

# Computing the Cyclically Adjusted Balance for Saint Lucia

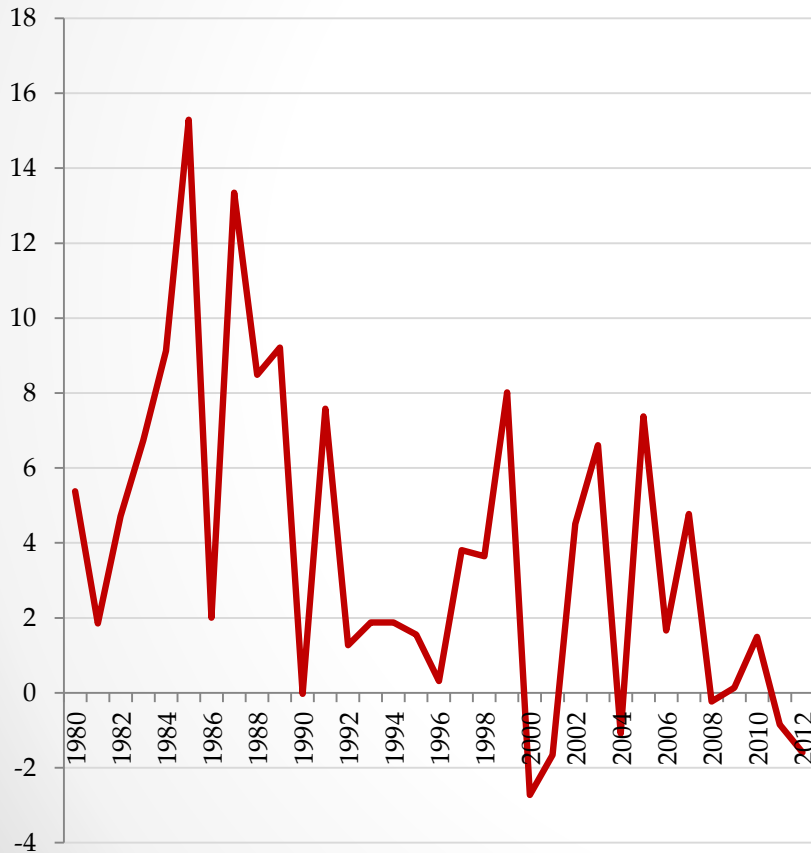
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# Outline

- Background
- Definition of key terms/ reasons for CAB Estimate
- Literature Review
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- Conclusion/Recommendations
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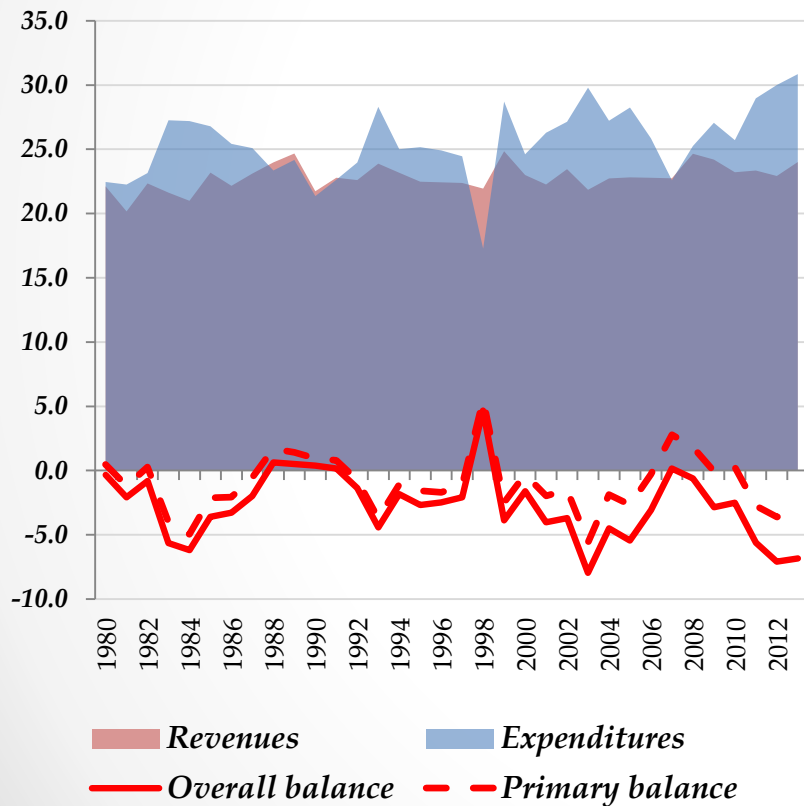
# Background

## GDP GROWTH



- Varying economic periods
  - 1980-1990's Agriculture era
  - 1990's transition to the service sector; tourism
  - Late 2000's global oil price hikes and recession

## Fiscal aggregates



- Major indicators

- Overall balance; annual average of -2.7 percent of GDP
- Primary Balance 1.0 percent of GDP

# Reasons for Estimate

- Fiscal variables move in response to both discretionary policy actions and other “automatic” effects induced by changes in the macroeconomic environment.
- Cyclical adjustment is applied to filter the impact of cyclical movements and assess the underlying fiscal stance
- The main purpose of cyclical adjustment is to measure the discretionary fiscal position.
- For this purpose, fiscal aggregates are adjusted for temporary effects associated with the deviation of actual from potential output.

# Key Terms

- **Potential Output:** It is a measure of sustainable output
  - Although potential output measures the productive capacity of the economy, **it is not a technical ceiling on output that cannot be exceeded.**
- **Output Gap:** The difference between actual and potential GDP, usually expressed as a percentage of potential output.
- **Fiscal Stance:** Attempts to measure the *discretionary* part of changes in fiscal policy.
  - Fiscal stance calculations implicitly assume that the multiplier effect of revenues, public consumption expenditures, and public transfers on domestic demand are all equal.
- **Fiscal Impulse** is a measurement of fiscal impulse overtime

# Literature Review

- **Blanchard (1990)** Estimate CAB directly from regression-based analysis
  - Other researchers as (**Dalsgaard and de Serres, 1999**) structural VAR methodologies and unobserved component models (**Camba-Mendez and Lamo, 2002**).
- The **European Commission, the OECD, the IMF and the ECB**. a cyclical component of the budget balance is first estimated and subsequently subtracted from the nominal budget.
- **Giorno et al (1995)** OECD; 1979-1996; close actual and structural budget balances; structural balances varying pro-cyclically with observed deficits.
- **Samuel (2009)** examined the cyclicity of fiscal policy in several Caribbean countries, including the six independent members of the ECCU; structural fiscal balance estimates in the Caribbean suggests that fiscal policy has been generally pro-cyclical

# METHODOLOGY





# Decomposing the Overall Balance

$$OB = PB - INT = CAPB + CPB - INT$$

Where PB is the primary balance, CAPB is the cyclically adjusted primary balance and CPB is the cyclical primary balance.

$$\Delta OB = \Delta CPB + \Delta CAPB - \Delta INT$$

Note it is possible to cyclically adjust the overall balance, but it is more common to cyclically adjust the primary balance. The reason for this is that the interest payments are not necessarily correlated with the business cycle.

# Automatic Stabilizers

$$\Delta OB = \Delta CPB + \Delta CAPB - \Delta INT$$



Automatic Stabilizers (AS)

$$AS = \Delta CPB = \Delta OB - \Delta CAPB + \Delta INT$$

# Cyclical adjustment

- 1) Calculate potential output and obtain the output gap:

$$gap = \frac{Y - Y^*}{Y^*} \Rightarrow \frac{Y^*}{Y} = \frac{1}{1 + gap}$$

$Y$  = Actual output  
 $Y^*$  = Potential output

- 2) Calculate cyclically adjusted aggregate revenues and expenditures:

$$T^{CA} = T \left( \frac{Y^*}{Y} \right)^\varepsilon, \quad G^{CA} = G \left( \frac{Y^*}{Y} \right)^\eta$$

$\varepsilon$  = Revenue elasticity  
 $T$  = Actual revenue  
 $\eta$  = Expenditure elasticity  
 $G$  = Actual expenditure

- 3) Obtain the **cyclically adjusted balance**:

$$CAB = T^{CA} - G^{CA}$$

Is  $\varepsilon$  (Revenue elasticity) greater or less than 1?

Is  $\eta$  (Expenditure elasticity) greater or less than 1?

# Estimating Potential Output and Elasticities

- For potential output, and the resulting output gap, the Hodrick Prescott Filter or linear trend which is a purely econometric techniques was used
- Aggregate revenue and expenditure elasticities can be assumed or sourced from the literature. A common assumption is 1 for revenues and 0 for expenditures.
  - Keith Kyle J. Hamlet (2013) using the divisia index found indirect tax elasticity estimate of 0.94
  - Andrew and Mitchel (...) and Hamlet (2013) buoyancy estimate greater than one

# The Fiscal Stance

Fiscal stance based on cyclically adjusted primary balance:

$CAPB < 0 \Rightarrow$  Expansionary FS>0

$CAPB > 0 \Rightarrow$  Contractionary FS<0

# The Fiscal Impulse

The fiscal impulse measures the change in fiscal stance over time:

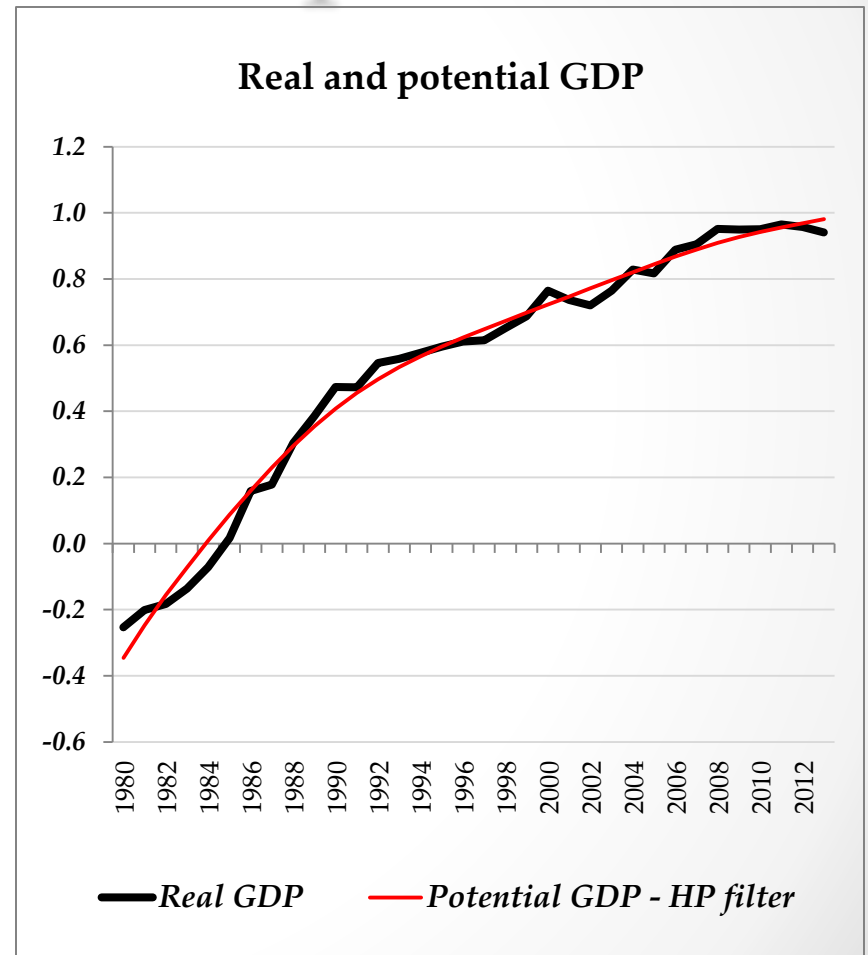
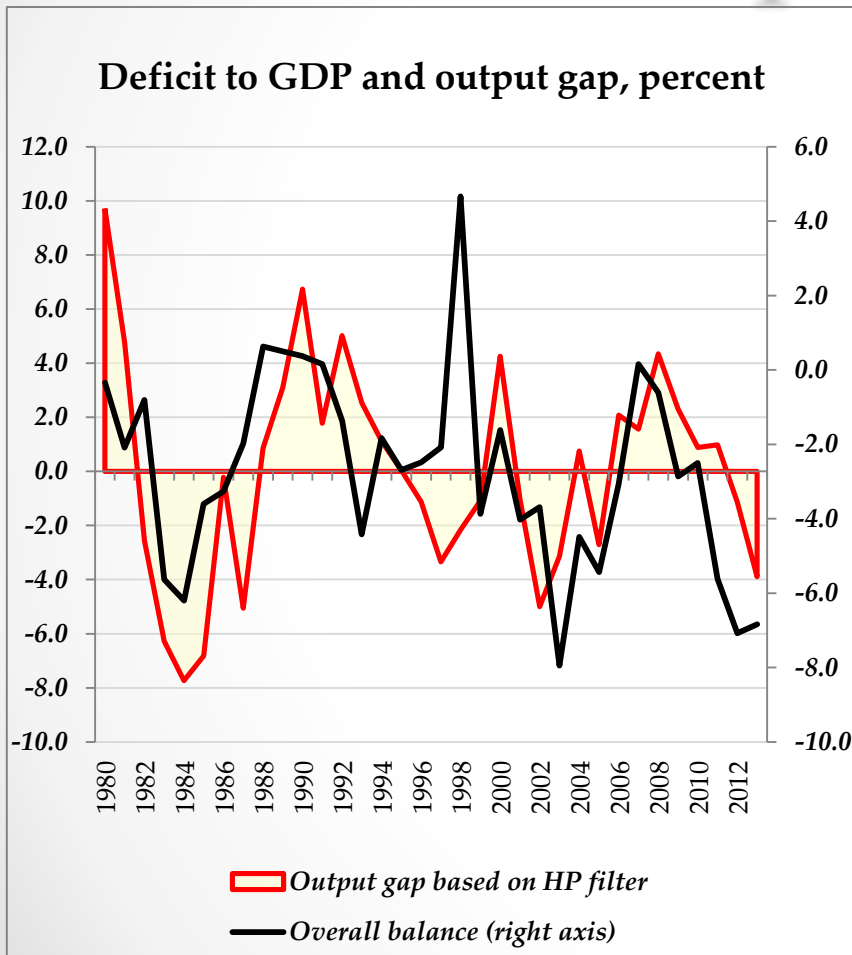
Fiscal impulse:  $FI = FS_t - FS_{t-1}$

If positive, the fiscal stance is getting more expansionary, i.e. looser over time

# RESULTS

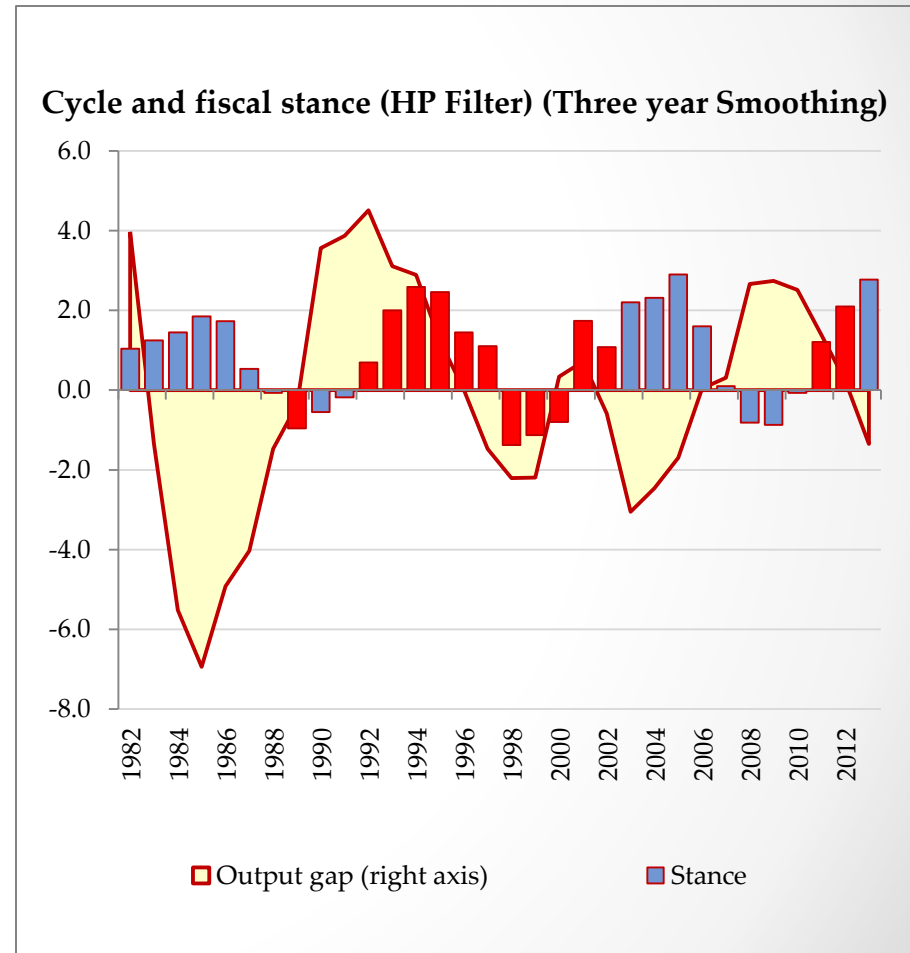
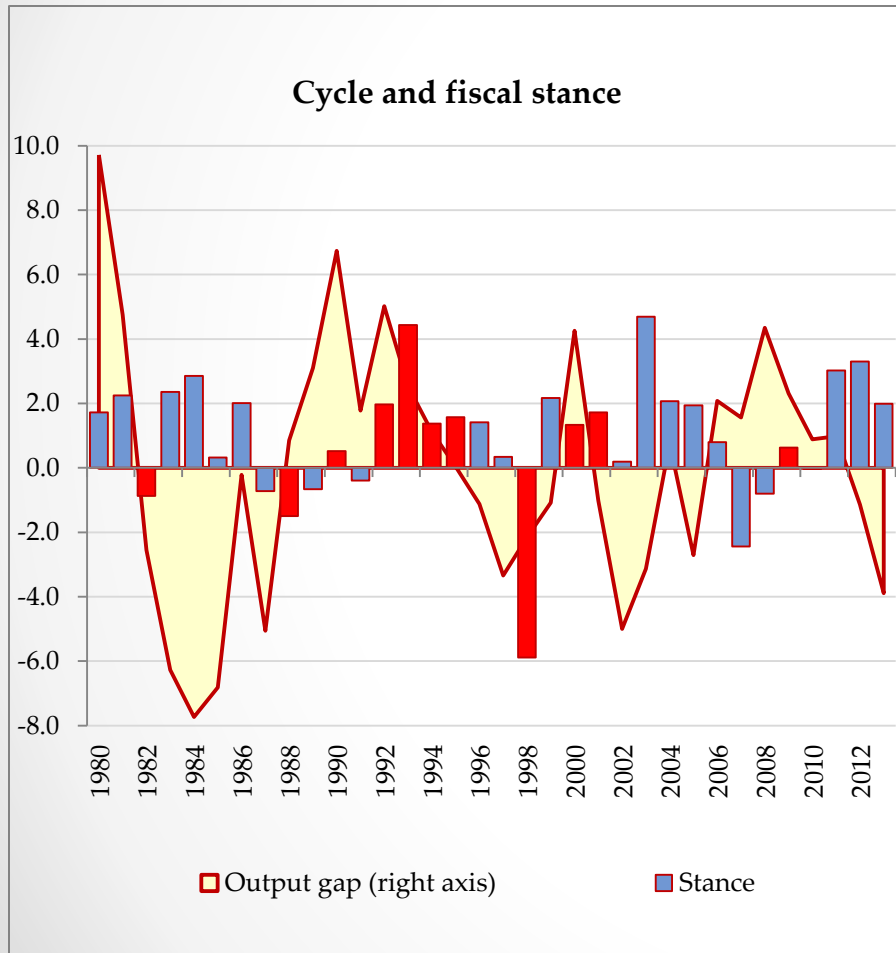


# Output Gap



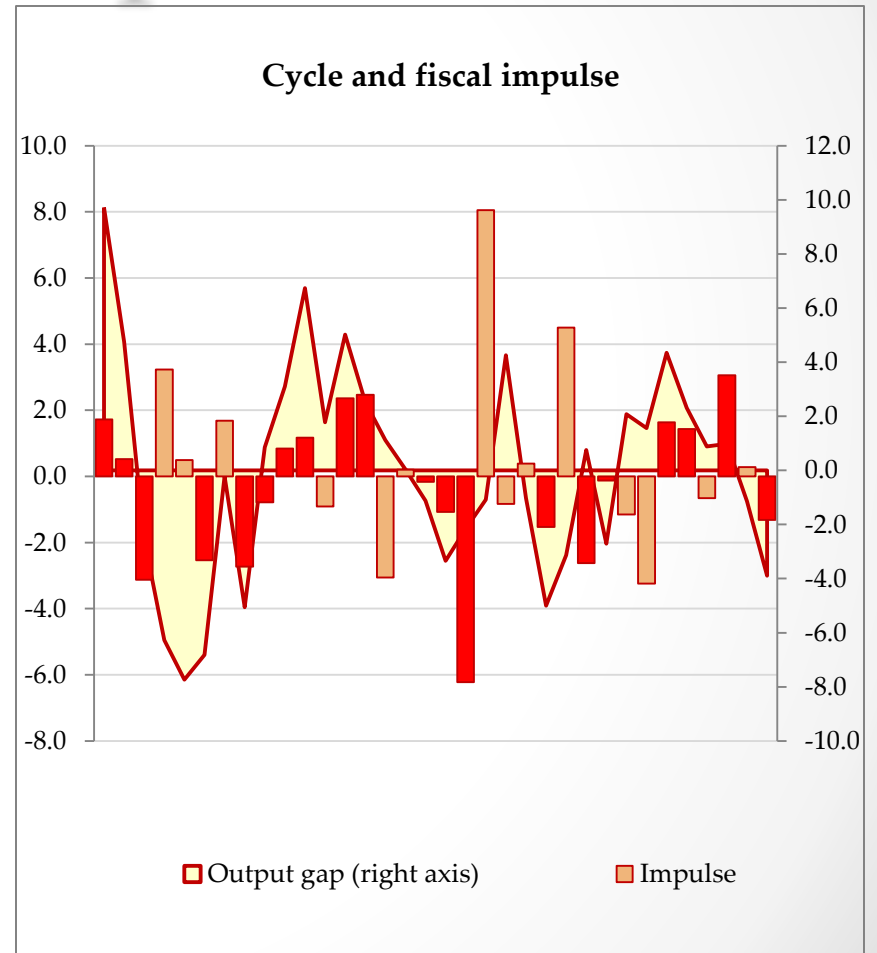
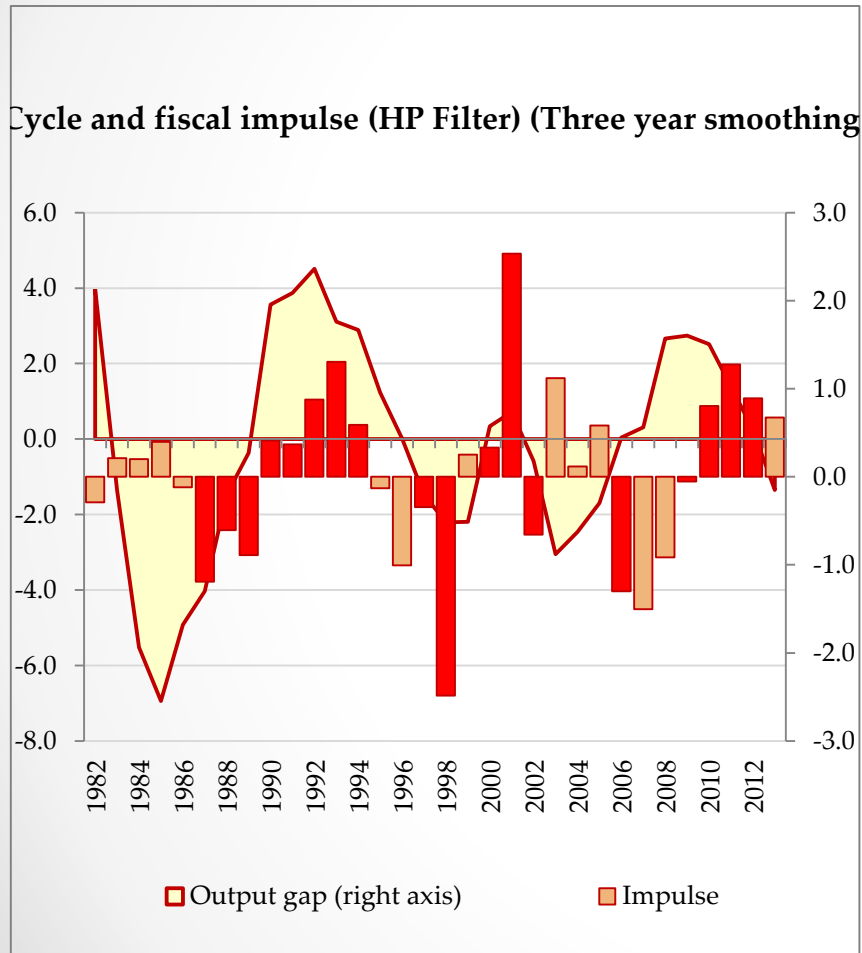


# Fiscal Stance

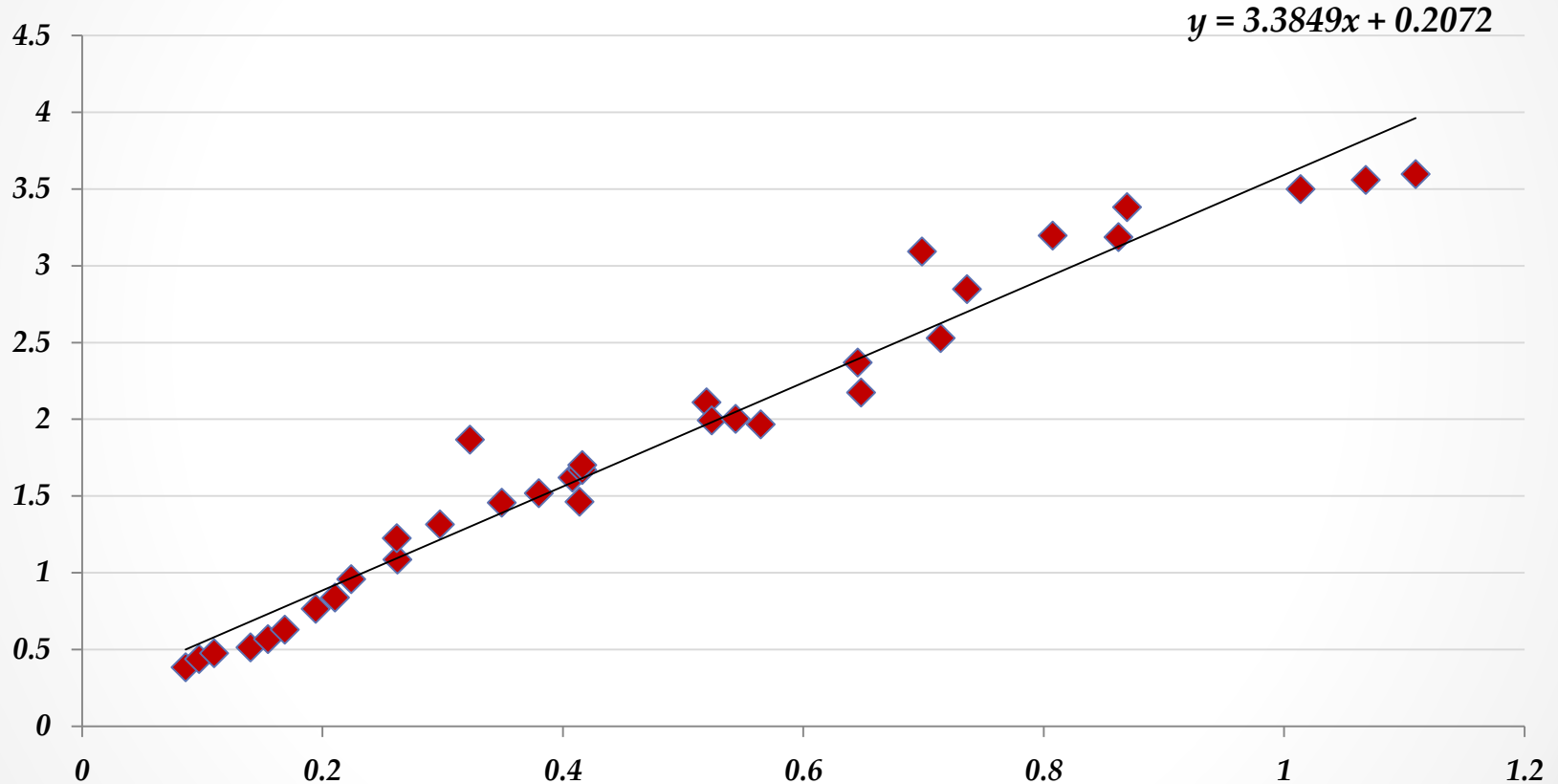


*Pro-Cyclical*   
*Countercyclical*

# Fiscal Impulse



# Relationship between GDP and Government Spending



# Pro-Cyclical and Countercyclical Fiscal Policies

- Pro-cyclicality: policies which magnify economic fluctuations; these policies tend to work with the natural swings of the economy. For example during booms government spending tends to increase and spending cuts in a recession.
- Conversely, countercyclical fiscal policies are policies that go against the current economic cycle. These types of policies are known as automatic stabilizers and are intended to manage the effects of fluctuations in the economy. For example in a recession period countercyclical policies are necessary to encourage upswings in the economy.
- Fiscal neutral stance is a position taken by government that has no influence on aggregate demand (AD); basically government makes no attempt at reducing or increasing AD.



# Research on Pro-cyclicality

- Alberto Alesani (2005) ;Pro-Cyclical and myopic policy stems from political agency problem
- Alesani and Tabellini (1990);Borrowing constraints

# Conclusion

- Wendell Samuel (2008) countries in the region implement pro-cyclical fiscal policies
  - These countries have statistically significant but have very small automatic stabilizers.
- Based on this research and previous analysis on Saint Lucia's fiscal policy it has been identified that Saint Lucia has implemented pro-cyclical fiscal policies

# Recommendation

- Well designed **Fiscal Rules** :
  - Wendell Samuel (2008)
    - Chile since 2001 has prudent fiscal policies...
    - ...
- **Strong Institution** *defined as Law and order, bureaucracy, quality, corruption and other risks investment*
  - Jeffrey Frankel, Carlos A. Vegh, Guillermo (2011) and Paolo Manasse (2006) supports strong institution for reducing and dealing with pro-cyclicality
- **Larger automatic Stabilizers**

**Thank You!!!!**





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