

UNIVERSAL VENTURES, INC.

Universal Ventures, Inc. (Universal) provides global financial services to businesses and individuals. It invests in global markets, primarily by buying and selling stocks, on the New York, London, and Tokyo exchanges. As an employee, you have been asked to evaluate a proposed method of global investing. The firm will use your study as a basis for recommending global investments to its clients.

The rise of the global economy has changed the way investment firms manage their portfolios. The free flow of savings and capital across national borders allows today's investment firms to diversify their stock portfolios by transacting in the stock markets of foreign countries. Many financial analysts believe that global investing hedges their risk exposure to a particular country because the economic performance of countries can differ. For example, the U.S. economy boomed from 1991 to 2001, while the Japanese economy remained in a deep recession. Holding stocks in multiple countries can diversify such country-specific risk. In any given period, some countries may slip into recession while others may move toward rapid growth.

Investment firms must decide which foreign markets to invest in when diversifying their portfolios. In one method of global investing, advocated by a number of your colleagues at Universal, macroeconomic variables are used to guide the selection of stocks. Economic indicators, such as interest and unemployment rates, are used to predict when the stock market in one country may outperform the stock markets in other countries. The theory is that market prices would be related to these economic indicators. Thus, an analyst must determine which indicators are best for predicting market performance.

Not all of the financial analysts at Universal subscribe to this method of global investing. Some view investing in global stocks, especially in emerging markets, as one of the riskiest forms of investment. They also believe that economic indicators are not good predictors of future stock market returns. Instead of relying on macroeconomic variables, these financial analysts use the performance of individual firms to guide their selection of stocks.

Based on your research, you have concluded that statistical analysis is needed to assess whether investment decisions should be guided by macroeconomic data. Your research has also uncovered that there are a number of macroeconomic variables available to test the relationship between stock market performance and economic performance in a country. These variables include inflation, per capita gross national income (GNI), the unemployment rate, and interest rates.

Previous empirical work has shown that interest rates might be an important factor in explaining a country's stock market performance. The primary reasons are fairly straightforward. The current price of a share of stock is the value today of owning the rights to a stream of future expected profits. The future expected profits must be discounted by the existing interest. If interest rates rise, the present value of a future expected earning is smaller. (At a higher interest rate one could invest a smaller amount today to get back the equivalent of the expected future profit.) A rise in interest rates is therefore often (though not always) associated with a fall in stock prices. Secondly, if the interest rate that a firm must pay to borrow is increased, and nothing else effecting future profits has changed, the higher cost of borrowing may lower expected future returns. Lower expected returns would also lower the stock price today.

You want to test the hypothesis that national interest rates are a good predictor of a country's stock market performance. To test this hypothesis, and to investigate other ideas, you have collected the data in Table 1. The eighteen countries listed all have branch offices of Universal Investments. (These data are also available in a downloadable Excel file named *stock prices.xls* on the course web site.)

Table 1
Selected Economic Statistics for 2005 and 2006 by Country*

Country	2005 Market Index**	2006 Market Index	2005 Interest Rates***	2006 Interest Rates	2006 Per Capita GNI 1000's \$	2006 Inflation Rate	2006 Unemployment Rate
Australia	312.5	400.6	5.46	5.81	35.86	3.5	4.8
Belgium	321.2	427.5	2.02	2.73	38.46	1.8	8.2
Canada	369.4	425.7	2.73	4.03	36.65	2.0	6.3
France	273.3	365.7	2.03	3.05	36.56	1.6	9.2
Germany	224.3	302.8	2.03	3.08	36.81	1.7	9.8
Indonesia	79.0	128.0	6.78	9.18	1.42	13.1	NA
Italy	213.8	280.6	2.17	3.18	31.99	2.1	6.8
Japan	113.5	115.8	0.01	0.12	38.63	0.2	4.1
Malaysia	119.5	158.9	2.48	3.23	5.62	3.6	NA
Mexico	360.1	501.0	9.20	7.19	7.83	3.6	NA
Netherlands	309.6	401.8	2.02	3.07	43.05	1.1	3.9
Singapore	176.3	249.4	2.04	2.95	28.73	1.4	NA
Spain	288.6	422.1	2.19	3.26	27.34	3.5	8.5
Sweden	378.3	542.6	1.72	1.75	43.53	1.4	7.0
Switzerland	452.5	577.6	0.71	1.36	58.05	1.1	4.0
Thailand	76.7	81.3	2.62	4.64	3.05	4.6	NA
United Kingdom	217.6	278.3	4.55	4.65	40.56	3.2	5.3
United States	302.4	343.2	3.15	4.72	44.71	3.2	4.6

* Source: U.S. Census Bureau and United Nations

** Dow-Jones World Stock Index

*** Treasury Bill Rates, if NA Money Market Rates

Required

Prepare a report for your supervisor to carefully explain your findings. (Follow the writing guide for a report posted on the class website).

In preparing your report be sure to review statistics concepts 1, 2, 3, 4, and 7 as well as macroeconomic concepts 2, 3, 4, and 7.