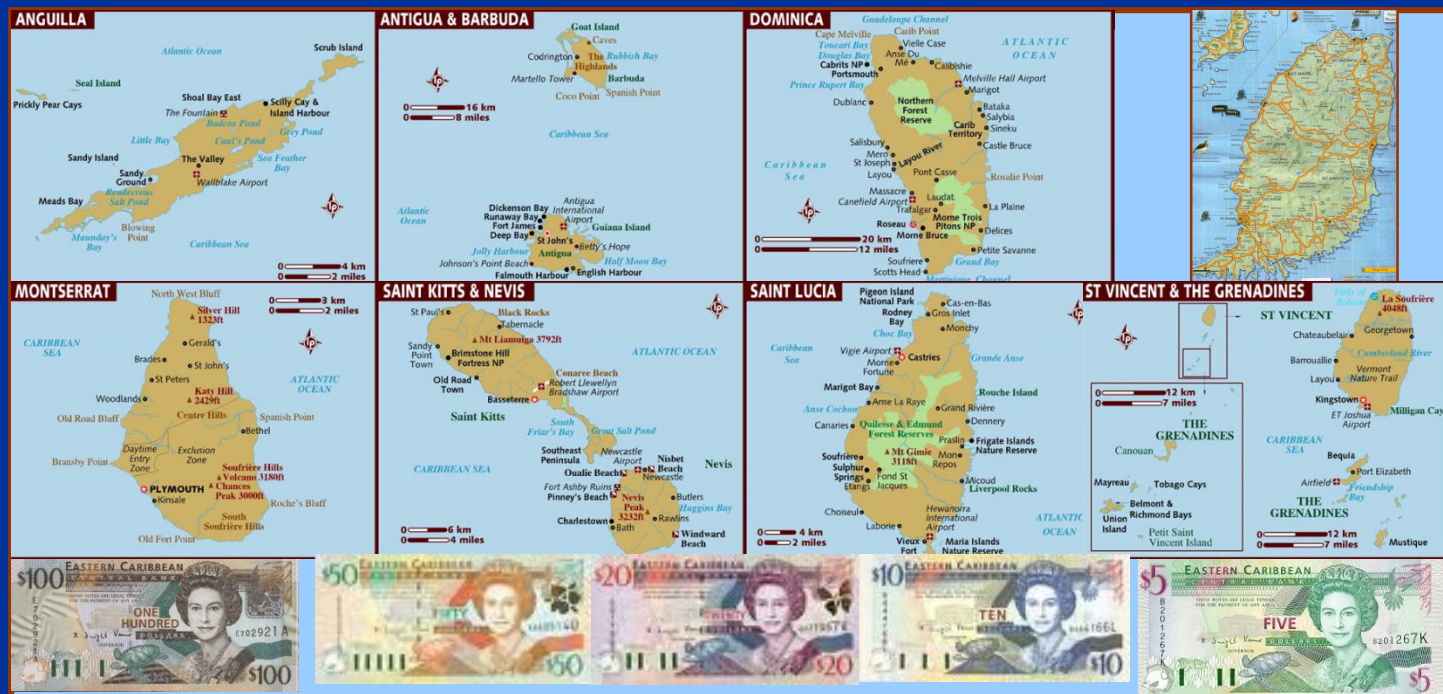


Financing Recovery: Implications of Natural Disaster Indebtedness on the Fiscal Sustainability of the Eastern Caribbean Currency Union



Ankie Scott-Joseph

Outline

1. STATEMENT OF THE PROBLEM

2. CONTRIBUTION OF THE STUDY

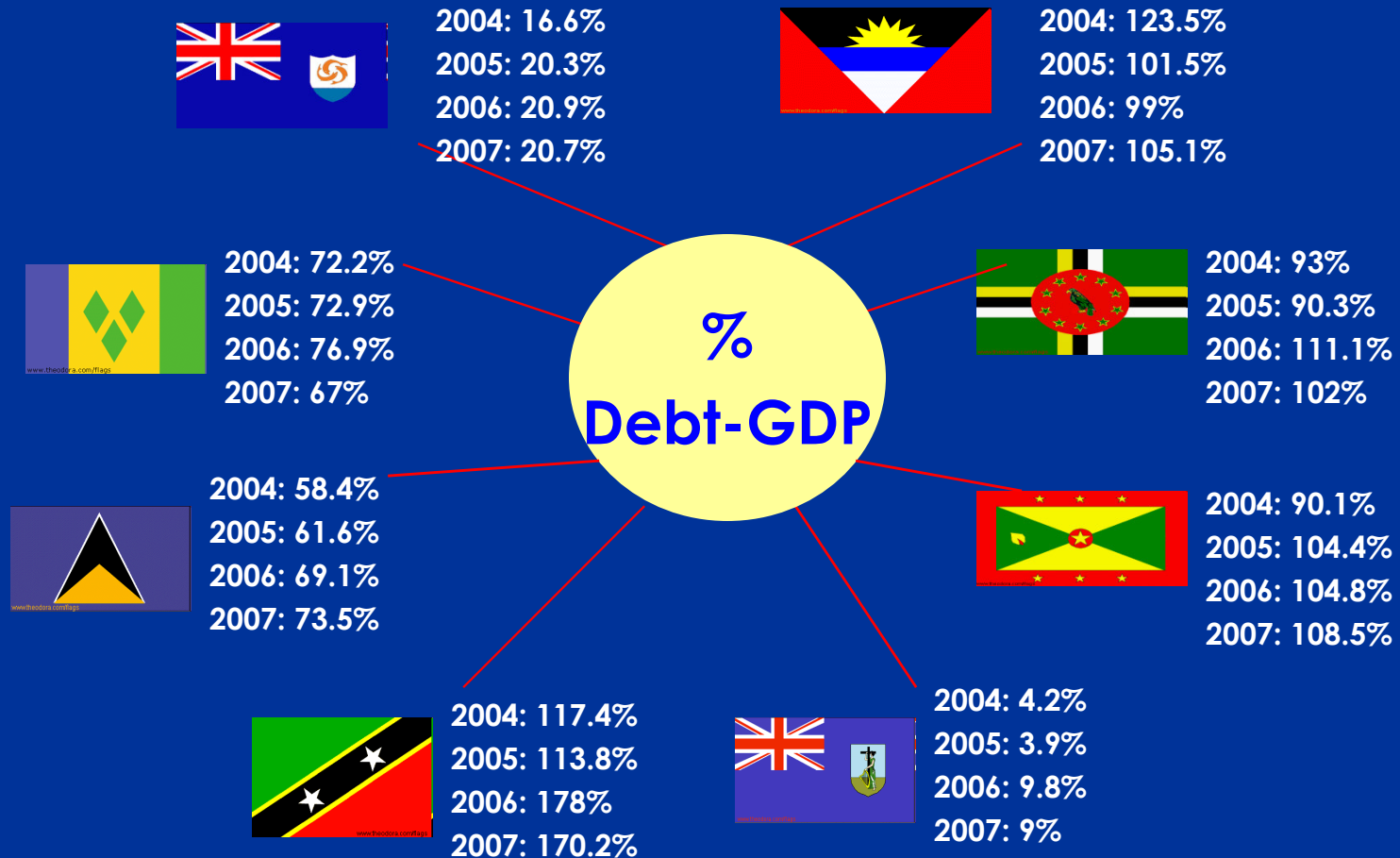
3. SURVEY FINDINGS

4. EMPIRICAL FINDINGS

5. RECOMMENDATIONS

6. CONCLUSION

1. STATEMENT OF THE PROBLEM



Concept of debt sustainability:

2. STATEMENT OF THE PROBLEM

Highly vulnerability to external shocks and natural disasters.

1950s – 1960s → high growth rates, low interest rates

1960s – 1970s → low growth rates, Oil supply shocks,
foreign exchange distress, Hurricanes -David (1979)
Frederick and Allen(1980), Gilbert in 1988,

1980s – 1990s → hurricanes, tropical storms, Georges(1998),
Lenny and José(1999)

1990s – 2000s → Hurricane: Ivan(2004), referential access to the EU
market, Poverty, social shocks – teenage
pregnancy HIV Aids.

2. STATEMENT OF THE PROBLEM

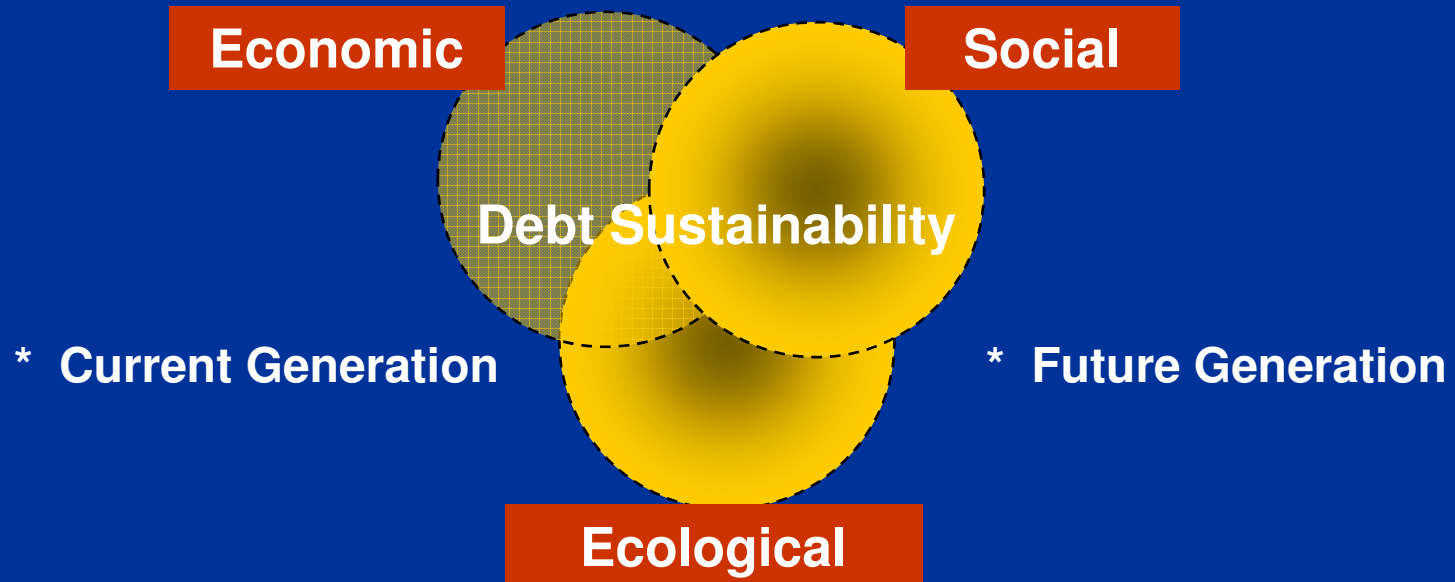
- ECCU – small, open, narrow export base and possess highly un-diversified production structures.

Antigua & Barbuda	Dominica	Grenada
Metal manufactures 55%	Chemicals 55%	Metal manufactures 47%
Chemicals 14%	Agriculture 33%	Agriculture 35%
Basic metals 9%	Mining quarry 4%	Food, beverages, tobacco 11%
St. Kitts & Nevis	St. Lucia	St. Vincent & Grnd.
Metal manufactures 68%	Agriculture 50%	Agriculture 51%
Food, beverages, tobacco 24%	Food, beverages, tobacco 21%	Food, beverages, tobacco 25%
Paper and product 3%	metal manufactures 12%	Metal manufactures 16%

2. STATEMENT OF THE PROBLEM

- Failure to integrate a Vulnerability indicator into the Debt sustainability analyses (DSA) ... ND disrupts social and economic development impact severe in poor countries than in rich countries.
- Do not integrate uncertainty or volatility in defining the underlying macroeconomic parameters
 - Volatility can be driven both by policy and by exogenous shocks, including ecological.
 - Middle income countries tend to experience greater volatility than high income countries, in part because of their limited capacity to raise taxes and a volatile revenue base.
- The decline of concessional funds

2. Potential Solution



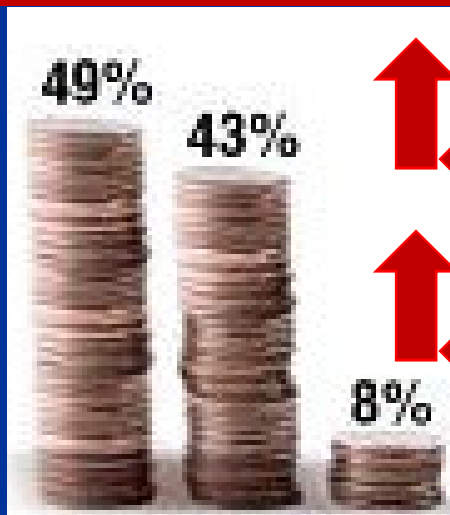
2. Contribution of the Study

- *Integrate the impact of ND shocks on DS*
- *Collection of primary data (survey)*
- *Use of cyclical models to test empirically impact of ND shocks on FS*

Why Target ND Shocks

X Taxes

Spending



Gov't

Donor

- divert current resources
- raise short term debts
- acquire external aid & grants

* Donor - shift financing from reactive borrowing to more efficient use of cost sharing and risk transfer tools..

Expenditure increases

Fiscal

Revenue decrease

BOP



Survey Findings



**Financing: why
revenue falls & public
debt increases**

Financial Implications - Survey Finding

Major findings:

REVENUE LOSS: is the main factor that attributes to indebtedness and unsustainable fiscal policies

----- Structure of revenue sources (taxes and foreign exchange)

Financial Implications - Survey Finding

Structure of revenue sources: taxes

	ECCU	Antigua & Barbuda	Dominica	Grenada	Montserrat	St. Kitts & Nevis	St. Lucia	St. Vincent & the
Current Revenue	3358.3	724.7	312.2	428.4	35.8	516.1	699.9	430.8
Tax Revenue	3033.6	690.9	285.5	402.8	31.6	399.6	659	399.9
Taxes on Income and Profit	639.4	100.9	53.2	74.8	14.4	116	176.7	103.6
Taxes on Property	64.4	0	9.3	29	1.4	-	4.9	2.8
Taxes on Domestic Goods and Services	973.2	8.9	162.7	71.3	3.4	84.1	119.7	184.1
Taxes on International Trade and Transactions	1356.5	299.4	60.3	227.7	12.4	53.1	357.9	109.6
Non-Tax Revenue	324.7	33.8	26.8	25.6	4.2	501.3	40.8	30.8

Financial Implications - Survey Finding

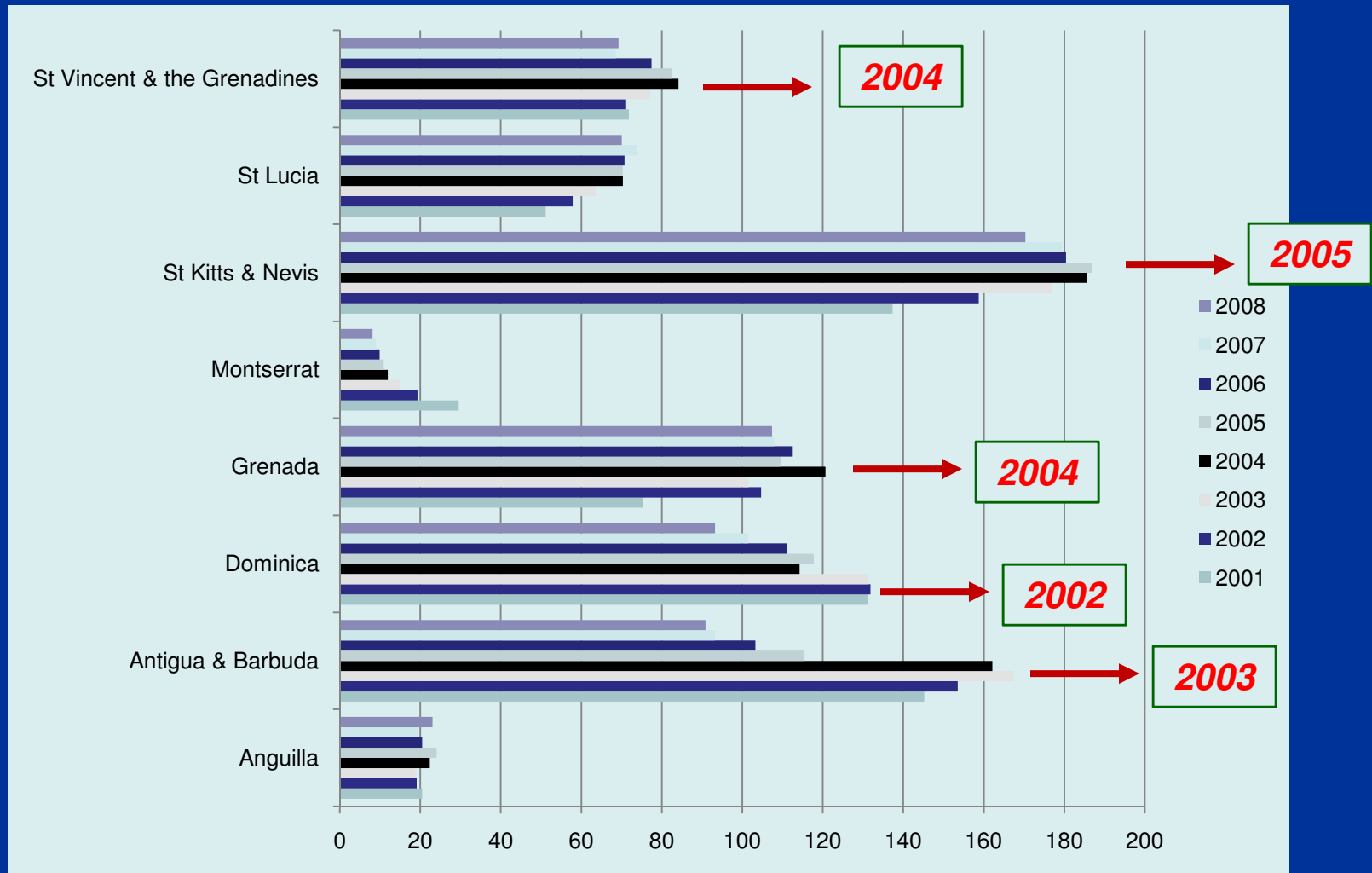
Structure of revenue sources: foreign exchange

Tourism and agriculture are the main earners.



.... are highly vulnerable to natural disasters and economic shocks

INCREASE BORROWING: External Debt-GDP



Survey Finding: Revenue loss: Human Capital

- (1) loss of lives: (*Grenada: 241, Montserrat: 51*)
- (2) migration: loss of housing & temp loss of jobs
(*Grenada, Ivan left 60,000 persons homeless*)
(*Montserrat's pop. – 10,000 in 1990's, to 4,000 in 2008*)



lower productivity



Higher expenditure

Survey Findings

Revenue loss: The Ecological System

- destroys mangrove: Tourism
- loss of arable land from floods, landslides: Agriculture



lower productivity



lower export revenue

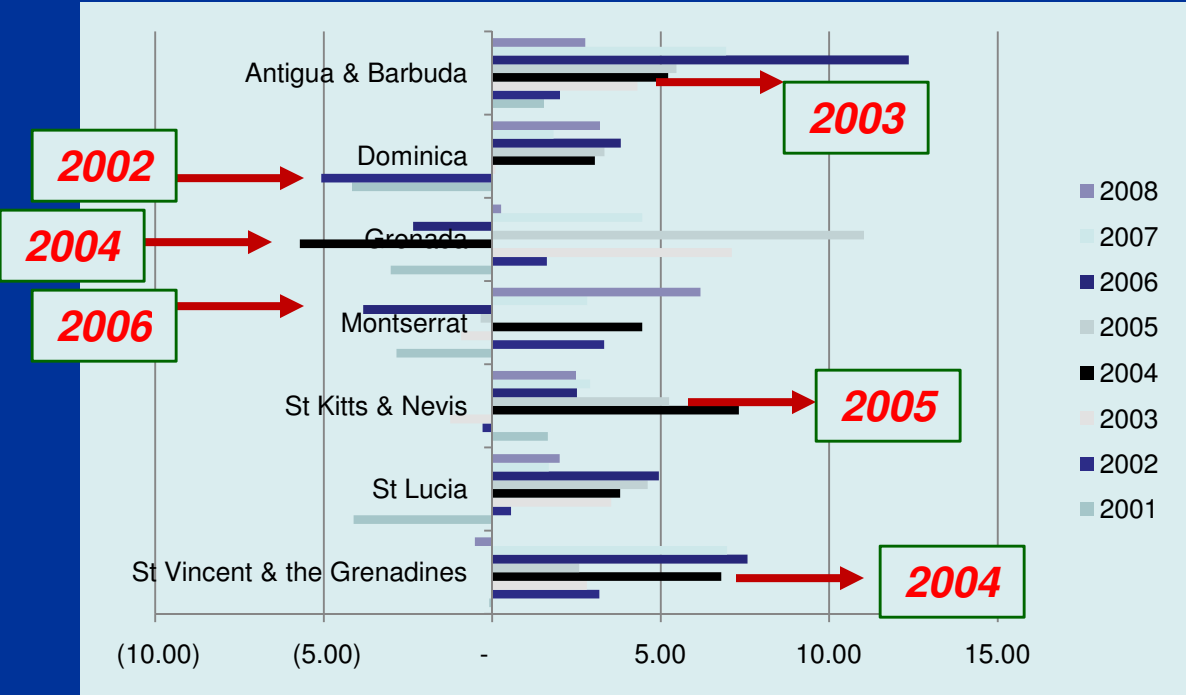


Higher expenditure

Survey Findings

Revenue loss: Economic Growth

Decline in national income



lower productivity



Higher expenditure

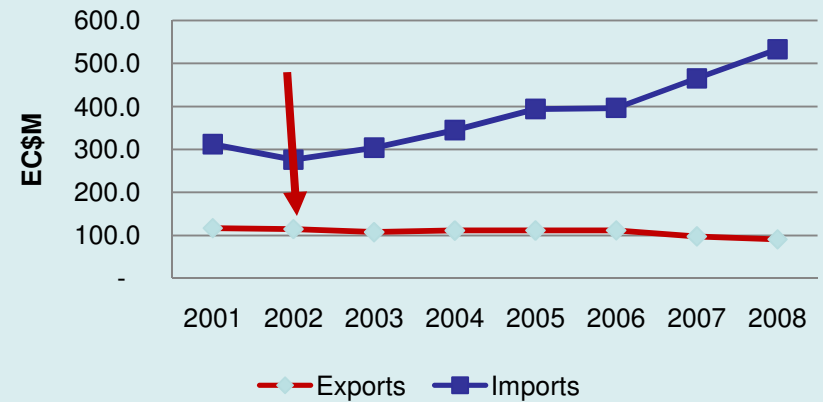
Survey Findings

Revenue loss: Balance of Payment

Antigua & Barbuda



Dominica



Grenada



Montserrat



Revenue loss: Balance of Payment

St. Kitts & Nevis



St. Lucia



St. Vincent & the Grenadines



→ **lower foreign revenue**

→ ***Higher expenditure***

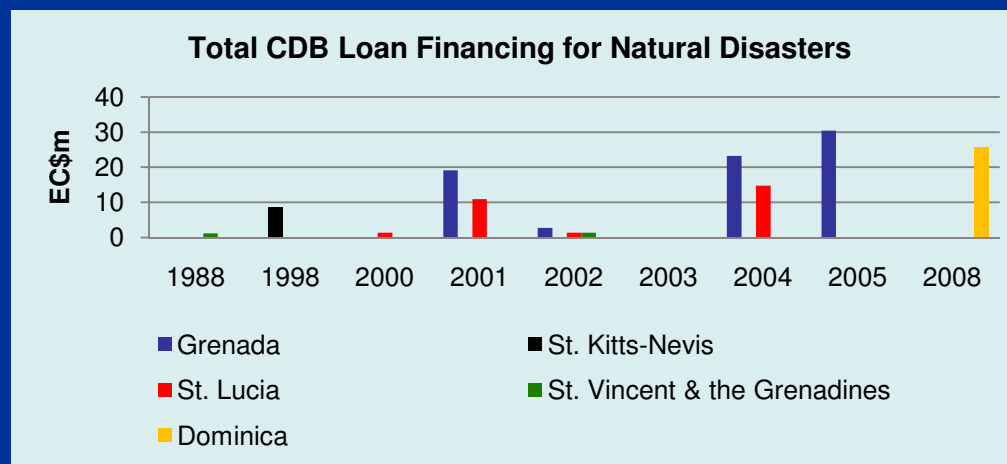
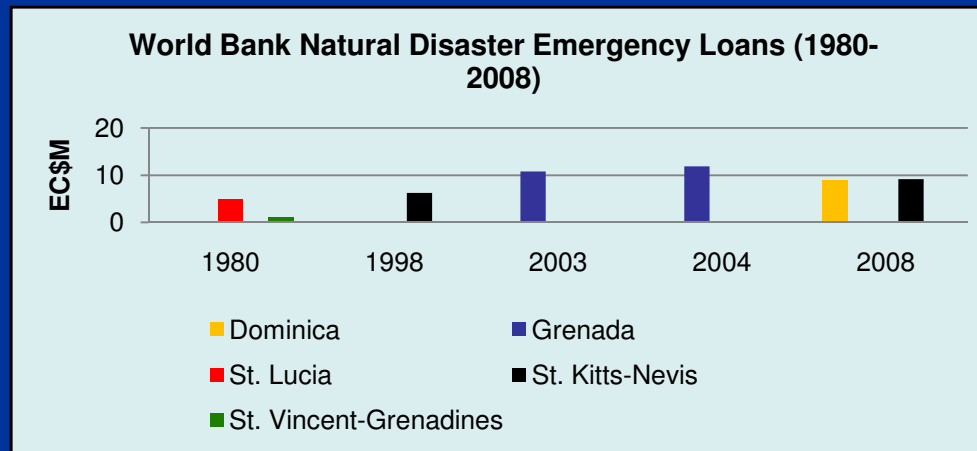
Survey Findings

Fiscal Balance

- increase in fiscal deficit
 - 2004: Grenada – deficit was estimated at EC\$28.4m
 - Grenada (2 major hurricanes) – EC\$2,620m
 - Dominica (6 major hurricane) –total loss EC\$338.9m
 - St. Kitts & Nevis (8 major hurricanes) – EC\$1,942m

→ higher growth in public spending

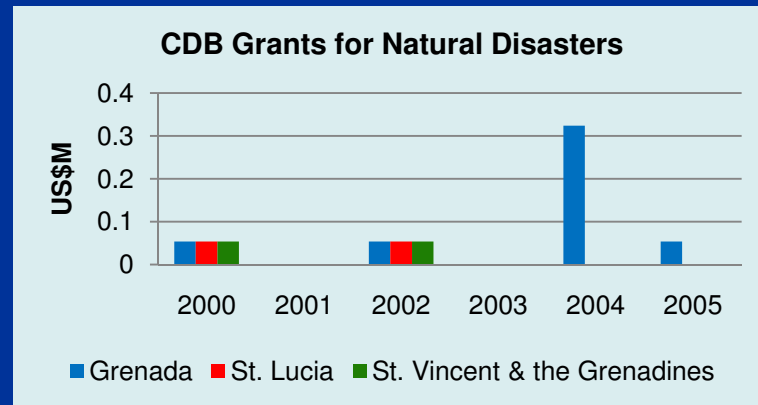
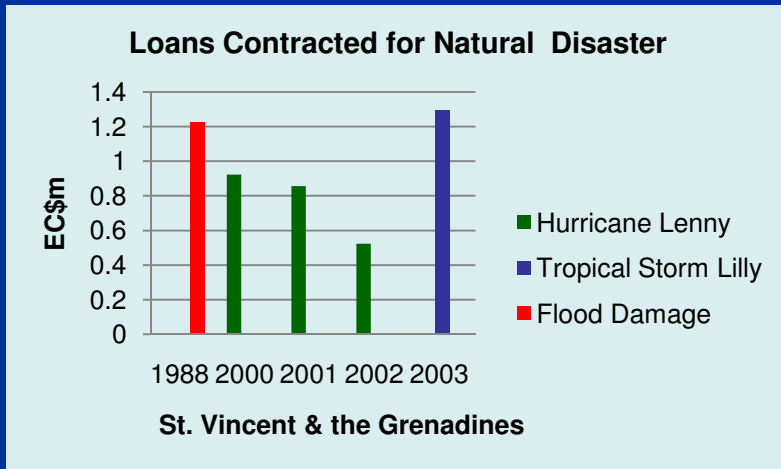
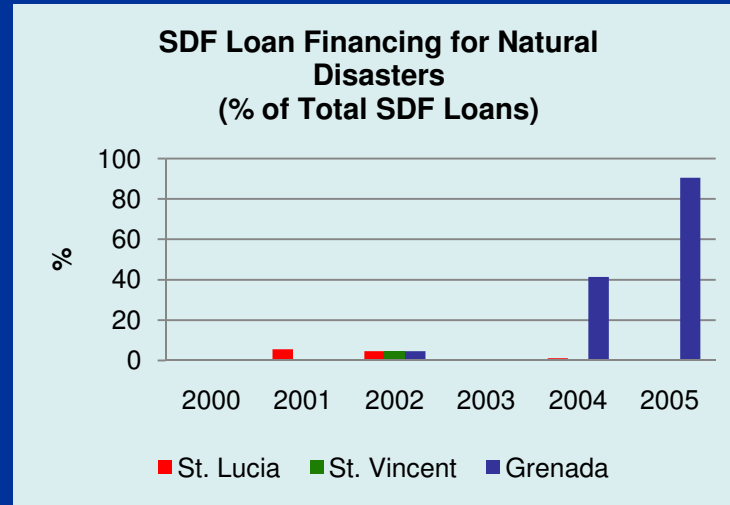
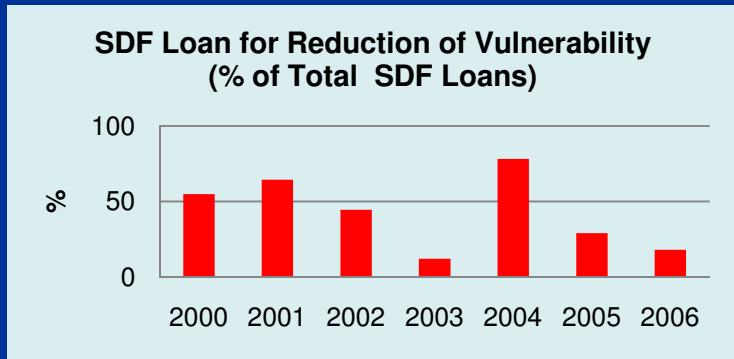
ND Loan & Grant Financing



→ **lower grants**

→ **higher loans**

ND Loan & Grant Financing



→ **lower grants**

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Empirical Findings

**Expenditure: How ND
cause gov'ts to adopt
unsustainable policies**

Cyclical Approach

Irrespective of the source of finance, the affected economy will experience a sudden influx of capital, triggers an artificial boom

ECONOMIC BOOM

1. Governments can borrow easily
2. facilitates overspending
3. taxes decrease
4. difficult for Governments to apply expansionary fiscal policies

**fiscal policies which should mitigate
the effect of the shock behaves**

→ procyclical

Empirical Approach

Cyclical Models

$$\Delta \log Gov_Exp_{it} = \alpha_1 + \beta_1 \Delta \log GDP_{it} + v_{it}$$

are often expressed as a percentage of growth/output

Cyclical

 β

Negative

Procyclical

 β

Positive

If $\beta > 1$

more-than-proportionate
response to fluctuations in
disaster spending

Cyclical Models

Model 1

$$\Delta \log GOV_EXP_{it} = \alpha_1 + \beta_1 \Delta \log GDP_{1it} + v_t$$

examines the response of the rate of change of expenditures to the rate of growth of output

Model 2

$$OFB_{s,t} = \alpha_0 + \alpha_1 \Delta \log NDCE_{s,t} + e_{s,t}$$

Also regress dep. var: $\log GOV$, $INTP$, $\log DEBT$, GDP on natural disaster expenditure.

RESULTS

Procyclical

Average entire union

Model 1

$$\beta_1 = 0.291$$

Model 2

$$OFB : \alpha_1 = 0.19$$

$$GOV_EXP : \beta_1 = 0.29$$

Cyclical

Model 2

$$GDP : \gamma_1 = -0.071$$

$$INTP : \delta_1 = -0.113$$

$$DEBT : \varphi_1 = -0.027$$

RESULTS

Pro-cyclical

Model 2

OFB

DOM, (2.33)
MINI (2.07)
SLU (2.55)

DEBT

Model 2

DOM (1.79)
GRN (5.88)
SKB (6.94)

RECOMMENDATION

- Financial and insurance markets
- Private sector participation
- Keep debt levels down
- Analyze the scale of the shocks
- Integrate analysis of shocks in to long-term DS framework
- Tailor grant allocation and borrowing formulas to absorb vulnerability to shocks

RECOMMENDATION

Role of Banks:

- Help State's access internal insurance and hedging institution
- Reduce the level of conditionality
- Revisit structural adjustment programme
- Consider volatility when implementing DSA

Conclusion

Public debt increases

- In the ECCU NDE increase debt by 6.5% over 3 yr period : Rasmussen (2004)

Financial confidence reduces

- Benson and Clay (2004) and Cochrane (1994)

Public debt repayment & debt relief problems.

- (2001 UN)

Conclusion

- ND threatens – GDP growth, balance of trade, public deficit and indebtedness
- ECCU have limited ability to finance – low domestic savings, low donor support, small tax base and limited ability to barrow
- ND cause fiscal adjustment ..Procyclicality
- NDE tend to exacerbate fiscal imbalance since macro policy behaves procyclical



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THANK YOU

