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*“The Economics of Constitutional Monarchy: The
Antipodean Anachronism?”*

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Abstract

The United Kingdom, since the end of the Second World War, has not been vitally trade or defence dependent on Australia. Australia since the advent of European Economic Community has not been vitally trade dependent on the United Kingdom. There are continuing trade and investment relationships but, any strong economic, financial and political connections have long since evaporated. Yet, the Union Jack remains at the corner of the Australian flag. A British constitutional monarchy persists. Australia is a wealthy, independent and rapidly growing developed country, with its own identity, destiny and pride of place in the world. The United Kingdom and Australia of course remain friendly allies. This paper does not deal with past British cultural connections. It merely demonstrates econometrically that linkages of an economic, financial and political nature are not sufficiently strong enough to perpetuate a constitutional monarchy for Australia. A three country model is presented, to include the only other developed Southern Hemisphere British constitutional monarchy (that of New Zealand), for purposes of comparison.

Key words: Constitutional monarchy, risk ratings, cointegration, causality.

JEL Classifications: O 56, P 16.

Introduction

Country risk ratings enable a comparison of the economic, financial positions and political environments of different countries, because the ratings ascribed are based on country specific economic, financial and political information. Analysis of ratings detects whether countries have similar profiles, or whether they are interconnected. In this paper, the objective is to demonstrate econometrically that Australia, whilst it enjoys the status of a low risk rated country along with New Zealand and the United Kingdom, is not strongly connected economically, financially or politically to the United Kingdom.

Country risk is the risk that a country will be either unable or unwilling to service its international obligations. The components of country risk are economic and financial risk (indicating the ability to perform) and political risk (indicating the willingness to perform). The component ratings are based on economic information (objectively assessed balance of payments current account data primarily demonstrating international trade performance), financial information (objectively assessed balance of payment capital account data demonstrating the ability to service international commitments) and political data (subjectively assessed, but providing an indication of collective expert opinion on a country's level of political development in democratic processes, levels of corruption, history of law and order and quality of bureaucracy among other human, cultural and legal factors). Constitutional and legal aspects are major components of political risk ratings.

Data

Risk ratings agencies utilise similar information to compile their ratings methodologies (for example, World Bank economic and financial data) and their ratings are highly positively correlated. This study utilises the International Country Risk Guide¹ data base and extracts monthly economic, financial, political and country (composite) risk ratings for New Zealand, Australia and the United Kingdom from January 1984 to November 2009 for analysis.

The Models

The abovementioned data are first examined in a regression² of unlagged changes in ratings in the three country model, stated as follows in functional form, treating New Zealand endogenously.

$$\Delta S_{NZ_t} = f(\Delta S_{A_t}, \Delta S_{UK_t}) \quad 1)$$

Where;

ΔS_{NZ} , ΔS_A and ΔS_{UK} are the changes in ratings/scores for New Zealand, Australia and the United Kingdom at time t .

¹ ICRG (2009).

² An Ordinary Least Squared (OLS) model.

The endogenous treatment of New Zealand is on the basis of the likelihood that the Australian and/or the United Kingdom systems (being larger countries, economies and financial systems), will drive or have greater influence on the New Zealand system than vice versa.

The second part of the analysis deals with lagged level series ratings in a multivariate model ³ again stated as follows in functional form.

$$S_{NZ_t} = f(S_{NZ_{t-n}}, S_{A_t}, S_{A_{t-n}}, S_{UK_t}, S_{UK_{t-n}}) \quad 2)$$

Where;

$t-n$ denotes the optimal lag of the level series variables interacting in the multivariate model. Similarly, New Zealand risk ratings are treated endogenously.

Then tests of cointegration and causality⁴ are run to ascertain whether the ratings for each country behave in a similar way and achieve stability together in the long-term. Short-term dynamics in causality tests ascertain exogeneity, or in other words if one country within the system is the major force on the other countries in terms of influencing economic, financial and political ratings.

Preliminary findings

Table 1 illustrates initially, the similarity in raw risk ratings levels between New Zealand, Australia and the United Kingdom. The low risks in each case show that these countries are all developed economies with advanced macro and micro economic reforms in place. They have similar economic, financial political profiles.

Table 1
Comparisons of means and standard deviations of raw ratings and tests of normality of distributions

	CRAUS	CRNZ	CRUK
Mean	80.99774	81.22323	81.79032
Median	81.20000	81.50000	82.00000
Maximum	87.00000	87.00000	88.00000
Minimum	75.50000	74.50000	72.20000
Std. Dev.	2.146623	2.543036	2.787240
Skewness	-0.247078	-0.161511	-0.735843
Kurtosis	3.017670	2.256021	4.281383
Jarque-Bera	3.158144	8.497205	49.18412
Probability	0.206166	0.014284	0.000000

Note: CRAUS, CRNZ and CRUK denote country risk ratings for New Zealand, Australia and the United Kingdom. Note that only Australia's composite risk ratings distribution is normal and uniform according to the Jarque-Bera test statistic.

³ A Vector Autoregressive (VAR) model.

⁴ Johansen cointegration and Granger causality tests.

Figures 1 to 3 confirm the similarity in economic, financial and political profiles and ratings levels for each country.

Figure 1
New Zealand Country Risk Ratings

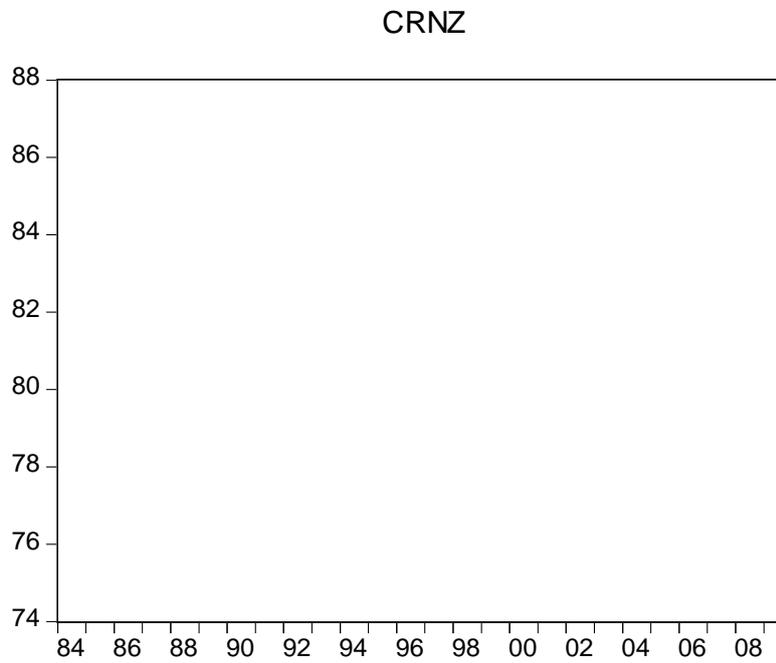


Figure 2
Australian Country Risk Ratings

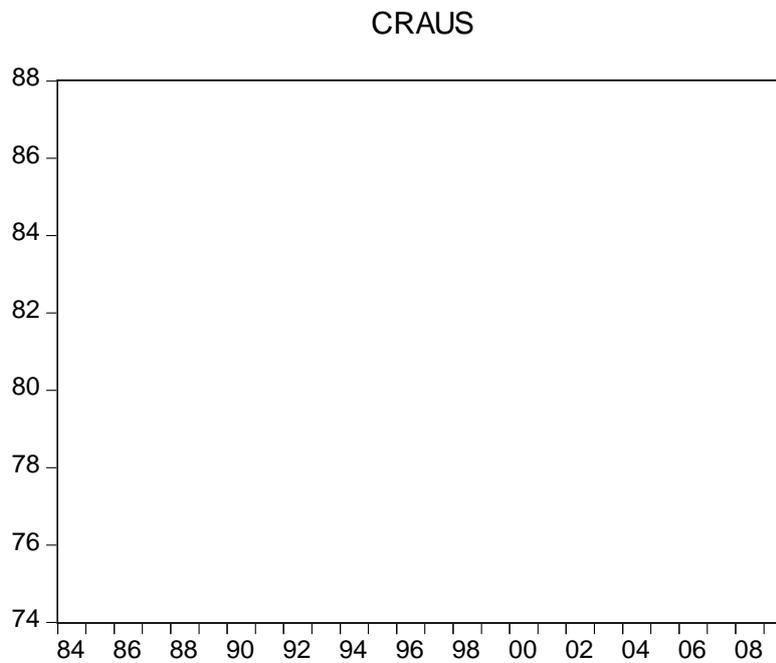
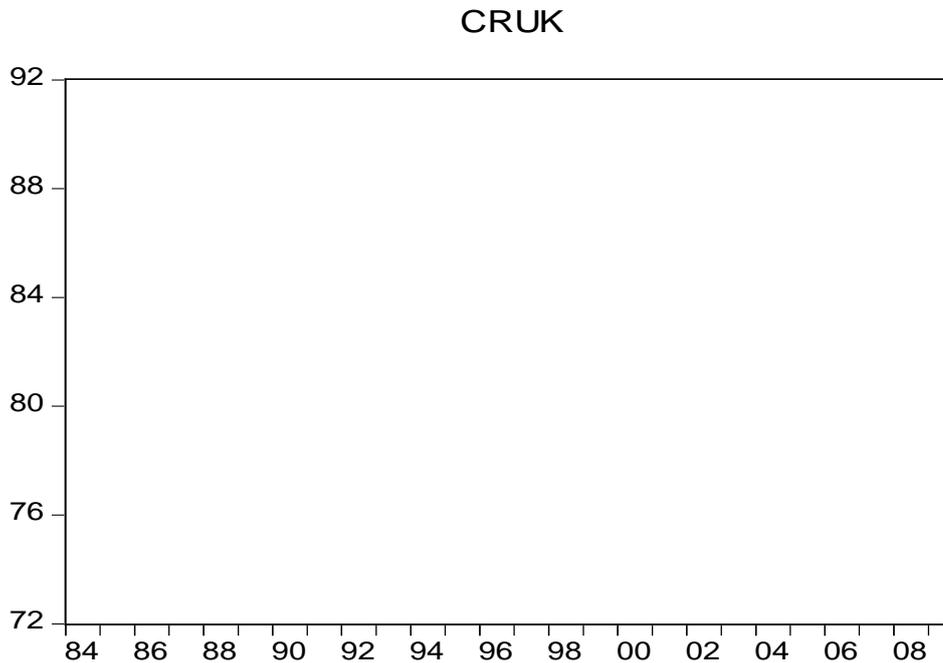


Figure 3
United Kingdom Country Risk Ratings



The ratings are at similar levels for all three countries, but this does not mean the countries are strongly interrelated economically, financially and politically. Further investigation is required to examine whether the difference in means of raw ratings are significantly different. Table 2 shows the results of this analysis with New Zealand mean ratings treated as the benchmark.

Table 2
Comparisons of means

Variable	t statistic
CRAUS	-1.850***
CRUK	3.582***
ERAUS	8.484*
ERUK	-1.910*
FRAUS	2.852*
FRUK	16.830*
PRAUS	-9.202*
PRUK	-10.774*

Note: CRAUS, CRUK, ERAUS, ERUK, FRAUS, FRUK, PRAUS and PRUK are composite, economic, financial and political ratings for Australia and the United Kingdom respectively. * denotes significance levels at 1%, ** at 5% and *** at 10%. Null hypothesis of no difference in means is rejected in each case at the 10% level.

Whilst ratings in each country are at a similar level, the means for each country in composite (country), economic, financial and political ratings are significantly different thus, providing an initial indication that there is little country, economic, financial and political bases of interrelationship between the countries in the sample.

Main findings

Unlagged relationships

Unlagged data in changes in ratings are first examined in a regression as per Equation 1. The results are shown in Table 3.

Table 3
Regression results for New Zealand ratings changes

Statistic	Economic rating	Financial rating	Political rating	Composite (Country) rating
Adjusted R Square	0.067*	0.344*	0.001	0.065*
t statistic Australia	3.646*	9.360*	1.111	4.271
t statistic UK	2.969*	5.071*	-0.340	1.842**
Durbin Watson (DW) statistic	2.332	2.249	2.108	2.173

Note: * denotes significance levels at 1%, ** denotes significance levels of 5%. *** denotes significance at 10%. The adjusted R Square value provides the explanatory power of the model. The t statistic and its sign show the strength and direction of the relationships between independent and dependent variables. If the DW statistic is significantly greater than 1.5 there is deemed zero problems with serial correlation and the regression results may be relied upon.

The results in Table 2 indicate that the explanatory power of the economic, political and composite ratings models is low. The explanatory power of the financial ratings model is comparatively high at 34.4%. This evidence supports the notion that equity investment is strong between the countries, but with greater flows from Australia to New Zealand. The t statistics for political ratings are not significant at any level.

It is concluded that the economic and financial relationships between Australia and New Zealand are stronger than those between the United Kingdom and New Zealand. It may be that Australian economic, financial and political relationships are closer with New Zealand than with the United Kingdom. In order to extend that analysis the investigation now moves to examine lagged data as per Equation 2.

Lagged relationships

Cointegration analysis demonstrates whether or not different variables have similar trends over time and whether or not they come to stability together at some point during the period of the study. It therefore shows in the case of this study whether or not the New Zealand, Australian and United Kingdom economic, financial and political environments are similar or interrelated. Causality analysis confirms the exogeneity of variables. That is whether or not, on an optimal lag, one variable has a greater influence on another variable in the short-term. In other words, in the case of this study, whether or not it is the Australian economic, financial and political environment that drives these environments in New Zealand or the United Kingdom or vice versa. A bivariate VAR model is initially specified (Equation 2) in raw risk ratings. Prior to this, Augmented Dickey-Fuller unit root (ADF) tests that test for stationarity of the variables are applied (that is, testing whether or not the variables are time dependent). The results of the unit root tests are provided in Table 4.

Table 4**ADF unit root tests for stationarity of variables**

Variable	Raw ratings test statistic	Changes in ratings test statistic
New Zealand country rating	-2.670***	-20.361*
Australian country rating	-2.682***	-18.688*
United Kingdom country rating	-1.918	-18.083*
New Zealand economic rating	-2.346	-23.003*
Australian economic rating	-2.739***	-18.659*
United Kingdom economic rating	-1.488	-19.089*
New Zealand financial rating	-1.211	-18.391*
Australian financial rating	-0.997	-11.169*
United Kingdom financial rating	-1.857	-11.928*
New Zealand political rating	-1.884	-18.341*
Australian Political rating	-1.735	-17.755*
United Kingdom political rating	0.700	-6.689*
Errors of country rating regression	-2.962**	-19.582*
Errors of economic rating regression	-5.673*	-23.964*
Errors of financial rating regression	-1.941	-19.883*
Errors of political rating regression	-2.138	-14.324*

Note: Critical values under ADF tests are as follows: at the 1% level -3.451, at the 5% level, -2.871, at the 10% level, -2.572. Significance levels for the test statistic are denoted * at 1%, ** at 5% and *** at 10%.

It can be seen that, by and large, the raw risk ratings and the errors of the relationship between those ratings (from Equation 1) are non-stationary. However, the changes in those variables are stationary as the test statistics are significantly less than the critical values of the ADF test.

The conclusion here is that the processes are integrated non-stationary processes and a bivariate VAR model in Equation 2 can be specified in raw risk ratings. Testing is then undertaken in non-stationary level series to run VAR based tests for cointegration and causality.

It is important that optimal lags be incorporated into Equation 2 and these are provided with reference to various information criteria (That is, Akaike, Hannan-Quinn and Schwarz together with Final Prediction Error and Likelihood Ratios tests).

After running these tests it is concluded that the optimal lag order is 1 to 2 months for each of the relationships. (That is, if one variable changes today it takes one to two months for the other variable to change. The exogenous variable is the variable that changes first. The endogenous variable is the one that changes after the former variable changes).

Johansen cointegration and Granger causality tests reveal the following:

1. With regard to the relationship for New Zealand composite (country) risk both Trace and Maximum Eigen Value⁵ test statistics reveal that, on a lag interval of 1 to 2 months, there is no cointegrating relationship. That is, in combined economic, financial and political environments there is no long-term relationship between New Zealand interacting with both Australia and the United Kingdom. Granger causality tests on similar lag orders show that there is no evidence of unidirectional or bidirectional causality in this relationship.
2. With regard to the relationship for New Zealand economic ratings on an optimal lag order⁶ of one to two months there is one cointegrating relationship. That is, there is a significant long-term relationship where all variables exhibit similar movement and together achieve equilibrium at some point during the period of the study. Granger causality tests show that, over a one to two month lag order, the Australian economic condition is a significant influence on the New Zealand economic condition (at the 1% level of significance). There are no other significant uni-directional or bi-directional causal relationships between the countries in the model.
3. With regard to the relationship for New Zealand financial ratings, on a lag order of 1 to 2 months, Trace tests and Maximum Eigen value tests indicate that there is no cointegrating relationship between the financial variables for each country in the model. That is, there is no significant long-term similarity or interrelationship between the New Zealand, United Kingdom and Australian financial conditions. However, in terms of short-term relationships on a similar lag order it is evident that the United Kingdom financial condition is a significant causal influence on the New Zealand financial condition (at the 5% level of significance). In addition there is evidence significant at the 5% level that the New Zealand financial condition influences the Australian financial condition.
4. With regard to political ratings there is no evidence of cointegration or uni directional or bi directional causality between the New Zealand, Australian and United Kingdom in political condition.

Discussion

Preliminary analysis of economic, financial political and composite (country) ratings data shows that New Zealand, Australia and the United Kingdom have similar low levels of ratings (that is, low levels of risk). The ratings levels reflect low economic, financial, political and composite country risk levels showing that the countries in the sample are developed with advanced levels of macro and micro economic reforms and stable political systems.

However, initial analysis of the means of the unlagged raw ratings data, reflecting country specific combined economic, financial and political information, shows that the countries are not related. Further, the analysis of unlagged data in OLS regressions in first differences of raw ratings shows that the relationship of Australia, particularly the economic and financial relationships, is stronger with New Zealand than they are

⁵ These are cointegration tests at the 5% level of significance.

⁶ As determined by information criteria, final prediction error and likelihood ratios.

with the United Kingdom. There is some evidence to show that New Zealand and the United Kingdom are related economically and financially.

When lagged raw ratings data are considered in a VAR and subsequently running cointegration and causality tests, there is no significant evidence to show that Australia is closely related economically, financially or politically to the United Kingdom. There is some evidence to suggest that Australia is related economically and financially to New Zealand and a smaller amount of evidence to suggest that New Zealand and the United Kingdom are related financially.

Conclusion

As stated earlier, cultural connections are not explored in this paper, although political risk ratings do in part reflect social and cultural factors for most countries. Australia has adopted many British institutional forms (For example, the Westminster system of democratic government and its legal framework) as well as other commercial infrastructural forms and associated corporate law frameworks across the broad spectrum of business and commerce (For example, banking, finance and stock markets). However, if the constitutional monarchy for Australia is being perpetuated on the basis of strong contemporary economic, financial and political similarities and interrelationships, the evidence produced in this paper demonstrates that such a position is out of date and out of time.

References

Dickey, D. A., and Fuller, W. A., (1981), "Likelihood Ratio Statistics for Autoregressive Time Series within a Unit Root", *Econometrica*, Volume 49, 1022-1057.

Durbin, J., and Watson, G. S., (1971), "Testing for Serial Correlation in Least Squares Regression-111", *Biometrika*, Volume 58, 1-42.

Granger, C. W. J., 1988, "Some Recent Developments in a Concept of Causality", *Journal of Econometrics*, Volume 39, Pages 199-211.

ICRG, (2009), International Country Risk Guide, The Political Risk Services Group Inc.

Jarque, C. M., and Bera, A. K., 1987, "A Test for Normality of Observations and Regression Residuals" *International Statistical Review*, Volume 55, pp. 163-172.

Johansen, S, (1988), "Statistical Analysis of Cointegration Vectors", *Journal of Economic Dynamics and Control*, Volume 12, Pages 231-254.