Trade Orientation and Economic Performance of Pacific Island Countries

A Dissertation Submitted in Partial Fulfilment of the Requirements for the Degree of Master of Economics

by
Itagia Salote Faumui

Department of Economics
Uniersity of New England, Armidale

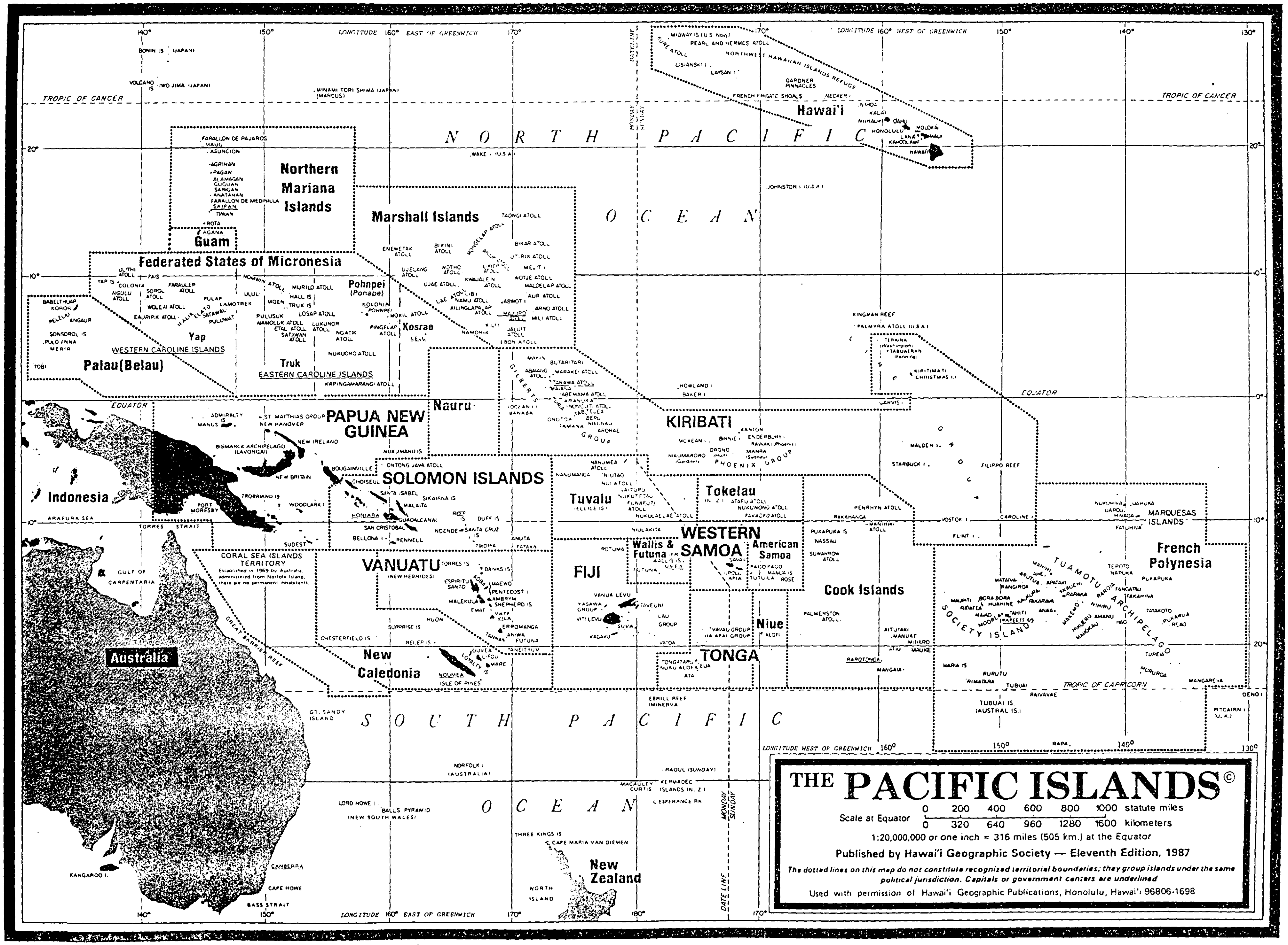
February
1995

Declaration

I certify that the substance of this dissertation has not already been submitted for any degree and is not currently being submitted for any other degree.

I certify that, to the best of my knowledge any help received in preparing this dissertaion, and all sources used have been acknowledged.

[redacted]



NORTH PACIFIC OCEAN
SOUTH PACIFIC OCEAN
TROPIC OF CANCER
EQUATOR
TROPIC OF CAPRICORN
LONGITUDE 160° EAST OF GREENWICH
LONGITUDE 160° WEST OF GREENWICH
DATE LINE
Hawai'i
Northern Mariana Islands
Guam
Marshall Islands
Federated States of Micronesia
Pohnpei (Ponape)
Kosrae
Yap
Truk
Palau(Belau)
WESTERN CAROLINE ISLANDS
EASTERN CAROLINE ISLANDS
PAPUA NEW GUINEA
Nauru
KIRIBATI
PHOENIX GROUP
SOLOMON ISLANDS
Tuvalu
Tokelau
WESTERN SAMOA
American Samoa
Wallis & Futuna
VANUATU
FIJI
Cook Islands
Niue
TONGA
New Caledonia
French Polynesia
MARQUESAS ISLANDS
TUAMOTU ARCHIPELAGO
SOCIETY ISLANDS
Indonesia
Australia
New Zealand
CORAL SEA ISLANDS TERRITORY
JOHNSTON I. (U.S.A.)
WAKE I. (U.S.A.)
NORFOLK I. (AUSTRALIA)
PITCAIRN I. (U.K.)
THE PACIFIC ISLANDS©
Scale at Equator
0 200 400 600 800 1000 statute miles
0 320 640 960 1280 1600 kilometers
1:20,000,000 or one inch = 316 miles (505 km.) at the Equator
Published by Hawai'i Geographic Society — Eleventh Edition, 1987
The dotted lines on this map do not constitute recognized territorial boundaries; they group islands under the same political jurisdiction. Capitals or government centers are underlined
Used with permission of Hawai'i Geographic Publications, Honolulu, Hawai'i 96806-1698

Abstract

The academic community, the International Monetary Fund (IMF) and the World Bank maintain the view that outward orientation or the openess of an economy is directly related to a country's economic performance. This has been supported by empirical studies undertaken on the subject. The popularity of outward orientation heightened during the 1980s as a result of improved economic performances of the few developing countries adopting this strategy and the failure of inward oriented policies to promote growth in countries adopting inward orientation.

This research therefore attempts to look at the relationship between the trade orientation strategies of Pacific Island countries and their economic performances. The study also aims to determine whether the positive link between outward orientation and economic peformance apply to Pacific Island countries, given their political, social, physical and economic conditions.

Data constraints for most Pacific islands limited the study to two islands: Fiji and Papua New Guinea. The study on the relationship between economic performance and trade strategy was carried out on a production function framework analysis using the export variable to measure the effect of outward orientation on economic performance.

The empirical results indicated that the relationship between the level of exports economic growth was positive and significant. Fiji and Papua New Guinea's economic growths appear to be highly dependent on export growth. Fiji's economic performance greatly improved under a more open or outward oriented regime. However, since the study was limited to two islands the results of this research cannot be representative of the South Pacific as a whole.

Contents

Map i

Declaration ii

Abstract iii

List of Charts, Tables and Figures vii

List of Appendices viii

Acknowledgements ix

1. Importance of Topic: Specific Aims and Objectives **1**

1.1 Introduction 1

1.1.1 Definitions 1

1.2 Historical View 2

1.3 The Problem 2

1.4 The Importance and Objectives of the Study 3

1.5 Hypotheses 3

1.6 An Outline of the Study 3

2. Trade Orientation Literature **5**

2.1 Introduction 5

2.2 Theories of International Trade 5

2.2.1 The Neo-classical Model 5

2.2.1 The Heckser-Ohlin Model 6

2.3 Static Gains from Trade 7

2.3.1 No Trade 7

2.3.2 Trade 9

2.4 The Dynamics Aspects of Trade Theory 10

2.5 Outward Orientation Strategy vs Inward Orientation Strategy 13

2.5.1 Inward Orientation 13

2.5.2 Outward Orientation 17

2.6 Empirical Evidence 18

2.7 Obstacles to Trade 21

2.8 Summary 23

3. Literature Review and Trade Orientation Strategies of Pacific Island Economies **24**

3.1 Introduction 24

3.2 Overview of the Island Economies 25

3.2.1 Natural Resource Endowment 25
3.2.2 Trade Issues 25
3.2.3 Trade Obstacles 26

3.3 Country Profiles 26

3.3.1 Fiji 26
3.3.2 Papua New Guinea 28

3.4 Identification of Trade Orientation 29

3.4.1 Measurements of Trade Orientation 29

3.4.1.1 Export-GDP Ratio 29
3.4.1.2 Import-Penetration Ratio 30

3.4.2 Trade Strategies 30

3.4.2.1 Fiji 30
3.4.2.2 Papua New Guinea 31

3.5 Summary 32

4. Method of Analysis **39**

4.1 Introduction 39

4.2 Theoretical Framework 39

4.2.1 Trade and Growth Theory 39
4.2.2 Technology 40
4.2.3 Factors of Production 40

4.3 Methodological Framework 42

4.4 The Economic Model 44

4.5 The Statistical Model 46

4.5.1 Constant Coefficient Model 47
4.5.2 Fixed Error Model 48
4.5.3 Random Error Model 49
4.4.4 Choice of a Model 50
4.4.5 The Seemingly Unrelated Model (SUR) 50

4.6 Specification of the Nature of the Series 52

4.7 Expectations of Results 53

4.7.1 Direction of Relationship 53
4.7.2 Magnitude of Coefficients 54

4.8 Data 54

4.8.1 Data Sources 54
4.8.2 Data Limitations 55

4.8.3 Statistical Package Used 56

5. Empirical Results and Discussion **57**

5.1 Unit Root Test Results 57

5.2 Estimation of the Seemingly Unrelated Model 57

5.2.1 Testing for Constant Returns to Scale 58

5.2.1 Testing for Contemporaneous Correlation 58

5.3 Estimation of the OLS Model 63

5.3.1 Testing for Constant Returns to Scale 63

5.3.1 Testing for Significance 64

5.3.2 Estimation Results 68

5.4 Discussion of Results 69

5.4.1 Intercept (Constant) 69

5.4.2 Dummy Variable 70

5.4.3 Labour Force 70

5.4.4 Capital Stock 71

5.4.5 Level of Exports 72

5.5 Summary 73

6. Concluding Remarks **74**

6.1 Summary 74

6.2 General Conclusions 74

6.3 Policy Implications 75

6.4 Limitations of the Study 76

6.5 Scope for Future Study 77

Appendix **78**

References **84**

List of Charts, Tables and Figures

Text Charts

3.1	GDP by Type of Economic Activity, 1989, Fiji	33
3.2	Domestic Exports for 1981, Fiji	33
3.3	Domestic Exports for 1991, Fiji	34
3.4	Domestic Exports for 1992, PNG	34

Text Tables

2.5	Empirical Studies on the Relationship between Export And Economic Growth	14
3.1	Economic and Social Indicators for Fiji	27
3.2	Economic and Social Indicators for PNG	29
5.1.1	Dickey-Fuller Unit Root Test Results	60
5.1.2	Phillips Perron Unit Root Test Results	60
5.2.1	Unrestricted Production Function Estimation (SUR)	61
5.2.2	Restricted Production Function Estimation (SUR)	62
5.3.1	Unrestricted and Restricted Production Functions - Model 1(OLS)	65
5.3.2	Unrestricted and Restricted Production Function for Fiji - Model 2 (OLS)	67

Text Figures

2.3.1	General Equlibrium in Autarky	8
2.3.2	Gains from Trade	10
3.1	GDP Growth of Fiji	35
3.2	Imports and Exports of Fiji	35
3.3	GDP Growth of PNG	36
3.4	Imports and Exports of PNG	36
3.5	Export-GDP Ratio of Fiji	37
3.6	Export-GDP Ratio of PNG	37
3.7	Import Penetration Ratio	38
4.2.1	Effect of Technological Change on the PPF	41
4.2.2	Effect of Factor Growth on the PPF	43

List of Appendices

Appendix

1. Table A1, Principal Domestic Exports, 1981-91:Fiji 79

2. Table A2, Exports Classified by Commodity, 1990-92: PNG 80

3. Table A3, Factor Inputs for Fiji 81

4. Table A4, Factor Inputs for PNG 82

5. Table A5, Gross Domestic Product 83

Acknowledgements

I would like to express thanks to a number of people who have helped in various ways in the preparation of this dissertation.

First and foremost, I would like to express my gratitude to my supervisors, Dr Mahinda Siriwardana (Department of Economics) and Dr Alicia Rambaldi (Department of Econometrics) for their valuable criticisms and comments and also for having the time and patience to read through the many drafts of the dissertation. Secondly, a word of thanks to Geoff Harris who helped with the development of this dissertation topic. Special thanks also goes to Professor Treadgold for his assistance in acquiring some of the data needed for this study.

To my husband and daughter for their patience and giving me the time to work, my gratitude is also extended.