CHAPTER IX

COUNTRY ANALYSIS

International investing seems very complicated due to amount of data available. It is very important to reduce the complexity of international investing to a limited number of variables. The apparent segmentation of international equity markets points out to one very important factor: the country where an investment is planned. It has been shown that country (currency) selection is the key decision in an active portfolio strategy. An active allocation strategy requires the study and forecast of changes in at least three macroeconomic variables: currencies, interest rates, and stock markets.

The first two variables affect the performance of bond and stock portfolios. Exchange rates are one of the many variables indirectly affecting local asset prices. Exchange rates, however, have a direct impact on the performance of foreign investments. The issue of currency forecasting was addressed in Chapter V, where we stressed that it is difficult. It is not easier to forecast the relative performance of national stock markets. In each country economists try to monitor a large number of economic, social, and political variables such as

(1) anticipated real growth
(2) monetary policy
(3) wage and employment rigidities
(4) social and political situations
(5) competitiveness
(6) fiscal policy (including fiscal incentives for investments).

Real economic growth is probably the major influence on a national stock market. Philippe Jorion, in a 1999 working paper, analyzes a database of about forty stock markets going back to the 1920s. Jorion establishes that an important long-term determinant of equity returns is real GDP growth per capita. Jorion reports that over the twentieth century, countries that have grown at a faster rate have also enjoyed greater stock market returns. The relationship is such that a one percent increase in real GDP per capita is associated with close to a one percent increase in equity price growth.

Many studies have found that expected returns in international stock markets vary across time. In addition, this variation has a predictable component. Harvey (1991) found that U.S. and national variables can help predict future stock returns in international markets. The predictive variables are the term spread (the difference between long-term and short-term interest rates), the default-risk spread (the difference between yields on short-term interest rates), and the interest rate differential. Although the predictable component of international stock returns has been found to be small, several companies believe that an asset allocation can be improved by incorporating macroeconomic variables in their analysis.

Investment and consulting companies invest a great deal of their resources (50% according to Frank Russell) to country analysis. Many of these companies produce country reports for their clients. First, a country report presents an overview of the economic situation of the country analyzed. Second, a country report will highlight growth sectors of the economy. In the Appendix **Country Report** (see my website), we discuss how to write a professional country report.

Example IX.1: Smith Barney Shearson publishes a monthly report for global investors. Below, we reproduce their Economic Overview of Hong Kong (February 1994).

HONG KONG

Geography

Hong Kong is a small British territory on the southeastern coast of China, halfway between the islands of Taiwan and Hainan. The territory includes not only Hong Kong Island but also more than 200 smaller islands in the South China Sea, as well as the peninsula nearby, which is part of the mainland but juts out into the sea. Hong Kong will cease to be a British colony on July 1, 1997, when it becomes a special administrative region of China. About 99% of Hong-Kong's population is Chinese. The frontier with Mainland China lies about 32km inland from Kowloon.

When Hong Kong Island was handed over to Britain by the Chinese, after its defeat in a war over the opium drug trade in 1842, the territory was almost uninhabited and known chiefly as a lurking place for bands of pirates. The British wanted to turn Hong Kong into a marketplace free from China's control where traders of all nations might meet and do business with the merchants of southern China. At first, Hong Kong served simply as an enormous kind of warehouse, where goods could be kept in safety while merchants bargained with each other. But as time went on, some of the inhabitants began to repair ships and then to build them. When the Japanese captured the territory in 1941, hundreds of thousands of Chinese returned to China. As a result, there were only 600,000 people in Hong Kong when World War II ended. After that, however, Chinese refugees escaping the civil war in China entered the territory, and the population expanded significantly. Victoria and Kowloon were so overcrowded that thousands of squatters built shacks both inside and outside the cities. Eventually, hundreds of factories and workshops grew up and today these make such goods as textiles, rubber shoes, ropes, flashlights, transistors, tape recorders, televisions, vacuum flasks, and goods of ever-increasing variety. However, Hong Kong has always earned its living mainly by handling goods from elsewhere. The territory is an important center for trade in Asia.

Joint Declaration

With the U.K.'s lease on the New Territories expiring in 1997, the Sino-British Joint Declaration regarding the future of Hong Kong was signed in 1984. British administration and jurisdiction over Hong Kong will continue until June 30, 1997, and on July 1, 1997, Hong Kong will become a Special Administrative Region (SAR) of the People's Republic of China. The joint declaration provides that for 50 years after 1997, Hong Kong's lifestyle, including its capitalist system, low taxes and existing contracts, will remain unchanged, and that China's socialist system and policies will not be practiced in the SAR --hence the phrase "One country, two systems." The agreement is registered with the United Nations Secretariat in New York. An additional document, the Basic Law, effectively a post-1997 constitution for Hong Kong, was put in place in 1990. The Sino-British Joint Liaison Group (JLG) meets regularly to implement the joint declaration.

Today, at least at an economic level, Hong Kong is an integral part of the southern Chinese economy and it is this relationship that is the driving force behind the territories current economic performance. Manufacturing has migrated from Hong Kong to its hinterland, except for the textile industry, in which country-specific quotas still dictate that this industry has to be resident in Hong Kong. As such, the economy is increasingly service oriented.

Hong Kong To Maintain Steady Growth Rate

Despite indications of a moderation in growth during the second half of 1993, the Hong Kong economy is expected to maintain a steady growth rate of 5.5% in 1994. Growth will be driven by exports as well as domestic demand, the later supported by private consumer spending and infrastructure development. Export growth is expected to remain at double-digit levels in the coming year, led by surging exports to China in both directions. Domestic exports will remain depressed, reflecting the shift of Hong Kong's manufacturing base to China. The stock market boom and increase in incomes will help sustain the robust growth in private consumer spending. Building and construction activity should continue to accelerate as work on Hong Kong's new airport gathers momentum. Private sector investment in construction is expected to remain subdued.

Export Growth To Remain in Double Digits

The slowdown in the Chinese economy in the second half of 1994 affected the territory’s exports as exports to China moderated. However, export growth is likely to be remain at double-digit levels in 1994, as economic growth in China is likely to be sustained, following the ending of the economic austerity program there, and latest statistics show that the U.S. economy is getting stronger. China and the U.S. are Hong Kong’s two largest export markets. Exports to China for its own consumption, which account for half of Hong Kong's total exports to the country, are expected to continue to register double-digit growth rates. Exports to other markets in Asia should also remain significant. Meanwhile, the economic strengthening in the U.S. will also fuel demand for products made in China for Hong Kong companies.

Investment Spending Underpinned by New Airport

Investment spending will be underpinned by public-sector spending on infrastructural projects, which will offset slower growth in private sector construction and investment in plant and machinery. Work on the new airport will support construction activity. A large number of government-funded airport-related projects costing HKD 40 billion have already been contracted out. Work on these projects will continue over the next few years, as they do not require private-sector financing and are therefore not affected by the political dispute between Britain and China over pre-democracy in Hong Kong. However, the breakdown in Sino-British talks will affect construction of the airport and Hong Kong's economic performance beyond 1995.

Inflation To Stay High

Hong Kong's sustained economic expansion and tight labor market are likely to keep inflation high. Inflation is expected to remain around 8.5% in 1994. Despite large decreases in manufacturing employment. The unemployment rate is expected to remain at the low level of 2%. Labor market conditions will remain generally tighter in the services sector than in the other areas, due to the acute shortages in professional, managerial, clerical, sales and service workers. So far, the shift of Hong Kong's manufacturing base to China and increased capital investments have helped to maintain Hong Kong's relative competitiveness. Export prices are expected to remain stable for a second consecutive year in 1994.

Ranking* of Selected Stocks

Market Cap

	HKD(m)
I . HSSC	261,080.0
2. HK Telecom	169.522.6
3. Hang Song Bank	138,102.3
4. SHK Prop	129,987.0
S. Hutchison	116.370.8
6. China Light	99,027.4
7. Cheung Kong	97.243.8
8. Swire Pacific	93,662.5
9. Henderson Land	79,401.0
10. Wharf	69.921.2
11. HK Land	67.704.8
12. HK Electric	56,164.3
13. New World Devl	50,832.6
14. Jardine Math	47,523.0
15. CMC Pacific	43,958.7

Average Daily Volume

	Shrs/day(m)
1. Masshan	42.075
2. Shanghai Petroche	38.414
3. Hopewell	15.667
4. HK Telecom	15.629
5. Sino Land	14.249
6. Great Eagle	7.681
7. Hutchison	7.510
8. Choung Kong	6.105
9. HK Land	5.452
10.Hang Lung Devi	5.329
11.CITIC Pacific	5.281
12. Guangzhou Ship	4.445
13. Now World Devl	4.274
14. HSIBC	4.177
15. HK & China rim	4.162

Prospective EPS Growth

I. Sino Land	67.0
2. Hopewell	63.2
3. Swire Pacific	50.2
4. HK Land	46.0
S. China Light	38.9
6. Wheelock Marden	35.4
7. Now World Devi	33.0
8. Cathay Pactfic	30.3
9. Henderson Land	28.8
10. Shangn-La Asia	28.3
11. HKS Hotels	25.1
12. Shun Tak	23.3
13. HSBC:	22.5
14. Dao Hong Bank Group	22.0
15. Tian An	21.1

Prospective PER (%)

1. UOL	7.0
2. Cheung Kong	9.5
3. Jardine Int'l Motors	10.2
4. Sime Darby (14K)	10.9
5. Now World Devi	11.1
6. Kumagai Gurni (HK)	11.3
7. Hang Lung Devi	11.5
8. HS8C	11.5
9. Hopewell	11.9
10. SCM Post	12.2
11. Tian An	12.4
12. Jardine Math	12.5
13. Shun Tak	12.7
14. Cathay Pacific	12.8
15. Dairy Farm	13.3

KEY INDICATORS

	1990	1991	1992	1993E	1994F
Market Indicators					
EPS Growth (%)+	*6.0*	*23.0*	*25.0*	*19.0*	*20.0*
Mkt Cap (USDbn)	*83.5*	*122.0*	*162.0*	-	-
Mkt PER (x)	*10.1*	*11.9*	*11.4*	*8.7*	*5.8*
Mtd. Yield (%)	*5.3*	*4.7*	*3.6*	*2.5*	*2.8*
Price/Book Value (x)	*2.6*	*2.6*	*2.8*	*2.5*	*2.3*
Price/Cash Earnings (x)	*26.6*	*21.6*	*18.0*	*17.7*	*15.5*
Financial Conditions					
Foreign Reserves (USDbn)	*n.a*	*n.a*	*n.a*	-	-
M2 Growth (%)	*16.8*	*26.2*	*12.2*	*15.0*	*15.0*
Gvt *Bud Surplus (USDbn)*	*1.2*	*0.5*	*2.6*	*(0.4)*	*(2.1)*
USD Cross-Rate (yr-avg)	*7.8*	*7.8*	*7.7*	*7.7*	*7.8*
Macro Indicators					
Real GOP *Growth*	*3.2*	*4.2*	*5.0*	*5.5*	*5.5*
Inflation (cpr%)	*9.8*	*12.0*	*9.4*	*8.5*	*8.5*
GOP (nominal USDbn)	*71.6*	*$2.2*	*96.6*	*109.9*	*126.4*
Capital Formation (%GDP)	*27.4*	*27.4*	*27.6*	*30.0*	*32.0*
Trade					
Current Account (USDbn)	*3.8*	*2.5*	*2.6*	*2.5*	-
Export Growth (nominal)	*12.2*	*19.7*	*20.8*	*14.0*	*13.0*
Import Growth (nominal)	*14.2*	*21.2*	*22.6*	*14.0*	*13.5*
Total Trade (% of GDP)	*235.0*	*245.0*	*255.0*	*250.0*	*261.4*

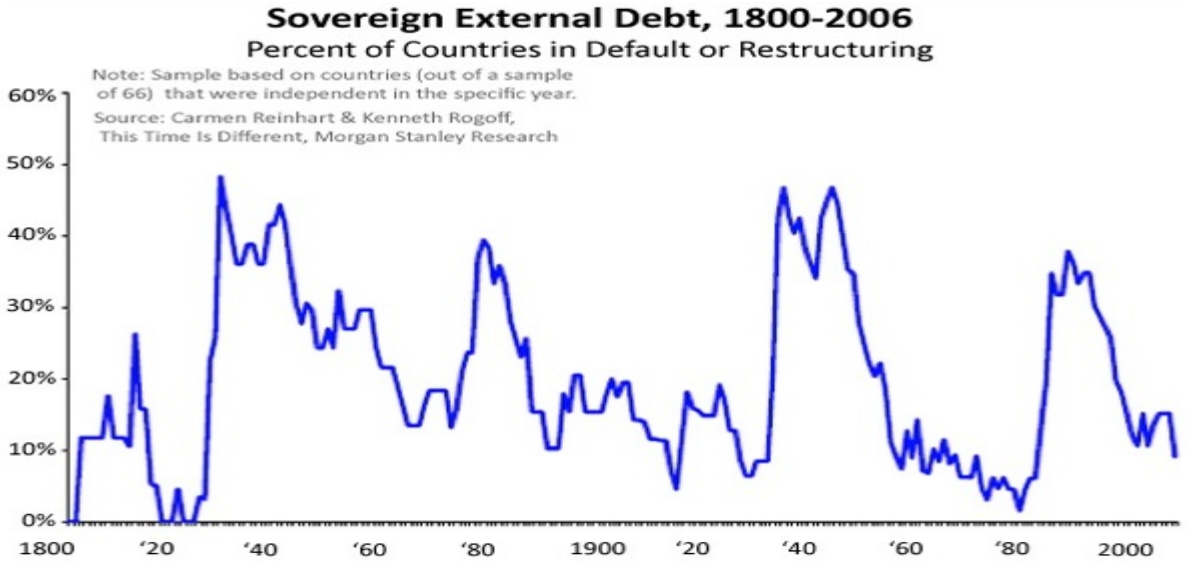
+Based on HSI aggregate of 33 stocks
F: Forecasts as of 14/01/94 (HSI = 10.774)

I. Country Risk Analysis

Sovereign debt crises and defaults have been around for centuries, see Figure IX.1 for a more recent history. The first recorded default in history occurred in the fourth century B.C., when ten Hellenic city-states defaulted on loans from the Delian league. But, the dramatic increase in international lending in the 1970s gave rise to the discipline of country risk analysis. During the early 1980s, many developing countries began to incur large balance of trade deficits, largely because of a global recession. The large balance of trade deficits caused deteriorated conditions in developing countries. Loans to Latin American countries were largely denominated in dollars. Loan repayments became more difficult when the dollar strengthened against the borrowers' currencies and when USD interest rates began to rise in the early 1980s. As a result of this situation, more than 25 countries requested a reschedule of their debts. International banks and investors suddenly realized the relevance of improving *country risk* analysis.

Figure IX.1

Sovereign External Debt1800 - 2006 – Taken from Reinhart and Rogoff (2011)



For us, country risk represents the risk attached to a borrower or an investment by virtue of its location in a particular country. Country risk is different than FX risk. Country risk can be zero and FX can be huge for a given country. The reverse, though unusual, can also happen. County risk reflects the (potentially) negative impact of a country's economic and political situation on an MNC's, a lender's or an investor's cash flows.

Country risk analysis tries to measure country risk. Country risk analysis is limited, international money managers recognize that their decisions might be incorrect. To reduce the damage, many institutions place a cap on the total amount invested in a particular country. This would limit the sensitivity of the overall portfolio to any single country's problem. Diversification also helps to protect the overall portfolio from substantially declining in value, since any country's economic and political problems will affect only a small portion of the portfolio. However, some countries tend to

have risk ratings that move together. For example, the country risk of a portfolio of investments in the Middle East will tend to move together with the price of oil. There is an active insurance market for country risk, with governments, international organizations, and private companies offering different insurance contracts. There is also a more recent set of tool to reduce country risk: derivatives. There is an active market for credit and political risk derivatives. In Chapter XIV, we will cover the most active of these derivatives, the *credit default swap*.

Diversification and Country Risk
Taken From **"Profits in a Time of War,"** *The Economist*, Sep 20, 2014.

An excessive concentration on one country is a classic mistake. After China's revolution in 1949 HSBC, then a purely Asian bank, lost half its business. Iran's nationalisation in 1951 of the Anglo-Iranian Oil Company's assets devastated the firm, a precursor of BP.

There are modern echoes of these episodes. Repsol, a Spanish oil firm, fell in love with Argentina, leaving it vulnerable when YPF, the firm it bought there, was nationalised in 2012. First Quantum, of Canada, had made a third of its profits from a mine that the Democratic Republic of Congo nationalised in 2009. But as they have expanded over the past two decades, multinationals have spread themselves more. Only a dozen big, global, listed firms have over a tenth of their sales in Russia. BP is the country's largest foreign investor but gets only about 10% of its value from its stake in Rosneft, an oil giant. McDonald's Moscow outlets, once a symbol of détente, are temporarily shut, victims of a diplomatic tit-for-tat. Even so, the burger giant makes less than 5% of its profits in Russia.

This picture is true in other hotspots. Telefonica, a Spanish firm, and Procter & Gamble (P&G), together have billions of dollars trapped in Venezuela, which has introduced capital controls. But it represents less than 5% of their sales. Ben van Beurden, the boss of Royal Dutch Shell, recently said diversification is "the only way to inoculate yourself".

1.B Measuring Country Risk

The basic idea behind country risk analysis is to determine from a big data set (with a lot of economic, socioeconomic and political variables and observations) a single measure that describes the riskiness of investing in or lending to a country. We will call this single measure *country risk* (CR). This measure is usually expressed as a letter (say, A to F). The lower the letter is, the worse the ranking of a country.

We will associate country risk with a spread over a risk-free rate. (In the U.S., or in the USD debt segment, we will use U.S. Treasuries yields as the risk-free rate.) That is, country risk influences the interest on the debt issued by a government of a country. In this context, the spread is called *sovereign default spread*.

Example IX.2: Setting yields for Mexico (actually, for the Mexican government)
The Mexican government wants to borrow in USD for 3 years.

Yields on Mexican government debt = US Treasuries + spread (risk premium, a function of CR)
Mexico's grade: BBB (associated with a spread of 140 bps (1.40%) over US Treasuries).
3-yr US Treasuries yield = 3%.

$Yield_{Mex}$ (USD) = 3% + 1.40% = 4.40% (*sovereign default spread*: 1.40%)

If the Mexican government wants to borrow in MXN, we have to introduce the expected change in S_t (measured as an annualized $e_{f,t}$). Using linearized IFE (with MXN as the DC):

$Yield_{Mex}$ (MXN) ≈ $Yield_{Mex}$ (USD) + $E[e_{f,t}]$. ¶

There are two main approaches to determine country risk: a *qualitative* approach and a q*uantitative* approach.

(1) *Qualitative Approach*: It is based on the opinions of *experts* (politicians, union members, economists, political analysts, etc.) to form a consensus opinion about the risk of a country. The consensus opinion becomes the grade.

(2) *Quantitative Approach*: It is based on a model. It starts by determining some quantifiable factors that influence country risk. Then, a formula is used to determine numerical scores for each factor. Finally, a weighted average of the factors' numerical scores is calculated. This weighted average determines the final grade.

The quantitative approach tends to be considered *objective*; however, many decisions, like the number of factors and the weights, are based on some degree of subjectivity. The quantitative approach is similar to the approach used to determine *credit risk* for companies.

There are many institutions and publications that publish country risk ratings. The rating agencies Moody's, S&P's and Fitch IBCA also produce country risk ratings. The *Institutional Investor* publishes a summary of country risk ratings for 150 countries based on a survey of some 100 international banks. This summary is revised every six months. The risk rating scale ranges from a high of 100 (best level) to a low of zero. *Euromoney* has a panel of 40 leading economists in international financial institutions evaluating country performance in the financial markets. Based on these panels, *Euromoney* publishes ratings for 180 countries, every six months.

The main advantage of country risk is its simplicity. It provides a single, easy to understand single measure. It allows cross-country and across time comparison. But, many critics state that it is *too* simple. In practice, we tend to observe that country ratings tend to converge. This phenomenon is called *herding*, which is also a common feature in credit ratings. Because many of the factors are slow to change, we tend to see a lot of persistence in the country ratings. For example, in 2011, for *Euromoney* the world ranking of China was 40^{th}. It is almost the same world ranking it had in 2001 (45^{th}), even though China has done very well through the global financial crisis of 2008.

The main criticism of country risk analysis is the lack of predictive power. For example, no rating agency or publication was able to predict the Asian crisis of 1997. South Korea had the same rating as Sweden as late as October 1997. Then, after the magnitude of the crisis emerged, South Korea was suddenly downgraded.

To be fair, we should note that country risk, like all risks, is an *unobservable* variable. We observe factors that influence risk, but we do not observe the unobservable risk. The single measure country risk will attempt to estimate the *true* country risk. But, keep in mind always, that country risk ratings refer to an unobservable variable. It is difficult to estimate unobservable variables.

We will present a brief description of two approaches to analyze country risk: the Risk Rating Model and the Prince Model. Different variations of the Risk Rating Model are widely used to evaluate the degree of risk of a country as whole. The Prince Model evaluates the political risk.

1.B Risk Rating Method

John B. Morgan, in an article published in Banker's Magazine, describes an assessment method used by banks to measure country risk. This system is based on four major aspects of a country:

i. Economic indicators, to evaluate the country's financial and economic condition
ii. Debt management, to measure the country's ability to repay debt
iii. Political factors, to evaluate political characteristics and political stability
iv. Structural factors, to measure socioeconomic conditions, such as human resource base.

Each factor, or aspect, represents a unique risk. For example, the third factor attempts to measure *political risk*. We think of country risk as a weighted average of the different risks an investor in a country faces.

Keep in mind that not all factors can be assessed with precision. Some of the factors are easier to measure than others. We have good economic data in almost all countries and, thus, we tend to find that economic risk is easier to measure. Political and structural factors tend to be more difficult to measure since there is no very precise data or model on these factors. Many of the variables used to measure political risk are subjective and complicated to derive (see, Prince Model below). That is, there are objective, easy to quantify and manipulate measures on economic and financial conditions, but very few objective measures for political stability or structural change.

Short-term and medium term models of these four aspects need to be developed. The segmentation into two time horizons is used because a country's economic outlook may vary with the time horizon used. Each of the four models assigns a score between 0 and 100. The scores (between 0 and 100) for each factor are a function of *fundamental* data. For example, the economic indicator's grade depends on GDP per capita, GDP growth, inflation, productivity, interest rates, etc.

A specific formula is used to compute the scores. For example, for the economic factor (EF) we can use the following linear model for country *j*:

$$\text{Score(EF)}_j = \alpha_0 + \alpha_1 \text{ GDP growth}_j + \alpha_2 \text{ Inflation}_j + \alpha_3 \text{ Productivity}_j + \ldots.$$

Statistical methods, like regressions or Bayesian analysis, are used to determine the coefficients (α_0, α_1, α_2,...). A practitioner's experience will also play an important role in adjusting the model and the

coefficients, if needed. For example, experience indicates that GDP growth should have a positive impact on the economic indicator factor. If the coefficient is negative, a practitioner will likely conclude that there is something wrong with the data or with the formulation of the model.

Once the four models are complete, the overall country rating is determined by weighing the importance of the factors. The overall numerical grade is converted into a rating.

$$\text{Country Score}_j = w_{1,J}\,\text{Score(EF)}_j + w_{2,J}\,\text{Score(DMF)}_j + w_{3,J}\,\text{Score(PF)}_j + w_{4,J}\,\text{Score(SF)}_j$$

You should note that the factors (EF, DMF, PF, and SF) and weights (w_i) assigned are subjective. Different institutions use different factors and weights, and, therefore, may reach different conclusions.

Example IX.3: *Euromoney* produces semi-annual country risk analysis of 189 countries using a panel of more than 400 experts. They rate six categories with a score (0 to 100).

Categories and weights:	
Economic performance	-30% weight
Political Risk	-30% weight
Structural assessment	-10% weight
Debt indicators: Debt/GDP; Debt service/X; & X-M/GDP	-10% weight
Credit rating: Moody's or S&P's or Fitch IBCA's rating	-10% weight
Access to bank finance/Capital markets: Experts grade from 0 to 10	-10% weight

The first three categories are qualitative and the last three categories are (mainly) quantitative. The qualitative average is produced by combining evaluations of political, economic, and structural assessments from experts around the world.

Based on the weighted average for each country, each country is placed on a Tier (Tier 1=AAA, Tier 5=C). A world country risk weighted average is also calculated: 42.94 (B rating or Tier 4) on February 2016. ¶

As mentioned above, the overall score is converted into a rating (letter). The conversion process converts grades into categories similar to those in Standard and Poor's rating system on securities. Table IX.1 presents a standard conversion table. Figure IX.2 presents the world country risk ratings on February 29, 2016. On that day, the world country risk weighted average was 42.94, for a B rating.

TABLE IX.1

Conversion Table of a Country's Grade into a Rating and Spreads over US Treasuries

Overall grade	Rating	Interpretation	Spread (in bps)	Average
91-100	AAA	Excellent	10-70	50
81-90	AA		50-100	70
71-80	***A***		***80-130***	***100***
61-70	BBB	Average risk	110-220	160
51-60	BB		190-300	240
41-50	B		270-410	350
31-40	CCC	Excessive risk	360-490	450
21-30	CC		450-700	570
10-20	C		700+	800
0-10	D	In Default	(debt in arrears)	-

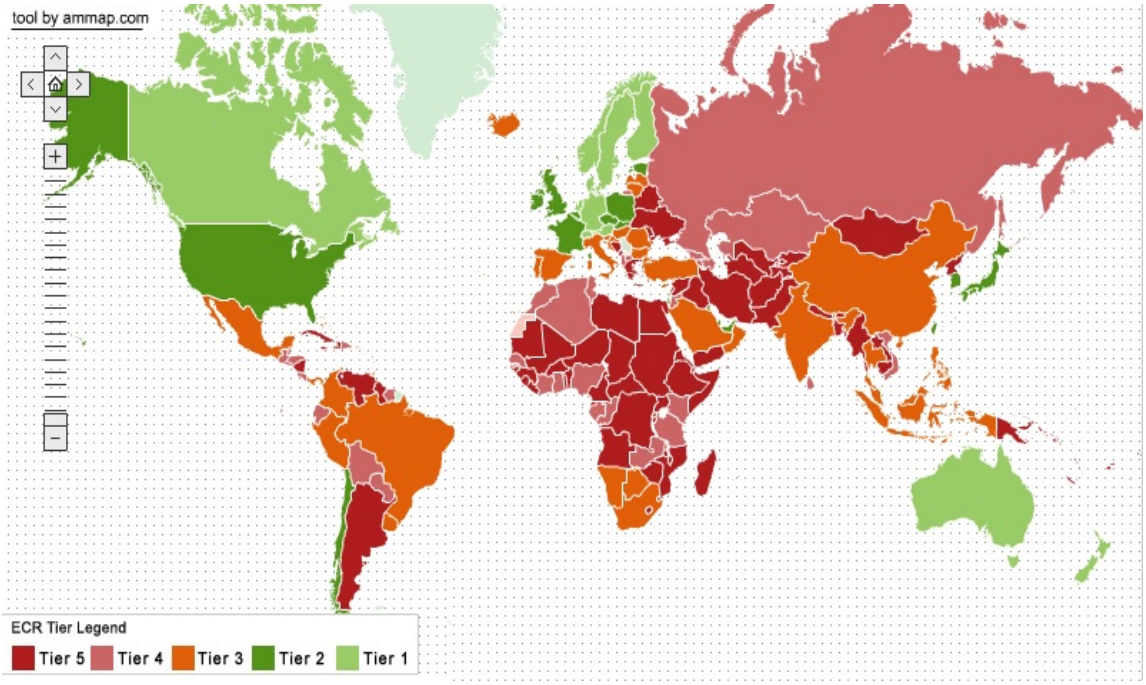
Notes:

◊ A rating of BBB or better is considered "*investment grade*."

◊ A rating of BB or less is considered "*junk*" (also called "*high-yield*," "*speculative grade*"). In the U.S., the usual spread of junk debt is between 400 to 600 bps over 1-yr T-bills. Range is very wide: Spreads can go over 2600 bps.

◊ Each rating category has three subcategories, usually with a plus or a minus, say, AA+, A, and AA- for the AA rating category. Low quality or below categories (CCC to D) have no subcategories.

Figure IX.2
Euromoney World Country Risk, February 29, 2016



Ratings are used to determine the interest rate a borrower should be charged. At the domestic level, usually each rating is associated with a credit spread range, which is expressed in basis points (bps). For example, for a company rated AA, the credit spread may be between 40 bps and 85 bps. Then, the credit spread is added to a base rate, usually the yield-to-maturity of government bonds with similar maturity to the maturity of the loan under consideration. For countries, the method of determining the interest rates governments should pay is similar. The terminology, however, is different. When we consider countries, the credit spread is called *country risk spread* or *sovereign spread*. The base rate is usually the U.S. T-bill or T-bond rate.

Example IX.4: Bertoni Bank evaluates the country risk of San Marcos. The following table illustrates the use of the risk rating method.

	Short-term Horizon			Medium-term Horizon		
Factor	Weights	Grade	Weighted Grade	Weights	Grade	Weighted Grade
Economic	.30	80	24	.30	70	21
Debt management	.30	90	27	.20	70	14
Political	.20	60	12	.30	50	15
Structural	.20	75	15	.20	60	12
Total			**78**			**62**

San Marcos has a better ranking in the short-term than in the medium-term. Using Table X.4, the short-term ranking is **A** (**78**), while **t**he medium-term horizon ranking is **BBB** (**62**).

Now, suppose the government of San Marcos wants to issue short-term debt. According to Table X.4, the sovereign spread range for a country rated **A** is [***90 bps, 135 bps***]. Based on the country risk analysis, Bertoni Bank determines that the appropriate sovereign spread for San Marcos is 95 bps. Suppose the U.S. T-bill is 3%, then San Marcos should be charged an interest rate of 3.95% for short-term debt.

Note that Table X.4 gives spreads over U.S. Treasuries, that is, the 3.95% interest rate for San Marcos is for USD debt. If San Marcos wants to issue debt in local currency, the expected change in exchange rates should be included, which is usually done through relative PPP. ¶

The risks associated with investment-grade countries are considered significantly higher than those associated with first-class government countries. The difference between rates for first-class government bonds and investment-grade bonds is called *investment-grade spread*. The range of this spread is an indicator of the market's belief in the stability of the economy. The higher these investment-grade spreads are, the weaker the economy is considered.

♦ **Country Risk Analysis: The Times Are Changing**

The 1990s wave of international capital flows has changed the focus of country risk assessment. One of the principal lessons from the 1970s was that traditional financial analysis was too narrow to capture the forces at work, the result has been a broadening of the factors analyzed. Narrow financial ratios have been replaced by broad-gauged economic analysis. Joyce Chang, director of international emerging markets fixed-income research at Merrill Lynch, says, "one of the key components of looking at sovereign risk is to have political analysts look at market events." Merrill Lynch has used political experts at local universities "who know nothing about markets," as Chang acknowledges, but who can help evaluate local political conditions and asses the prospects for stability.

Source: *Institutional Investor*, September 1997. ♦

1.C The Prince Model

William D. Coplin and Michael K. O'Leary, from Syracuse University, developed an integrated framework that allows comparisons across countries called the Prince Model. The Prince model has been used by the C.I.A., the U.S. State Department, and many multinational corporations.

1.C.1 Political Risk Factors

The relevant factors are:

(1) Regime change: A change in key government personnel through normal electoral or authorized political process, or through illegal means.

(2) Political turmoil: General levels of politically inspired violence, including violent strikes, demonstrations, riots, terrorist activities, guerrilla actions, or civil war.

(3) Government policy: Decisions with respect to fiscal and monetary policies, trade restrictions, or foreign investment regulation

(4) External events: Other countries' actions that affect the country of concern.

Government policy has the most frequent and negative effects. Coplin and O'Leary developed a rating system that places countries in the categories A (less risk), B, C or D (more risk) for two government policy areas:

(1) *Financial Transfer Risk*. This refers to the risk from financial transfer, non-convertibility from the local currency, and the transfer of foreign currency out of the country. The transfer could be for the payment of exports, repatriation of profits or capital, etc.

(2) *Direct Investment Risk*. This refers to the risk to foreign investment in wholly owned subsidiaries, joint ventures, and other forms of direct ownership of assets in a country.

1.C.2 Background Data

Sources: International Financial Statistics (IFS), published by the IMF; Foreign Economic Trends (FET), published by the U.S. Department of Commerce; local government publications, local press, direct contacts, U.S. Embassy officials.

Economic Indicators: GDP real growth, GDP per capita, capital investment, budget balance, changes in real wages, unemployment rate.

International: Debt service ratio, current account, exports, imports, principal exports and imports, currency changes.

Social Indicators: Energy consumption, population growth, infant mortality rate, urban population,

literacy, persons under 15, income distribution, work force distribution.

Political: Constitutional organization of the country, main government officials, schedule of election, status of the press, currency exchange system, sector of government participation in the economy.

1.C.3 The Prince Political Forecasting System

The Prince Model forms the basis of many forecasting models for international business. The Prince Model is used to generate probability scores for the most likely regime, turmoil, and restrictions on international investment and trade.

Example IX.5: Prince Chart for Regime Stability in the Dominican Republic, October 1987.

Actor	Orientation	Certainty	Power	Salience	Prince Score
Armed Forces	+	4	4	3	+48
Cuba	-	4	1	3	-12
PLD	-	5	2	4	-40
PRD	-	5	2	5	-50
International Community	+	2	4	3	+24
Labor	+	3	2	3	+18
Radical Left	-	5	1	5	-25
PR -Reformist Party	+	5	4	5	+100
Catholic Church	+	3	3	3	+27
Rural Workers	+	2	2	4	+16
U.S.A.	+	5	5	4	+100
University Students	-	3	2	4	-24

Total Positive Scores: 333.
Total of All Scores: 484.
Probability: 333/484 = 70%.

Notes:
Orientation: The general attitude of the actor.
Certainty: The firmness of the actor's orientation.
Power: Degree to which the actor can exert influence in support of his/her position.
Salience: The importance attached to supporting the actor's position, relative to all other concerns facing the actor.

The "Prince Score" is the product of the firmness of the actor's orientation (certainty), the player's ability to influence the outcome (power), and the importance of the specific risk factor to the actor (salience). Support (opposition) is indicated by a positive (negative) sign next to the score.

The above scores are based on the "consensus" of a team of country specialists. The probability of the regime remaining in power for the next 18 months following October 1987, was 70%. ¶

The Prince Model was also used in other areas. For example, the Prince Model aided the C.I.A. in estimating the probable position of 52 countries on various issues at the 1979 World Administrative Radio Conference.

♦**Country Risk and The Asian Crisis**
In a study of the Asian Crisis, Clark L. Maxan (1998) shows that the usual measures of country risk did not help to predict the 1997 Asian market crisis. In fact, most Asian countries saw improvements in terms of risk (that is, they became less risky) up to and shortly before the crucial turning point around September 1997. Moreover, other forward-looking measures of country risk completely failed to show any sign of recognizing the coming market collapse until it was underway. **Source**: Emerging Markets Quarterly, Winter 1998. ♦

1.D Other Country Risk Indicators

Given the lack of predictive power of CR, a single indicator may not be enough to capture the overall risk of a country. There are other indexes that may be help to signal the *true* riskiness of a country – i.e., indicators that can be correlated with the underlying true country risk.

There are many indicators that practitioners use to gauge the global economic, social and political environment of an economic. The most popular indicators are the following:

- *Globalization index (GI),* produced by A.T. Kearny. It measures a country's global links. It looks to all kind of data: foreign direct investment (FDI), international travel, internet servers, number of foreign embassies, etc.

- *FDI confidence index,* produced by A.T. Kearny. It is based on a survey of senior executives from the top 1,000 MNFs indicating the likelihood of investment in specific markets.

- *Global competitiveness index (GCI),* produced by World Economic Forum. It uses two indexes: a global competitiveness index and a microeconomic competitiveness index to rate each country growth environment and opportunities.

- *World competitiveness index,* produced by the Institute for Management Development (IMD). It uses over 300 economic and social indicators to determine the ability to grow and sustain growth in a country.

- *Opacity index*, produced by PWC and The Milken Institute. It covers 50 countries. It is based on 5 components: Corruption in government bureaucracy, Laws governing contracts or property rights, economic (fiscal, monetary, and tax-related), accounting standards, and business regulations. Together, these factors form the acronym CLEAR (Corruption, Legal, Economic, Accounting,

Regulatory). A higher level of opacity in any area increases the cost of doing business and makes investment capital riskier.

- *Index of economic freedom*, produced by the Heritage Foundation and the Wall Street Journal. It takes into account different institutional factors determining economic freedom: corruption, non-tariff barriers to trade, the economic (regulatory and non-regulatory) burden of government, the rule of law, restrictions on banks, black market activities, etc.

Table X.5 presents a summary of some country risk indicators for 5 countries: Brazil, China, Japan, the U.K., and the U.S. In general, the rankings from the different indexes tend to converge, but convergence is not always the case. The economic freedom rankings of Brazil and China are far away from the others.

TABLE X.5
Summary of Different Country Risk Indicators

Country	Euromoney (2011)	Globalization (2007)	GCI (2011)	World Competitive (2011)	Opacity (2009)	Economic Freedom (2011)
Brazil	41	67	53	44	28	99
China	40	66	26	19	45	138
Japan	25	28	9	26	16	22
UK	17	12	10	20	2	14
USA	15	7	5	1	6	10

1.D Country Risk: Implications

In 2012, after 10 years in power, the Peronist government in Argentina, lead by Cristina Fernández de Kirchner to renationalize YPF, the old Argentinian oil company then owned by Repsol, the Spanish oil giant. As a result of this nationalization, Repsol's cash flows were seriously affected and it embarked on long dispute regarding Repsol's compensation (the Argentine government ended up paying USD 5 billion in late 2013).

It is clear, that political risk has clear effects on expected cash flows of an international investment. MNCs need to account for this type of political risk when evaluating international projects. In general, companies tries to adjust the expected cash flows by decreasing them by an amount that reflects the probability of a loss due to political risk. It is not very clear how to calculate the probability distribution of political risk.

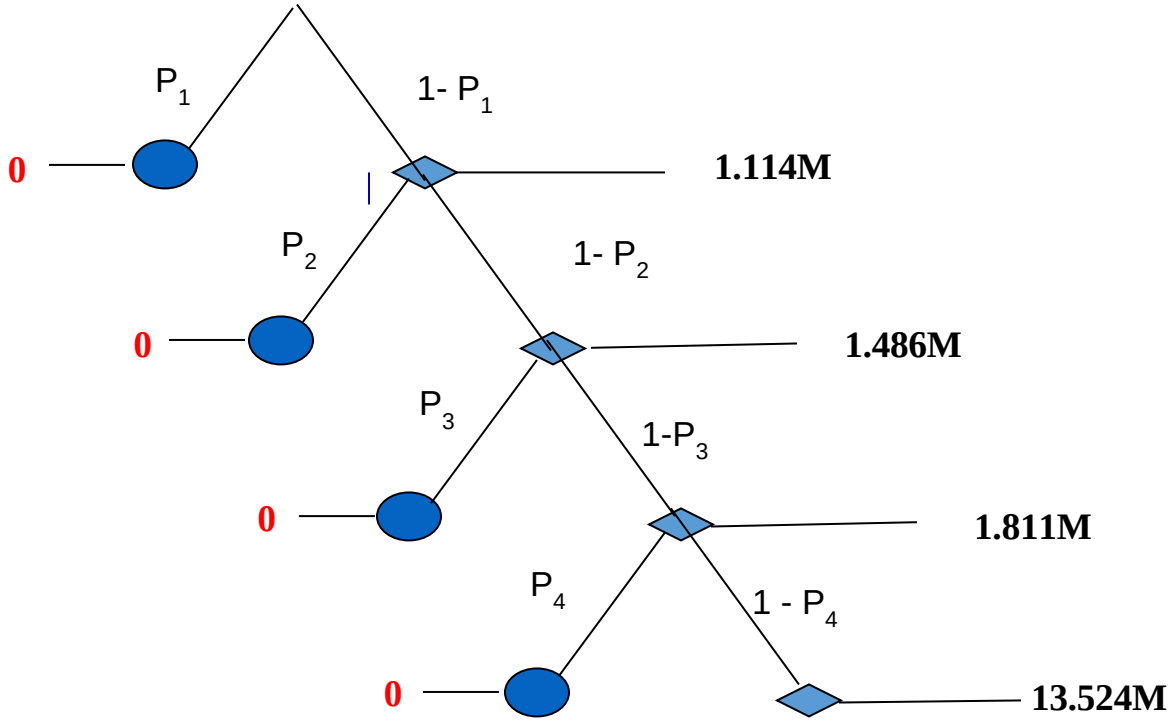
Example IX.6: Suppose a U.S. MNC is considering a project in Hong Kong with an initial investment of USD 10 million (=USD 1.114 million) and a duration of 4 years with the following expected cash flows (in USD):

	Year 1	Year 2	Year 3	Year 4
Free Cash Flows	**1.114M**	**1.486M**	**1.811M**	**13.524M**

The MNC uses a 15% discount rate. Then,

NPV (USD M) $= 10 - \{1.114/1.15 + 1.486/1.15^2 + 1.811/1.15^3 + 13.524/1.15^4\}$
$=$ **USD 1.0155 M** > 0 $\Rightarrow$ Yes, the U.S. MNC decides to undertake the project.

But, the above calculations completely ignore political risk. Suppose the MNC thinks there is a P_i probability of expropriation every year. Assume for simplicity that after expropriation the cash flows are zero –that is, re is no recovery. That is, the cash flows for the next four year are given by the following diagram:



Assume that the probability of expropriation is constant and set equal to 5%. Then,
NPV (USD M) $= -10 + \{1.114/1.15 * .95 + 1.486/1.15^2 * .95^2 + 1.811/1.15^3 * .95^3 + 13.524/1.15^4 * .95^4\}$
$=$ **- USD 0.7466533M** < 0 $\Rightarrow$ The U.S. MNC will reject the project. ¶

In practice, it is a difficult task to compute the probability distribution associated with a specific project in a specific country –i.e., the P_i's in Example IX.6 Sometimes, it is easier to calculate break-even probabilities and, then, compare them with a pre-specified probabilities used in other projects or derived from the experience of the company or an expert. In the previous example, the break-even probability, p_{BE}, can be derived from solving the following equation:

NPV $= -10 + \{1.114/1.15*(1-p_{BE}) + 1.486/1.15^2*(1-p_{BE})^2 + 1.811/1.15^3*(1-p_{BE})^3 + 13.524/1.15^4*(1-p_{BE})^4\} = 0.$

Example IX.7: In Example IX.6, suppose the U.S. MNC decides to compute the break-even probability of expropriation risk. As a policy, if the probability of expropriation risk is higher that 3% the MNC decides not to undertake a project. Using trial and error, the MNC determines $p_{BE} = 0.027964 < .03 \Rightarrow$ The U.S. MNC decides to undertake the project. ¶

II. Sovereign Risk and Political Risk Insurance

There is an active market that offers insurance to MNCs and international investors. International organizations, governments and private insurance companies participate in this market. There are two main types of insurable risk: sovereign risk and political risk.

Sovereign risk is the risk that a foreign government will not fully or partially repay debt. Sovereign risk can also include the risk that a foreign central bank affects the structure or regulation in the FX markets in a way that the value of FX contracts is significantly changed. Bonds and debt contracts can be easily insured with credit default swaps, or CDS, (see Chapter XIV) or by private companies. FX contracts are usually insured by private companies.

Political risk is the risk that political conditions in a country substantially affect the value of an investment or loan. Political risk is available for different events:

- Political violence: revolution, civil unrest, terrorism, war, etc.
- Expropriation or confiscation of assets.
- Repudiation of contracts.
- Cancellation of credit or guarantees.
- Business interruptions.
- Currency inconvertibility.
- Regulations that block the repatriation of funds.

Political risk insurance policies tend to be standardized, but sometimes adapted for specific situations. For larger investments or complex situations, tailor-made policies are common, with a syndicate of several insurers providing coverage. The private market is usually used for complex investments that require a great deal of customization.

Companies can get political risk insurance through private insurance companies, government programs and agencies, and international organizations. The private insurance market has been growing since the late 1990s, AIG, Lloyd's of London, Chubb, Zurich, and Sovereign are some of the major underwriters. The private market is very flexible and covers new and existing projects subject to country risk. The private market historically has been very competitive, but it tends to be more expensive and, thus, it is more commonly used for situations where public programs are not available.

The U.S. government, through the *Overseas Private Investment Corporation* (OPIC) has been providing political risk insurance to U.S. international investors since 1971. Originally created to to "contribute to the economic and social progress of developing nations," today it provides insurance and financial support for many projects unrelated to this goal. For example, the provision of insurance to Papa John's Pizza franchises in Russia in 2008. According to OPIC's reports, since its inception, OPIC has paid almost USD 1 billion in insurance claims and it has earned a profit every year. Most major countries have similar programs. For example, Japan established the *Nippon Export and Investment Insurance* in 2001; and India established the *Export Credit Guarantee Corporation of India* in 1957. These public programs tend to support new projects, usually export oriented

investments, or expansions of existing projects.

International organizations also participate in the political risk market: The World Bank, Inter-American Bank of Development, Asian Development Bank, etc. The World Bank also offers political risk insurance through its *Multilateral Investment Guarantee Agency* (MIGA), which was established in 1988. Typically, international organizations put requirements in the investments that they cover, balancing economic and social issues. Also, like government programs, the coverage of international organizations usually supports new projects or expansions of existing projects.

Government programs and international organizations offer long term coverage (15 to 20 years), usually covering up to 90% of an eligible investment. The private market tends to offer shorter coverage. Buyers typically secure between USD 20 million and USD 50 million in limits.

International organizations and governments are usually successful in recovering the paid claims. In the case of OPIC, the U.S. government pressures foreign governments to pay them back the losses. This situation makes OPIC very profitable!

2.A Country Risk Insurance: Implications

Suppose MNCs can get insurance against country risk and then get full compensation for their losses. Then, MNCs will subtract the insurance premium from the expected cash flows to adjust for country risk. In practice, however, obtaining full compensation is complicated, not only for the fact that future cash flows are uncertain, but because of the limits that the typical country risk insurance contracts have.

Example IX.8: In Example IX.6, assume that the U.S. MNC gets fully insured against political risk. It insured the full amount for each year. The premium is 1.4% annual. That is,

NPV (USD M) $= -10 + \{1.114 * .986 / 1.15 + 1.486 * .986 / 1.15^2 + 1.811 * .986 / 1.15^3 + 13.524 * .986 / 1.15^4\}$

$= -$ **USD 0.8612612** $< 0 \Rightarrow$ The U.S. MNC will undertake the project.

Note: This is a very simple example. In practice, MNCs cannot get insurance for 100% of cash flows, usually they can get covered from 50% to 90%. In many situations, once expropriation happens, there company files a claim and the company gets a one-time payment. ¶

III. Looking Ahead

In this chapter we presented an additional distinctive risk associated with the international environment: Country Risk. Given that it is not observable, it is difficult to measure. It is argued that the usual measures of country risk, like the ones presented in this chapter, are not very informative and lack predictive power. A more comprehensive approach, mixing different measures, with different ways of measuring economic, social, and political freedoms and opportunities may provide a better measure.

The next chapter analyzes how companies evaluate projects in the international context.

Exercises:

1. Analyze the impact of the following variables on the country risk of Costa Rica:
- Higher inflation
- Higher government deficits
- Banking crisis in Europe
- Brexit
- Lower trade balance
- Lower corporate taxes
- Political crisis in Panama
- Civil war in Nicaragua.

2. Suppose Costa Rica has a 92 score, for an A- rating. Suppose the 5-year risk-free rate in the U.S. is 1.75%. During the past 10-years, the average inflation in Costa Rica has been 5% while in the U.S. has been 2%. Given the information in Table IX.1, determine the 5-year borrowing rate for the Costa Rican government in Colones (CRC) and in USD.