Central Bank of Suriname

Tourism and Agricultural intersecotral linkages in Suriname 1980- 2010

44th Annual Monetary Studies Conference

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Paramaribo, 8 November 2012

Presentation Outline

- Introduction
- Review of the literature
- Institutional Issues
- The Model
- Results
- Conclusion & Policy Implication

Introduction

- Suriname's economy went through structural changes in its sectoral composition
- From a primary agro-based economy, to one dominated by the mining sector; almost 90 percent of total exports
- Tourism is emerging and becoming an important contributor to national production

Introduction (cont'd)

- Suriname gradually became a favorite holiday destination…..
- …that offers a variety of tourism products
- …ranging from cultural to nature tourism
- Growth potential in general and eco-tourism in particular

Motivation of the study

- As a key sector, this industry can trigger growth in other sectors, such as the agricultural sector
- Agriculture and tourism sector are dispersed in nature: widespread activity employs many, thus labor intensive
- A deeper understanding of the intersectoral linkages could help policy makers in setting up an institutional framework to shape the tourism sector

Central question

- To what extent will variations in Tourism output encourage a change in agricultural output?

- Method used for this analysis:
  - Engle-Granger Error Correcting Mechanism (EG-ECM)

Review of the literature

- The issue is whether tourism and agriculture are interrelated and which theory suits this constellation of interlinkages
- Studies on intersectoral linkages in general depart from the two sector model, known as the dualist model (Lewis, 1954)
- Unbalanced growth approach (Hirshmann, 1958) is also used in cases where the two sector model was not appropriate

Review of the literature

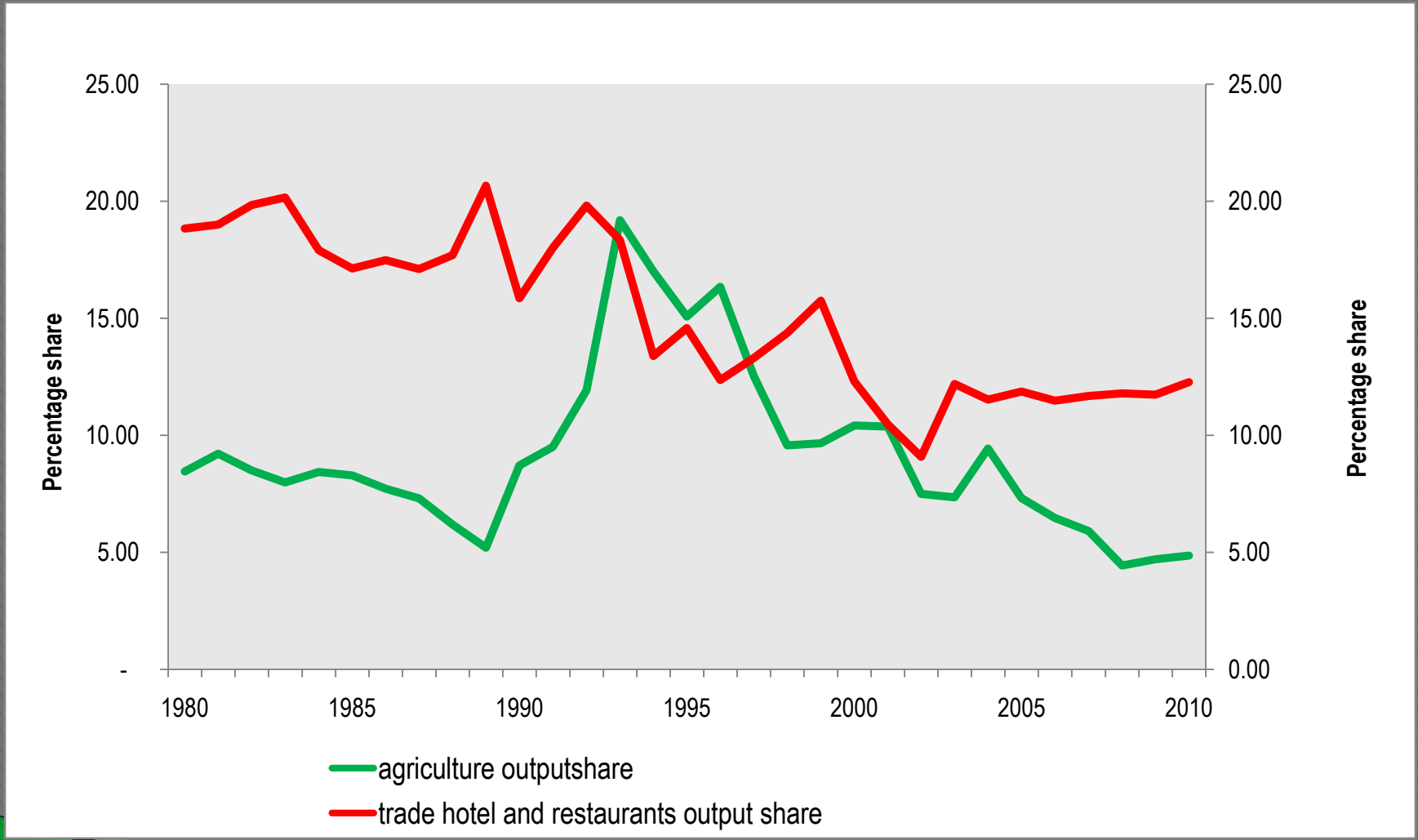
Study	Findings	Methods used
Bowen, Richard et al (1991)	➢ Both agriculture and tourism sectors can benefit from the linkages ➢ There is a symbiotic relationship between tourism and agriculture	
Gemmel, Norman et al (1998)	➢ An expansion of manufacturing GDP, is associated with a reduced agricultural output in the short run and an agricultural expansion in the long run ➢ This study departed from the two sector model	**Vector auto regressive Model (Multivariate VAR)**
Rogerson, Christian (2012)	➢ Tourism offers a potential backward linkages to agriculture ➢ Agriculture and tourism are symbiotic related ➢ Strengthening of these linkages could lead to a decreased linkages (leakages) through imports	
Gunjeet, Kaur et al (2009)	➢ Investigation of intersectoral linkages between the primary, secondary and tertiary sector with I-O framework. At sub-sectoral level a long-run equilibrium relationship was found between trade, hotel, transport & communication and manufacturing	**Input-output framework Co-integration analysis**

Institutional issues

- Suriname became part of organizations such as CTDA, CATP and ACTO

- Suriname exports agricultural products under preferential circumstances to the EU regions based on the EU-ACP agreements

Evolution of agricultural and tourism output shares 1980-2010



The model

Agriculture output depends on the demand from the Tourism sector and demand from local individuals

Estimated model :

$$\Delta lahff_t = \alpha_0 + \alpha_1 * \Delta lthr_t + \alpha_2 * \Delta lycap_t + \varepsilon_t$$

Where:

- *lahff represents Agricultural output and*
- *lthr denotes tourism output .*
- *lycap represents per capita income.*

Vector Autoregressive Model (VECM)

- VAR models are used to investigate intersectoral linkages through cointegration analysis and causality.
- Non-stationary data demand the deployment of a VECM
- The VECM results did not support the data
- Johansen Cointegration test suggested only one co-integrating equation.
- The single equation was also tested using an Engle-Granger ECM

Results of the ECM

	Coefficients	t-statistic	p-value
Long-run multipliers			
C	4.178	(6.852)	0.000
LYCAP	-0.632	(-7.929)	0.000
LTHR	1.082	(81.129)	0.000
Short-run dynamics			
DLYCAP	-0.572	(-5.195)	0.000
DLTHR	0.856	(7.174)	0.000
DLTHR(-1)	0.361	(5.248)	0.000
ECM1(-1)	-0.293	(-2.452)	0.021

Conclusions & Policy implications

- Both tourism output and per capita income stimulates movements in agricultural output in the short and long run.
- The evidence shows that there exists an important backward linkage from tourism to agriculture and not vice versa.
- Policies to expand tourism services, may prove to also promote growth in the agricultural sector

Thank you!