1. THE SUCCESS OF SMALL COUNTRIES GDP vs. size (km2) + population density

<https://www.ara.cat/2014/08/05/1187961194.pdf?hash=f2b1f4ba8c1b6bd92a473d05791bfb8fdad50e60>

Top 10 largest countries

1 – Russia.

2 – Canada.

3 – China.

4 – USA.

5 – Brazil.

6 – Australia.

7 – India.

8 – Argentina.

9 – Kazakhstan.

10 – Algeria.

Rural poor – Russia, China, Kazakhstan

Top 10 smallest countries

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | Vatican City | 0.44 | 0.17 | Europe | Italy |
| 2 | Monaco | 2.02 | 0.78 | Europe | France |
| 3 | Nauru | 21 | 8.1 | Australia and Oceania | - |
| 4 | Tuvalu | 26 | 10 | Australia and Oceania | - |
| 5 | San Marino | 61 | 24 | Europe | Italy |
| 6 | Liechtenstein | 160 | 62 | Europe | Austria, Switzerland |
| 7 | Marshall Islands | 181 | 70 | Australia and Oceania | - |
| 8 | Saint Kitts and Nevis | 269 | 104 | North America | - |
| 9 | Maldives | 300 | 116 | Asia | - |

Y: GDP growth

X:

1-> trade balance: share of imports and exports

2-> size (km2) continuous random variable

4 -> population

3-> population density

2. IUCN RED LIST AND

3. Asset price volatility

Y: Stock market index   
X1: Oil  
X2: Gold  
X3: Forex  
X4: Equity

-> From a macroeconomic perspective, the data indicates the assets analyze here

<https://www.bis.org/publ/confp01u.pdf>

“A full description of the data and the methods used to construct the holding period returns series is given in the Appendix. Figure 1 (at the end of this paper) plots each of the monthly series over the full sample period, January 1945 to August 1995, while Figure 2 plots the daily series -400- for each available dataset. Summary statistics for daily and monthly returns are given in Tables 2 and 3 respectively.4

For both the monthly and daily series in the case of equities, there is no adjustment made for dividend payments. Similarly, in the case of bonds, daily observations refer to clean prices; thus there is no adjustment made for accrued interest payments. As Steeley (1995) notes, since equity exdividend days usually coincide with the first Monday of an account (or settlement) period, the exclusion of share dividends could cause a systematic bias, particularly in the daily returns series. However, there is little evidence in the literature to suggest that, were the appropriate data available, adjusting for such a bias would materially impact the volatility of returns.5 Statistics for average returns, however, will be biased downwards since they reflect only the capital gain component of the holding period returns realised in the market.

The standard deviation of monthly returns across the full sample period is greater for the equity market, reflecting the relative riskiness of stocks compared to Treasury bills and bonds; this is unsurprising given that, while innovations to inflation and the real rate of interest, for example, will affect each of these markets, news about individual companies and sectors are likely to be important to the stock market alone. Of course, typically, news about any individual company might be expected to have an insignificant effect over the stock market index. However, since we use the FT-30, it is more likely that any such news will influence the uncertainty of overall returns. Interestingly, it would also appear that, on average, returns on stocks are more risky than the potential losses or gains from foreign exchange transactions. These results are mirrored by the daily returns series for each individual sample period. The skewness statistics are positive for both the Treasury bill and bond market monthly series, indicating that any asymmetry in returns, characterised by a long tail, is on the positive side.

The foreign exchange market, meanwhile, is significantly skewed to the left. A likely explanation for this is the heavy losses which would have been suffered as a result of the two major devaluations in sterling during the 1960s. As the daily returns series shows, returns on the foreign exchange market post-1972 were broadly symmetrical. In contrast, the daily returns series for ten-year bonds is somewhat more skewed than the monthly series. In this case, the asymmetry of returns might reflect periods during which returns were driven by high coupon payments as opposed to capital gains. Since the daily series effectively ignores these payments, this would leave the returns over such periods to appear abnormally low. The kurtosis coefficients measure whether the returns series have a fat-tailed distribution; the value of this coefficientfor a normal distribution is 3. For the monthly series, both the Treasury bill market and the dollar/sterling spot rate exhibit strong fat tails while bond and stock returns are closer to the normal distribution. Again, this is probably due to the fact that each market has experienced sudden shifts in the level of returns; these are due to devaluations in the case of the foreign exchange market and base rate changes in the case of the Treasury bill market. The historical probability of a large loss or gain in these markets is therefore somewhat higher than the bond and stock markets.

Similarly to the skewness statistics, the daily returns series for bonds is found to be more leptokurtic while the reverse is true for the foreign exchange market. The pattern of autocorrelations is broadly similar across the four assets. With the notable exception of the foreign exchange market, the monthly returns series are all serially correlated at the 1st or 2nd lag and each one is rejected by the Box-Pierce statistic, Q(24), for a test of the 24-lag autoregressive process against the null hypothesis of white noise. If markets are efficient, the covariance of returns should be equal to zero; there may be implications, therefore, for the relative efficiency of the four markets. The evidence of autocorrelation is even stronger for the daily data with each returns series exhibiting significant autocorrelation at the 1st lag. There is also some evidence of”

Shiller, 1958

4. Exchange rate volatility, GDP growth

<https://www.e-jei.org/upload/JEI_33_2_1302_1336_2013600159.pdf>