

Shareef, Riaz

Working Paper

## Country Risk Ratings of Small Island Tourism Economies

Nota di Lavoro, No. 25.2004

**Provided in Cooperation with:**

Fondazione Eni Enrico Mattei (FEEM)

*Suggested Citation:* Shareef, Riaz (2004) : Country Risk Ratings of Small Island Tourism Economies, Nota di Lavoro, No. 25.2004, Fondazione Eni Enrico Mattei (FEEM), Milano

This Version is available at:

<http://hdl.handle.net/10419/117899>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*

# **Country Risk Ratings of Small Island Tourism Economies**

Riaz Shareef

NOTA DI LAVORO 25.2004

**FEBRUARY 2004**

NRM – Natural Resources Management
------------------------------------

Riaz Shareef, *Department of Economics, University of Western Australia*

This paper can be downloaded without charge at:

The Fondazione Eni Enrico Mattei Note di Lavoro Series Index:  
<http://www.feem.it/Feem/Pub/Publications/WPapers/default.htm>

Social Science Research Network Electronic Paper Collection:  
[http://papers.ssrn.com/abstract\\_id=XXXXXX](http://papers.ssrn.com/abstract_id=XXXXXX)

The opinions expressed in this paper do not necessarily reflect the position of  
Fondazione Eni Enrico Mattei

# Country Risk Ratings of Small Island Tourism Economies

## Summary

Over the last twenty years, there has been a growing fascination within public and academic circles about the livelihood of islands with small populations and territory which are present in each of the world's great oceans. The Small Island Tourism Economies analysed in this paper vary profoundly in their size, land area, and location. Moreover, they have depended heavily on financial aid from their former colonists for infrastructure development, which has declined dramatically since the collapse of Communism. These economies also differ in their narrow natural resource bases on land and in water, in their prospects for self reliance in economic development, and their overwhelming reliance on tourism as a source of exports. These economies are developing countries which need a consistent inflow of foreign direct investment to maintain economic growth. Such sovereign island economies differ in the extent to which they are home to a multitude of ethnic diversity, political systems, historical experience, economic and environmental vulnerability, ecological fragility, the types of risks facing private investors, and in the extent to which they are perceived as, or perceive themselves to be, insular and peripheral. In spite of the vast diversity as well as similarities, researchers are fascinated by the world of small island economies, and are intrigued by their unique features which cannot be addressed through a generalised set of rules. This paper analyses the geographical, historical, economic, tourism-oriented and institutional characteristics, as well as vulnerability to changes in the international economic, financial and political climates, of twenty Small Island Tourism Economies. The snapshot images provide a comparative assessment of the international country risk ratings, and highlight the importance of economic, financial and political risk ratings as components of a composite risk rating for Small Island Tourism Economies.

**Keywords:** Small size, Tourism, Volatility, Vulnerability, Country risk ratings, Economic risk, Financial risk, Political risk, Composite risk

*This paper was presented at the international conference on "Tourism and Sustainable Economic Development – Macro and Micro Economic Issues" held in Sardinia, Italy, on 19-20 September, 2003 and jointly organised by CRENoS (Università di Cagliari e Sassari, Italy) and Fondazione Eni Enrico Mattei, Italy, and supported by the World Bank.*

*The author wishes to thank Michael McAleer and Suhejla Hoti for helpful comments and suggestions, and to acknowledge the financial support of an Australian Research Council Research Assistantship and the C.A. Vargovic Memorial Fund Award, Department of Economics, University of Western Australia.*

*Address for correspondence:*

Riaz Shareef  
Department of Economics  
University of Western Australia  
35 Stirling Highway  
Crawley  
WA 6009  
Australia  
E-mail: Riaz.Shareef@uwa.edu.au

## **1. INTRODUCTION**

Over the last twenty years, there has been a growing interest in the livelihood of small states, particularly island economies, around the world. Islands with small populations are also very small territorially, and these two aspects of their size tend to be connected. These island economies differ in the extent to which they are home to different ethnic minorities, their political cultures, historical experiences, and their vulnerability to external interventions and natural disasters; in their ecological fragility; and their perception of insularity and its underlying consequences. Such sovereign island economies have commonalities such as small populations, very little productive capacity, similar ecological surroundings, and pleasant climates which foster tourism.

Small Island Tourism Economies (SITEs) are developing countries with small populations, narrow productive capacities, and a consistent inflow of Foreign Direct Investment (FDI) in order to facilitate economic growth. When such economies have access to capital markets, they can smooth out consumption over time while absorbing adverse domestic production shocks. A common feature of SITEs is that they have to rely intensively on international development assistance, particularly from their former colonists, mainly for infrastructure development expenditures. This assistance has declined since the collapse of communism in Europe in the early 1990s. To compensate for the decline in development financing, SITEs have turned toward the international financial community. It is difficult for SITEs to borrow from the international capital markets, because they are perceived to suffer from frequent natural disasters, to be susceptible to adverse macroeconomic shocks, and to have high risk. The main impediments to lend to small island economies are considered to be the costs of obtaining information and country risk.

The Decolonisation Process during the latter half of the 20<sup>th</sup> Century gave rise to the political expectations and independence of the world's smallest islands, and led to the consolidation of their positions in the United Nations. This has prompted a variety of island-related research programs worldwide to address the special problems of, and the opportunities for, these small island economies in a period of vast globalisation.

Country risk has become a topic of major concern for the international financial community over the last two decades. Various risk rating agencies employ different methods to determine country risk ratings. They combine a range of qualitative and quantitative information regarding alternative measures of economic, financial and

political risk into associated composite risk ratings. For six SITEs, international country risk ratings compiled by the International Country Risk Guide (ICRG), which is the only rating agency to provide consistent monthly data for an extended period for a large number of countries, are compared for 1984-2002.

The plan of the paper is as follows. Section 2 defines Small Island Tourism Economies (SITEs) and the implications of being a SITE. An analytical review of the economic characteristics of SITEs is given in Section 3. A comparison of Country Risk Ratings compiled by the ICRG for six representative SITEs from 1984 to 2002 is given in Section 4. Some concluding remarks are presented in Section 5.

## **2. SMALL ISLAND TOURISM ECONOMIES (SITEs)**

### **2.1. Small Size**

In the literature on small economies, several attempts have been made to conceptualise the size of an economy, yet there has been very little agreement to date. The issue of size first emerged in the economics of international trade, where the small country is the price taker and the large country is the price maker with respect to import and export prices in world markets. According to Armstrong and Read (1998, p. 566), ‘this definition therefore lacks focus in its inclusion of small ones; most countries are regarded as small in spite of their relative largeness—Australia, Canada, Switzerland, etc.’

Size is a relative rather than an absolute concept. In the literature on small economies, size deals with quantifiable variables, where population, GDP and land area are the most widely used. Some notable examples in emphasising size are Kuznets (1960), where a country with a population of 10 million or less is regarded as small. By this measure, the World Bank’s World Development Indicators (WDI) 2002 data show there are 130 small economies. In Robinson (1960), a population threshold of 10 to 15 million is used. The United Nations uses a threshold of 1 million in its studies on small economies, UNCTAD uses 5 million, and the Commonwealth Secretariat uses 1.5 million. According to Liou and Ding (2002, p. 1290), population as a size measure is ‘currently used by the United Nations related institutes (e.g., UNIDO and the World Bank) and other international development institutions (e.g., the Commonwealth Secretariat).’ Armstrong and Read (1998) argue that population is often used because it is convenient and provides information about the size of the domestic market and labour force. Clearly, there is debate as to the definition of what

constitutes a ‘small’ country. It is difficult to substantiate why a particular population threshold is used, and there have been variations in the level of thresholds, which also seem to be chosen arbitrarily.

**Table 1.** Common Size Measures of SITES

	<b>Mean 1980-2000</b>		<b>2000</b>		
<b>SITE</b>	<b>Pop. (m)</b>	<b>GDP per capita ('000 USD)</b>	<b>Pop. (m)</b>	<b>GDP per capita ('000 USD)</b>	<b>Surface Area (km<sup>2</sup>)</b>
Antigua	0.06	6.6	0.07	9.1	440
Bahamas	0.26	13.1	0.30	13.9	10,010
Barbados	0.26	7.1	0.27	8.3	430
Comoros	0.44	0.5	0.56	0.4	2,230
Cyprus	0.69	10.0	0.76	14.1	9,240
Dominica	0.07	3.4	0.07	3.4	750
Dominican Rep.	7.06	1.5	8.37	2.1	48,380
Fiji	0.73	2.3	0.81	2.4	18,270
Grenada	0.09	2.6	0.10	3.8	340
Haiti	6.54	0.5	7.96	0.4	27,560
Jamaica	2.40	1.7	2.63	1.8	10,830
Maldives	0.21	1.3	0.28	1.9	300
Malta	0.37	7.0	0.39	10.2	320
Mauritius	1.07	2.9	1.19	4.4	2,030
Samoa	0.16	1.2	0.17	1.4	2,830
Seychelles	0.07	5.9	0.08	7.0	450
St Kitts	0.04	4.5	0.04	6.8	360
St Lucia	0.13	3.1	0.16	4.0	610
St Vincent	0.11	2.1	0.12	2.8	390
Vanuatu	0.15	1.2	0.20	1.2	12,190
<b>Total</b>	<b>20.9</b>		<b>24.5</b>		<b>147,960</b>

Source: WDIs/World Bank 2002

Note: For Dominica population is 2000 only

In determining the choice of countries for this paper<sup>1</sup>, neither a population nor a GDP threshold is used. This is because some of the SITES in the sample, particularly Dominican Republic, Haiti, Jamaica, and Mauritius, have populations above 1 million, and yet share

<sup>1</sup> The data presented in this study are taken from the World Development Indicators (WDI) 2002, World Bank.

numerous features of being small. Undesirable outcomes are inevitable when a population, GDP or a land-area threshold is chosen since countries can overshoot it but still feature ‘smallness’.

In a ground-breaking contribution to the subject of small states, Armstrong et al. (1995) probably best explains the size of an economy by using the concept of sub-optimality in a macroeconomic framework. The principle behind this framework is the incorporation of the interaction between production and trade through minimum efficient scale<sup>2</sup> (MES). For small economies, in particular, the level of GDP is determined by the MES, the shape of the average cost curve below the MES, and transportation costs. This approach to conceptualise size provides a more precise understanding of the implications of being small.

Viewing the populations of the 20 SITEs analysed in Table 1 above, the SITEs are home to more than 24 million people, which is less than one percent of the total population of all the developing countries combined. They range in size from micro economies, like St. Kitts and Nevis, with only 41,000 people, to mini economies like Antigua and Barbuda, Dominica, Grenada, and Seychelles, with populations between 50,000 and 100,000. Furthermore, The Bahamas, Barbados, Maldives, Malta, Samoa, St. Lucia, St. Vincent and the Grenadines, and Vanuatu have populations between 100,000 and 500,000. This is the population range into which most SITEs fall. Cyprus and Fiji have populations between 500,000 and 1 million. The remaining four SITEs are Dominican Republic, Haiti, Jamaica and Mauritius, each with populations of more than one million.

Comoros and Haiti were French colonies, while Dominican Republic was a Haitian colony. The remaining seventeen SITEs profiled in this paper are former British colonies, which gained independence in the latter half of the 20<sup>th</sup> Century. The above mentioned seventeen SITEs are now in the British Commonwealth. Haiti has the longest history of independence, having gained it from France in 1804.

The per capita GDP (in constant 1995 US Dollars) in these countries also ranges widely. There are two low income (< US\$756) SITEs, namely Comoros and Haiti, and three high income (> US\$9,265) SITEs, which are The Bahamas, Cyprus and Malta. The rest are either low or high middle income SITEs, where their per capita GDP ranges from US\$756 to US\$9,265. SITEs in this paper are in four geographic regions of the world, with 11 of

---

<sup>2</sup> This is the level of output of goods and services at which production is feasible.

them in the Caribbean Sea, 3 in the Pacific Ocean, 4 in the Indian Ocean, and 2 in the Mediterranean Sea.

## **2.2. Island Economies**

Dommen (1980, p. 932) argued that ‘not all free-standing land masses are islands’ and ‘an island is not a piece of land completely surrounded by water.’ This had been established through comparing and matching economic, social and political indicators, and not on account of the geological nature of land formations of the countries chosen. However, the SITEs profiled in this paper are sovereign island economies because of their geological nature. They are all archipelagic, have risen from the ocean through volcanic activity and lie along the weaker parts of the earth’s crust. Two of the countries in this sample, namely Haiti and the Dominican Republic, are not entirely surrounded by water. Since they are two different countries on the Hispaniola island, their inclusion in the sample is warranted. Visitors normally reach these economies by air, and freight is usually carried by sea.

These island economies have the world’s most delicate ecosystems, and are consistently threatened by natural disasters as well as the effects of environmental damage. According to Briguglio (1995), all islands are insular but not situated in remote areas of the globe, while insularity and remoteness give rise to transport and communications problems. In this regard, Armstrong and Read (2002, p. 438) reiterate that ‘both internal and external communication and trade maybe very costly and implications for their internal political and social cohesiveness as well as competitiveness.’ Most of these SITEs are in regions where they are frequently affected by unfavourable climatic conditions, which typically affect the entire population and economy.

## **2.3. Reliance on Tourism**

Tourism plays a dominant role in the economic well-being of SITEs, and tourism earnings account for a significant proportion in the value added in their national product. The fundamental aim of tourism development in SITEs is to increase foreign exchange earnings to finance imports. As can be seen in Table 2, the SITEs examined in this paper have an overwhelming reliance on tourism as a source of exports. In economic planning, tourism has been given a predominant emphasis in the SITEs where the climate is well suited for tourism development and the islands are strategically located.



**Table 2.** Structure of the Economy: Mean Percentages 1980-2000

<b>SITEs</b>	<b>Agriculture*</b>	<b>Industry*</b>	<b>Manufacturing*</b>	<b>Services*</b>	<b>Exports*</b>	<b>Tourism Repts**</b>
Antigua	4.6	18.5	3.4	76.9	77.6	67.0
Bahamas	2.2	n.a.	n.a.	83.8	65.5	59.0
Barbados	6.8	20.6	10.2	72.6	57.5	51.0
Comoros	38.4	12.0	3.9	49.7	17.5	22.2
Cyprus	7.4	28.0	15.2	64.6	48.2	36.8
Dominica	24.7	19.6	7.3	55.7	47.6	23.3
Dom. Rep.	14.4	29.5	16.6	56.1	27.4	31.7
Fiji	19.8	23.3	11.5	56.9	54.1	25.3
Grenada	14.6	18.9	6.1	66.5	46.1	41.9
Haiti	31.1	17.1	9.0	51.8	13.3	23.3
Jamaica	7.3	36.7	17.3	55.9	48.3	32.8
Maldives	13.9	n.a.	4.6	n.a.	48.1	51.6
Malta	3.9	39.6	28.2	56.5	84.1	24.3
Mauritius	11.5	30.7	21.9	57.8	58.8	14.0
Samoa	18.8	30.9	18.8	50.4	32.6	41.5
Seychelles	4.9	18.4	10.6	76.7	61.8	40.2
St Kitts	8.2	25.2	12.4	66.5	55.7	57.4
St Lucia	12.3	19.4	7.8	68.3	65.7	59.3
St Vincent	15.8	24.9	9.6	59.3	59.1	37.2
Vanuatu	21.6	10.5	4.5	67.7	44.6	46.4

Source: WDIs 2002/World Bank

\*Mean % of GDP and \*\* Mean % of Exports

A large proportion of what is being earned through tourism leaves the economy, almost instantaneously to finance imports to sustain the tourism industry. Tourism-related imports are comprised mostly of non-indigenous goods. Meat and dairy products feature heavily in the Caribbean, while imports of construction material for building tourism-related facilities feature more in the Maldives. Labour is also imported for employment in tourism, which results in substantial foreign exchange outflow.

In SITEs, tourism facilities are mostly enclave developments, and their effects on the domestic economy can sometimes be very limited. Tourism requires careful planning in

order to maintain its sustainability and limit environmental damage. While tourism development has contributed to economic development in many SITEs, they should be managed responsibly in order to secure their long term sustainability.

Research on pairwise correlations among international tourist destinations in terms of tourist arrivals or earnings provides some background for national policies of SITEs. When the correlation coefficients are negative, destinations are generally neighbouring countries, and are regarded as substitutes. In contrast, when correlations are positive, the destinations are complementary to each other. In Figure 1, all of the pairwise correlations are positive, except for Haiti.

#### **2.4. Implications of being a SITE**

The most prominent feature of SITEs is their narrow production base and the small domestic market. Many of these SITEs are necessarily and relatively undiversified in their production of exports. In order to tackle this problem, they have to rely on international trade and foreign direct investment.

SITEs do not have advanced capital markets to hedge against adverse macroeconomic shocks. Access to international capital markets is difficult because SITEs are considered to be risky entities. The absence of reliable institutional frameworks in SITEs makes the distribution of income more uneven and results in higher levels of poverty. Until 1990, SITEs had enjoyed a steady flow of aid from their former colonists towards an advancement of social infrastructure such as schools and hospitals, which has reinforced their economic development records.

There are substantially qualitative differences about per capita incomes and economic growth rates between SITEs and other relatively large developing countries. A possible explanation for this outcome is because SITEs have relatively large natural resource abundance, which fosters tourism and offsets the inherent disadvantages of being small. Some key social indicators such as the formal education attainment of population, access to better health care, and safe drinking water in SITEs, are highly favourable. That is a clear reflection of sound domestic policies in these SITEs on their social front.

Most SITEs are in remote areas of the globe. Exports and imports are equally uncompetitive in the world and domestic markets, respectively, due to higher

transportation costs. Therefore, there is no incentive to improve efficiency or to prop up modernisation.

The incidence of natural disasters is very high in most SITEs, where there is severe economic disruption, while development opportunities are regularly forgone. Some SITEs have a high incidence of HIV/AIDS, particularly in Haiti. The population estimates for Haiti, given in Table 1, explicitly accommodate the effects of excess mortality due to HIV/AIDS. This has resulted in lower life expectancy, higher infant mortality and death rates, lower population and growth rates, and greater changes in the distribution of population by age and sex, than would otherwise have been expected.

It is widely claimed that, due to the increased emissions of greenhouse gases, there will be widespread global warming. The subsequent rise in sea levels would increase by a metre over the next one hundred years, which would result in complete extinction of SITEs such as the Maldives. Moreover, other SITEs would experience widespread soil erosion, which could result in the disappearance of the world's most popular beaches.

There is diversity among SITEs if, for instance, one compares the stages of development among SITEs. Therefore, one could not draw up a single set of policy prescriptions for all SITEs, but should address their domestic and regional circumstances as each SITE is inherently unique.

### **3. ECONOMIC CHARACTERISTICS**

#### **3.1. High Volatility of Real GDP Growth**

The squared deviation from the mean of the GDP growth rate is known as the volatility of GDP growth. In SITEs, the volatility of GDP growth rate tends to be very high. The real GDP growth rate and its volatility are given in Figure 2. The number of observations varies among SITEs according to the availability of data. Eleven SITEs have data from 1977-2000, five SITEs have data from 1978-2000, and the four remaining SITEs have data from 1979-2000, 1980-2000, 1981-2000 and 1985-2000. The lowest mean volatility of real GDP growth rate recorded was 8.1 for Malta, while the highest mean volatility was for 56.9 for St. Lucia. The highest individual volatility figure recorded was 555.1 for Dominica.

The high volatility of the GDP growth rate recorded among SITEs is due to three main reasons. SITEs are so open to the rest-of-the-world markets due to the high dependability of imports and exports, and are more susceptible to changes in the rest-of-the-world market

conditions. Moreover, SITEs have a small range of uncompetitive exports and limited options to avoid losses. Finally, SITEs are prone to natural disasters, which affect every activity within the economy. The significance of the above vary quite differently among SITEs because smallness is associated with relatively high levels of specialisation in production and trade.

### **3.2. Narrow Production Base**

There is less incentive to diversify industry when the domestic market is small. It is quite prominent in SITEs to have one dominant economic activity and, when it starts to decline, another dominant economic activity replaces it rather than the economy becoming more diversified. During the last decade, merchandise exports among SITEs have plummeted, while tourism-related earnings have soared.

### **3.3. International Trade**

In SITEs the range of production of goods and services is small, but a broad range of goods and services is consumed for the purposes of international trade. Hence, the proportion of trade to GDP is relatively high among SITEs.

Small island economies are highly open to world markets and adheres to the same rules and regulations as larger economies. In that regard, such small island economies hold much greater stake in the international market place because of their smaller proportion of world trade. Moreover, SITEs do not necessarily receive preferential treatment, except for a few former British colonies with regard to banana exports. In this regard, the terms of trade of SITEs do not exhibit irregular changes when compared with other larger developing countries.

The reliance of SITEs on their import tariff receipts as a major source of government revenue can be hampered in any trade liberalisation measure. This could also result in unsustainable government debt in SITEs.

### **3.4. Capital Market Accessibility**

SITEs need a consistent inflow of foreign capital to smooth out consumption over the long run, while compensating for any adverse shocks to domestic production. A common feature of SITEs is that they depend heavily on foreign aid to finance development. Aid flows have dropped sharply during the last decade of the 20<sup>th</sup> Century, due to the collapse

of communism in Europe. Aid from donor countries has been diverted towards former Soviet allies. SITEs have experienced a dramatic decline in per capita aid of around US\$145 in 1990 to less than US\$ 100 per capita in 2000. They have very limited access to commercial borrowings because these are perceived to suffer from frequent natural disasters or for other reasons considered to be high risk.

Even though SITEs have relatively low levels of indebtedness, they have difficulties in borrowing on commercial terms. The costs of obtaining information on the economy and country risk issues are the major impediments to borrowing. Difficulties in prosecuting illegal activities in SITEs makes enforcing contracts very costly for investors. This is one of the main reasons why the costs of borrowing for SITEs are relatively high. As a result, the integration of SITEs into international financial capital markets is more difficult than would otherwise be the case.

### **3.5. Foreign Direct Investment**

Foreign direct investment plays an important role in linking SITEs to the developed world. Entrepreneurship from the outside world is an important source of knowledge and expertise in creating efficiency and improving management control in the private sector. Moreover, this would also bring in state-of-the-art technology, and increase market opportunities for local firms.

### **3.6. Poverty Prevalence**

Although SITEs have achieved high average per capita GDP relative to the larger developing countries, poverty continues to be an unabated challenge. Generally, with the increase in per capita GDP, there has been a decline in poverty. However, there are a number of small economies that have higher poverty rates than are reflected in their per capita incomes, primarily because SITEs are island archipelagos. In such SITEs, a large proportion of the economic activity is confined to the capital, while the dispersed communities remain poor. Poverty prevalence becomes high with the uneven distribution of income. The high volatility of GDP, together with the population's inability to absorb negative shocks to their incomes, mean that inequality is further aggravated and hardship is intensified.

### **3.7. Institutional Distinctiveness**

The public sector has played a dominant role in economic activities. There is limited institutional capacity in the public sector, particularly in SITEs in which there are considerable internal transport costs, with islands scattered across miles of ocean, which is often difficult to navigate.

### **3.8. Vulnerability**

Vulnerability means exposure to exogenous shocks over which the affected country has little or no control, and low resilience to withstand and recover from these shocks. Small states are less likely to be resilient to these shocks, given the narrow economic structures and limited resources. In the literature, vulnerability can exist in the form of economic, strategic and environmental factors. Economic vulnerability examines the narrow productive base, the susceptibility of the economy to external shocks, and the high incidence of natural disasters. Strategic vulnerability accounts for the political vulnerability to their colonial history, as well as their larger neighbours. Environmental vulnerability explains the intensity of the fragility of the delicate ecosystems of SITEs.

## **4. COMPARISONS OF ICRG COUNTRY RISK RATINGS**

The concept of country risk became a topic of major concern for the international financial community in the early 1980s when Poland and the Eastern Bloc countries had debt repayment problems, and also when Brazil and Mexico defaulted on their debts.

### **4.1. Country Risk and Country Risk Ratings**

Country risk refers to the inability of a sovereign country to honour obligations to repay its debt. There are many country-specific factors which affect country risk ratings. However, the literature addresses factors which are categorised into three main components, namely economic, political and financial risks, and are considered to be interrelated (see Hoti (2001) and Hoti and McAleer (2003)).

The Third World debt crisis in the early 1980s prompted country risk rating agencies such as Moody's, Euromoney, S&P, Institutional Investor, Economist Intelligence Unit, International Country Risk Guide, and Political Risk Services, to compile sovereign indexes or ratings. These ratings are considered as benchmarks by which credit risks associated with sovereign countries can be established at a given point in time. Hoti (2002)

notes that the risk rating agencies have attempted to provide an independent analysis of country risk and a consistent method of risk assessment on a timely basis. These agencies provide qualitative and quantitative country risk ratings, combining information regarding alternative measures of political, economic and financial risk ratings to obtain a composite risk rating. The International Country Risk Guide (ICRG) is the only international rating agency to provide detailed and consistent monthly data over an extended period for a large number of countries.

**Table 3.** Descriptive Statistics of Risk Ratings

SITE	Economic		Financial		Political		Composite	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Bahamas	74.2	3.8	75.9	7.5	72.8	7.0	73.9	3.3
Cyprus	79.0	3.0	83.3	7.1	69.0	9.6	75.1	6.3
Dominica	67.5	8.7	56.6	16.3	60.7	8.1	61.4	10.0
Haiti	58.6	4.3	40.2	19.2	38.0	10.8	43.7	9.9
Jamaica	59.1	5.9	68.9	12.3	68.5	6.8	66.3	7.1
Malta	81.4	8.0	76.3	9.1	73.5	13.1	76.2	7.5

*Source:* International Country Risk Guide

#### **4.2. Trends and Volatilities in Country Risk Ratings**

From 1984 to date, the ICRG has been compiling economic, financial, political and composite risk ratings for over 140 countries on a monthly basis. As given in Hoti (2002), the ICRG rating system is composed of 22 variables which correspond to three major components of country risk, namely economic, financial and political. These variables essentially represent risk-free measures. There are 5 economic and 5 financial variables, while political component is based on 12 variables. Using each set of variables, a separate risk rating is created for the 3 components. The 5 economic variables for the economic risk assessment are weighted equally to give a score of 50 points: the 5 financial variables, for financial risk assessment are weighted equally to give a score of 50 points, and 12 political variables for political risk assessment are weighted equally to give a score of 100 points. The composite risk rating is obtained by dividing the sum of the 3 components of risk ratings by 2: the economic and financial components account for 25% each, and the political component accounts for 50% of the composite risk rating. The lower (higher) is a

given risk rating, the higher (lower) is the associated risk. In essence, the country risk rating is a measure of country creditworthiness.

There are six representative SITEs. The Bahamas, Dominica, Haiti, Jamaica, in the Caribbean, and Cyprus and Malta in the Mediterranean, are selected to provide snapshot images for the period January 1984 to May 2002, which is the longest period for which data are available. In the literature on small states, SITEs are perceived to be of high risk. However, except for Haiti, all of the small island economies profiled here have relatively higher risk ratings in each of the four categories, showing an associated low risk. Table 3 above provides the means and standard deviations of the economic, financial, political and composite risk ratings for the six SITEs.

In the case of the Bahamas, while exhibiting high risk ratings, the means across the ratings for the four categories are reasonably close. Dominica and Haiti have shown the lowest risk ratings, while Cyprus and Malta have the highest risk ratings in all four categories, apart from a slight depression in the political risk rating for Cyprus.

The snapshot images of the four country risk ratings, denoted ECO-R, FIN-R, POL-R and COM-R, and their associated volatilities, denoted ECO-V, FIN-V, POL-V and COM-V, for the six SITEs are given in Figures 3-6.

Both Jamaica and Dominica have increasing trends in economic risk ratings, while the Bahamas, Cyprus and Haiti generally show no trends. Haiti has experienced widespread associated volatilities. At first, the financial risk ratings for Cyprus and Jamaica increase and then stabilise. Meanwhile, Haiti shows an impressive increase in the ratings for almost a decade. The Bahamas, Dominica, and Malta have showed mixed results over the sample period. Their associated volatilities have shown a mixed degree of variation, with Haiti showing extremely high volatility. All six SITEs have shown increasing trends in their political risk ratings, with Haiti having a major slump in middle of the sample. The associated volatilities for the Bahamas show an increasing trend, while all the other SITEs have shown considerable variations.

As a weighted sum of the three indexes, the composite risk ratings for all six SITEs have increasing trends, except for the Bahamas and Haiti. The composite risk rating for the Bahamas is not noticeably influenced by any one component rating. For the other five SITEs, it is quite apparent that the political risk rating has a substantial influence. The



associated volatilities for the Bahamas and Cyprus have been quite stable, whereas there have been varying fluctuations for the rest.

The geographical region of SITEs seems to influence the behavioural patterns of the risk ratings. However, the risk rating agencies do not explicitly accommodate geographical location in compiling the risk ratings.

## **5. CONCLUDING REMARKS**

This paper evaluated the economic, social and political characteristics of 20 sovereign states, which are small island economies, where international tourism earnings dominate the value added in their national incomes. Moreover, Country Risk Ratings compiled by the ICRG for 6 representative Small Island Tourism Economies from January 1984 to May 2002 were compared. An evaluation of the salient properties, coupled with the comparison of country risk ratings for Small Island Tourism Economies, warrants a critical assessment of the relevance and practicality of theories pertaining to international tourism earnings, economic growth and country risk.

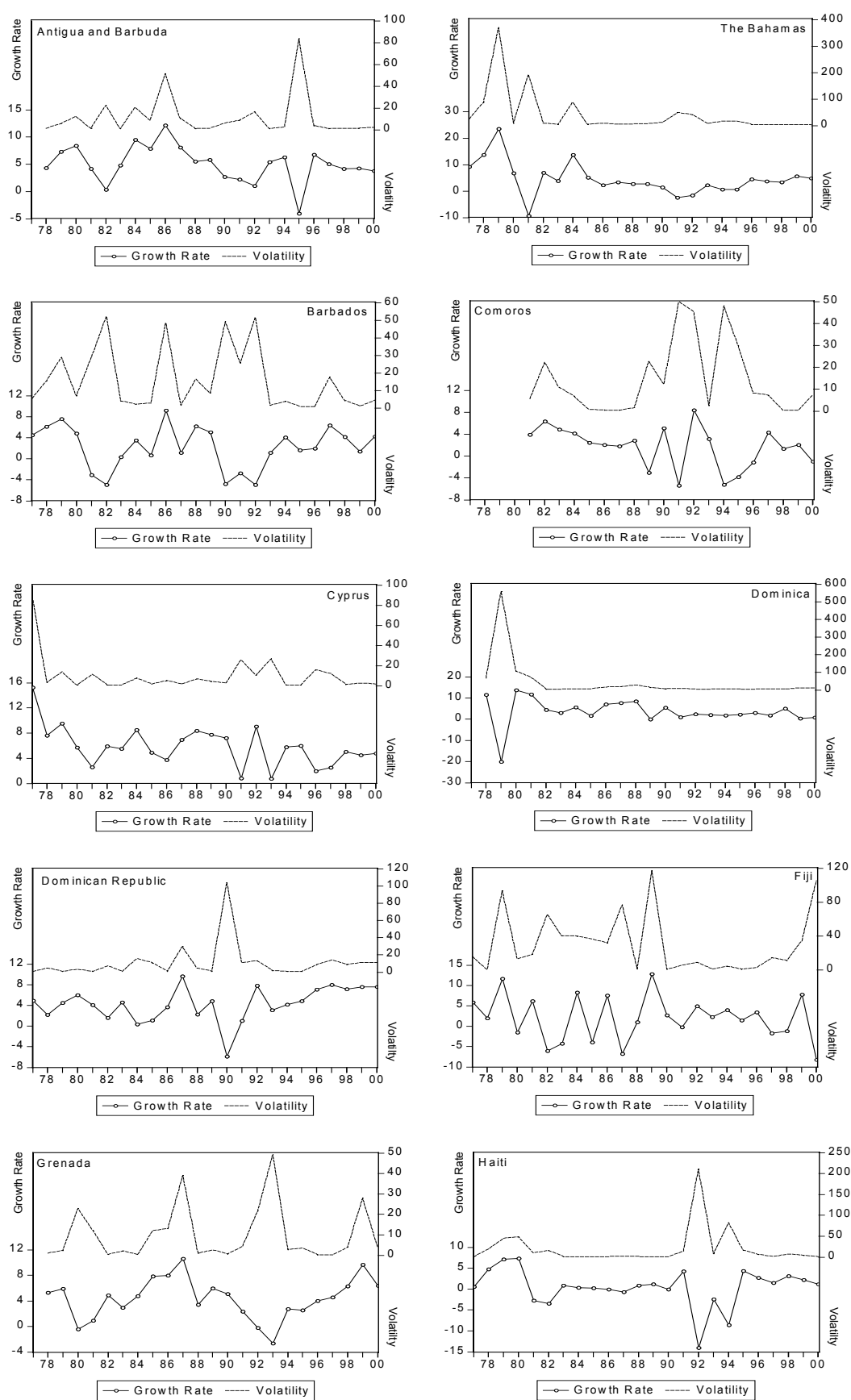
## 6. REFERENCES

- Armstrong, H.W. and Read, R., The Phantom of Liberty?: Economic Growth and the Vulnerability of Small States, *Journal of International Development*, **14** (3), 435-458, 2002.
- Armstrong, H.W. and Read, R., Trade and Growth in Small States: The Impact of Global Trade Liberalisation, *World Economy*, 21 (4), 563-585, 1998.
- Armstrong, H.W. and Read, R., Western European Micro-States and Autonomous Regions: The Advantages of Size and Sovereignty', *World Development*, **23** (7), 1229-1245, 1995.
- Briguglio, L., Small Island Developing States and Their Economic Vulnerabilities, *World Development*, **23** (9), 1615-1632, 1995.
- Commonwealth Secretariat/World Bank Joint Task Force on Small States, Small States: Meeting Challenges in the Global Economy, London: Commonwealth Secretariat/Washington, D.C.: The World Bank.
- Dommen, E., Some Distinguishing Characteristics of Island States, *World Development*, **8**, 931-943, 1980.
- Hoti, S., Snapshot Images of Country Risk Ratings: An International Comparison, in A. Rizzoli and A.J. Jakeman (eds.), Proceedings of the International Conference on Environmental Modelling and Software, Vol. 2, Lugano, Switzerland, pp. 532-537, 2002.
- Hoti, S., A Comparison of Country Credit Risk Ratings, in F. Ghassemi, M. McAleer, L. Oxley and M. Scoccimarro (eds.), Proceedings of the International Congress on Modelling and Simulation, Vol. 3: Socio-economic Systems, Australian National University, Canberra, Australia, pp. 1297-1302, 2001.
- Hoti, S., and McAleer, M., Country Risk Ratings: An International Comparison, Unpublished paper, Department of Economics, University of Western Australia, 2003.
- Liou, F.M., and Ding, C.G., Subgrouping Small States Based on Socio Economic Characteristics, *World Development*, **30** (7), 1289-1306, 2002.
- Kuznets, S., Economic Growth of Small Nations, in E.A.G. Robinson (ed.), *The Economic Consequences of the Size of Nations*, London, Macmillan, 14-32, 1960.
- Robinson, E.A.G. (ed.), *Economic Consequences of the Size of Nations*, London, Macmillan, 14-32. 1960.

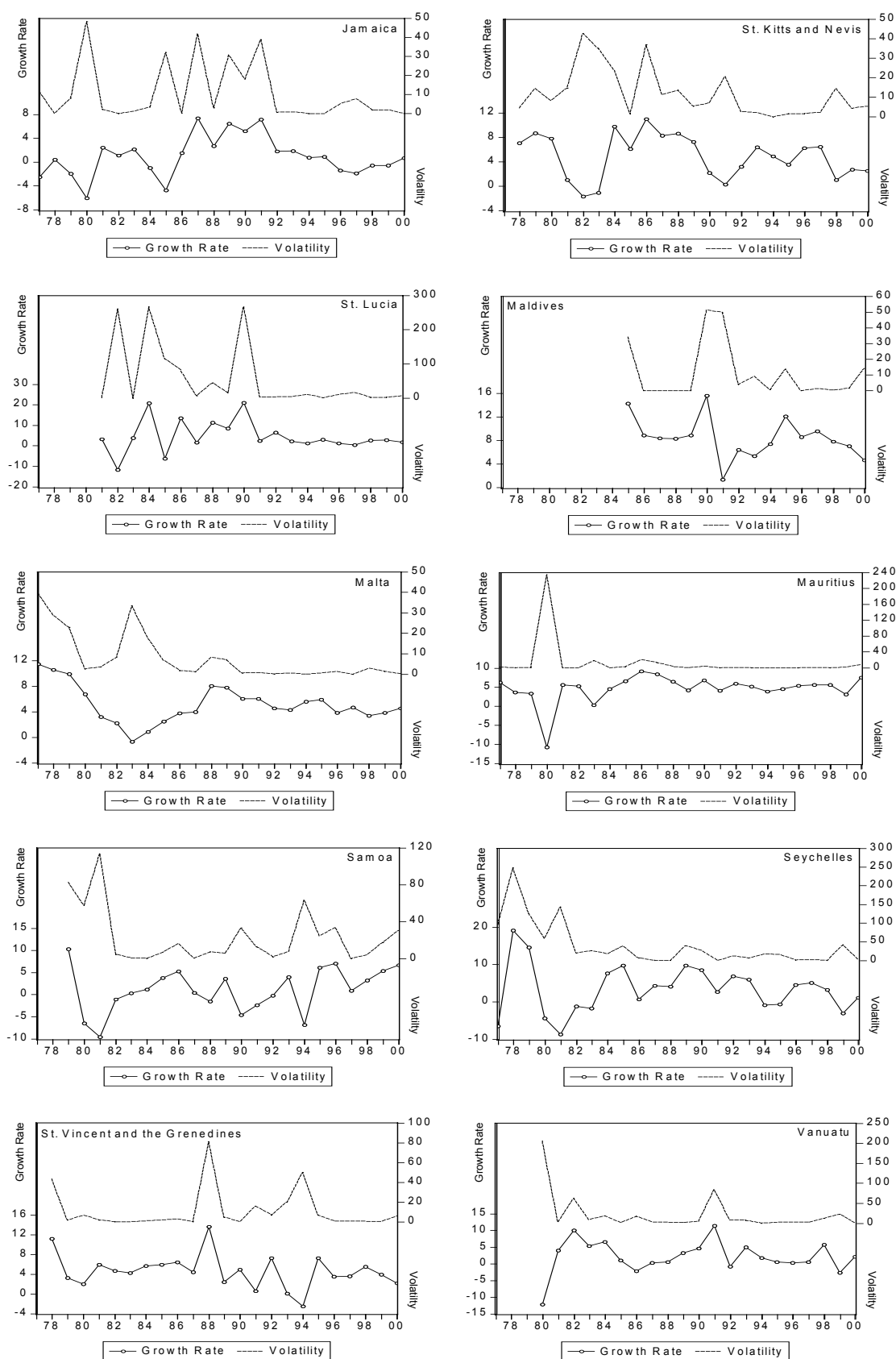
**Figure 1: Pairwise Correlations of International Tourism Receipts (ITRs) for 20 SITES**

	ATG	BHS	BRB	COM	CYP	DMA	DOM	FJI	GRD	HTI	JAM	KNA	LCA	MDV	MLT	MUS	SMW	SYC	VCT	VUT
Antigua	1																			
Bahamas	0.9	1																		
Barbados	0.8	0.8	1																	
Comoros	0.9	0.7	0.7	1																
Cyprus	0.9	0.8	0.8	0.9	1															
Dominica	0.9	0.8	0.8	0.9	1.0	1														
Dominican Rep.	0.9	0.8	0.9	0.9	1.0	1.0	1													
Fiji	0.8	0.7	0.7	0.9	0.9	0.9	0.9	1												
Grenada	0.9	0.9	0.8	0.9	1.0	1.0	1.0	0.9	1											
Haiti	-0.5	-0.2	0.0	-0.3	-0.3	-0.2	-0.1	-0.1	-0.3	1										
Jamaica	0.9	0.9	0.8	0.9	1.0	1.0	0.9	0.9	1.0	-0.3	1									
Maldives	0.9	0.8	0.8	0.9	1.0	1.0	0.9	0.9	1.0	-0.2	1.0	1								
Malta	0.9	0.7	0.5	0.8	0.8	0.8	0.7	0.7	0.8	-0.4	0.9	0.9	1							
Mauritius	0.9	0.8	0.9	0.9	1.0	1.0	1.0	0.9	1.0	-0.1	0.9	1.0	0.7	1						
Samoa	0.6	0.6	0.7	0.5	0.7	0.7	0.7	0.6	0.7	0.1	0.7	0.7	0.6	0.7	1					
Seychelles	0.9	0.8	0.9	0.9	1.0	1.0	1.0	0.9	1.0	-0.1	0.9	1.0	0.7	1.0	0.7	1				
St Kitts	0.6	0.6	0.9	0.7	0.8	0.8	0.9	0.8	0.8	0.1	0.7	0.8	0.4	0.9	0.6	0.9	1			
St Lucia	0.9	0.8	0.8	0.9	0.9	1.0	0.9	0.9	1.0	-0.2	0.9	1.0	0.8	0.9	0.7	1.0	0.8	1		
St Vincent	0.9	0.8	0.9	0.9	1.0	1.0	1.0	0.9	1.0	-0.1	1.0	1.0	0.8	1.0	0.8	1.0	0.8	1.0	1	
Vanuatu	0.7	0.5	0.6	0.9	0.8	0.9	0.8	0.8	0.8	0.0	0.9	0.9	0.8	0.9	0.7	0.9	0.7	0.8	0.8	1

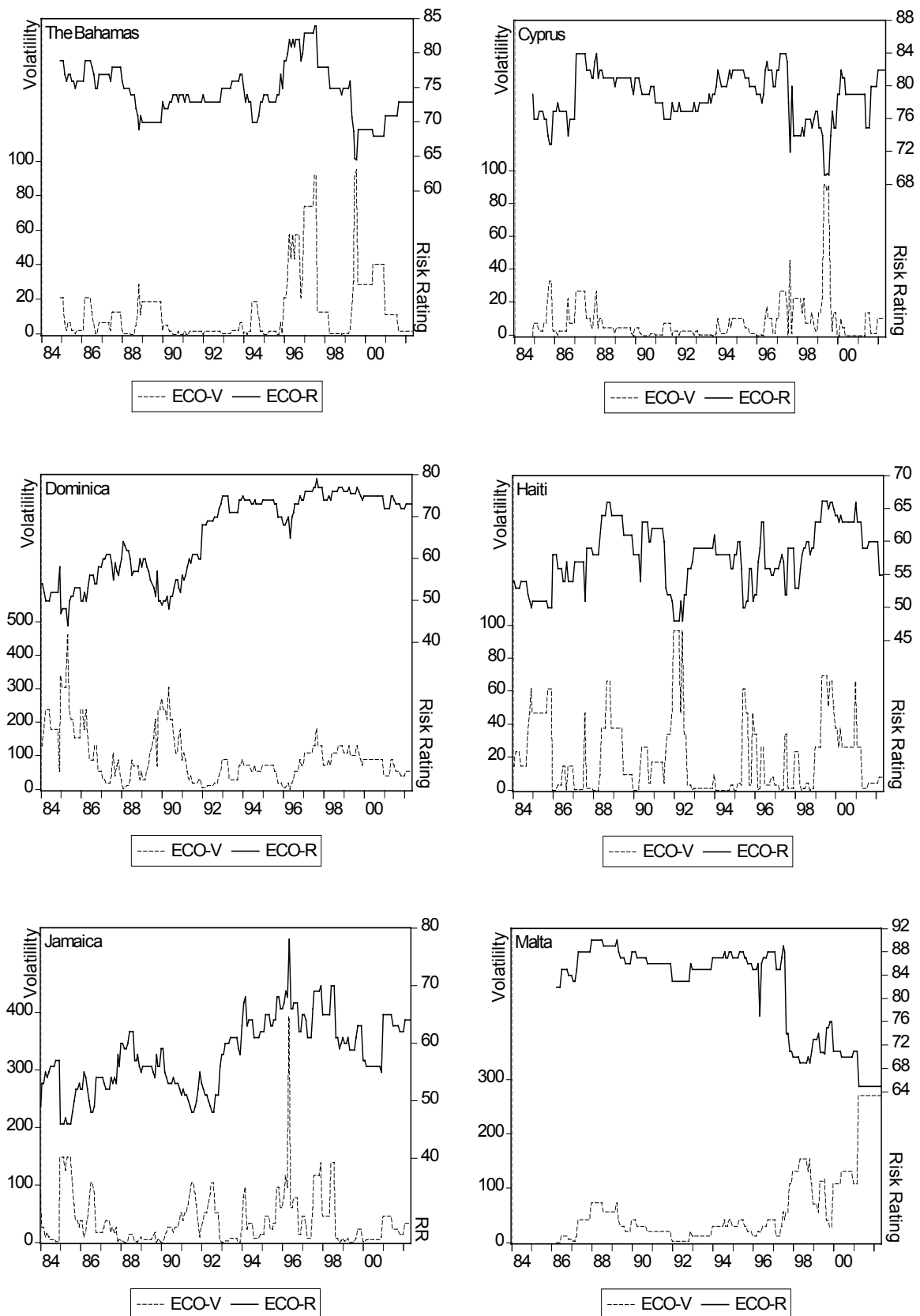
**Figure 2 (a):** Real GDP Growth Rate and Their Respective Volatilities for 10 SITES



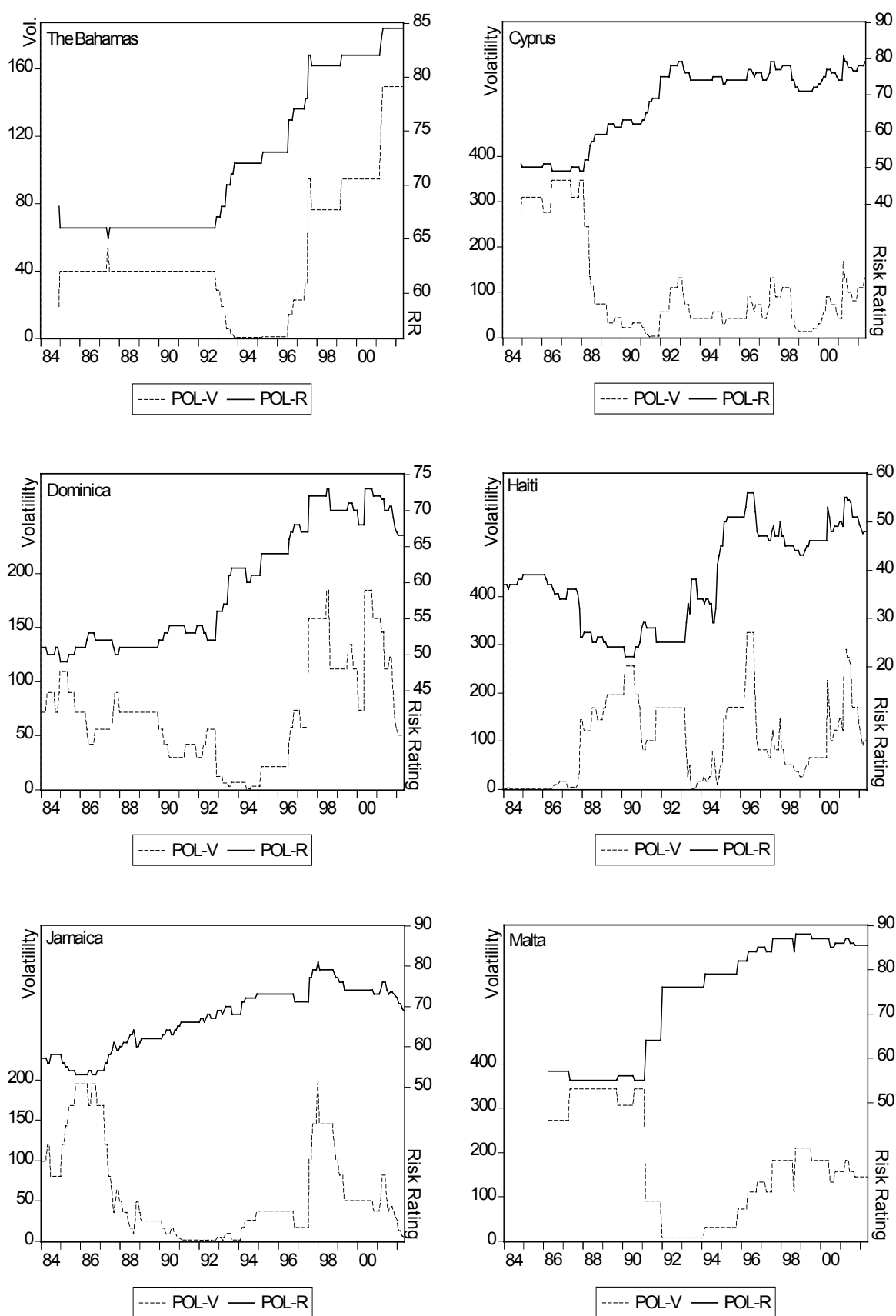
**Figure 2(b): Real GDP Growth Rate and Their Respective Volatilities for 10 SITES**



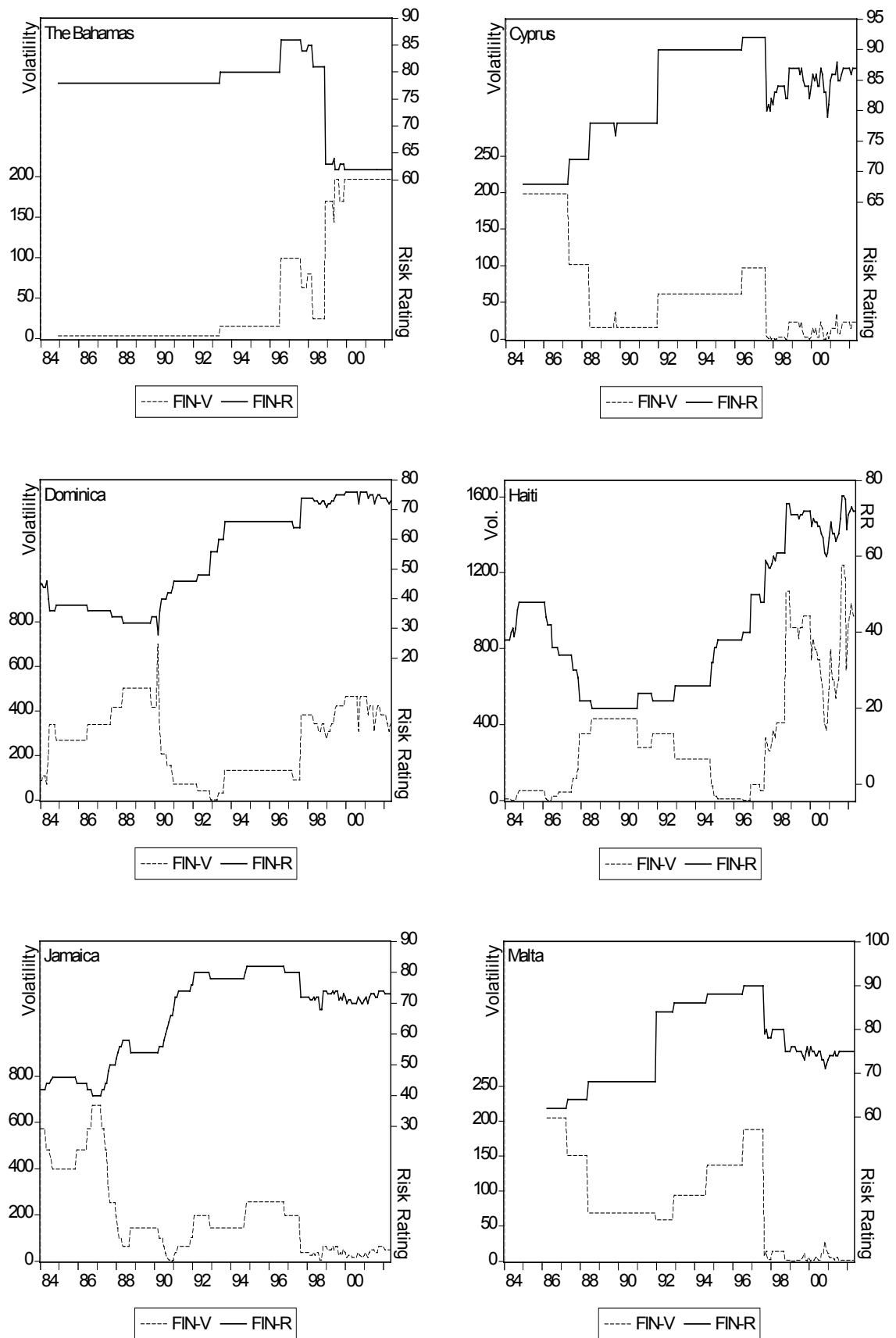
**Figure 3: Economic Risk Ratings and Their Respective Volatilities for 6 SITES.**



**Figure 4:** Political Risk Ratings and Their Respective Volatilities for 6 SITES.

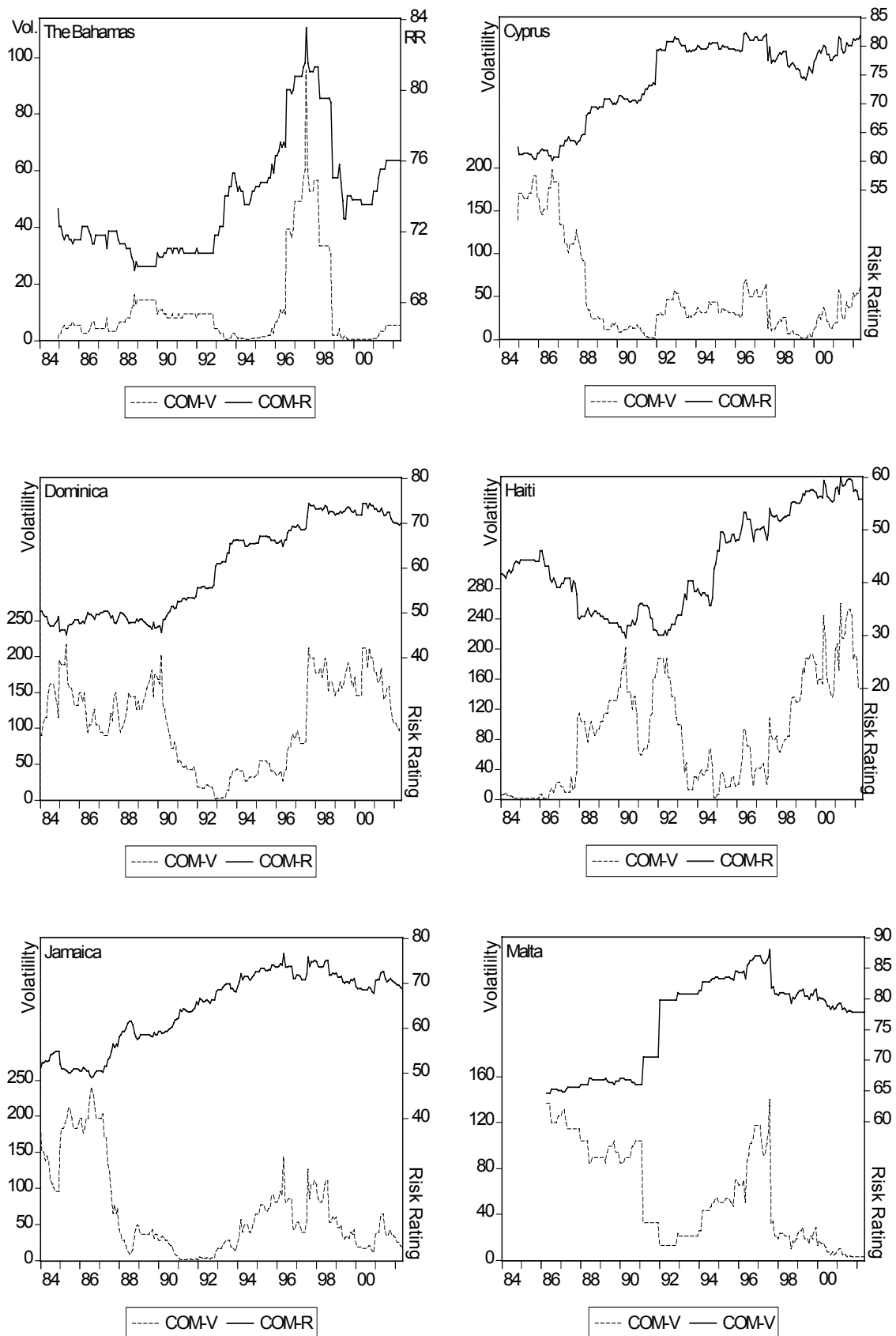


**Figure 5:** Financial Risk Ratings and Their Respective Volatilities for 6 SITES.





**Figure 6:** Composite Risk Ratings and Their Respective Volatilities for 6 SITES.



# NOTE DI LAVORO DELLA FONDAZIONE ENI ENRICO MATTEI

## Fondazione Eni Enrico Mattei Working Paper Series

Our Note di Lavoro are available on the Internet at the following addresses:

<http://www.feem.it/Feem/Pub/Publications/WPapers/default.html>

<http://www.ssrn.com/link/feem.html>

## NOTE DI LAVORO PUBLISHED IN 2003

PRIV	1.2003	<i>Gabriella CHIESA and Giovanna NICODANO: <u>Privatization and Financial Market Development: Theoretical Issues</u></i>
PRIV	2.2003	<i>Ibolya SCHINDELE: <u>Theory of Privatization in Eastern Europe: Literature Review</u></i>
PRIV	3.2003	<i>Wietze LISE, Claudia KEMFERT and Richard S.J. TOL: <u>Strategic Action in the Liberalised German Electricity Market</u></i>
CLIM	4.2003	<i>Laura MARSILIANI and Thomas I. RENSTRÖM: <u>Environmental Policy and Capital Movements: The Role of Government Commitment</u></i>
KNOW	5.2003	<i>Reyer GERLAGH: <u>Induced Technological Change under Technological Competition</u></i>
ETA	6.2003	<i>Efrem CASTELNUOVO: <u>Squeezing the Interest Rate Smoothing Weight with a Hybrid Expectations Model</u></i>
SIEV	7.2003	<i>Anna ALBERINI, Alberto LONGO, Stefania TONIN, Francesco TROMBETTA and Margherita TURVANI: <u>The Role of Liability, Regulation and Economic Incentives in Brownfield Remediation and Redevelopment: Evidence from Surveys of Developers</u></i>
NRM	8.2003	<i>Elissaios PAPYRAKIS and Reyner GERLAGH: <u>Natural Resources: A Blessing or a Curse?</u></i>
CLIM	9.2003	<i>A. CAPARRÓS, J.-C. PEREAU and T. TAZDAÏT: <u>North-South Climate Change Negotiations: a Sequential Game with Asymmetric Information</u></i>
KNOW	10.2003	<i>Giorgio BRUNELLO and Daniele CHECCHI: <u>School Quality and Family Background in Italy</u></i>
CLIM	11.2003	<i>Efrem CASTELNUOVO and Marzio GALEOTTI: <u>Learning By Doing vs Learning By Researching in a Model of Climate Change Policy Analysis</u></i>
KNOW	12.2003	<i>Carole MAIGNAN, Gianmarco OTTAVIANO and Dino PINELLI (eds.): <u>Economic Growth, Innovation, Cultural Diversity: What are we all talking about? A critical survey of the state-of-the-art</u></i>
KNOW	13.2003	<i>Carole MAIGNAN, Gianmarco OTTAVIANO, Dino PINELLI and Francesco RULLANI (lix): <u>Bio-Ecological Diversity vs. Socio-Economic Diversity. A Comparison of Existing Measures</u></i>
KNOW	14.2003	<i>Maddy JANSSENS and Chris STEYAERT (lix): <u>Theories of Diversity within Organisation Studies: Debates and Future Trajectories</u></i>
KNOW	15.2003	<i>Tuzin BAYCAN LEVENT, Enno MASUREL and Peter NIJKAMP (lix): <u>Diversity in Entrepreneurship: Ethnic and Female Roles in Urban Economic Life</u></i>
KNOW	16.2003	<i>Alexandra BITUSIKOVA (lix): <u>Post-Communist City on its Way from Grey to Colourful: The Case Study from Slovakia</u></i>
KNOW	17.2003	<i>Billy E. VAUGHN and Katarina MLEKOV (lix): <u>A Stage Model of Developing an Inclusive Community</u></i>
KNOW	18.2003	<i>Selma van LONDEN and Arie de RUIJTER (lix): <u>Managing Diversity in a Globalizing World</u></i>
Coalition	19.2003	<i>Sergio CURRARINI: <u>On the Stability of Hierarchies in Games with Externalities</u></i>
Theory	20.2003	<i>Giacomo CALZOLARI and Alessandro PAVAN (lx): <u>Monopoly with Resale</u></i>
Network	21.2003	<i>Claudio MEZZETTI (lx): <u>Auction Design with Interdependent Valuations: The Generalized Revelation Principle, Efficiency, Full Surplus Extraction and Information Acquisition</u></i>
PRIV	22.2003	<i>Marco LiCalzi and Alessandro PAVAN (lx): <u>Tilting the Supply Schedule to Enhance Competition in Uniform-Price Auctions</u></i>
PRIV	23.2003	<i>David ETTINGER (lx): <u>Bidding among Friends and Enemies</u></i>
PRIV	24.2003	<i>Hannu VARTIAINEN (lx): <u>Auction Design without Commitment</u></i>
PRIV	25.2003	<i>Matti KELOHARJU, Kjell G. NYBORG and Kristian RYDQVIST (lx): <u>Strategic Behavior and Underpricing in Uniform Price Auctions: Evidence from Finnish Treasury Auctions</u></i>
PRIV	26.2003	<i>Christine A. PARLOUR and Uday RAJAN (lx): <u>Rationing in IPOs</u></i>
PRIV	27.2003	<i>Kjell G. NYBORG and Ilya A. STREBULAIEV (lx): <u>Multiple Unit Auctions and Short Squeezes</u></i>
PRIV	28.2003	<i>Anders LUNANDER and Jan-Eric NILSSON (lx): <u>Taking the Lab to the Field: Experimental Tests of Alternative Mechanisms to Procure Multiple Contracts</u></i>
PRIV	29.2003	<i>TangaMcDANIEL and Karsten NEUHOFF (lx): <u>Use of Long-term Auctions for Network Investment</u></i>
PRIV	30.2003	<i>Emiel MAASLAND and Sander ONDERSTAL (lx): <u>Auctions with Financial Externalities</u></i>
ETA	31.2003	<i>Michael FINUS and Bianca RUNDSHAGEN: <u>A Non-cooperative Foundation of Core-Stability in Positive Externality NTU-Coalition Games</u></i>
KNOW	32.2003	<i>Michele MORETTO: <u>Competition and Irreversible Investments under Uncertainty</u></i>
PRIV	33.2003	<i>Philippe QUIRION: <u>Relative Quotas: Correct Answer to Uncertainty or Case of Regulatory Capture?</u></i>
KNOW	34.2003	<i>Giuseppe MEDA, Claudio PIGA and Donald SIEGEL: <u>On the Relationship between R&amp;D and Productivity: A Treatment Effect Analysis</u></i>
ETA	35.2003	<i>Alessandra DEL BOCA, Marzio GALEOTTI and Paola ROTA: <u>Non-convexities in the Adjustment of Different Capital Inputs: A Firm-level Investigation</u></i>

GG	36.2003	<i>Matthieu GLACHANT</i> : <u>Voluntary Agreements under Endogenous Legislative Threats</u>
PRIV	37.2003	<i>Narjess BOUBAKRI, Jean-Claude COSSET and Omrane GUEDHAMI</i> : <u>Postprivatization Corporate Governance: the Role of Ownership Structure and Investor Protection</u>
CLIM	38.2003	<i>Rolf GOLOMBEK and Michael HOEL</i> : <u>Climate Policy under Technology Spillovers</u>
KNOW	39.2003	<i>Slim BEN YOUSSEF</i> : <u>Transboundary Pollution, R&amp;D Spillovers and International Trade</u>
CTN	40.2003	<i>Carlo CARRARO and Carmen MARCHIORI</i> : <u>Endogenous Strategic Issue Linkage in International Negotiations</u>
KNOW	41.2003	<i>Sonia OREFFICE</i> : <u>Abortion and Female Power in the Household: Evidence from Labor Supply</u>
KNOW	42.2003	<i>Timo GOESCHL and Timothy SWANSON</i> : <u>On Biology and Technology: The Economics of Managing Biotechnologies</u>
ETA	43.2003	<i>Giorgio Busetti and Matteo MANERA</i> : <u>STAR-GARCH Models for Stock Market Interactions in the Pacific Basin Region, Japan and US</u>
CLIM	44.2003	<i>Katrin MILLOCK and Céline NAUGES</i> : <u>The French Tax on Air Pollution: Some Preliminary Results on its Effectiveness</u>
PRIV	45.2003	<i>Bernardo BORTOLOTTI and Paolo PINOTTI</i> : <u>The Political Economy of Privatization</u>
SIEV	46.2003	<i>Elbert DIJKGRAAF and Herman R.J. VOLLEBERGH</i> : <u>Burn or Bury? A Social Cost Comparison of Final Waste Disposal Methods</u>
ETA	47.2003	<i>Jens HORBACH</i> : <u>Employment and Innovations in the Environmental Sector: Determinants and Econometrical Results for Germany</u>
CLIM	48.2003	<i>Lori SNYDER, Nolan MILLER and Robert STAVINS</i> : <u>The Effects of Environmental Regulation on Technology Diffusion: The Case of Chlorine Manufacturing</u>
CLIM	49.2003	<i>Lori SNYDER, Robert STAVINS and Alexander F. WAGNER</i> : <u>Private Options to Use Public Goods. Exploiting Revealed Preferences to Estimate Environmental Benefits</u>
CTN	50.2003	<i>László Á. KÓCZY and Luc LAUWERS (Ixi)</i> : <u>The Minimal Dominant Set is a Non-Empty Core-Extension</u>
CTN	51.2003	<i>Matthew O. JACKSON (Ixi)</i> : <u>Allocation Rules for Network Games</u>
CTN	52.2003	<i>Ana MAULEON and Vincent VANNETELBOSCH (Ixi)</i> : <u>Farsightedness and Cautiousness in Coalition Formation</u>
CTN	53.2003	<i>Fernando VEGA-REDONDO (Ixi)</i> : <u>Building Up Social Capital in a Changing World: a network approach</u>
CTN	54.2003	<i>Matthew HAAG and Roger LAGUNOFF (Ixi)</i> : <u>On the Size and Structure of Group Cooperation</u>
CTN	55.2003	<i>Taiji FURUSAWA and Hideo KONISHI (Ixi)</i> : <u>Free Trade Networks</u>
CTN	56.2003	<i>Halis Murat YILDIZ (Ixi)</i> : <u>National Versus International Mergers and Trade Liberalization</u>
CTN	57.2003	<i>Santiago RUBIO and Alistair ULPH (Ixi)</i> : <u>An Infinite-Horizon Model of Dynamic Membership of International Environmental Agreements</u>
KNOW	58.2003	<i>Carole Maignan, Dino PINELLI and Gianmarco I.P. OTTAVIANO</i> : <u>ICT, Clusters and Regional Cohesion: A Summary of Theoretical and Empirical Research</u>
KNOW	59.2003	<i>Giorgio BELLETTINI and Gianmarco I.P. OTTAVIANO</i> : <u>Special Interests and Technological Change</u>
ETA	60.2003	<i>Ronnie SCHÖB</i> : <u>The Double Dividend Hypothesis of Environmental Taxes: A Survey</u>
CLIM	61.2003	<i>Michael FINUS, Ekko van Ierland and Robert DELLINK</i> : <u>Stability of Climate Coalitions in a Cartel Formation Game</u>
GG	62.2003	<i>Michael FINUS and Bianca RUNDSHAGEN</i> : <u>How the Rules of Coalition Formation Affect Stability of International Environmental Agreements</u>
SIEV	63.2003	<i>Alberto PETRUCCI</i> : <u>Taxing Land Rent in an Open Economy</u>
CLIM	64.2003	<i>Joseph E. ALDY, Scott BARRETT and Robert N. STAVINS</i> : <u>Thirteen Plus One: A Comparison of Global Climate Policy Architectures</u>
SIEV	65.2003	<i>Edi DEFRANCESCO</i> : <u>The Beginning of Organic Fish Farming in Italy</u>
SIEV	66.2003	<i>Klaus CONRAD</i> : <u>Price Competition and Product Differentiation when Consumers Care for the Environment</u>
SIEV	67.2003	<i>Paulo A.L.D. NUNES, Luca ROSSETTO, Arianne DE BLAEIJ</i> : <u>Monetary Value Assessment of Clam Fishing Management Practices in the Venice Lagoon: Results from a Stated Choice Exercise</u>
CLIM	68.2003	<i>ZhongXiang ZHANG</i> : <u>Open Trade with the U.S. Without Compromising Canada's Ability to Comply with its Kyoto Target</u>
KNOW	69.2003	<i>David FRANTZ (Ixi)</i> : <u>Lorenzo Market between Diversity and Mutation</u>
KNOW	70.2003	<i>Ercole SORI (Ixi)</i> : <u>Mapping Diversity in Social History</u>
KNOW	71.2003	<i>Ljiljana DERU SIMIC (Ixi)</i> : <u>What is Specific about Art/Cultural Projects?</u>
KNOW	72.2003	<i>Natalya V. TARANOVA (Ixi)</i> : <u>The Role of the City in Fostering Intergroup Communication in a Multicultural Environment: Saint-Petersburg's Case</u>
KNOW	73.2003	<i>Kristine CRANE (Ixi)</i> : <u>The City as an Arena for the Expression of Multiple Identities in the Age of Globalisation and Migration</u>
KNOW	74.2003	<i>Kazuma MATOBA (Ixi)</i> : <u>Glocal Dialogue- Transformation through Transcultural Communication</u>
KNOW	75.2003	<i>Catarina REIS OLIVEIRA (Ixi)</i> : <u>Immigrants' Entrepreneurial Opportunities: The Case of the Chinese in Portugal</u>
KNOW	76.2003	<i>Sandra WALLMAN (Ixi)</i> : <u>The Diversity of Diversity - towards a typology of urban systems</u>
KNOW	77.2003	<i>Richard PEARCE (Ixi)</i> : <u>A Biologist's View of Individual Cultural Identity for the Study of Cities</u>
KNOW	78.2003	<i>Vincent MERK (Ixi)</i> : <u>Communication Across Cultures: from Cultural Awareness to Reconciliation of the Dilemmas</u>
KNOW	79.2003	<i>Giorgio BELLETTINI, Carlotta BERTI CERONI and Gianmarco I.P. OTTAVIANO</i> : <u>Child Labor and Resistance to Change</u>
ETA	80.2003	<i>Michele MORETTO, Paolo M. PANTEGHINI and Carlo SCARPA</i> : <u>Investment Size and Firm's Value under Profit Sharing Regulation</u>

ITEM	81.2003	<i>Alessandro LANZA, Matteo MANERA and Massimo GIOVANNINI: <u>Oil and Product Dynamics in International Petroleum Markets</u></i>
CLIM	82.2003	<i>Y. Hossein FARZIN and Jinhua ZHAO: <u>Pollution Abatement Investment When Firms Lobby Against Environmental Regulation</u></i>
CLIM	83.2003	<i>Giuseppe DI VITA: <u>Is the Discount Rate Relevant in Explaining the Environmental Kuznets Curve?</u></i>
CLIM	84.2003	<i>Reyer GERLAGH and Wietze LISE: <u>Induced Technological Change Under Carbon Taxes</u></i>
NRM	85.2003	<i>Rinaldo BRAU, Alessandro LANZA and Francesco PIGLIARU: <u>How Fast are the Tourism Countries Growing? The cross-country evidence</u></i>
KNOW	86.2003	<i>Elena BELLINI, Gianmarco I.P. OTTAVIANO and Dino PINELLI: <u>The ICT Revolution: opportunities and risks for the Mezzogiorno</u></i>
SIEV	87.2003	<i>Lucas BRETSCGHER and Sjak SMULDERS: <u>Sustainability and Substitution of Exhaustible Natural Resources. How resource prices affect long-term R&amp;D investments</u></i>
CLIM	88.2003	<i>Johan EYCKMANS and Michael FINUS: <u>New Roads to International Environmental Agreements: The Case of Global Warming</u></i>
CLIM	89.2003	<i>Marzio GALEOTTI: <u>Economic Development and Environmental Protection</u></i>
CLIM	90.2003	<i>Marzio GALEOTTI: <u>Environment and Economic Growth: Is Technical Change the Key to Decoupling?</u></i>
CLIM	91.2003	<i>Marzio GALEOTTI and Barbara BUCHNER: <u>Climate Policy and Economic Growth in Developing Countries</u></i>
ITEM	92.2003	<i>A. MARKANDYA, A. GOLUB and E. STRUKOVA: <u>The Influence of Climate Change Considerations on Energy Policy: The Case of Russia</u></i>
ETA	93.2003	<i>Andrea BELTRATTI: <u>Socially Responsible Investment in General Equilibrium</u></i>
CTN	94.2003	<i>Parkash CHANDER: <u>The <math>\gamma</math>-Core and Coalition Formation</u></i>
ITEM	95.2003	<i>Matteo MANERA and Angelo MARZULLO: <u>Modelling the Load Curve of Aggregate Electricity Consumption Using Principal Components</u></i>
ITEM	96.2003	<i>Alessandro LANZA, Matteo MANERA, Margherita GRASSO and Massimo GIOVANNINI: <u>Long-run Models of Oil Stock Prices</u></i>
CTN	97.2003	<i>Steven J. BRAMS, Michael A. JONES, and D. Marc KILGOUR: <u>Forming Stable Coalitions: The Process Matters</u></i>
KNOW	98.2003	<i>John CROWLEY, Marie-Cecile NAVES (Ixxiii): <u>Anti-Racist Policies in France. From Ideological and Historical Schemes to Socio-Political Realities</u></i>
KNOW	99.2003	<i>Richard THOMPSON FORD (Ixxii): <u>Cultural Rights and Civic Virtue</u></i>
KNOW	100.2003	<i>Alaknanda PATEL (Ixxiii): <u>Cultural Diversity and Conflict in Multicultural Cities</u></i>
KNOW	101.2003	<i>David MAY (Ixxiii): <u>The Struggle of Becoming Established in a Deprived Inner-City Neighbourhood</u></i>
KNOW	102.2003	<i>Sébastien ARCAND, Danielle JUTEAU, Sirma BILGE, and Francine LEMIRE (Ixxiii) : <u>Municipal Reform on the Island of Montreal: Tensions Between Two Majority Groups in a Multicultural City</u></i>
CLIM	103.2003	<i>Barbara BUCHNER and Carlo CARRARO: <u>China and the Evolution of the Present Climate Regime</u></i>
CLIM	104.2003	<i>Barbara BUCHNER and Carlo CARRARO: <u>Emissions Trading Regimes and Incentives to Participate in International Climate Agreements</u></i>
CLIM	105.2003	<i>Anil MARKANDYA and Dirk T.G. RÜBBELKE: <u>Ancillary Benefits of Climate Policy</u></i>
NRM	106.2003	<i>Anne Sophie CRÉPIN (Ixiv): <u>Management Challenges for Multiple-Species Boreal Forests</u></i>
NRM	107.2003	<i>Anne Sophie CRÉPIN (Ixiv): <u>Threshold Effects in Coral Reef Fisheries</u></i>
SIEV	108.2003	<i>Sara ANIYAR (Ixiv): <u>Estimating the Value of Oil Capital in a Small Open Economy: The Venezuela's Example</u></i>
SIEV	109.2003	<i>Kenneth ARROW, Partha DASGUPTA and Karl-Göran MÄLER(Ixiv): <u>Evaluating Projects and Assessing Sustainable Development in Imperfect Economies</u></i>
NRM	110.2003	<i>Anastasios XEPAPADEAS and Catarina ROSETA-PALMA(Ixiv): <u>Instabilities and Robust Control in Fisheries</u></i>
NRM	111.2003	<i>Charles PERRINGS and Brian WALKER (Ixiv): <u>Conservation and Optimal Use of Rangelands</u></i>
ETA	112.2003	<i>Jack GOODY (Ixiv): <u>Globalisation, Population and Ecology</u></i>
CTN	113.2003	<i>Carlo CARRARO, Carmen MARCHIORI and Sonia OREFFICE: <u>Endogenous Minimum Participation in International Environmental Treaties</u></i>
CTN	114.2003	<i>Guillaume HAERINGER and Myrna WOODERS: <u>Decentralized Job Matching</u></i>
CTN	115.2003	<i>Hideo KONISHI and M. Utku UNVER: <u>Credible Group Stability in Multi-Partner Matching Problems</u></i>
CTN	116.2003	<i>Somdeb LAHIRI: <u>Stable Matchings for the Room-Mates Problem</u></i>
CTN	117.2003	<i>Somdeb LAHIRI: <u>Stable Matchings for a Generalized Marriage Problem</u></i>
CTN	118.2003	<i>Marita LAUKKANEN: <u>Transboundary Fisheries Management under Implementation Uncertainty</u></i>
CTN	119.2003	<i>Edward CARTWRIGHT and Myrna WOODERS: <u>Social Conformity and Bounded Rationality in Arbitrary Games with Incomplete Information: Some First Results</u></i>
CTN	120.2003	<i>Gianluigi VERNASCA: <u>Dynamic Price Competition with Price Adjustment Costs and Product Differentiation</u></i>
CTN	121.2003	<i>Myrna WOODERS, Edward CARTWRIGHT and Reinhard SELTEN: <u>Social Conformity in Games with Many Players</u></i>
CTN	122.2003	<i>Edward CARTWRIGHT and Myrna WOODERS: <u>On Equilibrium in Pure Strategies in Games with Many Players</u></i>
CTN	123.2003	<i>Edward CARTWRIGHT and Myrna WOODERS: <u>Conformity and Bounded Rationality in Games with Many Players</u></i>
1000		<b>Carlo CARRARO, Alessandro LANZA and Valeria PAPPONETTI: <u>One Thousand Working Papers</u></b>

# NOTE DI LAVORO PUBLISHED IN 2004

ITEM	1.2004	<i>Anil MARKANDYA, Suzette PEDROSO and Alexander GOLUB: <u>Empirical Analysis of National Income and So<sub>2</sub> Emissions in Selected European Countries</u></i>
ETA	2.2004	<i>Masahisa FUJITA and Shlomo WEBER: <u>Strategic Immigration Policies and Welfare in Heterogeneous Countries</u></i>
PRA	3.2004	<i>Adolfo DI CARLUCCIO, Giovanni FERRI, Cecilia FRALE and Ottavio RICCHI: <u>Do Privatizations Boost Household Shareholding? Evidence from Italy</u></i>
ETA	4.2004	<i>Victor GINSBURGH and Shlomo WEBER: <u>Languages Disenfranchisement in the European Union</u></i>
ETA	5.2004	<i>Romano PIRAS: <u>Growth, Congestion of Public Goods, and Second-Best Optimal Policy</u></i>
CCMP	6.2004	<i>Herman R.J. VOLLEBERGH: <u>Lessons from the Polder: Is Dutch CO<sub>2</sub>-Taxation Optimal</u></i>
PRA	7.2004	<i>Sandro BRUSCO, Giuseppe LOPOMO and S. VISWANATHAN (lxv): <u>Merger Mechanisms</u></i>
PRA	8.2004	<i>Wolfgang AUSENNEGG, Pegaret PICHLER and Alex STOMPER (lxv): <u>IPO Pricing with Bookbuilding, and a When-Issued Market</u></i>
PRA	9.2004	<i>Pegaret PICHLER and Alex STOMPER (lxv): <u>Primary Market Design: Direct Mechanisms and Markets</u></i>
PRA	10.2004	<i>Florian ENGLMAIER, Pablo GUILLEN, Loreto LLORENTE, Sander ONDERSTAL and Rupert SAUSGRUBER (lxv): <u>The Chopstick Auction: A Study of the Exposure Problem in Multi-Unit Auctions</u></i>
PRA	11.2004	<i>Bjarne BRENDSTRUP and Harry J. PAARSCH (lxv): <u>Nonparametric Identification and Estimation of Multi-Unit, Sequential, Oral, Ascending-Price Auctions With Asymmetric Bidders</u></i>
PRA	12.2004	<i>Ohad KADAN (lxv): <u>Equilibrium in the Two Player, k-Double Auction with Affiliated Private Values</u></i>
PRA	13.2004	<i>Maarten C.W. JANSSEN (lxv): <u>Auctions as Coordination Devices</u></i>
PRA	14.2004	<i>Gadi FIBICH, Arie GAVIOUS and Aner SELA (lxv): <u>All-Pay Auctions with Weakly Risk-Averse Buyers</u></i>
PRA	15.2004	<i>Orly SADE, Charles SCHNITZLEIN and Jaime F. ZENDER (lxv): <u>Competition and Cooperation in Divisible Good Auctions: An Experimental Examination</u></i>
PRA	16.2004	<i>Marta STRYSZOWSKA (lxv): <u>Late and Multiple Bidding in Competing Second Price Internet Auctions</u></i>
CCMP	17.2004	<i>Slim Ben YOUSSEF: <u>R&amp;D in Cleaner Technology and International Trade</u></i>
NRM	18.2004	<i>Angelo ANTOCI, Simone BORGHESI and Paolo RUSSU (lxvi): <u>Biodiversity and Economic Growth: Stabilization Versus Preservation of the Ecological Dynamics</u></i>
SIEV	19.2004	<i>Anna ALBERINI, Paolo ROSATO, Alberto LONGO and Valentina ZANATTA: <u>Information and Willingness to Pay in a Contingent Valuation Study: The Value of S. Erasmo in the Lagoon of Venice</u></i>
NRM	20.2004	<i>Guido CANDELA and Roberto CELLINI (lxvii): <u>Investment in Tourism Market: A Dynamic Model of Differentiated Oligopoly</u></i>
NRM	21.2004	<i>Jacqueline M. HAMILTON (lxvii): <u>Climate and the Destination Choice of German Tourists</u></i>
NRM	22.2004	<i>Javier Rey-MAQUIEIRA PALMER, Javier LOZANO IBÁÑEZ and Carlos Mario GÓMEZ GÓMEZ (lxvii): <u>Land, Environmental Externalities and Tourism Development</u></i>
NRM	23.2004	<i>Pius ODUNGA and Henk FOLMER (lxvii): <u>Profiling Tourists for Balanced Utilization of Tourism-Based Resources in Kenya</u></i>
NRM	24.2004	<i>Jean-Jacques NOWAK, Mondher SAHLI and Pasquale M. SGRO (lxvii): <u>Tourism, Trade and Domestic Welfare</u></i>
NRM	25.2004	<i>Riaz SHAREEF (lxvii): <u>Country Risk Ratings of Small Island Tourism Economies</u></i>

- (lix) This paper was presented at the ENGIME Workshop on “Mapping Diversity”, Leuven, May 16-17, 2002
- (lx) This paper was presented at the EuroConference on “Auctions and Market Design: Theory, Evidence and Applications”, organised by the Fondazione Eni Enrico Mattei, Milan, September 26-28, 2002
- (lxi) This paper was presented at the Eighth Meeting of the Coalition Theory Network organised by the GREQAM, Aix-en-Provence, France, January 24-25, 2003
- (lxii) This paper was presented at the ENGIME Workshop on “Communication across Cultures in Multicultural Cities”, The Hague, November 7-8, 2002
- (lxiii) This paper was presented at the ENGIME Workshop on “Social dynamics and conflicts in multicultural cities”, Milan, March 20-21, 2003
- (lxiv) This paper was presented at the International Conference on “Theoretical Topics in Ecological Economics”, organised by the Abdus Salam International Centre for Theoretical Physics - ICTP, the Beijer International Institute of Ecological Economics, and Fondazione Eni Enrico Mattei – FEEM Trieste, February 10-21, 2003
- (lxv) This paper was presented at the EuroConference on “Auctions and Market Design: Theory, Evidence and Applications” organised by Fondazione Eni Enrico Mattei and sponsored by the EU, Milan, September 25-27, 2003
- (lxvi) This paper has been presented at the 4th BioEcon Workshop on “Economic Analysis of Policies for Biodiversity Conservation” organised on behalf of the BIOECON Network by Fondazione Eni Enrico Mattei, Venice International University (VIU) and University College London (UCL) , Venice, August 28-29, 2003
- (lxvii) This paper has been presented at the international conference on “Tourism and Sustainable Economic Development – Macro and Micro Economic Issues” jointly organised by CRENoS (Università di Cagliari e Sassari, Italy) and Fondazione Eni Enrico Mattei, and supported by the World Bank, Sardinia, September 19-20, 2003

**2003 SERIES**

<b>CLIM</b>	<i>Climate Change Modelling and Policy</i> (Editor: Marzio Galeotti )
<b>GG</b>	<i>Global Governance</i> (Editor: Carlo Carraro)
<b>SIEV</b>	<i>Sustainability Indicators and Environmental Valuation</i> (Editor: Anna Alberini)
<b>NRM</b>	<i>Natural Resources Management</i> (Editor: Carlo Giupponi)
<b>KNOW</b>	<i>Knowledge, Technology, Human Capital</i> (Editor: Gianmarco Ottaviano)
<b>IEM</b>	<i>International Energy Markets</i> (Editor: Anil Markandya)
<b>CSRM</b>	<i>Corporate Social Responsibility and Management</i> (Editor: Sabina Ratti)
<b>PRIV</b>	<i>Privatisation, Regulation, Antitrust</i> (Editor: Bernardo Bortolotti)
<b>ETA</b>	<i>Economic Theory and Applications</i> (Editor: Carlo Carraro)
<b>CTN</b>	<i>Coalition Theory Network</i>

**2004 SERIES**

<b>CCMP</b>	<i>Climate Change Modelling and Policy</i> (Editor: Marzio Galeotti )
<b>GG</b>	<i>Global Governance</i> (Editor: Carlo Carraro)
<b>SIEV</b>	<i>Sustainability Indicators and Environmental Valuation</i> (Editor: Anna Alberini)
<b>NRM</b>	<i>Natural Resources Management</i> (Editor: Carlo Giupponi)
<b>KTHC</b>	<i>Knowledge, Technology, Human Capital</i> (Editor: Gianmarco Ottaviano)
<b>IEM</b>	<i>International Energy Markets</i> (Editor: Anil Markandya)
<b>CSRM</b>	<i>Corporate Social Responsibility and Management</i> (Editor: Sabina Ratti)
<b>PRA</b>	<i>Privatisation, Regulation, Antitrust</i> (Editor: Bernardo Bortolotti)
<b>ETA</b>	<i>Economic Theory and Applications</i> (Editor: Carlo Carraro)
<b>CTN</b>	<i>Coalition Theory Network</i>