

# Report on investment in country x



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The market rewards an investor for bearing risks, and therefore it is critical to understand the risks underlying. In case of investing in Country X, the following are the risks an investor is exposed to:

**Equity Risk:** The risk of investing in equity instead of investing in risk-free instrument

**Sovereign Risk:** The risk the government of Country X defaults on its debt, which is correlated with Country X's sovereign rating

**Currency Risk:** The risk of an unanticipated movement on the currency exchange rate, which is related to the expectations of inflation rates in both Country X and in the U. S.

If the expected return on an investment is greater than the required return (or the reward) for assuming those risks, then the investment should be accepted. Following the instruction, a model has been adopted to quantify the required return necessary to compensate an investor for equity investment on Country X's companies:

$$RX = i_{RF-US} + ERPUS + SSX + CEX$$

where:

RX is the required return on equity of Country X's companies

$i_{RF-US}$  is the risk-free interest rate in the U. S.

ERPUS is the equity risk premium in the U. S.

SSX is the sovereign spread to Country X

CEX is the extra return on currency exchange risk with respect to Country X

## **Influence on Key Parameters**

It is worth identifying the external forces (“ Cultural/Social Values”, “ Demographics”, “ Governmental Influences”, “ Economic and Business Environment” and “ Other External Forces”) that can have influence on the sovereign spread and the currency exchange rate.

According to a regression analysis which relates sovereign ratings to explanatory variables (from the article “ Determinants and Impact of Sovereign Credit Ratings” authored by Richard Cantor and Frank Packer and published in FRBNY Economic Policy Review / October 1996), it is found that the following 6 variables are statistically significant, including:

Per capita income

GDP growth

Inflation

External debt

Economic development (Indicator variable of whether or not a country is classified as “ industrialized” by the International Monetary Fund)

Default history (Proxy of credit reputation; Indicator variable of whether or not a country has defaulted on debt since 1970)

Apparently 4 variables – per capita income, GDP growth, inflation and economic development – are classified as the external force “ Economic and

Business Environments”, but it is important to recognize that they can also be dependent of another external force “ Governmental Influence”, a force which can be dominant when the market is inefficient:

Per capita income: The government can increase revenue by increasing tax rate or expanding tax base

GDP growth: The authorities may manipulate GDP statistics to meet political objectives

Inflation: The government can increase inflation rate to finance fiscal deficit

Economic development: The government can control the area or the extent of the development

Such illustrations indicate that interaction among external forces exists. For the remaining 2 factors, they are categorized as “ Governmental Influence”:

External debt: The government can issue more debt for financing government operation

Default history: The policies of government can influence the sovereign creditworthiness

The above discusses the factors acting on sovereign rating and hence sovereign spread, but it is noted that one of the factors, inflation, also affects currency risk (or the relative movement of expected inflation in both Country X and in the U. S.).

Overall, the external force “ Governmental Influence” plays the most important role as the influence on sovereign spread (SSX) and currency exchange risk (CEX). Yet there are other external forces which should not be ignored:

Cultural/Social Value (e. g. crime, corruption, dispute between the rich and the poor)

Demographics (e. g. immigration)

Economic and Business Environment (e. g. employment level, wage, business structure, business ethics)

Other External Forces (e. g. IT development, environment, pollution)

The interaction among different external forces will be illustrated in the section “ Futurism Scenarios” below.

## **Data**

According to the equity analyst of our company the values of each item in the model are as follows:

iRF-US = 6.75%

ERPUS = 5.50%

SSX = 5.75%

CEX = 0.00%

Hence the required return RX is 18%. Our analysts were also aware that:

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The sovereign rating was BB for Country X

The relative inflation movement had varied from -2% to 3% over the latest five years

It is also vitally important to be noted that:

The environment and underlying external forces is dynamic and always changing over time

The data used is questionable since the source and analysis are unclear

Therefore, instead of providing a point estimate it is more appropriate to determine the required return in a range format. Moreover, this explicitly shows that there is an uncertainty inherent in the estimation. Such variability can be expressed using a risk estimate (e. g. standard deviation or downside deviation), a return/risk measure (e. g. Sharpe ratio or Sortino ratio) or higher moments (e. g. skewness) for providing better insight for investment decision. Yet the appropriateness of using any kinds of measurement is out of the scope of this report.

## **Futurism Scenarios**

As the situation keeps varying over time, it is better to consider and investigate different combinations of external forces for determining the required investment return. To do so, I would like to apply the three scenarios of Latin America purposed by the futurist Dr. Allen Hammond (extracted from article “ Which World? Scenarios for the 21st Century” – “ Global Scenarios for the 21st Century” authored by A. L. Hammond and published by Island Press in 1998; used with permission).

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The three scenarios are “ Market World”, “ Fortress World” and “ Transformed World”, and the following shows how external forces differ and interact within each scenario.

## **Market World**

It “ reflects a vision of the future that is widely held today. It assumes that free markets, private enterprise, and global market integration are the best way to increase prosperity and improve human welfare. Economic reform, privatization, and deregulation are, in this view, the key to the future.” (A. L. Hammond, 1998)

Under this scenario, the governmental influence on the economy begins to decrease while the free market itself drives the economy. The government also initiates economic reforms which encourage private cooperation to increase capital investment. The privatization of pension plans successfully helps raise savings which further boosts the economic growth.

At the same time, the government strikes for improving living standard of citizens, cooperated with private firms, through deploying more assets on infrastructure, education and utility services, especially the communication and IT technology. The higher education level and easier access to various resources lead to an increase in personal income, which accelerates the growth rate in saving and investment.

Meanwhile, the public as well as the government starts to focus more on social problems (e. g. corruption and poverty) and environmental problems (e. g. pollution). Solving those problems definitely lubricate the economic

development. Ultimately, the region becomes a key role in international councils.

## **Fortress World**

It “ focuses on the potential of unattended social and environmental problems and the growing gap between rich and poor to diminish social progress and doom hundreds of millions of people to lives of poverty and deprivation. It foresees the likelihood of widespread degradation, social instability, rising conflict – and the possibility of violence and chaos, of a world divided against itself.” (A. L. Hammond, 1998)

Under this scenario, the economic grows at first, but it finds out that the poverty is widespread while the rich and some middle class become wealthier. However the government does not do the best to solve the social problems and the reputation on government reaches new lows. Instead the corporate influence on policies increases and the industrial activity expands which deteriorates the environmental problem. The soil erosion leads to food storage and a number of the poor are starved to death, and the breakout of dengue fever worsens the health problem.

The disparity between the rich and the poor attributes to the increasing conflict, protest or even riot. Skilled professionals can no longer bear the violence and death threat and decide to immigrate to other places, decreasing the productivity of the economy. For the business leaders, they urge government to stabilize the social order which hamper the economic growth severely.



The instability also causes foreign investors to withdraw their capital investments or even abandon their ventures. Similarly local citizens bring their families and transfer their money out of the region. Both lead to a shrink in the economic growth. All in all, an economic stagnation takes place.

## **Transformed World**

It “ is an optimistic vision of the future, one in which social and political – as well as economic – reforms create a better life, not just a wealthier one. It assumes that human ingenuity and compassion can extend opportunity to all of humanity. And it points to tentative changes, already underway, that may presage such a transformation.” (A. L. Hammond, 1998)

Under this scenario, the government implements a variety of political and social reforms, apart from economic reform, with the help of community groups and non-governmental groups, in order to minimize the inequality between the poor and the rich. This involves massive programs of school construction and public works, land allocation to rural farmers and even decentralization of political and economic power.

Not only do the above implementations stabilize the society but also transform the cultural and social values of the citizens. The public looks forward the establishment of anti-corruption laws and other bans on illegal activities. The value of law enforcement reaches new high. There is no longer a doubt about the political and social stability, and foreign investors are willing to increase their investments and boost the economic growth.

Furthermore, the environment in Latin America, with appropriate management, become famous and ecotourism turns out to be a major part

of the economy. The tourists from other parts of the world enjoy their trips while the workers earn their livings from them. Eventually, the region becomes a well-known spot among the world, no matter in terms of economic development, social stability and tourism.

## **Futurism Scenarios and Investment Analysis**

The following discusses how the external forces affect the sovereign spread (SSX) and currency exchange risk (CEX) and estimates the reasonable values of them for each scenario.

### **Market World**

The government supports the economic development (e. g. infrastructure, education, utility and technology) which certainly leads to high per capita income (“ more than doubled average income”) and high GDP growth (“ rapid, sustained growth”). This also increases the tax revenue and hence keeps a low level of external debt necessary for financing government operation. The default probability normally decreases as it becomes a “ key international player”. All will raise the sovereign rating of Country X and decrease the sovereign spread. As a result, it is appropriate to assume a decrease in SSX from 5. 75% to a range of +3% to +5%.

The relative inflation in Country X may increase due to the rise in production costs (or demanded wages) and in government spending, while it may be partly offset by the reduction in corruption and other illegal activities.

Therefore, CEX may be adjusted from 0% to a range of -0. 5% to +1. 5%.

In total, the required return RX under the “ Market World” is a range of 14. 75% to 18. 75%, or a rounding of 15% to 19%.

## **Fortress World**

The economic development and GDP growth nearly stops because of the continuous crimes, conflicts and corruptions. The escape of skilled professionals, business leaders and rich people also lower the productivity and investment level as well as the per capital income. The level of external debt remains high in order to maintain government operation, while the default on foreign debt becomes easier to occur since the economy is deteriorating and so the government becomes difficult to repay the debt. All things considered, Country X's sovereign rating will be downgraded, and raise the sovereign spread. Therefore, it is suitable to assume a significant increase in SSX from 5.75% to a range of +10% to +20%, which can reflect the fact that generally investors are risk-averse and are reluctant to bear such a large uncertainty.

The relative inflation in Country X may increase as the government may choose to increase money supply to pay for government expenditure or to repay debts. Also, the manufacturers and suppliers may increase the prices of goods due to the limited resources they can obtain under a social instability, so CEX may be changed from 0% to a range of +5% to +10%.

Overall, the required return  $R_X$  under the "Fortress World" is a range of 27.25% to 42.25%, or a rounding of 27% to 42%. It is worth noting that most of the investments cannot provide such a high return. It is recommended to suspend any investment in Country X if the scenario occurs and wait until the situation improves.

## **Transformed World**

The social and political reform sustains the economic development through the construction of infrastructure and the reduction of illegal activities. Such tasks results in high per capita income and high GDP growth (“ rapid, sustained growth”). Although the government spending increases, tax revenue also rises and so the external debt would not fluctuate frequently. The default probability happens to be low as the society becomes stable and the economy keeps growing. The sovereign rating of Country X is hence upgraded and the sovereign spread drops. Moreover, the development of ecotourism shares a considerable portion of the economy. Consequently, it is proper to modify SSX from 5. 75% to a range of +5% to +10%, an estimate of which is higher than that under the “ Market World”.

Similar to the “ Market World”, the relative inflation in Country X may increase due to the rise in production costs and public expenditure, while it may be offset by the reduction in illegal activities and hence the increase in economy efficiency. The offset should be larger than that under the “ Market World”, so CEX may be altered only from 0% to a range of -0. 5% to +0. 5%.

In all, the required return RX under the “ Transformed World” is a range of 16. 75% to 22. 75%, or a rounding of 17% to 23%.

## **Conclusions and Recommendations**

The following summarizes the required investment return under different scenarios:

Market World: 15% to 19%

Fortress World: 27% to 42%

Transformed World: 17% to 23%

It is somewhat different from the point estimate of 18% mentioned before. Theoretically it can be viewed as the weighted average of return under different scenarios with the weight being the probabilities of occurrences, but it may not correct to say so since:

The source of data is questionable.

The determination of the point estimate is not recognized.

There may be other scenarios which are not considered.

Nevertheless there are some clear conclusions which can be made:

If it is anticipated that the “ Fortress World” emerges then the investment has to be reassessed and even stopped until the situation improves.

If the “ Market World” or the “ Transformed World” is expected then the investment can be considered to be reasonable and relatively safe.

It is also recommended that:

The data and the analysis should be reviewed and validated.

It is necessary to understand the risk appetite and the time horizon of the investor. The use of risk estimate and return-risk measure can facilitate the appropriateness of the investment for the investor.

It is suggested that diversification can be achieved through investing equities of different countries in South America or even in the U. S.

It is shown that the investment return heavily relies on the future situation of Country X. Hence the social situation and the economic condition have to be monitored closely so as to adjust or alter investment decisions.

Finally, a draft letter to the client has been prepared on the next page.

Please kindly have a look and amend it for any inappropriateness.

## **Draft Letter to Client**

Dear Client,

We have acknowledged that you are considering a potential investment in Country X. After discussing with our analysts and conducting some research, I would like to share our thoughts about it.

It is understood that an investor is rewarded for bearing risks for an investment. In case of investing in the equities of Country X, we have identified two additional risks you will be exposed to apart from equity risk:

**Sovereign risk:** the risk that the government of Country X does not honor its debts

**Currency risk:** the risk that the currency exchange rate moves unexpectedly

The sovereign risk can be quantified using the sovereign spread, which is correlated to the sovereign credit rating of Country X. The currency risk depends on the relative movement of inflation in both Country X and the U. S.

We determine the required return with the use of a model which takes into account the risk-free rate, equity risk premium, sovereign spread and the extra return on currency risk, and it comes up with a value of 18%, which is higher than the U. S. equity return of 12. 25%. It is mainly due to the fact that the sovereign rating of Country X is BB which is the rating of a “ junk bond”. For the extra return on currency risk it is determined to be 0% as the inflation rate movement is as expected.

To be more meaningful and useful, we have applied some futurism scenarios constructed by the futurist Dr. Allen Hammond. He is a senior scientist and director of strategic analysis of the World Resources Institute, and he has suggested three main scenarios as below:

Market World: An Economic Boom – a world which free market drives the economy

Fortress World: Stagnation and Conflict – a world with widespread degradation and social instability

Transformed World: Political and Social Reform – an optimistic world with economic, political and social reform

In the Market World, the free market and private enterprise drives the economy while the government aims to facilitate the economic growth through building infrastructure, improving services and eliminating illegal activities. Default on foreign debt is hardly to occur, and the inflation rate movement remains stable. It is suggested that the required return is 15% to 19%.

In the Fortress World, the disparity between the rich and the poor and low respect to the government and law enforcement attribute to crimes and conflicts. Such a social unrest hinders the economic growth, and the default probability on foreign debt becomes higher as the government turns out to be unable to repay the debts. The inflation rate increases as the price level rises and also the government may print excessive money to afford public expenditures. It is purposed that the required return is 27% to 42%.

In the Transformed World, there is political and social reform in addition to economic reform, which causes the economic surge. The economic growth is better than that under the Market World, and so the required return under the Transformed World increases to be 17% to 23%.

It clearly shows that it requires much higher required return under the Fortress World, and such a high return is unlikely to be achieved. It is therefore suggested that if Country X appears to become the Fortress World, the investment should be held up and wait until a recovery signal emerges; otherwise it is reasonable to invest in Country X if the Market or Transformed World is anticipated and the required return is offered.

It is also obvious that the situation of Country X should be monitored closely and regularly. It is valuable to look into several measures and variables as the proxy, including:

Sovereign rating

Inflation rate

Economic indicators (e. g. GDP growth, per capita income)

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Thank you very much for seeking our consultation on investment in Country X. I hope the analysis will be useful and beneficial to you. Should you have any queries, please feel free to contact us.

Yours sincerely,

Manager