export of foreign currency from the country.

Corruption and Legal Inefficiency

Highly inefficient governments with large bureaucracies can increase a company's costs of doing business. Governments may also be corrupt and demand bribes. Transparency International (TI) produces an annual "Corruption Perceptions Index" for more than 170 countries, using expert assessments and opinion surveys. In 2010, Denmark, New Zealand, and Singapore were perceived as the least corrupt countries; Somalia was perceived as the most corrupt. Russia was number 154 out of 178 countries.

TI also compiles information on which companies have the highest propensity to pay bribes and therefore undermine efforts of governments to improve governance. Multinationals from Russia, China, Mexico, and India were the worst offenders in 2008, whereas Belgian and Canadian companies had the least tendency to pay bribes.

A country's legal system is an important factor in determining the overall quality of its institutions and how attractive it is for firms to do business there. Djankov et al. (2003) gauge the quality and efficiency of the legal systems of 109 countries by measuring the time it takes to evict a tenant or clear a bounced check through the legal system. Exhibit 14.1 shows these measures for the G5 countries and for the best- and worst-performing countries on this score.

The United States and the United Kingdom seem to have the speediest legal systems among the G5 countries, but there are five countries (Uganda, Tunisia, Malawi, Swaziland, and Canada) where evicting a tenant happens even faster. In contrast, in Poland and Slovenia, it takes almost 3 years to either evict a tenant or collect on a bounced check. Such a tardy legal system is a potential risk factor for MNCs.

Ethnic Violence, Political Unrest, and Terrorism

Significant MNC losses can occur due to internal civil strife or wars. In war-torn regions across the world, companies often hire their own private armies in order to try to function normally. For example, piracy near the Somali coast has prompted some companies to hire private security firms to protect their ships. This, of course, is expensive and raises thorny legal and humanitarian issues.

Home-Country Restrictions

The politics of a company's home country can affect its cash flows from foreign operations. For example, after the Iranian Revolution in 1979, a U.S. embargo on Iran forced Coca-Cola to shut down its operations there. Coke later resumed operations in the country by the late

Exhibit 14.1 Legal System Quality
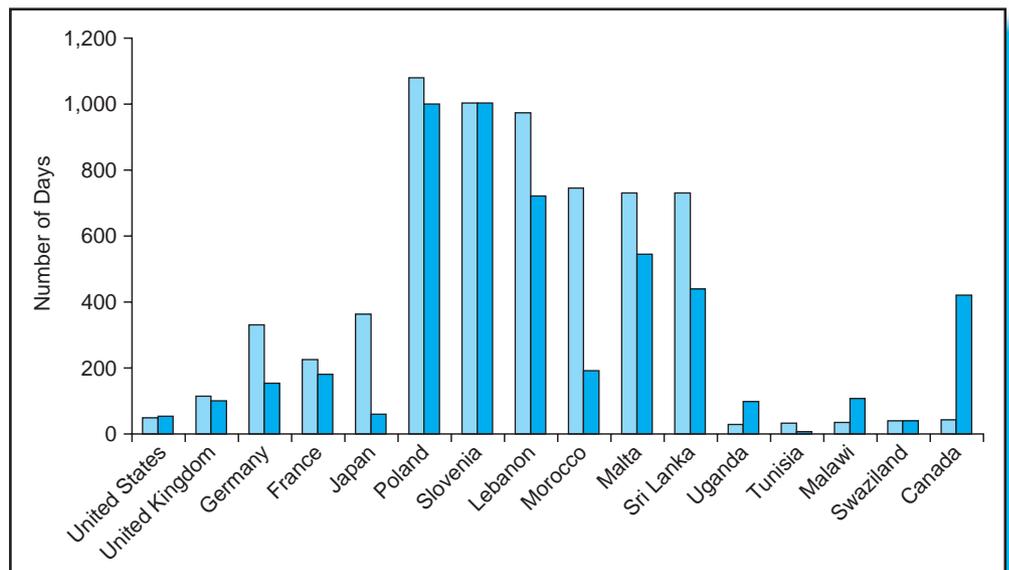
Notes: For each country, the column heights indicate numbers represent the number of days it takes to evict a tenant (on the left) or to collect a bounced check through the court system (on the right). We report numbers for the G5 countries and the five countries with the longest and shortest durations.

Source: Data from Table 6, Simeon Djankov, Rafael La Porta, Florencio Lopez-de-Silanes and Andre Shleifer, 2003, "Courts" *The Quarterly Journal of Economics* 118, 453–517.

1980s, until President Clinton reimposed the embargo in 1995. Coca-Cola now exports to Iran through subsidiaries in Ireland, thereby circumventing U.S. restrictions. However, in 2010, new U.S. and United Nations sanctions on Iran in response to its nuclear program proved a new challenge as Iranian President Ahmadinejad reacted by banning Coca-Cola and other American products from Iranian stores.

The Debt Crisis

The 1980s **Debt Crisis** was one of the defining historical episodes that made country risk analysis an important part of international banking and a critical component in international capital budgeting. It holds lessons for debt crises such as the ongoing sovereign debt crisis in Europe.

Origins of the Debt Crisis

From 1948 to the end of the 1960s, crude oil prices ranged between $2.50 and $3.00 per barrel. The Organization of Petroleum Exporting Countries (OPEC) was formed in 1960 to stabilize oil prices. In 1973, OPEC curtailed production, which sent oil prices from $3.00 per barrel to over $12.00 per barrel by the end of 1974. Over the next few years, events in Iran and Iraq led to another round of increases in the price of crude oil, with prices eventually reaching $35 per barrel in 1981. Because these prices are all nominal, current-year prices, it helps to adjust them for inflation. In 1981, oil prices reached $85.00 per barrel measured in 2010 dollars.

Exhibit 14.2 summarizes how such a boon for oil-producing countries eventually led to a Debt Crisis for the developing countries. Rather than match the increases in income generated by the oil price jumps in 1973 and 1974 with increases in consumption and investment spending, the OPEC countries saved by making loans to international banks, often in the form of dollar deposits in the Eurocurrency markets at floating interest rates. The banks in turn loaned these "petrodollars," as they were called at the time, to developing countries, typically in the form of loans called eurocredits that were quoted at a spread above the floating interest rate they paid to the OPEC countries.

Banks viewed the lending as profitable and relatively riskless for three reasons. First, the loans were made at a spread over the banks' borrowing costs. Thus, the banks were not exposed to interest rate risk, as they would have been if they had borrowed short term and had lent at long-term fixed rates. Second, the banks eliminated currency risk as both the deposits and loans were in dollars. Third, the banks syndicated the loans, taking diversified exposures to a number of countries to avoid too much exposure to a single country. As a result, during the 1970s, the debt of non-OPEC developing countries owed to banks in industrialized countries, especially banks in the United States, increased significantly.

A mix of external shocks affecting industrialized countries and developing countries in the early 1980s and macroeconomic mismanagement in developing countries triggered the actual Debt Crisis. In contrast to the response to the first oil shock, the oil shock of the late 1970s was met with a staunchly anti-inflationary monetary policy in a number of countries, particularly in the United States under Paul Volcker, Chairman of the Board of Governors of the Federal Reserve System. The macroeconomic situation in the developed world was now totally different: Real interest rates were high, the global economy was in recession, and the dollar was strong. This situation contributed to low prices of commodities on the world markets and low demand for the exports of developing countries.

With the huge dollar appreciation and high dollar interest rates, the developing countries faced steep interest payments in dollars at the same time as their export revenues were falling. Suddenly, the default risk of the loan portfolios of international banks had greatly increased. The situation was exacerbated by the fact that developing countries had not used the money they borrowed very productively and had run unsustainable economic policies.

Exhibit 14.2   The Origins of the Debt Crisis
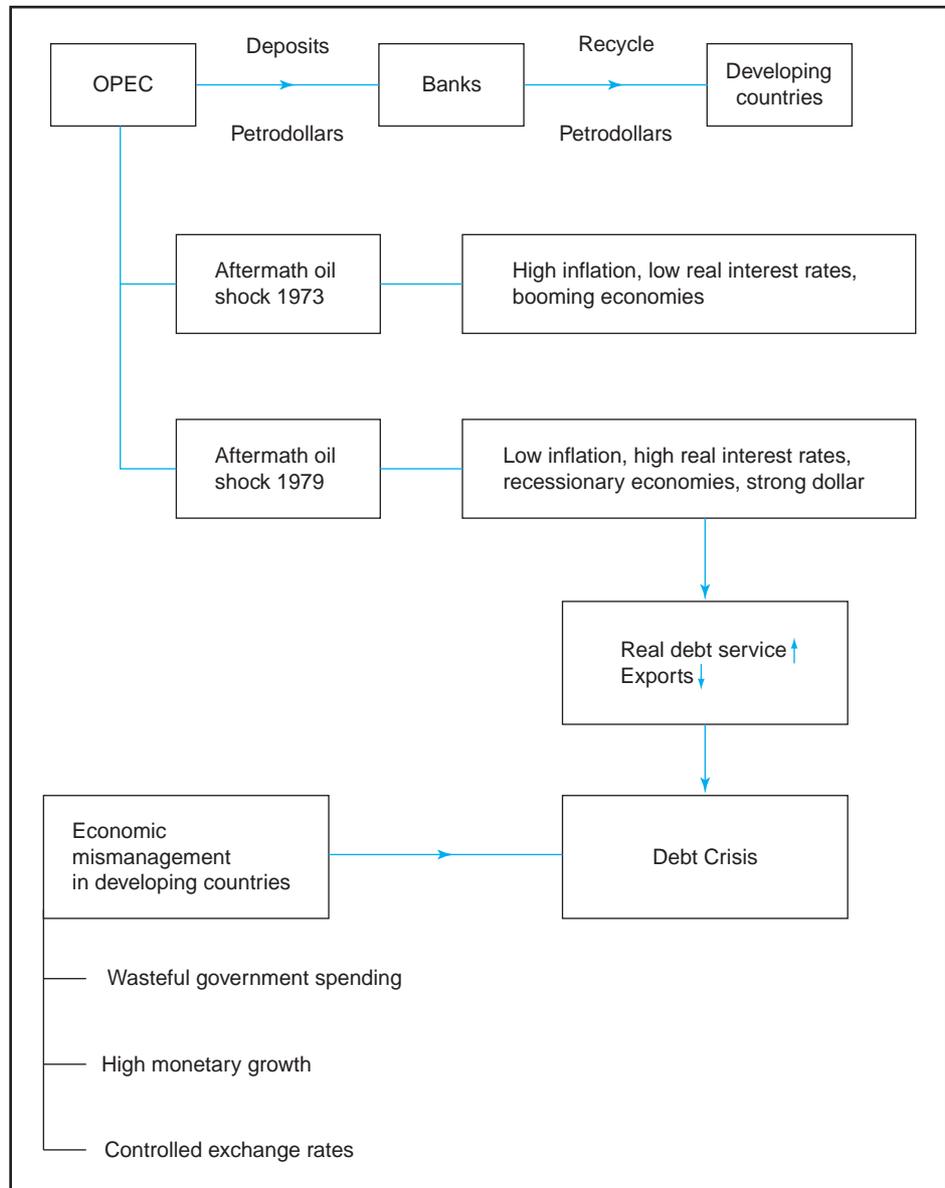
Ironically, however, the Debt Crisis actually started in Mexico, an oil-exporting country. On August 12, 1982, Mexico announced that it could no longer make its scheduled payments on its foreign debt. Mexico requested loans from foreign governments and the International Monetary Fund (IMF), and it started negotiating with its commercial bank creditors. It was the start of a prolonged and deep crisis. By the end of the year, 24 other countries had requested restructuring on their commercial bank debts.

The debt of developing countries threatened to undermine the global financial system because many large banks, in particular the largest U.S. banks, had considerable exposures to Mexico and other debt-ridden developing countries—exposures that exceeded their capital. Moreover, developing countries lost access to much-needed international capital for a decade. As a result, they failed to register any substantive economic growth during the 1980s.

Managing the Debt Crisis

At the beginning of the Debt Crisis, the banks mistook the Debt Crisis for a "liquidity" problem. They were betting that the developing countries were only temporarily unable to repay their debts. The hope was that economic recovery plus sensible economic policies in developing countries guided by the IMF would make the debt problem disappear. Advisory committees, composed of the large banks, industrial-country governments, and the IMF, arranged debt reschedulings and the extension of new credit.

The **Baker Plan**, instituted in 1985 and named for U.S. Treasury Secretary James Baker, relied heavily on countries agreeing to change their economic policies following guidelines set by the IMF. Although some successful financing packages were agreed upon, economic growth did not revive and the debt-rescheduling agreements proved a failure.

According to a number of academic observers, the developing countries' reluctance to repay their debts was justified because they were suffering from "**debt overhang**"—the notion that a country saddled with a huge debt burden has little incentive to implement economic reforms or stimulate investment because the resulting increase in income will simply be appropriated by the country's creditors in the form of higher debt payments.[1] From this perspective, it is not surprising that some countries (Peru and Brazil, for example) stopped or severely restricted repaying their debts altogether.

By 1987, it became clear that the banks were not going to be repaid in full, and most resorted to attempts to decrease their exposure to high-debt developing countries. At the same time, facing mounting debt stocks, many countries started to adopt debt-reducing policies. Stimulated by an active secondary market in developing-country debt, debt buybacks and debt–equity swaps proved popular.

In a **debt buyback**, the country repays a loan at a discount. In a **debt–equity swap**, an MNC that is willing to directly invest in a country buys the debt of the country in the secondary market at a discount from face value. The MNC then presents the debt to the country's government and receives local currency (equal to the face value of the debt or at a discount less than the market discount). The MNC then uses the local currency to make the equity investment in the country. Many MNCs used debt–equity swaps to lower the cost of their investments. Debt–equity swaps were a central element of the efforts of Peru, Chile, and Argentina to privatize their government-operated industries. For example, in 1994, Peru offered debt–equity swaps in two government-owned and -operated mining companies, Tintaya and Cajamarquilla.

Some of the Debt Crisis debt-reduction arrangements were even accompanied by developmental aid for the troubled countries. For example, an international organization buying debt in the secondary market would exchange the debt for local currency at the country's central bank. The organization would then use the proceeds to finance development projects of an environmental, health, or educational nature. However, in addition to such "debt-for-do-good" swaps, there were also interesting "debt-for-do-bad" swap proposals. For example, in the mid-1980s, Colombian drug lords offered to buy back their country's debt in return for immunity from prosecution. The proposal was rejected.

Several economists argue that when a country uses its own resources to buy back its troubled debt at a discount, the country's creditors are the only ones that benefit. Here we use a simple numeric example to illustrate the main argument.

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[1]In Chapter 16, this debt overhang argument will resurface when we consider the investment incentives of private companies in severe financial distress.

Example 14.1 Debt Buybacks in Brazar

Suppose that the country of Brazar has an outstanding debt of $100 billion. Creditors all agree that there is only a 25% probability that the debt will be repaid. They also estimate that if the country defaults, it will be possible to seize $20 billion of Brazar's international assets for distribution to creditors. Suppose the debt is payable next year, and to keep things simple, let the market interest rate be 0. What is the market value of the debt? We know that the value of the debt must be the expected value of the repayments:

$$V = 0.25 \times \$100 \text{ billion} + 0.75 \times \$20 \text{ billion} = \$40 \text{ billion}$$

Hence, $1 of debt sells for $0.40 in the market.

Suppose that the government of Brazar has $8 billion that it could use to buy back the debt. Given the steep 60% discount, Brazar may reason that a buyback is a good investment because it retires a dollar of debt for $0.40. Can Brazar buy back $20 billion of face-value debt with $8 billion? The answer is no because creditors must be indifferent between selling the debt to Brazar in the buyback and holding the debt for the next year. They will figure out the new price of the debt after the buyback.

To determine how much Brazar must pay to buy back $20 billion of debt, we must first determine the new price of debt. Let's assume that the amount that is recoverable in the bad state of the world remains $20 billion.[2] The new value of the debt is, therefore,

$$V_{\text{new}} = 0.25 \times \$80 \text{ billion} + 0.75 \times \$20 \text{ billion} = \$35 \text{ billion}$$

Hence, given that $80 billion of debt remains outstanding, the price per dollar of debt rises to $\frac{35}{80} = 0.4375$, or $0.4375 per dollar of debt. The creditors will want to sell only at this price. Who gains in this scenario? Let's consider the different parties:

- Brazar pays $0.4375 \times \$20$ billion $= \$8.75$ billion, not $8 billion and it reduces the market value of its debt from $40 billion to $35 billion, or by $5 billion.
- The creditors who sell their debt to the government realize a capital gain of 3.75 cents on the dollar. In sum, they gain $0.0375 \times \$20$ billion $= \$0.75$ billion.
- The creditors who hold out (do not sell) also receive a capital gain of 3.75 cents per dollar, for a total of $0.0375 \times \$80$ billion $= \$3$ billion.

The conclusion is pretty clear: The government overpaid by $3.75 billion ($8.75 − $5.00). Notice that the gain is nicely split up among the creditors who sell to the government and the holdout creditors.

A famous case that confirms this theory is the Bolivia debt buyback of 1988. The following box discusses this case in more detail.

The Bolivia Debt Buyback

In March 1988, Bolivia received $34 million from an anonymous group of countries to buy back part of its commercial bank debt. Whereas the market value of the debt before the buyback was around $50 million, the market value of debt after the buyback was $43.4 million, even though $34 million had been spent to reduce the debt. The reason was that the buyback increased the price of the debt on the secondary market from around 7 cents to the dollar

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[2]In reality, the country must use resources to repay the debt, which would likely reduce this amount. Research by Bulow and Rogoff (1988, 1991) shows that this effect is unlikely to overturn the main result of the example.

to over 11 cents to the dollar. Although debt prices fluctuated daily, let's fix some prices to get a concrete idea of what happened.

Suppose the price just before the debt buyback is 7.25 cents on the dollar. The total outstanding face value of the debt was $670 million. Hence, the market value of the debt was $0.0725 \times \$670$ million $= \$48.575$ million. The Bolivian government paid 11 cents on the dollar to buy back $308 million worth of debt. So, it paid $0.11 \times \$308$ million $= \$33.88$ million, about $34 million. However, the secondary market price of Bolivian debt then remained at or above 11 cents per dollar, so the value of the remaining debt was 0.11 ($670 million $-$ $308 million) $= \$39.82$ million. Essentially, Bolivia paid $34 million to reduce the market value of its debt by a paltry $8.755 million.

Clearly, commercial bank creditors reaped the bulk of the benefits.

The solution to this problem is to eliminate the debt entirely so that there are no holdout creditors benefiting from the debt buyback scheme. In March 1993, Bolivia eliminated $170 million of its commercial bank debt, leaving less than $10 million outstanding. The whole operation (primarily a debt buyback at 16 cents to the dollar) was financed by donations. Some banks, such as JPMorgan, chose to channel the money received into conservation and environmental projects run by the Nature Conservancy and the World Wildlife Fund. Although the whole operation clearly seemed a success, Bolivia still ended up with an outstanding debt of no less than $3.5 billion to various multilateral organizations, including the World Bank.

The Brady Plan

After years of muddling through the Debt Crisis, it became obvious that the developing countries faced not just a lack of liquidity but were actually insolvent. In 1989, the **Brady Plan**, developed by then U.S. Treasury Secretary Nicholas Brady, put pressure on banks to offer some form of debt relief to developing countries. The Brady Plan also called for an expansion in secondary market transactions aimed at debt reduction. In addition, the IMF and the World Bank were urged to provide funding for "debt or debt service reduction purposes." The first Brady package was arranged for Mexico in July 1989.

Negotiating a debt-reduction agreement is complex because numerous banks are involved, and "free-rider" problems exist. For example, small banks could refuse to put up new money, yet they still benefit from their share of interest rate payments that the new money makes possible. In the Brady Plan, each bank could choose the restructuring option that it found most suitable from a menu of possibilities established in a debt-reduction agreement between the debtor-country government and its creditor banks. The creditor banks, because of their large number, were represented by a bank advisory committee. In order to mitigate free-rider problems, no bank could opt out. Among the options available to the banks were the following:

- *Buybacks:* The debtor country was allowed to repurchase part of its debt at an agreed discount (a debt-reduction option).
- *Discount bond exchange:* The loans could be exchanged for bonds at an agreed discount, with the bonds yielding a market rate of interest.
- *Par bond exchange:* The loans could be exchanged at their face value for bonds yielding a lower interest rate than the one on the original loans.
- *Conversion bonds combined with new money:* Loans could be exchanged for bonds at par that yield a market rate, but banks had to provide new money in a fixed proportion of the amount converted (an option for banks unable or unwilling to participate in debt reduction or debt service reduction).

The Brady Plan ended up securitizing the debt into easily tradable bonds, called **Brady bonds**. Quite a few Brady bonds have "official enhancements" attached to them, such as collateral provisions, often in the form of U.S. Treasury zero-coupon bonds. (Collateral is an asset pledged as security for the repayment of a loan.) The Brady Plan agreements also included financing arrangements to pay for the collateral and other up-front debt-reduction costs.

Sources included the IMF, the World Bank, the Inter-American Development Bank, and the Japanese government, which would typically provide funds only if the country adhered to an IMF-supported structural adjustment program. Such a program typically involved economic policy recommendations such as currency devaluation, the lifting of export and import restrictions, the balancing of government budgets, and removal of price controls and state subsidies.

For many countries, the Brady bond market soon replaced the market for secondary bank loans and provided the impetus to a thriving emerging market bond market. Not only do sovereign borrowers now tap international bond markets, but investors from industrialized countries have also started to invest in the local bond and money markets of many formerly heavily indebted developing countries. As a consequence, sovereign credit ratings have become more important (see Section 14.3). Johnson and Boone (2010) have even proposed Brady bonds to help resolve the current debt crisis in Greece and Ireland in Europe, which they feel are *de facto* insolvent. It is indeed possible that the European crisis will follow a similar pattern to the Debt Crisis in the 1980s, where early measures aimed at avoiding debt write-downs and providing new loans to the crisis countries prove futile and debt restructuring eventually becomes necessary.

14.2 INCORPORATING POLITICAL RISK IN CAPITAL BUDGETING

When MNCs undertake international investments, they must forecast their future cash flows and discount them at an appropriate risk-adjusted discount rate. There is much confusion and disagreement about how political risks should enter these computations. Some researchers suggest using a discount rate adjustment to account for political risk; others feel that political risk should affect only cash flow projections.

Adjusting Expected Cash Flows for Political Risk

Consider a multinational corporation with a shareholder base that is globally diversified. In this case, the discount rate should reflect only international, systematic risks. Chapter 13 showed that systematic risks are typically related to how an MNC's return in a particular country covaries with the world market return. If the risk of loss from political risk does not covary with the world market return, no adjustment to the discount rate is necessary. Positive covariation between the cash flows from the project and the world market return increases the required global discount rate. Consequently, unless political risk, which adversely affects the MNC's investment returns, is systematically high when the world market return is low, political risk should not enter the calculation of the discount rate. Instead, the company's cash flows should be adjusted for the presence of political risk.

To fully understand this argument, consider a simple scenario. Suppose a company takes out an insurance policy against political risk and that the policy covers all contingencies and has no deductible. In this case, a company would simply compute its expected cash flows as if there were no political risk and then subtract the insurance premium it must pay each year from the cash flows of the project. The cash flows would then be discounted at the usual discount rate. It is, indeed, possible to purchase **political risk insurance**, and in some countries, such insurance is even subsidized by the government. (However, it is seldom the case that an investment can be fully insured. We discuss insurance and other ways companies can mitigate political risks in Section 14.4.)

If a company chooses not to purchase political risk insurance, when it forecasts its future cash flows, it must incorporate into the calculation how its cash flows might be affected by various political risks, such as expropriation, unexpected taxation, and so forth. In the following example, we show how this can be done.

Example 14.2 Oconoc's Project in Zuenvela

Suppose Oconoc, an American oil company, wants to do a joint project with Atauz Petrol, an oil company in Zuenvela. Oconoc's contribution to the project is $75 million, and Oconoc predicts that the project will yield it $50 million per year for 2 years. However, Zuenvela has a very unstable political system and, in the past, has witnessed widespread strikes. The president of Zuenvela, Ugo Vezcha, has expressed some dismay with the management of Atauz Petrol, and he has hinted that he might renationalize the company, which would have drastic consequences for Oconoc's cash flows. Given this information, the managers of Oconoc think that the probability that the government will expropriate the project is 12% each year. Furthermore, if the government interferes, the cash flows will be zero from then onward.

Exhibit 14.3 presents this analysis in a simple diagram. If there were no political risk, the value of the project would be easy to calculate. With a 10% discount rate, the present value of the project is

$$V = \frac{\$50 \text{ million}}{1.1} + \frac{\$50 \text{ million}}{1.1^2} = \$86.78 \text{ million}$$

The project should be undertaken because its value, $86.78 million, is greater than its cost, $75 million.

However, the political risk adjustments change the computation considerably. Let's follow Exhibit 14.3 to make the adjustments. For the first year, there are two scenarios. With 0.88 chance, the cash flow of $50 million will be realized, and with 0.12 chance, the project will return 0. For the second year, there are three scenarios: (1) expropriation in the first year implies no second-year cash flows and has probability of 0.12; (2) no expropriation in the first year but expropriation in the second year and no cash flows has probability of $0.88 \times 0.12 = 0.1056$; and (3) no expropriation at all, which has probability of $0.88 \times 0.88 = 0.7744$. Bringing it all together, we obtain:

$$V = \frac{(0.88 \times \$50 \text{ million}) + (0.12 \times 0)}{1.1}$$

$$+ \frac{(0.88^2 \times \$50 \text{ million}) + (0.12 \times 0.88) \times 0 + (0.12 \times 0)}{1.1^2}$$

$$= \$40 \text{ million} + \$32 \text{ million} = \$72 \text{ million}$$

Exhibit 14.3 Adjusting the MNC's Cash Flows for Political Risk
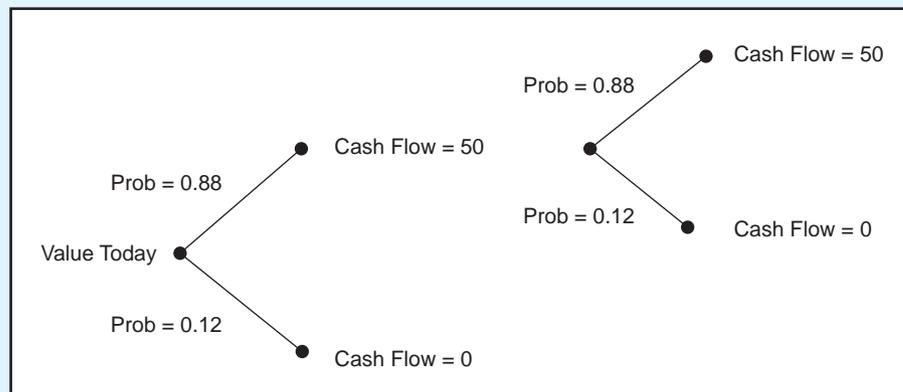
Notes: Expected cash flows are $50 million in period 1 and period 2. There is a 12% chance each period that the host government will expropriate the project. In this case, the cash flow to the MNC is 0.

Hence, the value of the project is now less than its cost, and the project should not be undertaken. If Oconoc's managers find it difficult to figure out the probability of expropriation, they can still do an informative analysis: They can find the expropriation probability, p, that would cause the project to have a net present value (NPV) of 0 by solving

$$-\$75 \text{ million} + \frac{(1 - p)\$50 \text{ million}}{1.1} + \frac{(1 - p)^2 \$50 \text{ million}}{1.1^2} = 0$$

Such an equation can be solved analytically for the two-period case here, but it soon becomes difficult to calculate for a large number of periods. However, because p is in the interval [0, 1], trial and error can yield a solution relatively quickly. Alternatively, in Microsoft Excel, the Goal Seek function can solve the equation. The solution is $p = 9.48\%$. Hence, if management believes the expropriation probability is lower than 9.5%, it should take on the project.

Example 14.3 The Infinite Cash Flow Case

Most investments in the oil business generate cash flows over much longer periods of time than just 2 years. Let's investigate the extreme case that an oil investment generates an expected $50 million (m) per year forever. The value of the project, not taking into account political risk, is

$$\frac{\$50 \text{ m}}{1 + r} + \frac{\$50 \text{ m}}{(1 + r)^2} + \frac{\$50 \text{ m}}{(1 + r)^3} + \ldots = \frac{\$50 \text{ m}}{r}$$

With a discount rate of 10%, the value of the project is $500 million.

How much will political risk reduce the value of the project? Let's assume that the probability of an adverse political event, again denoted by p, is constant over time. Note that the expected cash flow generated by the project now decreases with time because it is less and less certain that the government won't seize the revenues earned from the project:

$$V = \frac{\$50 \text{ m}(1 - p)}{1 + r} + \frac{\$50 \text{ m}(1 - p)^2}{(1 + r)^2} + \frac{\$50 \text{ m}(1 - p)^3}{(1 + r)^3} + \ldots$$

where p is the probability of expropriation ($p = 0.12$), and r is the discount rate ($r = 10\%$). To compute this infinite sum, we can use a trick we have used before. If $S = 1 + \lambda + \lambda^2 + \lambda^3 + \ldots$ and $\lambda < 1$, it is true that $S = \frac{1}{1 - \lambda}$. In our case, we have

$$V = \frac{\$50 \text{ m}(1 - p)}{1 + r}[1 + \lambda + \lambda^2 + \ldots]$$

with $\lambda = \frac{1 - p}{1 + r}$. Hence, we obtain

$$V = \frac{\$50 \, \mathrm{m}(1 - p)}{1 + r} \times \frac{1}{1 - \dfrac{1 - p}{1 + r}} = \frac{\$50 \, \mathrm{m}(1 - p)}{r + p}$$

$$= \frac{\$50 \, \mathrm{m}(1 - 0.12)}{0.10 + 0.12} = \$200 \, \text{million}$$

With 12% probability of expropriation each period, the value of the project is reduced dramatically to $200 million.

General Formulas

In general, if the expropriation risk is idiosyncratic, capital budgeting analysis must be adjusted for political risk as follows:

Step 1. Compute the discount rate, r, and future expected cash flows for period t, $C(t)$, as usual, without expropriation risk.

Step 2. Compute a series of expropriation probabilities, $p(t)$, for each future period.

Step 3. Let $\prod_{n=0}^{t-1}(1 - p(t{-}n))$ be shorthand notation for $(1 - p(t))(1 - p(t{-}1))$ $\ldots (1 - p(1))$, which is the probability that at time t, there has not yet been any expropriation.

For an investment of I, compute the NPV as

$$NPV = -I + \sum_{t=1}^{T} \frac{C(t)\prod_{n=0}^{t-1}(1 - p(t{-}n))}{(1 + r)^t} \tag{14.1}$$

The formula assumes *total* expropriation. However, in many cases, the MNC might actually receive at least some compensation or experience only a reduction in its cash flow. If this is the case, additional terms are necessary to reflect these additional cash flows with their corresponding probabilities.

In the previous example, we had

- Infinite cash flows
- The same cash flows every period (C)
- The same probability of expropriation in each period

The formula then becomes

$$V = C \times \frac{1 - p}{r + p}$$

This represents a rather extreme estimate of the effect of political risk. It assumes that the MNC receives no compensation and that the political risk will be present forever. However, in the case of an imminent crisis, it is likely that the political risk outlook will improve after a few years, so p will decrease over time if the crisis is resolved favorably.

Adjusting the Discount Rate Instead of Cash Flows

A popular alternative method is to initially ignore political risk and project an MNC's cash flows under the rosy scenario that no expropriation takes place, but then apply a discount rate

scaled up to account for political risk. As the following example and formulas show, such a method can indeed yield exactly the same solution, as long as the new discount rate is

$$r^* = \frac{r + p}{1 - p} \qquad \text{(14.2)}$$

Note that this formula is valid only in the special case we discussed—that is, the case in which cash flows occur forever and a constant probability of expropriation is assumed—and that a dramatically higher discount rate must be used. In our example, the discount rate adjusted for political risk is 25.0%. That is more than double the original 10% rate. However, as we just explained, it may well be the case that a country's political risk is unusually high for a short period of time during a crisis, but if the crisis is weathered, the MNC's managers expect the situation to normalize after a few years. The next example shows how to deal with a situation in which political risk subsides over time.

Example 14.4 Decreasing Political Risk

Suppose that Oconoc judges political risk to be negligible after 1 year. Either the company will be expropriated in the first year, or the populace of Zuenvela will have elected a more business-friendly president. In this case, the value of the project is

$$V = \frac{\$50\,\text{m} \times 0.88}{1 + r} + \frac{\$50\,\text{m} \times 0.88}{(1 + r)^2} + \frac{\$50\,\text{m} \times 0.88}{(1 + r)^3} + \cdots$$

The first cash flow calculation accounts for the probability of an adverse political event, but cash flows from the second period onward assume that there is no further political risk. However, the probability is only 0.88 that there are any positive cash flows from the second period onward. Hence, the value of the project is

$$V = \frac{\$44\,\text{million}}{0.10} = \$440\,\text{million}$$

Under this scenario for political risk, adjusting the discount rate from 10% to 11.36% would yield the "correct" discount rate. The new rate of 11.36% is the solution for r^* of $440 = \frac{50}{r^*}$.

More realistically, some probability of an expropriation after a first, tumultuous year would remain. Suppose the probability of expropriation decreases from 12% to 1% after the first year. We now obtain

$$V = \frac{\$50\,\text{m} \times 0.88}{1.1} + \frac{0.88 \times 0.99 \times \$50\,\text{m}}{1.1^2} + \frac{0.88 \times 0.99^2 \times \$50\,\text{m}}{1.1^3} + \cdots$$

$$= \frac{\$44\,\text{m}}{1.1} + \frac{\$43.56\,\text{m}}{1.1^2}\left[1 + \frac{0.99}{1.1} + \left(\frac{0.99}{1.1}\right)^2 + \cdots\right]$$

Applying our infinite sum formula with $\lambda = \frac{0.99}{1.1} = 0.9$, we obtain

$$V = \frac{\$44\,\text{m}}{1.1} + \frac{\$43.56\,\text{m}}{1.1^2} \times \frac{1}{1 - 0.9} = \$400\,\text{million}$$

The remaining political risk reduces the value of the project further from \$440 million to \$400 million. Hence, the discount rate that would yield the correct project value would satisfy $400 = \frac{50}{r^*}$, implying $r^* = 12.50\%$. It is unlikely that one can guess the correct political risk–adjusted discount rate in this case.

Discount Rates for Emerging Markets and Political Risk

In Chapter 13, we argued that the discount rate for emerging market investments should be computed using the world capital asset pricing model (CAPM), if the investing company has globally diversified investors. Because many emerging markets show relatively low correlations with the world market, the standard procedure may lead to relatively low discount rates for emerging market investments, which strikes many practitioners and economists as counterintuitive. In fact, a practice has developed to adjust the standard CAPM-based discount rates with a number of fudge factors to make them more palatable (that is, higher). We discuss this in more detail in the *Point–Counterpoint* feature in this chapter. Of course, many of the perceived risks of investing in emerging markets are political in nature, and we argue here that from the perspective of global investors, idiosyncratic political risks should be perfectly diversifiable and, consequently, should not affect discount rates.

In reality, however, emerging markets are not yet fully integrated with global capital markets, and therefore, it is possible that the CAPM does not capture all systematic risk factors. Perhaps political risk is one of these factors. Nevertheless, if the cost of capital is computed from the perspective of an MNC with globally diversified shareholders, political risk should affect the discount rate only if it affects global discount rates and represents a global systematic risk.[3] Although recent crises in emerging financial markets, such as the 1998 Russia crisis, may have spilled over into other emerging markets and even have adversely affected the stock market performance in developed markets, hard evidence for such global contagion remains elusive. Therefore, it remains best to view political risk as country-specific risk that can be diversified away by global investors. For that reason, we recommend not adjusting the discount rate for pure political risk and using only business risk to increase the magnitude of the discount rate above the risk-free rate. This may imply that emerging market investments require surprisingly low discount rates. However, political risk does reduce the value of the project because it reduces the cash flows that the MNC expects to receive in the future.

14.3 COUNTRY AND POLITICAL RISK ANALYSIS

This section begins by discussing how one might acquire information on the factors that lead to various **country risk ratings**. It then discusses some of the organizations that provide political risk analysis. Finally, the section discusses sovereign credit ratings and information about default probabilities that is incorporated in market prices of government bonds.

Country Risk Ratings

The capital budgeting analysis in the previous section requires information about political risk probabilities and alternative expropriation scenarios. Many organizations analyze the risk factors associated with doing business in countries around the world and come up with risk ratings for most countries. Some of these risk-rating organizations focus on financial and economic risks and others on political risk. As explained earlier in the chapter, political risks must be treated and managed differently than economic and financial risks.

How important political risk is relative to business risk depends on the particular activity of an MNC in a country. Imagine an MNC that establishes a foreign manufacturing plant to capitalize on cheap production costs and exports the goods produced to other countries. This

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[3]Andrade (2009) develops a model where country defaults are more likely to occur during global economic downturns, and political risk thus affects discount rates.

MNC will be relatively less subject to local economic risk than it might otherwise be because its customers are primarily outside the country. In other words, only the firm's costs—not its revenues—will be affected by economic risk. That said, the MNC might be quite vulnerable to political risks. In contrast, a firm that actually creates a local customer base in a foreign country might need to focus relatively more on economic risks because by creating local jobs and satisfying local customers, it may be less exposed to political risks. As you can see, ratings that do not distinguish between political and economic hazards are less useful for MNCs.
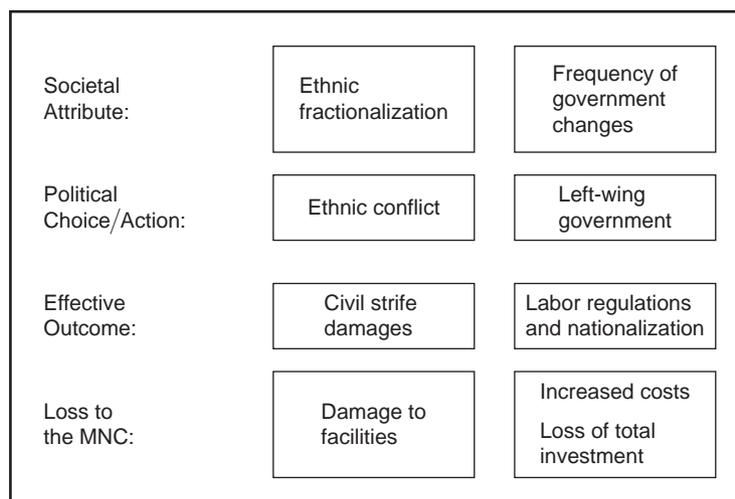
Political Risk Analysis

The primary objective of political and country risk analysis is to forecast losses stemming from these risks. Most risk-rating services forecast by linking certain measurable attributes to future political risk events.

Exhibit 14.4 shows two examples. Analysts have noted that ethnic conflicts in a country tend to adversely affect foreign investors, including MNCs. They have also noted that a good predictor of future ethnic conflict is the presence of ethnic fractionalization. For example, it is hard to imagine ethnic strife in a homogeneous country such as Sweden, but it is very likely to occur in Nigeria, where there are more than 250 different ethnic groups, several different religions, and at least five different languages spoken. Consequently, ethnic fractionalization is used as a risk attribute. Similarly, left-wing governments may be associated with actions that harm foreign investors, such as stricter labor regulations or outright nationalization. Countries with unstable governments and frequent, forced elections have a higher probability of electing left-wing officials within a particular period than countries with stable governments. This is true even if a right-wing government may be in power currently. Consequently, the frequency of government changes is used as a risk attribute. Generally, political risk services examine indicators of political risk, such as the following:

• Political stability (for example, the number of different governments in power over time)
• Ethnic and religious unrest; the strength and organization of radical groups
• The level of violence and armed insurrections; the number of demonstrations
• Enforcement of property rights
• The extent of xenophobia (fear of foreigners); the presence of extreme nationalism

Exhibit 14.4 Risk Attributes and Political Risk Analysis

Societal Attribute:	Ethnic fractionalization	Frequency of government changes
Political Choice/Action:	Ethnic conflict	Left-wing government
Effective Outcome:	Civil strife damages	Labor regulations and nationalization
Loss to the MNC:	Damage to facilities	Increased costs / Loss of total investment

Note: Political risk analysis uses measurable "risk attributes" (at top) to predict risk events for MNCs (bottom).

The different political variables are then weighted and added to provide one country score. Of course, such weightings should be adjusted for a particular MNC's situation, which is not always possible. It is also clear that the relative importance of certain risk events has changed over time. For example, the Overseas Private Investment Company (OPIC), which is the U.S. government's political risk insurance company, has seen a distinct change in the nature of the claims it has paid over time. In the 1960s, there were a significant number of expropriations; in the 1970s and 1980s, there were many cases regarding inconvertible currencies; during the 1990s, the majority of claims were paid for damages due to civil strife.

There are, however, risk-quantifying approaches besides the attribute approach. Political Risk Services Group (PRS Group), a New York–based firm, forecasts the three most likely governments (regimes) to be in power in a country over 18 months to 5 years in the future, and it predicts how these governments will behave. Whereas PRS Group focuses on future risks, some ratings services focus on current conditions only. Of course, it is often the case that countries with precarious current political conditions also face high future political risks. It is important to realize that country and political risk analyses ultimately produce probabilistic forecasts. A high-risk country need not experience a political risk event. Let's examine some actual rating services in more detail.

Some Examples of Ratings Systems

Institutional Investor publishes a biannual country credit rating based on information provided by leading international banks. The banks grade each country (except their home countries) on a scale of 0 to 100, with 100 representing those with the least chance of default. The individual responses are weighted using a formula that gives more importance to responses from banks with greater worldwide exposure and more sophisticated country-analysis systems. The factors to which bankers pay the most attention in producing the country rating are its debt service, its political and economic outlook, its financial reserves, and its current account and trade account balances with other countries.

The composite risk indicator of the Economist Intelligence Unit (EIU), a sister company to the magazine *The Economist*, encompasses four types of risk: political risk, economic policy risk, economic structure risk, and liquidity risk. It is compiled for 100 countries on a quarterly basis. The political risk component is of the attribute type and includes two subcategories: political stability (war, social unrest, orderly political transfer, politically motivated violence, and international disputes) and political effectiveness (change in government orientation, institutional effectiveness, bureaucracy, transparency/fairness, corruption, and crime). The three other categories involve a mix of subjective elements, using opinions of country experts and objective economic statistics. For example, the EIU's economic policy category focuses on a country's monetary policy, fiscal policy, exchange rate policy, and trade and regulatory policies. The economic structure category assesses solvency using information on growth, savings, debt structure, and the current account balance. Finally, the liquidity risk category examines the imbalance between a country's assets and liabilities versus the rest of the world, using various economic statistics (such as the country's short-term debt as a percentage of its exports).

The magazine *Euromoney* provides an overall country risk score based on nine individual variables that carry different weights. The two most important indicators, each with 30% weighting, are political risk and economic performance. The political risk assessment is based on scores given by country experts and banking officers, assessing government stability, regulatory environment, corruption, risk of a country's non-payment of loans, trade-related finance and dividends, and the non-repatriation of capital. The economic performance variable combines information on bank, monetary, and currency stability; budget deficits; unemployment; and economic growth. The other indicators include indicators about the amount and status of the country's debt and its access to local and international finance.

Other examples include S. J. Rundt & Associates, which relies on a global network of associates to provide country risk scores, and Control Risks Group (CRG), which provides assessments of political risk and travel risk (focusing on terrorism, crime, and so on). The IHS Energy Group's Political Risk Ratings focus primarily on risks for the oil and gas industry.

The PRS Group's ICRG Rating System

PRS produces the *International Country Risk Guide (ICRG)* monthly, along with the *Political Risk Yearbook*, and country fact sheets and data sets. We now focus on the ICRG ratings because they can be split up into economic, financial, and political risk components and their various subcomponents. The ICRG ratings, available since 1980, are developed from 22 underlying variables. The political risk measure is based on 12 different subcomponents, and the financial and economic risk measures are based on five subcomponents each. Exhibit 14.5 presents the different components and the points assigned to them in the ICRG system.

Exhibit 14.5 The ICRG Risk Components

POLITICAL RISK COMPONENTS	
Component	**Points (max.)**
Government stability	12
Socioeconomic conditions	12
Investment profile	12
Internal conflict	12
External conflict	12
Corruption	6
Military in politcs	6
Religious tensions	6
Law and order	6
Ethnic tensions	6
Democratic accountability	6
Bureaucracy quality	4
Maximum total points	**100**
FINANCIAL RISK COMPONENTS	
Component	**Points (max.)**
Foreign debt as a percentage of GDP	10
Foreign debt service as a percentage of XGS*	10
Current account as a percentage of XGS*	15
Net liquidity as months of import cover	5
Exchange rate stability	10
Maximum total points	**50**
ECONOMIC RISK COMPONENTS	
Component	**Points (max.)**
GDP per head of population	5
Real annual GDP growth	10
Annual inflaction rate	10
Budget balance as a percentage of GDP	10
Current account balance as a percentage of GDP	15
Maximum total points	**50**

*XGS = exports of goods and services.

Notes: XGS, exports of goods and services. From *International Country Risk Guide*, published by the PRS Group, Inc. Copyright © 2010. The PRS Group, Inc., www.prsgroup.com.

Financial and Economic Risk Factors

The financial and economic risk assessments are based solely on objective economic data. ICRG collects statistics on the variables listed in Exhibit 14.5 and then uses a fixed scale to translate particular statistics into risk points. For example, countries with foreign debt ratios smaller than 5% of GDP obtain a perfect 10 score on that indicator, whereas countries with a debt ratio of over 200% receive a score of 0.

The financial risk measure clearly aims to assess a country's ability to pay its foreign debts. The indicators measure (1) a country's outstanding foreign debt to GDP ratio, (2) its foreign debt service as a percentage of its exports, (3) its current account balance as a percentage of its exports, (4) its official reserves divided by its average monthly merchandise imports, and (5) exchange rate volatility. ICRG considers both large depreciations and appreciations of a currency to be "risky," but the former are considered the more risky of the two. The economic risk rating views highly developed countries (those with high levels of GDP per capita)—with high economic growth, low inflation, sound fiscal balances, and positive current balances—as having low economic risk.

The Political Risk Components

Unlike the financial and economic risk indicators, the political risk rating depends on subjective information, with ICRG editors assigning points on the basis of a series of preset questions for each risk component. The various subcomponents are shown in Exhibit 14.5. Following Bekaert et al. (2005), we organize the 12 components into four categories, based on their content but also on an analysis of how correlated different components are across countries and time, and we show some example scores in Exhibit 14.6. We group the "law and order," "bureaucratic quality," and "corruption" variables into a "quality of institutions" measure. The "law and order" variable separately measures the quality of the legal system ("law") and the observance of the law ("order"). "Bureaucratic quality" measures the institutional quality and the strength of the bureaucracy, which can help provide a cushioning effect in case governments change. "Corruption" can add directly to the cost of doing business in a particular country, for instance, because bribes must be paid. However, the corruption variable also captures the actual or potential corruption in the form of excessive patronage, nepotism, job reservations, "favors-for-favors," secret party funding, and suspiciously close ties between politics and business. ICRG uses the length a government has been in power as an early indicator of potential corruption.

A second grouping is "conflict" or "political unrest." The variables belonging in this category are "internal conflicts" (an assessment of internal political violence in the country), "external conflict" (an assessment of external disputes, ranging from full-scale warfare to economic disputes, such as trade embargoes), "religious tensions" (an assessment of the activities of religious groups and their potential to evoke civil dissent or war), and "ethnic tensions" (an assessment of disagreements and tensions between various ethnic groups that may lead to political unrest or civil war).

The sum of the subcomponents "military in politics" and "democratic accountability" is a good measure of the democratic tendencies of a country, which are correlated with political risk. A military takeover or threat of a takeover might represent a high risk if it is an indication that the government is unable to function effectively. This signals that the environment is unstable for foreign businesses. The democratic accountability category measures how responsive the government is to its citizens.

"Government stability" depends on a country's type of governance, the cohesion of its governing party or parties, the closeness of the next election, the government's command of the legislature, and the popular approval of the government's policies. We group "government stability," "socioeconomic conditions," and "investment profile" into one category, called "Policies." The "socioeconomic conditions" subcomponent attempts to measure the general

public's satisfaction, or dissatisfaction, with the government's economic policies. Socioeconomic conditions cover a broad spectrum of factors, ranging from infant mortality and medical provision to housing and interest rates. Within this range, different factors have different weights in different societies.

Of particular interest for MNCs is the "investment profile" category. It has four subcategories, including the risk of expropriation or contract viability, taxation, repatriation, and labor costs. For particular projects, the investment profile category can suffice to assess an MNC's pure political risk.

Overall Ratings

The points on the 12 categories within the "political risk" measure add up to 100, which constitutes the score for the political risk index. Analogously, the financial and economic risk indexes each carry 50 points. ICRG creates an overall index by adding up the three subindexes and by dividing by 2 so that the top score is 100. When all the subcomponents have been scored, ICRG then assigns the following degrees of risk to the composite score:

Very high risk	00.00% to 49.9%
High risk	50.00% to 59.9%
Moderate risk	60.00% to 69.9%
Low risk	70.00% to 79.9%
Very low risk	80.00% to 100%

The composite score is only an assessment of the country's current country risk situation. In addition, ICRG provides 1-year and 5-year risk forecasts. These forecasts include a worst-case forecast, a most-probable forecast, and a best-case forecast. The ICRG calls the difference between the worst- and best-case forecasts "risk stability" because it is an indication of the volatility of risk.

Example 14.5 A Cross-Country Example of ICRG's Political Risk Ratings

Exhibit 14.6 lists the political risk ratings and their subcomponents for a number of countries in Southeast Asia. For comparison, we also present the G5 countries, the country ranked the highest (Norway), and the country ranked the lowest (Somalia). Among the Southeast Asian countries, Singapore and Brunei have low overall country risk, whereas Myanmar has relatively high overall country risk.

Suppose a large U.S. MNC is considering setting up a textile production facility in Southeast Asia and is exploring options in Indonesia, Malaysia, Myanmar, and Vietnam. Among these four countries, Malaysia has the best overall political risk situation, followed by Vietnam. Indonesia and Myanmar have the most risk overall. Note that these similar overall ratings hide very different performances on the subgroup measures discussed earlier. If democratic tendencies are important, both Myanmar and Vietnam score very poorly relative to Indonesia. However, Indonesia's political institutions are of poor quality, pulling down its overall score.

Suppose the CEO is particularly concerned about the repatriation of profits in the future and about the possibility that corruption will erode profits. We can specifically tailor the ICRG system to this situation by giving more weight to the "investment profile" and "corruption" categories.

The last column in Exhibit 14.6 uses the subcategories to create an alternative political risk index in which only the investment profile and corruption categories are considered. In this last column, we simply added the investment profile and corruption scores for each country and reweighted the index to be between 0 and 100. Because the "investment profile" category receives double the points of corruption, the new index puts two-thirds of its weight on "investment profile" and one-third on "corruption," and it assigns a 0 weight to all other categories. Using this system, Indonesia becomes the least risky country in which to invest, whereas it only ranked third behind Malaysia and Vietnam using the overall political risk index.

Exhibit 14.6 Country and Political Risk Ratings for Selected Countries

Country	Overall Country Risk	Political Risk	Quality of Institutions	Conflict	Democratic Tendencies	Policies	Investment Conditions / Corruption
United States	76.8	81.5	81.3	83.3	83.3	79.2	88.9
United Kingdom	76.0	80.5	84.4	77.8	100.0	75.0	80.6
France	74.5	78.0	81.3	73.6	95.8	75.0	88.9
Germany	82.3	83.0	87.5	84.7	100.0	73.6	91.7
Japan	82.0	80.5	84.4	84.7	83.3	73.6	88.9
Norway	91.0	89.0	93.8	88.9	100.0	83.3	91.7
Somalia	36.0	24.0	9.4	34.7	16.7	22.2	16.7
Brunei	87.5	82.5	68.8	93.1	45.8	90.3	77.8
Indonesia	67.8	60.5	50.0	61.1	62.5	63.9	66.7
Malaysia	78.5	73.0	59.4	77.8	79.2	72.2	63.9
Singapore	82.5	84.5	84.4	87.5	58.3	90.3	91.7
Vietnam	68.3	65.5	53.1	83.3	33.3	63.9	58.3
Myanmar	51.8	46.5	34.4	66.7	8.3	44.4	22.2
Philippines	72.3	62.5	46.9	70.8	66.7	59.7	61.1
Thailand	68.8	56.0	40.6	58.3	62.5	58.3	52.8

Notes: The ratings are taken from ICRG's Web site (www.prsgroup.com/ICRG.aspx). The data are for July 2010. Subgroup ratings were computed as the sum of the points for the several subcategories and normalizing, so that 100 would mean a perfect score (no risk).

Country Credit Spreads

In Chapter 11, we defined the credit spread on a corporate bond as the difference between the yield on the bond and the yield on a comparable Treasury bond that is not subject to default risk. When a sovereign borrower issues bonds in its own currency, there is usually no default risk because the government can simply print money to pay back the debt holders. When sovereign borrowers issue bonds in a different currency, though, a default is possible because the government must earn foreign exchange to pay off the bondholders.

Government defaults have occurred regularly in international bond markets throughout the past 200 years. Defaults occurred in Russia (1998) and Argentina (2001), and more recently in Belize (2007) and Ecuador (2008). Because of possible default, the yields offered on international bonds are higher than the yields on the government bonds of the developed country issuing the currency. The difference between the two is called the **country credit spread**. For example, if the yield on a 5-year U.S. Treasury bond is 6%, and the yield on a 5-year dollar bond issued by the Brazilian government is 9%, the Brazilian country credit spread is 3%. These spreads, which vary over time in secondary markets, are, of course, an indication of country risk.

Sovereign Credit Ratings

Today, major international rating agencies, such as Moody's, Standard & Poor's, and Fitch, are rating more and more sovereign bond issues as the markets for them continue to grow. Exhibit 14.7 reports the March 2011 ratings on long-term foreign currency debt, provided by Standard & Poor's. Recall that an investment grade rating extends from AAA to BBB. While most developed countries are rated investment grade, Greece lost its investment grade status in 2010. Other countries involved in the European sovereign debt crisis, such as Ireland, Portugal, Spain, and Italy, are still investment grade, but not AAA. Whereas the debt of many developing countries is rated as "junk debt"—for example, Argentina (B), Ukraine (B+), and

Exhibit 14.7   Sovereign Credit Ratings by Standard & Poor's

Abu Dhabi	AA	Fiji Islands	B–	The Netherlands	AAA
Albania	B+	Finland	AAA	New Zealand	AA+
Angola	B+	France	AAA	Nigeria	B+
Argentina	B	Gabonese Republic	BB–	Norway	AAA
Aruba	A–	Georgia	B+	Oman	A
Australia	AAA	Germany	AAA	Pakistan	B–
Austria	AAA	Ghana	B	Panama	BBB–
Azerbaijan	BB+	Greece	BB+	Papua New Guinea	B+
Bahamas	BBB+	Grenada	B–	Paraguay	B+
Bahrain	BBB	Guatemala	BB	Peru	BBB–
Bangladesh	BB–	Guernsey	AAA	Philippines	BB
Barbados	BBB–	Honduras	B	Poland	A–
Belarus	B	Hong Kong	AAA	Portugal	BBB
Belgium	AA+	Hungary	BBB–	Qatar	AA
Belize	B	Iceland	BBB–	Romania	BB+
Benin	B	India	BBB–	Russian Federation	BBB
Bermuda	AA	Indonesia	BB	Saudi Arabia	AA–
Bolivia	B	Ireland	A–	Senegal	B+
Bosnia and Herzegovina	B+	Isle of Man	AAA	Serbia	BB
Botswana	A–	Israel	A	Singapore	AAA
Brazil	BBB–	Italy	A+	Slovakia	A+
Bulgaria	BBB	Jamaica	B–	Slovenia	AA
Burkina Faso	B	Japan	AA–	South Africa	BBB+
Cambodia	B+	Jordan	BB	Spain	AA
Cameroon	B	Kazakhstan	BBB	Sri Lanka	B+
Canada	AAA	Kenya	B+	Suriname	B+
Cape Verde	B+	Korea	A	Sweden	AAA
Chile	A+	Kuwait	AA–	Switzerland	AAA
China	AA–	Latvia	BB+	Taiwan	AA–
Colombia	BBB–	Lebanon	B	Thailand	BBB+
Cook Islands	BB–	Liechtenstein	AAA	Trinidad and Tobago	A
Costa Rica	BB	Lithuania	BBB	Tunisia	BBB–
Croatia	BBB–	Luxembourg	AAA	Turkey	BB
Cyprus	A	Macedonia	BB	Uganda	B+
Czech Republic	A	Malaysia	A–	Ukraine	B+
Denmark	AAA	Malta	A	United Kingdom	AAA
Dominican Republic	B	Mexico	BBB	United States	AAA
Ecuador	B–	Mongolia	BB–	Uruguay	BB
Egypt	BB	Montenegro	BB	Venezuela	BB–
El Salvador	BB–	Morocco	BBB–	Vietnam	BB–
Estonia	A	Mozambique	B+		

Notes: This table is extracted from Standard and Poor's Web site (www.standardandpoors.com) and represents the agency's 2011 ratings for long-term foreign currency debt of the various sovereign borrowers. The best rating is AAA; the worst is D.

Vietnam (BB–)—countries such as Brazil, Chile, China, Korea, and Malaysia now receive investment-grade ratings.

An increasing number of firms in developing countries are also being rated as they seek to diversify their funding sources and access a wider investor base. Credit ratings of private companies generally fall at or below the credit ratings of the governments of the countries in which the firms are domiciled. This "sovereign ceiling" makes sense in the case of foreign currency debt because the sovereign has first claim on available foreign exchange and controls the ability of residents to obtain funds to repay creditors. Although there are more and more exceptions to this rule, sovereign ratings remain a significant determinant of the credit rating assigned to corporations (see Durbin and Ng, 2005; and Borensztein et al., 2007).

Why Is Sovereign Credit Risk Different?

Sovereign defaults are different from a company going bankrupt because it is very difficult to take a country to court, and there are no formal bankruptcy proceedings in place for sovereigns. Nonetheless, sovereigns still worry about the consequences of defaulting because of the following issues:

- The assets of the country located in the jurisdiction of a creditor may be seized. For example, in early 1986, the Peruvian government brought home some $700 million worth of gold and silver it had been holding abroad. This was around the time it was restricting payments on its debt to a certain percentage of the country's export revenues.
- The country will not be able to borrow as readily in the future, and if it manages to borrow, its borrowing costs may be higher.
- The country could find its ability to engage in international trade severely curtailed.
- Default may make economic crises worse, for example, by causing a run on banks and exacerbating capital flight.

Panizza et al. (2009) thoroughly review the costs of sovereign default and suggest the costs are rather moderate and short lived, but Andrade and Chhaochharia (2010) estimate the costs to be more substantial.

As we have explained, the benefit to defaulting is that the debt is no longer serviced. Servicing the debt can be painful if the country's income is low. One country that has reneged on foreign obligations numerous times is Argentina. In 1930, an economic crisis led to a military coup that ended 70 years of parliamentary government and led to a forced debt restructuring. Argentina defaulted again after Mexico declared a debt moratorium in 1982. Finally, on Christmas Eve, 2001, Argentina defaulted on $150 billion in foreign debt. The country then restructured its debt. The Argentine government offered a deal in which 76% of the defaulted bonds were exchanged for new bonds worth between 25% and 35% of the original value and with longer maturities. Payments on some of these bonds are indexed to the future economic growth of Argentina. In 2010, some of the holdout bondholders accepted another exchange offer. Yet some holdouts continue to litigate to receive full payment, and Argentina remains ostracized from the international capital markets. It has not issued a sovereign bond in foreign jurisdictions since its 2001 default.

Taking Governments to Court

Bilateral investment treaties (BITs) help investors avoid legal problems associated with sovereign debt. A few decades ago, when foreign investors and multinationals were hurt by the actions of a foreign government, they had to rely on the foreign government's laws or persuade their own governments to intervene on their behalf. To encourage international capital investment, countries have recently begun entering into treaties with each other, promising mutual respect for and protection of investments in each other's territory. A BIT allows an individual investor to make his or

her claims directly against a nation at a private international arbitration tribunal consisting of three independent arbitrators. The administering organization for many of these disputes is the **International Center for the Settlement of Investment Disputes (ICSID)**, an arm of the World Bank. More than 2,500 BITs have been signed, most after 1990, and there are over 120 cases pending with the ICSID.

The standards of protection offered by BITs are quite broad. Indeed, the ICSID has made a number of precedent-setting arbitration awards. BIT arbitration now reaches far beyond cases in which expropriation or nationalization has occurred. It also encompasses any government action that deprives an investor of all or part of the economic value of an investment. This includes intangible assets such as contractual rights.

We already mentioned the example of INE, an agency of the federal government of Mexico, refusing to renew Tecmed's license to operate a hazardous waste landfill. Tecmed argued that this act constituted an expropriation of its investment that was contrary to the provisions of the 1996 Spanish–Mexican BIT, and the company brought the case before the ICSID. The tribunal agreed and ordered Mexico to pay Tecmed damages in excess of $5 million plus compound interest.

Although there have been a number of cases in which investors such as Tecmed have won, there have also been cases in which investors have lost. In some instances, the issues involved are not simple but cut across a broad set of societal and cultural lines. For example, in January 1997, the U.S.-based waste disposal company Metalclad Corporation filed a complaint with the ICSID, alleging that the Mexican state of San Luis Potosi had violated a number of North American Free Trade Agreement (NAFTA) provisions when it prevented the company from opening a multimillion-dollar hazardous waste treatment and disposal site it had built near Guadalcazar. The site had previously been contaminated in 1990 when a Mexican company illegally dumped 55,000 drums—about 20,000 tons—of hazardous waste in a valley a few kilometers away from Guadalcazar. The drums were filled with industrial waste from Mexico City and other urban areas, and they were not covered or properly stored.

Metalclad had negotiated with the Mexican federal government to clean up the site in return for using it as a waste treatment and disposal site. The Mexican federal government saw Metalclad as a company that would clean up a horrible mess, but the local government and the people of Guadalcazar were not so sure. The Governor of San Luis Potosi denied Metalclad the permit to operate when he rezoned the area of the site part of an ecological zone in response to an environmental impact assessment that revealed that the plant site lay atop an ecologically sensitive underground alluvial stream.

The Metalclad case raises complex social, legal, and economic issues. Perhaps the local population should have been consulted about the plans for establishing a toxic waste treatment facility in the area, but they never were. Legally, the case was brought against the Mexican federal government in defiance of a ruling by a local state, a factor that frightens environmentalists. "The decision is proof that NAFTA and the environment are at odds, and that municipalities will have a tough time turning away garbage if foreign corporations are involved," said Michelle Swenarchuk of the Canadian Environmental Law Association.[4] Although Metalclad sought $90 million in damages, the company received only $16.7 million. Grant Kesler, the CEO of Metalclad, stated, "This is a token amount of money that doesn't really reflect the value of the project." The company estimated that it had spent more than $20 million in planning, permitting, and construction. "The biggest losers of all," Mr. Kesler added, "are the people of Mexico who continue to have to live in a country that produces 10 million tons of hazardous waste a year and has only one facility in the whole country to handle it."[5]

Whether BITs are beneficial remains an open question. Yackee (2010) claims that there is only weak evidence that BITs meaningfully influence foreign direct investment (FDI) decisions; moreover, BITs are not strongly correlated with political risk rankings, and providers of political risk insurance do not really take BITs into account when making underwriting decisions. One potential reason is that litigation is often costly, and the outcome surely is uncertain. For example, in a recent case, Commerce Group Corp (CGC), a Wisconsin-based company, saw its case against the government of El Salvador, demanding $100 million in compensation, dismissed by an ICSID panel, stating that the dispute was not within its jurisdiction. CGC explores and produces precious metals in El Salvador, especially in the Sebastian Gold Mine, under a 1987 exploitation concession granted by the government of El Salvador. In order to mine and process gold ore, environmental permits from the El Salvador Ministry of Environment and Natural Resources are required. On September 13, 2006, the Ministry revoked the required permits, thereby effectively terminating CGC's right to mine and process gold, which led to the claim for damages.

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[4]See Scoffield (2000).
[5]See DePalma (2000).

Historical Background: Brady Bonds

Although the majority of Brady bonds have been retired, Brady bonds remain an important and liquid component of the emerging debt market. Mexico issued the first Brady Bond in February 1990, converting $48.1 billion of its eligible foreign debt to commercial banks into two types of the bonds. The principal on both types of bonds was fully collateralized in the form of U.S. Treasury zero-coupon bonds held at the Federal Reserve Bank of New York. Mexico also guaranteed investors that 18 months' worth of interest payments would be paid on the bonds by depositing that amount as collateral with the New York Fed. Most other Brady deals were quite similar to Mexico's. Brady deals were concluded for over 20 countries, including Argentina, Brazil, Jordan, Nigeria, and Poland.

The vast majority of outstanding Brady bonds are U.S. dollar denominated, and they tend to have very long maturities (20 to 30 years). The bonds are evenly divided between fixed and floating-rate instruments. Brady bonds lend themselves to the same valuation techniques applied to more conventional fixed-income securities. The price of a given bond represents the present value of its stream of future payments. However, as we hinted earlier in the chapter, Brady bonds have a number of special features:

- *Principal collateral:* All par and discount bonds are collateralized by U.S. Treasury zero-coupon securities having similar maturities.
- *Interest collateral:* For some bonds, the government issuing the Brady bonds deposits money with the New York Federal Reserve Bank in amounts covering 12 to 18 months' of interest payments on a "rolling" basis.
- *Sovereign portion:* The remaining cash flows are subject to sovereign risk.

The collateral enhancements imply that the difference between the yield-to-maturity on the Brady bond and a U.S. Treasury bond of comparable maturity (sometimes called the "blended" yield) cannot really be viewed as a country spread. Therefore, bond traders compute the "stripped yield," based on the yield-to-maturity of the unenhanced interest stream after removing the present value of the U.S. Treasury zero-coupon bond that collateralizes the principal and the present value of the guaranteed interest stream. This stripped yield is truly based on the credit quality, or sovereign risk, of the issuing nation.

Bonds sometimes also include detachable warrants or recovery rights predicated on a country's economic performance. Mexico's Value Recovery Rights (VRRs), for example, were based on numerous variables, including oil prices, GDP, and oil production levels. In June 2003, Mexico retired the last of $35 billion in Brady bonds, drawing an end to its disastrous debt default of the early 1980s.

Analyzing a Brady Bond

Consider a Brady bond with an annual coupon of 7% issued by Peru with 10 years remaining until maturity. Assume that the par value of the bond and the following year's coupon payments are collateralized by U.S. Treasury bonds. Exhibit 14.8 contains all the information necessary to value the bond. If the Peruvian government does not default, the investor in this bond receives $7 (per $100 par) each year and receives $107 of interest and principal 10 years from now.

If this were a bond issued by the U.S. government, we would value it as in Chapter 6 by taking the present value of each year's promised cash flows with the appropriate spot interest rate from Exhibit 14.8. The value of such a hypothetical U.S. Treasury bond would be

$$\text{Value} = \frac{7}{1 + 0.035} + \frac{7}{(1 + 0.0410)^2} + \ldots + \frac{107}{(1 + 0.065)^{10}} = 105.3724$$

Exhibit 14.8 Analyzing a Brady Bond

Year	Dollar Cash Flows	Dollar Spot Rates	Present Value of the Cash Flows
1	7	3.50	6.76
2	7	4.10	6.46
3	7	4.65	6.11
4	7	5.05	5.75
5	7	5.55	5.34
6	7	5.85	4.97
7	7	6.05	4.64
8	7	6.25	4.31
9	7	6.35	4.02
10	107	6.50	57.00

Notes: The bond is trading at a price of $92 (per $100 par value) and carries a coupon of 7%. The second column lists the cash flows accruing to the bondholder when Peru does not default on its obligation. The third column lists the dollar spot interest rates. The fourth column computes the present value of the future cash flows, using these spot interest rates.

Instead, the price of the Peruvian Brady bond is only $92. To analyze this bond, let's start by computing the yield-to-maturity, ignoring the collateral. Recall that the yield-to-maturity is the one yield that makes the present value of the cash flows equal to the price:

$$92 = \frac{7}{1 + ytm} + \frac{7}{(1 + ytm)^2} + \ldots + \frac{107}{(1 + ytm)^{10}}$$

Solving this equation gives $ytm = 8.20\%$. By substituting 105.3724 for 92 above, we can also compute the yield-to-maturity on our hypothetical U.S. Treasury bond, which is $ytm = 6.26\%$.

From these computations, you might conclude that the country spread is $8.20\% - 6.26\% = 1.94\%$. However, this is incorrect because the 8.20% is a "blended," not a stripped, yield. The 8.20% yield does not take into account the fact that parts of the cash flows in the bond are collateralized and hence are risk free.

Let's value the collateral, the first coupon payment and the par value of the bond, with the USD spot interest rates:

$$\text{Value of collateral} = \frac{7}{1.035} + \frac{100}{1.065^{10}} = 60.0359$$

The price of $92 per $100 of par value consists of $60.0359 for the cash flows collateralized by U.S. Treasury bonds and $31.9641 = $92 - $60.0359 for the other cash flows. These other cash flows are nine coupons of $7 each, which the Peruvian government promises to pay. The stripped yield therefore solves

$$31.9641 = \frac{7}{(1 + ytm)^2} + \frac{7}{(1 + ytm)^3} + \ldots + \frac{7}{(1 + ytm)^{10}}$$

Note that the first non-collateralized cash flow occurs in the second year. The solution for *ytm* in this equation is 12.88%. Hence, a better estimate of the country spread is $12.88\% - 6.26\% = 6.62\%$.[6]

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[6]This calculation is not entirely correct because the timing of the cash flows in the 6.26% computation is more tilted toward the 10-year horizon (because there is a par value payment then) than in the computation for the Peruvian non-collateralized flows. To correct for that, we would have to compute the yield-to-maturity on a U.S. bond with a cash flow pattern similar to that of the non-collateralized portion of the Peruvian bond. To do so, we must first price the cash flows of $7 from year 2 to year 10 with the U.S. spot interest rates, and then we would compute the yield-to-maturity. It so happens that this yield is only 5.82%, so the country spread is even higher than the stripped yield indicates.

Country Spreads and Political Risk Probabilities

Country spreads are often used in capital budgeting to account for political risk. It is not obvious how to do so.

First, recall that the country spread is an indication of the default risk of a sovereign bond. Although a government might default on its bonds as a result of a political event, this does not necessarily mean that it will also expropriate the assets of the MNCs that lie within its borders.

Second, even if political risk and sovereign default risk are highly correlated, the nature of Brady bonds is such that the probabilities of default are not easily recovered from the yield spreads. It is best to use an example to illustrate the point. Consider the Peruvian bond we analyzed earlier. What is the probability that the Peruvian government will default each year? We can estimate this probability by making some additional assumptions. We first assume that when the Peruvian government reneges on the debt, it will pay foreign debt holders nothing. This is clearly unrealistic. In most cases of sovereign default, a restructuring happens (the Brady deals are but one example), so that foreign debt holders still recover some of their investment. In a 2008 report, Moody's computed an average historical recovery rate of about 35%. For the sake of this example, though, we set this recovery value to 0. (The next subsection considers the case of non-zero recovery values.) We also assume here, for simplicity, that the probability of default is constant over time.

The cash flow diagram for the Peruvian bond is simple. The first period, it pays $7 for sure because that payment is collateralized. Therefore, it should not enter our computations at all. However, there is still a probability that the Peruvian government will default (for instance, on other bonds) in that year. We denote this probability by p. The second year, there is a probability of $(1 - p)^2$ that the bond will not be in default, and there is a probability of $(1 - p)p$ that there will be a default. This is the same reasoning used in Exhibit 14.3. For the third year, the probability of no default is $(1 - p)^3$, and the probability of default is $(1 - p)^2 p$. Following this same argument until the 10th year, it must be the case that

$$31.9641 = (1 - p)^2 \frac{7}{1.041^2} + (1 - p)^3 \frac{7}{1.0465^3} + \ldots + (1 - p)^{10} \frac{7}{1.065^{10}}$$

Here, we equate the value investors assign to the bond with the present value of the expected cash flows, discounted at U.S. risk-free rates. We can do this because the possibility of default is taken into account in the probabilities, and we assume that default is an idiosyncratic risk. As before, this equation can be solved for p, the probability of default. We find $p = 6.34\%$. If we believe sovereign risk as reflected in this default probability is perfectly correlated with the political risk embedded in a cash flow analysis for capital budgeting, this is the probability we should use.

Default Probabilities with Positive Recovery Values

In the previous section, we computed the probability of default by using the formula

$$\text{Stripped Price} = \sum_{j=1}^{10} \frac{CF(j)(1 - p)^j}{[1 + i(j)]^j} \tag{14.3}$$

In Equation (14.3), the stripped price is the dollar price of the bond after subtracting the value of the collateral; $CF(j)$ is the promised dollar cash flow at time j; $i(j)$ is the USD spot interest rate for period j; and p is the default probability. The assumptions are that the default probability is constant over time and the recovery value upon default is 0.

In most cases of sovereign defaults, foreign investors have recovered some of their money after the governments renegotiated the terms of the debt jointly with investors and

representatives of the World Bank and the IMF.[7] How much is recoverable depends on economic conditions. The recovery values are likely to change over time. When there is the possibility of recovery under default, the formula in Equation (14.3) becomes more complex:

$$\text{Stripped Price} = \sum_{j=1}^{10} \frac{CF(j)(1-p)^j + R(j)p(1-p)^{j-1}}{[1+i(j)]^j} \qquad \textbf{(14.4)}$$

where $R(j)$ is the expected recovery value for the bond in period j, conditional upon default at that time.

Let's apply this formula to the Peruvian bond example. The stripped bond promises nine payments of $7 per $100 par over 9 years. We computed the stripped price to be 31.9641. When there was no recovery, the default probability was 6.34%. Because recovery values increase the expected cash flows, the default probability will now be higher. In other words, assuming zero recovery underestimates the probability of the risk event occurring.

Let's work through an example. Assume that the Peruvian bond has the following expected recovery values: periods 1 and 2 = 8; periods 3 and 4 = 4; and period 5 and thereafter = 0. Recall that the first coupon payment is collateralized. However, the Peruvian government can still announce that it will no longer service its debt and that it will default in period 1. We must now find a p that solves the following equation:

$$31.9641 = \frac{8 \times p}{1+0.035} + \frac{7 \times (1-p)^2 + 8 \times p(1-p)}{1.041^2}$$
$$+ \frac{7 \times (1-p)^3 + 4 \times p(1-p)^2}{1.0465^3} + \frac{7 \times (1-p)^4 + 4 \times p(1-p)^3}{1.0505^4}$$
$$+ \frac{7 \times (1-p)^5 + 0 \times p(1-p)^4}{1.0555^5} + \dots + \frac{7 \times (1-p)^{10}}{1.065^{10}}$$

Solving this equation yields $p = 7.20\%$. This compares to an estimated p of only 6.34%, when recovery values were assumed to be 0.

CASE STUDY

The Mexican Peso Crisis and Country Risk

Determining the default probabilities related to Brady bonds is not always easy because their cash flows extend over such long periods of time. Let's revisit the country risk related to Tesobonos, securities issued by the Mexican government in the 1990s. Let's also discuss the correlation between currency risk and country risk in the context of the Mexican peso crisis in 1995.

In the early 1990s, Mexico regained access to international capital flows and started to run a current account deficit. Domestic savings began to decline in a situation much like the United States in the mid-2000s. In fact, it was jokingly suggested that Mexico was not

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[7]One problem has been that smallish minorities of creditors often block restructuring deals to which large majorities agree. Recently, some sovereign issuers have included "collective-action clauses" in their bonds that prevent this from happening.

only economically integrating with the United States but had also adopted the bad spending habits of U.S. citizens, as Mexican citizens were incurring substantial credit card debts. The Mexican current account deficit worsened over time, reaching 8% of Mexico's GDP by 1994. At the time, Mexico had a crawling peg exchange rate system (see Chapter 5), but the nominal exchange rate did not fully adjust with Mexican inflation. As a result, Mexico experienced a real appreciation, which further eroded Mexico's competitive trade position and encouraged Mexican consumers to buy international goods.

There were two other important developments in Mexico. First, Mexico had a weak banking system. Mexican banks had been privatized in the early 1990s, and they subsequently went on a lending boom. Non-performing loans as a share of total loans increased from less than 5% in 1990 to around 10% in 1994. To keep its banks afloat, Mexico's central bank could not let interest rates rise too much. To do so would have threatened the economy and led to even more non-performing loans. (At higher interest rates, borrowers with bad credit are the ones who still want to borrow money.)

Given Mexico's precarious economic situation, the demand for pesos was low. In order to prevent the peso from falling in value, Mexico's central bank used sterilized intervention. That is, because the bank was forced to use its foreign reserves to buy pesos, it simultaneously bought domestic bonds, increasing their prices and keeping their yields low. Understandably, foreign investors were not thrilled with the Mexican government's high-risk, low-yielding peso-denominated securities (called "Cetes"). This led to a second major development: From 1993 onward, the Mexican government started to rely more and more on the newly created Tesobonos to finance its public debt.

Tesobonos are Treasury bills issued by the Mexican government, just as Cetes are, but they are effectively U.S. dollar denominated. That is, although both the purchase amount and the principal payment are denominated and made in pesos, the principal payment is fully indexed to the change in the exchange rate between the dollar and the peso.

Let's consider an example using a 3-month Tesobonos. Suppose the yield on the Tesobonos is 5%. If the Mexican peso exchange didn't change in value, the investor would receive

$$1 + \frac{0.05}{4} = \text{MXN}1.0125$$

after 3 months. Suppose though that the Mexican peso devalues by 5% over the 3-month period. Then, the amount paid to the investor will be

$$\left(1 + \frac{0.05}{4}\right) \times 1.05 = \text{MXN}1.063125$$

Note that this represents a 25.25% (6.3125 × 4) return on an annualized basis. While Tesobonos provided investors with protection against peso devaluation, they also guaranteed that a devaluation of the peso would be extremely costly to Mexico. In that sense, by shifting heavily toward short-term financing indexed to the dollar, the Mexican government signaled that it would not let the peso devalue. On December 30, 1994, $48.9 billion of Tesobonos were outstanding, and about one-third of them were held by foreigners.

The year 1994 was an election year for Mexico, and it proved disastrous for the country, both economically and politically. Economically, the current account worsened, the central bank steadily lost reserves, and foreign investors bought only Tesobonos. Politically, 1994 was turbulent as well. Early in the year, the Chiapas Indians rebelled, and the presidential candidate most likely to win the election, Luis Donaldo Colosio, was murdered. This turmoil increased the political risk in Mexico, making it less attractive for international investors.

The situation became untenable on December 20, 1994. With international reserves in short supply, the Mexican government tried to devalue the peso by 13.67%, from MXN3.4662/$ to MXN3.94/$. However, the devaluation proved insufficient, and the

Mexican government was forced to let the Mexican peso float. By the end of December 1994, the peso sank to above MXN5.20/$, and by March 1995, it was trading above MXN6/$. Interest rates on both Cetes and Tesobonos shot up. The central bank's official international reserves were insufficient to cover the amount of Tesobonos coming due in the following months. It became clear that Mexico faced an acute liquidity crisis. As we discussed in Chapter 10, the Mexican government was bailed out by a U.S. Treasury and IMF support package at the end of January 1995. The last Tesobonos were issued on February 17, 1995.

The Tesobonos and Cetes securities offer a unique opportunity to study the interaction of country risk and currency risk. The standard Mexican Treasury bills (Cetes) must reward investors for both currency risk and country risk; Tesobonos, however, need only reward investors for country risk because they are indexed to the U.S. dollar. Note that this approach assumes equal default and recovery rates for the two types of bonds, which may not be true. A country may choose to default and pay less on bonds that it perceives to be held by more international investors.

To put these ideas into symbols, let the U.S. interest rate be denoted by i_{US}, the Cetes rate by i_{CET}, and the Tesobonos rate by i_{TB}. The interest rates are all deannualized. Furthermore, we denote the country premium or country spread by copr and the currency or devaluation premium by cupr. We then define

$$1 + i_{CET} = (1 + i_{US}) \times (1 + \text{copr}) \times (1 + \text{cupr}) \qquad \textbf{(14.5)}$$
$$1 + i_{TB} = (1 + i_{US}) \times (1 + \text{copr})$$

Note that we define country and currency premiums multiplicatively rather than additively (see Chapter 11). The country risk premium is, of course, directly related to default probabilities. Let p be the probability that the Mexican government will not repay the Tesobonos investors, in which case we assume that recovery of interest and principal is 0. Then, it must be the case that

$$1 + i_{US} = (1 + i_{TB}) \times (1 - p) + 0 \times p \qquad \textbf{(14.6)}$$

That is, the expected return on a U.S. T-bill investment or a Tesobonos investment is the same, taking default into account. After combining Equations (14.5) and (14.6), we obtain

$$1 + \text{copr} = \frac{1}{1 - p}$$

Equivalently, $p = \dfrac{\text{copr}}{1 + \text{copr}}$. The country risk premium embedded in Tesobonos provides immediate information on political risk probabilities.

Domowitz et al. (1998) studied 3-month and 6-month currency and country premiums in Mexico in 1993 and 1994. They found currency premiums, which averaged 7% to 8%, to be much bigger than country premiums, which averaged around 2.5%. They also found currency and country premiums to be only weakly positively correlated. Nevertheless, the correlation between the currency premiums and the country risk premium becomes extreme when it matters—that is, when the country is on the brink of a currency and/or debt crisis. This is vividly illustrated in Exhibit 14.9, which shows currency and country spreads before and during Mexico's 1994 to 1995 currency crisis.[8]

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[8]Note that the country and currency premiums in the exhibit are annualized. That is, we multiplied them by 4 because we used 3-month Cetes and Tesobonos. When additive country and currency premiums are reported, one typically uses the annualized interest rates reported in the exhibit, so that the country risk spreads are already annualized. This annualization is not harmless. Three-month securities harbor information about currency and country risk within the 3-month period, not beyond. Consequently, the default probabilities reported in the last column use the actual 3-month country spreads (that is, the numbers in column 8 divided by 4). If we were to use annualized probabilities, the numbers would be higher. If the term structure of interest rates is relatively flat, these annualized probabilities will give a good indication of default risk over a 1-year period. However, in times of crisis, we often observe a downward-sloping term structure of interest rates, and the use of short-term rates may overestimate annual default probabilities.

Exhibit 14.9   Country and Currency Premiums Around the Mexican Currency Crisis

| | | 3 MONTH INTEREST RATES | | | SPREADS | | |
| | EXCHANGE RATE | U.S. | Mexico | | Country Risk | Currency Risk | Default |
Month	Peso/$ Spot	T-bill	Cetes	Tesobonos	Premium	Premium	Probability
Dec-93	3.1070	3.054	10.370	5.090	2.021	5.569	0.5026
Jan-94	3.1065	2.992	10.890	4.670	1.666	6.148	0.4147
Feb-94	3.1900	3.435	9.340	5.050	1.601	4.237	0.3987
Mar-94	3.3586	3.538	10.120	6.790	3.223	3.274	0.7994
Apr-94	3.2700	3.940	16.450	7.750	3.773	8.535	0.9344
May-94	3.3200	4.260	16.770	7.190	2.899	9.411	0.7196
Jun-94	3.3900	4.240	17.000	7.000	2.731	9.828	0.6781
Jul-94	3.4000	4.354	17.190	7.250	2.865	9.763	0.7111
Aug-94	3.3785	4.655	13.820	7.240	2.555	6.463	0.6348
Sep-94	3.3955	4.768	13.100	6.790	1.998	6.205	0.4971
Oct-94	3.4335	5.121	14.350	6.730	1.589	7.494	0.3956
Nov-94	3.4475	5.423	14.760	7.500	2.049	7.126	0.5097
Dec-94	5.0750	5.682	31.990	10.490	4.741	20.950	1.1710
Jan-95	5.7350	5.902	38.000	24.980	18.800	12.250	4.4890
Feb-95	5.8750	5.870	57.000	16.990	10.960	38.380	2.6670

Notes: The original source is Bloomberg, but the first five columns were taken from Froot (1995). The last three columns represent the authors' own computations. The risk premiums are annualized, but the default probability applies to a 3-month horizon, and is in percent.

In the beginning of 1995, Mexico suffered from extreme country and currency risk, with the currency premium exceeding 35% and the country premium exceeding 10%. This suggests that taking into account political risk should also affect the translation of foreign currency cash flows into dollar cash flows. This correlation between the two risks is mostly ignored in capital budgeting. Ignoring it, however, typically leads to conservative estimates of expected cash flows. Let us illustrate this with a numeric example.

Example 14.6   Stars and Bars Subsidiary Sale

Suppose it is the end of 1999, and Stars and Bars, a U.S. company, is planning to sell its Argentine subsidiary in 2 years. Given its projections for the local economy and the subsidiary's projected revenues and costs, the expected sales price is 50 million pesos. While the peso is trading at $1 per peso because of the Argentine currency board, Stars and Bars assigns a 20% chance to a collapse of the currency board regime, which will lead to a 25% devaluation of the peso. Hence, the expected dollar sales price is

$$\left(ARS50 \text{ million} \times \frac{\$1.00}{ARS} \times 0.80 \right) + \left(ARS50 \text{ million} \times \frac{\$0.75}{ARS} \times 0.20 \right)$$
$$= \$47.5 \text{ million}$$

Alternatively, note that the expected dollar–peso rate is $\$0.95/ARS = (1.00 \times 0.80) + (0.75 \times 0.20)$. Political risk analysts are also arguing that there is a 10% chance of total expropriation, in which case Stars and Bars would lose the full value of its subsidiary.

Following the recipe of this book, the expected cash flows are adjusted to reflect the expropriation probability:

$$(\$47.5 \text{ million} \times 0.90) + (0 \times 0.10) = \$42.75 \text{ million}$$

However, it is quite unlikely that expropriation will happen while the currency board is still in place. It is more likely that when Argentina gets into economic difficulties, it may first lift the currency board and devalue the currency. Then, if things get worse, it may also expropriate foreign investments. Hence, a more realistic scenario analysis is as follows:

	Probability	Dollar Sales Price
No devaluation, no expropriation	80%	$50 million
25% devaluation, no expropriation	10%	$37.5 million
25% devaluation and expropriation	10%	$0

The expected sales price now becomes:

($50 million × 0.80) + ($37.5 million × 0.10) + (0.0 × 0.10) = $43.75 million

The analysis that ignored the correlation between political and currency risk underestimated expected cash flows by $1 million.

Epilogue
If Stars and Bars sold before the end of 2001, it would have received the full $50 million. However, at the end of January 2002, the currency board had collapsed, and the peso's value was reduced to $0.7143 per peso!

POINT–COUNTERPOINT

Cable Television in Argentina

"You are so naïve!" shouted Ante at Freedy. "That discount rate you've come up with is much too low. This is an emerging market, for crying out loud, so there has got to be an adjustment for political risk in your discount rate!"

Ante and Freedy already regretted having chosen to be in the same group to solve their international finance cases. Their case discussion on the Continental–Fintelco deal was due tomorrow, and they could simply not agree on the discount rate to be used for the cash flow analysis.

The case concerned Continental Cablevision, the third-largest U.S. cable operator, which was seeking to acquire a 50% stake in Fintelco, the number 3 cable company in Argentina, in early 1994. At the time, Carlos Menem, Argentina's president, had overseen a profound transformation of Argentina's economy from a state-dominated closed economy suffering from hyperinflation to an open, deregulated economy in which the peso was pegged to the dollar through a currency board, and many state-owned companies had been privatized. Many risk factors remained. The stock market had been extremely volatile; inflation had been higher in Argentina than in the United States, leading to a loss of competitiveness; and presidential elections were scheduled for 1995. As part of the deregulation program, a treaty was in the works that would allow U.S. investors to own up to 100% of Argentine cable systems and 25% of broadcast television stations.

Ante and Freedy had worked hard on the case and had come up with a set of expected dollar cash flows. The only thing left to do was to discount them at an appropriate rate. Because they were supposed to value Fintelco assuming an all-equity deal, Freedy had suggested simply using the standard CAPM formula (see Chapter 13):

$$E[r_{\text{fin}}] = r_f + \beta_{\text{fin}} E[r_m - r_f]$$

where r_f is the risk-free rate, $E[r_m - r_f]$ is the risk premium on the world market, and β_{fin} is Fintelco's beta with the world market.

Freedy had suggested using a beta estimated from data on publicly traded U.S. cable companies. The number was 1.08. Although Ante agreed with the use of a world market risk premium and a beta appropriate for cable companies, he had read a few articles on cost of capital computations for emerging markets and felt that two adjustments were necessary.

First, he wanted to increase the risk-free rate with the Brady bond country spread. The articles he read suggested that this was an appropriate adjustment for the political risk present in emerging markets. This would increase the discount rate by 3.5% in 1994. Second, he did not feel it would be appropriate to compare the cash flow risk of U.S. companies with the cash flow risk of Argentine companies. However, he had not been able to find data on publicly traded cable companies in Argentina. The beta of the Argentine market as a whole seemed to be quite unstable and had moved from being negative in the 1980s to close to 1.00 the past 5 years. Nevertheless, he felt they had to somehow adjust for the huge volatility of the Argentine market, which had been running over 60% on an annualized basis in the years before the time of the deal. One of the articles he read had suggested scaling up the beta for local companies with the ratio of the volatility of the local market to the volatility of the U.S. or world market.[9]

Freedy shouted at Ante, "If anything, my discount rate is too high! If we could compute betas of the local Argentine cable companies, they would be really low. I think that it provides a unique chance for the U.S. shareholders of Continental to diversify their cash flow risks."

Cousin Suttle Trooth leisurely walked into the room of the quarreling brothers, his smirk betraying a tired déjà vu feeling. "Did I hear someone mention political risk adjustments? I know all about that! I once did a summer internship for OPIC, a U.S. political risk insurer," said Suttle.

Ante and Freedy simultaneously gasped: "You can insure your investments for political risk?"

"Sure you can," replied Suttle. "And it is done quite often, too."

Freedy, reasoning quickly, burst out: "Aha! So I am right. You do not need a discount rate adjustment!"

"Hold on, Cousin, it is not that simple!" said Suttle. "First of all, you should, of course, subtract any insurance premium from the expected cash flows. If your case says there was no insurance, you must still take political risk into account. In fact, full insurance is hard to get anyway. And there have been many cases in which political risk events wiped out whole investments. It is really an extremely bad negative cash flow scenario that many cash flow projections forget to take into account. So making no adjustment at all is probably worse than making an adjustment through the discount rate."

Ante was getting really agitated. "So, these professor guys talking about Brady bond spreads and risk premium adjustments do not know what they are talking about? Come on!" he said.

"Well, no, I did not say that," Suttle argued back. "It is very difficult to figure out what political risk events may occur, what their probabilities are, and whether there will be some compensation when they do occur. Therefore, some quite knowledgeable people have suggested that it is easier to scale up the discount rate with something that captures political risk in some sense like the country spread. However, it is quite hard to do even that right. Moreover, Freedy is absolutely right that the betas of local Argentine companies with the world market are likely low, and if the shareholders of the U.S. company are well diversified, the true discount rate should be low because the investment carries low systematic risk for them."

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[9]Damodaran (2003), for example, suggests both to increase the risk free rate by the country spread and to increase the risk premium by some function of the volatility ratio.

"Is there anything you do not know, cousin?" Ante sighed, as he turned on the TV—cable, of course.

Epilogue

Continental Cable and Fintelco signed a joint venture agreement to go in effect in October 1994. However, Continental had trouble financing the deal because of the Mexican peso crisis. Eventually, the $80 million deal was financed using bank loans, part of them insured against political risk by OPIC.

Computing Political Risk Probabilities

In this book, we strongly recommend adjusting for political risk by changing the cash flow projections to reflect the probabilities of political risk. This, of course, requires computing the probabilities of political risk, which is easier said than done. In any case, cash flow scenarios for investments in high political risk countries should incorporate dramatic scenarios where part or all of the investment is lost due to a political risk event. To estimate political risk probabilities, we recommend using as much information as possible. There are essentially three sources of information that can be used, two of which we have already discussed extensively:

- Country credit spreads
- Political risk analysis and political risk ratings
- Political risk insurance premiums

Even when a company does not intend to use political risk insurance or finds it unavailable for its project, the rates quoted for the insurance can be a useful indication. It can tell a firm's capital budgeting group about how much should be subtracted from expected cash flows to account for political risk. It is also possible that political risk insurance products provided by government organizations are priced below private market rates, in which case they should be purchased when available. We will discuss political risk insurance in Section 14.4, but now we discuss how to use country spreads and political risk ratings.

Using Country Spreads to Compute Political Risk Probabilities

Major currency–denominated bonds provide a market-determined assessment of a country's default risk that promptly reacts to new information. Although we do not recommend scaling up the costs of capital using a country spread, we do recommend analyzing these securities to uncover default probabilities, as we illustrated earlier. In addition, when available, securities of different maturities should be examined to potentially detect horizon effects in a country's default probability.

We have already indicated some disadvantages of country spreads. In particular, the country risk premium reflects the ability and willingness of a country to repay debt; therefore, it reflects both political and economic risks. In addition, sovereign bond spreads may be influenced by the risk appetites of international investors, which have nothing to do with the likelihood of a political risk event in the bond-issuing country. Finally, countries that face elevated political risks, such as African countries, are least likely to have any outstanding market debt because their ability to borrow from the rest of the world is limited.

Using Political Risk Ratings

Some of the political risk rating systems assign numeric scores to narrowly defined subcategories of political risk. Therefore, they are likely to be more informative than country spreads about the exact political risks a multinational corporation faces.

The subcategory risk ratings have two major disadvantages. First, because they are not determined by market forces, little is known about how well the ratings truly predict political risk events. In addition, credit rating companies are often accused of lagging behind events and not being able to predict actual defaults. Second, although the ratings are numeric, they are not expressed in units (such as probabilities of expropriation or percentage discount rates) that are useful for capital budgeting purposes. The scores must somehow be converted into such units. Unfortunately, there simply does not seem to be an accepted method for accomplishing this; the following box describes some recent research that goes in the right direction.

Credit Spreads, Political Risk Ratings, and Capital Budgeting

Recent academic research on sovereign spreads, computed either from bonds or from credit default swaps (see Chapter 21), dramatically shows why unadjusted spreads cannot be used to infer political risk probabilities.[10] These articles determine what factors drive the cross-country and temporal variation in credit spreads, invariably finding that local macroeconomic conditions and, importantly, global risk factors (such as U.S. credit spreads) play an important role. This implies that the use of credit spreads leads to a double counting of risk factors. Macroeconomic risk factors should already be accounted for in the usual cash flow analysis, whereas global risk factors presumably should already be part of the usual discount rate factor. Therefore, it makes no economic sense to simply add a sovereign credit spread to a discount factor obtained from, say, the world CAPM. Only the part of the sovereign spread that is driven by pure political risk factors is useful to enter political risk computations. Bekaert et al. (2011) attempt to derive a "political risk spread" by cleansing credit spreads from the effects of other factors (macroeconomic risks, global and liquidity risks). To do so, they use regression analysis and data on these factors and on political risk ratings (from ICRG). Of the variation in spreads that the model explains, about 40% is due to political risk factors, with the remainder due to other factors. Using their model, they can then use political risk ratings to predict a value for the credit spread, associated with political risk, which they call the "political risk spread." Because political and other risk factors are positively correlated, they compute two versions of the spread, a narrow spread (assuming no correlation) and a wide spread (accounting for other factors correlated with political risk). Their analysis effectively turns political risk ratings into percentage discount rate units. For example, during the Argentine crisis, credit spreads rose to over 1,500 basis points, but the model of Bekaert et al. (2011) predicts a narrow political risk spread of about 550 basis points and a wide spread of about 770 basis points.

14.4 MANAGING POLITICAL RISK

Political risk management means more than computing the probability of political risk events occurring. Even after a project is accepted and implemented, political risk must continue to be monitored. An MNC should develop a strategy that minimizes the chances that political risk events will materialize. They should also determine what actions they will take if political risk events do materialize. We discuss these strategies and others in the following sections.

Structuring an Investment

When political risk is a factor, an MNC should structure its investment so as to minimize the chance that political risk events will adversely affect its cash flows. Here is a short list of actions that could be taken:

- *Rely on unique supplies or technology:* The MNC can make a government takeover difficult without its cooperation by relying on unique supplies coming in from its

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[10]See Borri and Verdelhan (2011), Hilscher and Nosbusch (2010), Longstaff et al. (2011), Özatay et al. (2009), and Remolana et al. (2008).

headquarters or unique technology that is difficult to operate without the collaboration of the MNC.

- *Use local resources:* When the MNC hires local labor or borrows funds locally, it reduces the government's incentive to close down the plant.
- *Bargain with the government:* Prior to making a major investment in a particular country, the MNC can improve its position by negotiating an agreement with the host country regarding how profits the MNC earns will be taxed and converted to foreign currency. Developing relationships with government officials can come in handy if a political risk event occurs and a settlement must be negotiated. Nevertheless, bargaining with the current government can also backfire when the government turns over.
- *Hire protection:* In the case of kidnapping possibilities or violence—for example, because of local warfare—MNCs can hire bodyguards or, at the extreme, employ private military companies for protection. With conflicts raging all around the globe, private military companies have become an important global business in their own right. Many private military companies are no longer small companies built by a few veteran soldiers but are sophisticated companies that offer a wide range of services. The oldest and most respected private military companies in the industry, MPRI, DynCorp, and Vinnell, have been purchased by industrial giants moving into the growing private military company market. MPRI was purchased by L3, DynCorp was purchased by CSC, and Vinnell was purchased by Northrop Grumman. Other well-known groups include Xe, formerly known as Blackwater; Control Risks Group; and Janusian, part of the Risk Advisory Group, with portfolios of services including crisis management, kidnap and extortion management, fraud and insurance investigation, countersurveillance, and the defense of personnel and assets.
- *Focus on the short term:* Anshuman et al. (forthcoming) formally motivate front-loading cash flows in cases where expropriation risk is high. If possible, the MNC can try to repatriate cash flow early. It can also sell assets to local investors or the government in stages rather than reinvesting funds for the long haul.

Insurance

Perhaps the clearest indication that political risk is a cash flow risk is that it is an insurable risk. If MNCs can fully insure against all possible risk events and are fully compensated for their losses, subtracting the insurance premium from the expected cash flows suffices to account for political risk. The reality is much different, however. Full insurance is impossible to purchase. Because cash flows are uncertain, it is typically difficult to insure an amount more than the current investment. Nevertheless, political risk insurance is available from an increasingly wide variety of sources.

There are three potential sources of political risk insurance: international organizations aimed at promoting foreign direct investment (FDI) in developing countries, government agencies, and the private market. Among international organizations providing insurance, the World Bank's Multilateral Investment Guarantee Agency (MIGA), the Inter-American Development Bank (IDB), and the Asian Development Bank (ADB) are the best known. Most Organization for Economic Cooperation and Development (OECD) countries have national agencies that provide domestic companies with political risk insurance. Examples include the Overseas Private Investment Corporation (OPIC; United States), Nippon Export and Investment Insurance (Japan), the Export Development Corporation (EDC; Canada), the Export Credits Guarantee Department (ECGD; United Kingdom), and the Export Finance and Insurance Corporation (EFIC; Australia). The private market has grown significantly and now includes firms such as Lloyd's, American International Group (AIG), Sovereign Risk Insurance Ltd., and Zurich Emerging Markets Solutions.

Coverage is typically provided for three types of political risk events:

- Currency inconvertibility and non-transferability coverage protects companies against losses in case a company is unable to convert its foreign earnings to its home currency or otherwise transfer the earnings out of the host country. Currency inconvertibility and non-transferability coverage does not protect an investor against the devaluation of a country's currency.
- Expropriation coverage protects MNCs and lenders against confiscation, expropriation, nationalization, and other acts by the host government that adversely affect the MNC's cash flows. In addition to outright acts of nationalization and confiscation, "creeping expropriation" (a series of acts that cumulatively expropriate), discriminatory legislation, the deprivation of assets or collateral, the repudiation of a concession, and the failure of a sovereign entity to honor an arbitration award issued against it can also be included in expropriation coverage.
- War and political violence coverage compensates a company when war or civil disturbances cause damage to the MNC's assets or cash flows. Political violence coverage does not cover losses due to labor strife or student unrest without a political objective. Political violence coverage has come back into the spotlight since the September 11, 2001, terrorist attacks on the United States.

Seldom is it true that 100% of losses are covered. Private insurers almost always impose limits on the amount of coverage they provide. We now discuss two of the most important publicly provided political insurance programs: the OPIC in the United States and the MIGA run by the World Bank.

Political Risk Insurance for U.S. Companies

The U.S. government provides political risk insurance through the **Overseas Private Investment Corporation (OPIC)**. OPIC was established in 1971 as a self-sustaining government development agency. Its mission is to mobilize U.S. private capital and technological knowledge to aid the economic and social development of less developed countries with a particular focus on countries in transition from non-market to market economies. OPIC carries out this mission by providing financing through direct loans and loan guarantees and by leveraging private capital, using OPIC-supported funds. However, here, we focus on its third task—the provision of political risk insurance.

By charging market-based fees for its products, OPIC operates at no net cost to taxpayers. While it has issued thousands of contracts and paid close to $1 billion in claims, it has earned a profit in each year of its operation. OPIC has built up substantial reserves of about $5 billion. All its guaranty and insurance obligations are backed by its own reserves and by the full faith and credit of the U.S. government. OPIC insurance can cover up to $250 million per project for up to 20 years, and it can insure up to 90% of an eligible investment. For FDI, OPIC typically issues insurance commitments equal to 270% of the initial investment, with 90% representing the original investment and 180% to cover future earnings.

OPIC offers the three standard types of coverage: insurance against the risk of expropriation, political violence, and currency inconvertibility. OPIC has paid out claims under all three types of losses during its long history. With terrorist acts becoming more prevalent, OPIC has also started to offer stand-alone terrorism insurance. Terrorism coverage protects against violent acts with the primary intent of achieving a political objective, undertaken by individuals or groups that do not constitute national or international armed forces. OPIC has also started to support more and more small businesses in recent years, sometimes at reduced rates. OPIC's political risk insurance and financing have helped U.S. businesses of all sizes invest in more than 150 emerging markets and developing nations worldwide.

Political Risk Insurance in Emerging and Transitioning Economies

In 1988, the World Bank established the **Multilateral Investment Guarantee Agency (MIGA)** to promote development by facilitating investment in emerging and transitioning economies. MIGA provides political risk insurance for projects that cannot be easily covered elsewhere. In addition to the three types of risks covered by most other insurers (the risk of expropriation, political violence, and currency inconvertibility), MIGA also offers breach-of-contract insurance, a relatively new product that protects investors from losses arising from the host government's breach or repudiation of a contract with the investor. The investor must be able to invoke a dispute resolution mechanism (for example, an international arbitration) and obtain an award for damages. MIGA will pay compensation if the dispute resolution mechanism fails due to host government actions.

As of 2010, MIGA had issued more than 950 contracts worth more than $22 billion. Its largest exposures are in Ukraine (12.8%), Russia (12.7%), and Turkey (8.6%). As an example of its 2010 activities, MIGA issued guarantees totaling $1.8 million to the Sierra Investment Fund and the ManoCap Soros Fund of Mauritius covering their equity investment in Dragon Transport Ltd., a transport and logistics company in Sierra Leone. The coverage is for a period of up to 10 years against the risks of transfer restriction, expropriation, and war and civil disturbance. The project consists of the design and development of a national distribution, warehousing, and trading transport company in Freetown, Sierra Leone. The company will provide transport services to the Sierra Leonean market with a focus on the distribution of fish, ice, and other perishables. While small, this project fits in well with two focal points of MIGA's recent activities: developing infrastructure in sub-Saharan Africa and promoting investment in war-torn areas.

Public Versus Private Insurance

Private insurers are playing an increasingly important role in the political risk insurance market. Nonetheless, public-sector insurers remain seemingly indispensable players, especially when it comes to long-term investment insurance in high-risk countries. Taxpayers may wonder why their tax dollars support an agency that provides a service that can be easily provided by private financial service companies. The basic idea is that political risk insurance facilitates FDI in less developed countries and that FDI benefits both the developing countries and the countries that invest in them to the extent that governments should promote it.[11] Assuming that this is true, why then does OPIC have an advantage over, say, AIG? There are two related reasons.

First, the existence of a government-backed or international agency–backed political risk insurance program acts as a deterrent to rogue countries. When an OPIC or MIGA policy is in place, the host government that interferes with an investment risks retribution from the United States or the World Bank. In other words, OPIC and other public insurers provide an umbrella of protection that helps to correct a market failure in the ability of host countries to make long-term commitments to honor contracts. Without such a policy in place, host countries find it harder to resist domestic pressures to confiscate large amounts of foreign capital invested within their borders. In that sense, the presence of public political risk insurance allows foreign investment projects to launch where they otherwise would never have been launched.

Second, when there is a claim, most public insurers try to recover the money from the respective governments of the countries in which the political risk event occurred. The claim then becomes the public debt of these developing countries to the U.S. government (in the case of OPIC) or another developed country. These governments have much more clout than private parties to recover their claims. For example, they can seize assets of the host countries on their territory, put pressure on the governments in trade matters, discourage further foreign direct investments, and so forth. It is striking that OPIC has operated for more than three

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[11]In economic jargon, FDI is a public good that generates positive externalities, benefits beyond those that accrue to the private parties involved (see Moran, 2003).

decades on a self-sustaining basis, managing a recovery rate of over 90% on its settlements. It is difficult to fathom that private-sector insurance providers would be able to replicate the deterrent function of the public-sector insurance providers or that their recovery rates for damages would compare favorably.

We now return to Oconoc's oil project in politically unstable Zuenvela to illustrate how political risk insurance affects capital budgeting.

Example 14.7   Political Risk Insurance at Oconoc

Barring political risk, the Oconoc project is very valuable, requiring a $75 million investment but generating a present value of $86.78 million. However, when political risk is taken into account, the NPV of the project becomes negative. Oconoc now considers obtaining political risk insurance from OPIC. OPIC has special rates for oil- and gas-sector companies. The ranges of the rates quoted on its Web site (www.opic. gov) for oil and gas development and production on March 29, 2011, are as follows:

Coverage	Rate Range
Inconvertibility	$0.20–$0.40
Expropriation	$1.35–$1.60
Political violence	$0.65–$0.85
Interference with operations	$0.35–$0.55

These rates are annual base rates per $100 of coverage. The actual rate depends on the particular situation in the country. Because the situation in Zuenvela is precarious, we assume that its rates are at the top of the range. Consequently, full coverage on all four types of coverage would cost $3.40 per $100 of coverage. Even though Oconoc may be particularly worried about expropriation, it might prefer to obtain full insurance because an unstable political situation can lead to riots and civil unrest, which can also jeopardize operations.

Let us assume that Oconoc takes out full coverage (that is, all four policies) and negotiates with OPIC to insure for $50 million. This is only two-thirds of the investment, rather than the more typical 90%, but it helps reduce the cost of the insurance. Given this situation, the annual insurance premium is $0.034 \times \$50$ million $= \$1.70$ million.
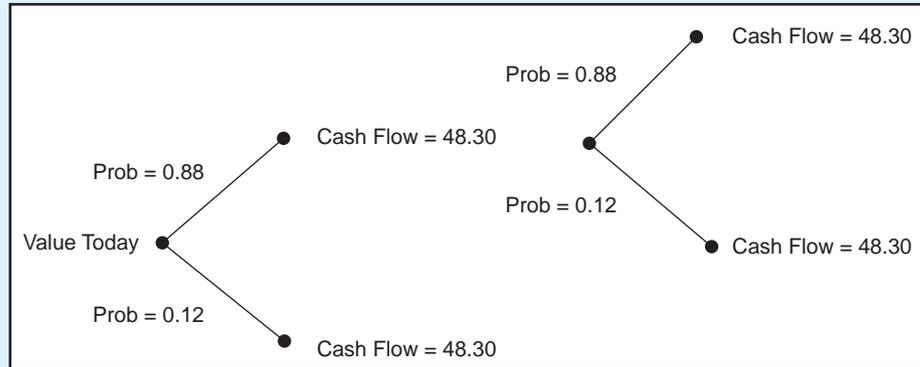
Exhibit 14.10 describes the new cash flow pattern, which can be compared with that of Exhibit 14.3. In period 1, if there is an expropriation, Oconoc gets paid $50 million by OPIC, so its expected cash flows for that period are identical whether the political risk event is realized or not. Of course, this event then prevents Oconoc from continuing its operations and earning another $50 million in period 2. Moreover, Oconoc must pay the insurance premium of $1.70 million, which reduces its cash flow to $48.30 million. This is true whether or not expropriation occurs. The probability that the cash flow in the second period is realized is still only 0.88. Consequently, the present value computation using the discount rate of 10% becomes

$$V = \frac{\$48.30 \text{ million}}{1.1} + 0.88 \times \frac{\$48.30 \text{ million}}{1.1^2} = \$79.036 \text{ million}$$

Hence, the project now has a NPV of $4.036 million, so Oconoc should proceed with the project.

Does the fact that Oconoc turns a negative NPV project into a positive NPV project mean that the insurance company loses for sure? That is, for the insurance company, the

Project Finance

At the end of the 13th century, a leading merchant bank in Florence, Italy, financed the development of silver mines in Devon, England, which were owned by the English Crown. In exchange for paying all the operating costs, the bank received a 1-year lease for the total output of the mines. However, if the extracted ore did not suffice to recover the bank's costs, it could seek no recourse from the Crown. This is an early example of **project finance**.

Project finance has two main characteristics. First, it is specific to a particular project, and second, the providers of the funds receive a return on their investment only from the cash flows generated by the project. For debts, there is no recourse to a parent corporation—only to the project's cash flows.

The project finance market has grown considerably in recent years. It is particularly prevalent in terms of power, telecom, infrastructure, and oil and gas projects. Project finance deals are typically long term, with maturities mostly extending beyond 10 years and often beyond 20 years.

Famous examples of project finance transactions include the $16 billion Channel Tunnel (the "Chunnel") connecting France and the United Kingdom and the $4.4 billion Berlin–Brandenburg International airport. Although deals in developed countries still dominate, a growing number are taking place in developing countries. However, issuing bonds to finance projects in developing countries is sometimes problematic because of the "sovereign ceiling" that applies to credit ratings for such bonds (see Section 14.3). If the country is not investment grade, it is difficult for the project finance bond to obtain an investment-grade rating, and without that, most institutional investors will not invest in these bonds.

Example 14.8 Petrozuata

Petrozuata was a joint venture between Maraven, a subsidiary of Venezuela's government-owned oil company, Petroleos de Venezuela S. A. (PDVSA), and ConocoPhillips, a U.S. oil company. Petrozuata was established in 1997 to develop the Orinoco oil belt in central Venezuela, the largest-known heavy and extra-heavy oil accumulation in the world. The project initially involved a $2.4 billion investment. It was part of PDVSA's long-term plan to expand domestic oil and gas production in Venezuela, which could not be accomplished without foreign funding.[12]

Directing investments to Venezuela at that time was not obvious for a foreign oil company. In 1976, oil companies in Venezuela were the victims of a great deal of political turmoil. The Venezuelan government nationalized the domestic oil industry, integrating the Venezuelan assets of the multinationals Royal Dutch Shell, Exxon Mobil, ConocoPhillips, and Gulf, among others, with those of PDVSA. According to some estimates, the government compensation package for the foreign oil companies amounted to only about 25% of the market value of their assets. In the early 1990s, the Venezuelan economy continued to depend heavily on its oil revenues, and it had witnessed two (failed) military coups.

Because the project was so large, planning its financing was complicated. Eventually, PDVSA decided to fund 60% of the project with debt and 40% with equity financing. Petrozuata's planning team also decided that project financing should be used on a stand-alone non-recourse basis. Moreover, the deal contained a special feature called a "cash waterfall."

The cash waterfall worked like this: Petrozuata's customers would deposit their dollar-denominated funds from the purchase of refined oil and by-products into an off-shore account maintained by Bankers Trust, a U.S.–based bank. Bankers Trust would then disburse the cash according to a payment hierarchy, ensuring that the project debt would be serviced before money would be transferred to Venezuela to pay off the project's equity holders. It was hoped that this structure would help mitigate political risk and result in lower funding costs. By keeping dollar cash flows out of Venezuela, foreign exchange controls imposed by the Venezuelan government could not undermine the repayment of the debt.

The team considered bank loans, public bonds, and Rule 144A Bonds (private placement bonds, which we discussed in Chapter 11) as possible debt options to finance the deal. Of the three alternatives, the 144A bonds would raise money most quickly because they could be underwritten within a 6-month period and did not require an initial disclosure to the Securities and Exchange Commission (SEC). The main problem with this route, however, was that Rule 144A bonds can only be bought by institutional investors, and many institutional investors can buy only investment-grade debt.

At the time, PDVSA was a very well-run company. However, it had the same credit rating as Venezuela: a B rating from Standard & Poor's and Ba2 from Moody's. Even though the revenue cash flows from the project were protected by the cash water-fall structure, the Venezuelan government could still expropriate Petrozuata's oil fields. Consequently, some political risk remained. Eventually, the deal closed in June 1997. Petrozuata issued $1 billion worth of bonds with three different maturities in the Rule 144A market. S&P rated Petrozuata BBB–, Moody's rated it Baa1, and Duff and Phelps rated it BBB+ (investment grade). Therefore, the project was able to exceed the sovereign rating of the country, partly due to the special project finance structure.

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[12]See Esty (1999) for additional information.

The financing of the deal was considered a success, and the project itself proceeded smoothly at first. However, President Chavez had other ideas. Chavez initially meddled with the internal affairs of PDVSA, firing half of its workers, including nearly all the well-respected senior managers in 2003. In practice, this turned the control of PDVSA over to the presidency.

Then, on May 1, 2007, President Chavez announced that Venezuela was taking over control of all oil-production projects in the Orinoco belt. Romero (2007) reports that Chavez stated, "Today is the end of that era when our natural riches ended up in the hands of anyone but the Venezuelan people." The international oil companies were allowed to remain as minority partners, but, as we mentioned before, Exxon Mobil and ConocoPhillips decided to take the case to an international tribunal, with the outcome still uncertain. In 2008, the majority of the bondholders reached an agreement with PDVSA, in which PDVSA bought back bonds linked to the Petrozuata project, paying accrued and unpaid interest as well as 33% of the redemption premium specified in the original bond issue.

The MidAmerican Energy Holdings Case

In the mid-1990s, two Indonesian subsidiaries of MidAmerican Energy Holdings Company entered into contractual arrangements with the wholly state-owned Indonesian electricity company PLN, the wholly state-owned natural resources company Pertamina, and the government of Indonesia. Under the contract terms, the subsidiaries were supposed to develop and operate a separate geothermal field, owned by Pertamina, for 42 years. The contracts also involved an energy sales contract, providing that PLN would purchase electricity generated from the field, and they established "unused capacity" fees even when no electricity was purchased. The development was to happen in stages. General Suharto had been governing Indonesia for over 30 years, and Indonesia was viewed as a stable country with low political risk. MidAmerican nevertheless took out political risk insurance policies with both OPIC and Lloyd's.

In September 1997, the Indonesian government issued a presidential decree essentially stopping the further development of the power projects, even though one of them was near completion. In 1998, PLN failed to make the first payment due under its contractual obligation. Moreover, the Indonesian government made it publicly clear that it viewed the power projects as unnecessary. As discussions with the Indonesian government proved fruitless, MidAmerican started arbitration proceedings, according to the stipulations in the contracts. In October 1999, the arbitration tribunal established that the Indonesian government had breached its contract with the MidAmerican subsidiaries and violated international laws it had signed and was therefore liable for damages to the two subsidiaries in the aggregate amount of $577 million. The government's defense was to assert that the contract was established as the result of corruption. Interestingly, the Indonesian government accused all international companies involved in power projects of "KKN" (corruption, cronyism, and nepotism), while trying to cancel the deals.

In the meantime, MidAmerican filed insurance claims, and by November 1999, OPIC and Lloyd's had paid a total of $290 million, with OPIC's share being $217.5 million. As a matter of normal practice, paid OPIC claims become the responsibility of the host country's government, making the claim paid to MidAmerican effectively Indonesian government debt to the U.S. government. From then on, the U.S. government started to pressure the Indonesian government to pay. Successors to Suharto continued to claim that MidAmerican had cut a corrupt deal involving members of the Suharto family. The prospect of reduced foreign investment and strained relations with the United States finally made the Indonesian government capitulate. By mid-2001, the Indonesian government agreed to pay OPIC most, if not all, of the original claim.

14.5 SUMMARY

This chapter discusses how MNCs can measure and manage political and country risk. Its main points are the following.

1. Country risk refers to the potentially adverse impact of a country's economic and political environment on an MNC's cash flows. Political risk is a special case of country risk in which a government or political action negatively affects a company's cash flow. Country risk and political risk are also closely associated with the ability and willingness of a government to repay its foreign debt holders. The risk of non-payment is often referred to as sovereign risk.

2. Political risk factors include the risk of expropriation, contract repudiation, currency controls that prevent the conversion of local currencies to foreign currencies, and laws that prevent MNCs from transferring their earnings out of the host country. Corruption, civil strife, and war are also risk factors.

3. Country risk analysis became prevalent after the Debt Crisis began in 1982. Many developing countries had borrowed heavily from commercial banks in developed countries, using floating-rate dollar debt. When both interest rates and the value of the dollar shot up, many countries could no longer service their debts.

4. It soon became clear that many countries suffered from debt overhang: They failed to attract new investment as most of the benefits were feared to accrue to the creditors.

5. Many countries attempted to reduce their debt burdens by using debt–equity swaps and debt buybacks. Some fear that these operations merely provided windfall gains for the creditors.

6. The 1989 Brady Plan finally resolved the Debt Crisis by providing for some form of debt relief—securitizing the debt in the form of Brady bonds and stimulating economic reforms.

7. To take political risk into account in capital budgeting, we must forecast the effects it will have on expected cash flows. However, we need not adjust the discount rate for political risk because most global companies operate in open, integrated markets. From this perspective, political risk is diversifiable and does not require a discount rate adjustment—only a cash flow adjustment.

8. Only rarely will adjusting the discount rate instead of a company's cash flows yield the same result as a cash flow analysis.

9. Organizations such as Euromoney, Institutional Investor, Economist Intelligence Unit, and Political Risk Services Group produce country risk ratings for most countries in the world.

10. Both quantitative and qualitative information obtained from experts is used to evaluate country and political risks.

11. The ICRG system contains many subcomponents that can be used to tailor a risk measure to the particular situation a multinational corporation faces.

12. Although country risk ratings provide useful information, it is difficult to translate the information into political risk probabilities. Country risk spreads can be more easily converted into political risk probabilities, but they are not available for most countries. Moreover, care must be taken with respect to collateralized cash flows and maturity effects.

13. Most political risk analysis ignores the fact that currency crises and political risk events often occur simultaneously.

14. In capital budgeting, MNCs should not only take into account political risk, but also should take other actions to mitigate the chances of being affected by political risk events. Examples include relying on unique supplies or technologies, doing business with local lenders and workers, having good working relationships with local and national governments, and front-loading cash flows.

15. MNCs can purchase political risk insurance from either private-sector or public-sector insurers.

16. Public-sector insurers, such as OPIC in the United States and the World Bank's MIGA, are important players in the political insurance market. Some believe that they play a special role because their presence is a deterrent to rogue government actions. In addition, public-sector insurers of large developed countries can put political pressure on foreign governments to pay claims made against them.

17. Insurance is typically available for currency inconvertibility, expropriation, and war and political violence. It is not typically possible to insure all the expected cash flows from an investment.

18. Project financing is a method of financing that is specific to a particular project in which the providers of the funds are repaid only from the cash flows generated by the project.

QUESTIONS

1. Describe the differences between country risk and political risk. What is sovereign risk?
2. What economic variables would give some indication of the country risk present in a particular country?
3. Suppose an MNC is considering investing in Bolivia. Will an overall assessment of Bolivia's country risk suffice to understand the political risk present in the investment?
4. What are three political risk factors?
5. When, where, and why did the Debt Crisis start?
6. What is debt overhang?
7. What is a debt buyback? Why was a program of debt buybacks not sufficient to resolve the Debt Crisis?
8. What were the main characteristics of the Brady Plan?
9. Why should the discount rate not be adjusted for political risk?
10. What are some examples of organizations that provide country risk ratings?
11. How can we use current quantitative information to predict future political events, such as expropriation?
12. Suppose a multinational corporation is particularly worried about ethnic warfare in a few countries in which it is considering investing. Do country risk ratings have information on this particular risk?
13. Can Panama issue a bond denominated in dollars at the same terms (that is, at the same yield) as the U.S. government? Why or why not?
14. What stops governments from defaulting on loans or bonds held by foreigners?
15. What is a Brady bond?
16. How is a political risk probability related to a country spread?
17. What are Cetes? What are Tesobonos?
18. What are the three main types of political risk covered by political risk insurance?
19. What are some organizations or firms that provide political risk insurance?
20. How is it possible to embed political risk insurance in a capital budgeting analysis?
21. What is project finance?

PROBLEMS

1. In February 1994, Argentina's currency board was in place, and 1 peso was exchangeable into 1 dollar. The following interest rates were available:

    U.S. LIBOR 90 days: 3.25%
    Peso 90-day deposits: 8.99%
    Dollar interest rate in Argentina, 90-day deposits: 7.10%

    The latter two rates were offered by Argentine banks. What risk does the difference between the 7.10% dollar interest and 3.25% LIBOR reflect? What risk does the difference between the rate on 90-day pesos and 90-day dollar deposits by Argentine banks reflect?

2. Consider the numbers in the previous question. Assume that if the peso were to depreciate, investors figure it will depreciate by 25%. Also, assume that if the Argentine bank were to default on its dollar obligations, it would pay nothing to investors. Compute the probability that the peso will devalue and the probability that there will be a default.

3. Consider a 10-year Brady bond issued by Brazil. The coupon payment is 6.50%, and the par value has been collateralized by a U.S. Treasury bond.

    The current price of the bond is $98 (per $100 in par value). Compute the (blended) yield-to-maturity for the bond. What is the stripped yield? Assume that the spot rates on the dollar are the ones reported in Exhibit 14.8.

4. At the height of the Mexican peso crisis in January 1995, the default probabilities on U.S. dollar-denominated emerging-market bonds were quite high. A British investment bank, assuming that these bonds would pay 15 cents on the dollar upon default, calculated a 61% chance of default on Venezuelan bonds. Consider a bond with 5 years left to maturity, paying a coupon of 12%. The par value is 80% collateralized by American Treasury bonds. Assume that the U.S. interest rate is 5% for all maturities. What is the price of a bond with $100 par?

5. Badwella United Company (BUC) is worried that its banana plantation in El Salvador will be expropriated during the next 2 years. However, BUC, through an agreement with El Salvador's central bank, knows that compensation of $100 million will be paid if the plantation is expropriated. If the expropriation does not occur, the plantation will be worth $400 million 2 years from now. A wealthy

El Salvadoran has just offered $160 million for the plantation. BUC would have used a discount rate of 23% to discount the cash flows from its Honduran operations if the threat of expropriation were not present. Evaluate whether BUC should sell the plantation now for $160 million. (Hint: Set up a diagram.)

6. You are the chief financial officer of Clad Metal, a U.S. multinational with operations throughout the world. Your capital budgeting department has presented a proposal to you for a 5-year ore-extraction project in Mexico. The expected year-end net dollar cash flows are as follows:

Year	Net Cash Flow
1	$100,000
2	$200,000
3	$250,000
4	$250,000
5	$250,000

The initial required investment in plant and equipment is $500,000, and the cost of capital is 16%.

a. What is the present value of the project? Should the project be undertaken?

b. You notice that the proposal does not include any analysis of political risk, but you are concerned about potential expropriation of the investment. Therefore, you decide to call a meeting to discuss political risk. Who would you invite to this meeting? What information or data would you need? How would you arrive at a political risk probability estimate?

c. Assume that, at the end of the meeting, you decide that the probability of expropriation is between 5% and 7%. Also assume that there is no compensation in the case of expropriation. Would you approve the project?

d. Given the possibility of expropriation, might you want to reconsider converting Mexican peso expected cash flows at forward rates?

7. Web Question: How will the political turmoil in a number of Middle East countries in early 2011, such as Egypt, affect political risk? Try to use Web resources on ratings and spreads to come up with a quantitative answer.

BIBLIOGRAPHY

Andrade, Sandro C., 2009, •A Model of Asset Pricing Under Country Risk,Ž*Journal of International Money and Finance* 28, pp. 671…695.

Andrade, Sandro C., and Vidhi Chhaochharia, 2010, •How Costly Is Sovereign Default? Evidence from Financial Markets,Ž working paper.

Anshuman, V. Ravi, John Martin, and Sheridan Titman, forthcoming, •Sovereign Risk and Investing in Emerging Markets,Ž*Journal of Corporate Finance*.

Bekaert, Geert, Campbell R. Harvey, and Christian Lundblad, 2005, •Does Financial Liberalization Spur Growth?Ž *Journal of Financial Economics* 77, pp. 3…55.

Bekaert, Geert, Campbell R. Harvey, Christian Lundblad, and Stephan Siegel, 2011, •Political Risk, Country Spreads, and the Cost of Capital,Ž working paper.

Borensztein, Eduardo, Kevin Cowan, and Patricio Valenzuela, 2007, •Sovereign Ceilings •Lite•? The Impact of Sovereign Ratings on Corporate Ratings in Emerging Market Economies,Ž International Monetary Fund Working Paper No. 07/75.

Borri, Nicola, and Adrien Verdelhan, 2011, •Sovereign Risk Premia,Ž manuscript, MIT.

Bulow, Jeremy, and Kenneth Rogoff, 1988, •The Buyback Boondoggle,Ž*Brookings Papers on Economic Activity* 2, pp. 675…698.

_____, 1991, •Sovereign Debt Repurchases: No Cure for Overhang,Ž*Quarterly Journal of Economics* 106, pp. 1219…1235.

Damodaran, Aswath, 2003, •Country Risk and Company Exposure: Theory and Practice,Ž*Journal of Applied Finance* 13, pp. 63…76.

DePalma, Anthony, 2000, •Mexico Is Ordered to Pay a U.S. Company $16.7 Million,Ž*New York Times*, August 31, p. C4.

Djankov, Simeon, Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer, 2003, •Courts,Ž *The Quarterly Journal of Economics* 118, pp. 453…517.

Domowitz, Ian, Jack Glen, and Anath Madhavan, 1998, •Country and Currency Risk Premia in an Emerging Market,Ž*Journal of Financial and Quantitative Analysis* 33, pp. 189…216.

Durbin, Erik, and David Ng, 2005, •The Sovereign Ceiling and Emerging Market Corporate Bond Spreads,Ž*Journal of International Money and Finance* 24, pp. 631…649.

Esty, Ben C., 1999, •Petrozuata: A Case Study on the Effectual Use of Project Finance,Ž*Journal of Applied Corporate Finance* 12, pp. 26…42.

Froot, Kenneth, 1995, •Futures on the Mexican Peso,Ž Harvard Business School Case N9-296-004.

Hilscher, Jens, and Yves Nosbusch, 2010, •Determinants of Sovereign Risk: Macroeconomic Fundamentals and the

Pricing of Sovereign Debt," *Review of Finance* 14, pp. 235–262.

Johnson, Simon, and Peter Boone, 2010, "Brady Bonds for the Eurozone," www.Project-Syndicate.org, September 15.

Longstaff, Francis A., Jun Pan, Lasse H. Pedersen, and Kenneth J. Singleton, 2011, "How Sovereign Is Sovereign Credit Risk?" *American Economic Journal: Macroeconomics* 3, pp. 75–103.

Moran, Theodore H., 2003, "On the Reauthorization of OPIC," Testimony to the Committee on International Relations, U.S. House of Representatives.

Özatay, Fatih, Erdal Özmen, and Gülbin Sahinbeyoglu, 2009, "Emerging Market Sovereign Spreads, Global Financial Conditions and U.S. Macroeconomic News," *Economic Modelling*, 26, pp. 526–531.

Panizza, Ugo, Federico Sturzenegger, and Jeromin Zettelmeyer, 2009, "The Economics and Law of Sovereign Debt and Default," *Journal of Economic Literature* 47, pp. 1–47.

PRS Group, 2010, *International Country Risk Guide*, East Syracuse, NY: The PRS Group, Inc.

Remolana, Eli M., Michela Scatigna, and Eliza Wu, 2008, "The Dynamic Pricing of Sovereign Risk in Emerging Markets: Fundamentals and Risk Aversion," Bank for International Settlements and University of New South Wales Working Paper.

Romero, Simon, 2007, "Chavez Takes Over Foreign-Controlled Oil Projects in Venezuela," *New York Times* online edition, May 2, www.nytimes.com/2007/05/02/world/americas/02venezuela.html.

Scoffield, Heather, 2000, "NAFTA Ruling Raises Environmental Questions; Mexico Ordered to Pay California-Based Metalclad $16.7-Million After Municipality Blocks Plans for a Hazardous Waste Dump," *The Globe and Mail*, September 1, p. B5.

Yackee, Jason W., 2010, "Do Bilateral Investment Treaties Promote Foreign Direct Investment? Some Hints from Alternative Evidence," University of Wisconsin Legal Studies Research Paper No. 1114.