Caribbean Economic Research Team

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Hurricane Losses and Government Debt: Evidence from the Eastern Caribbean

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Introduction

- **The Caribbean is characterized by low growth, high debt, and high exposure to climate related disaster risk.**

- **The region has been in a high debt low growth trap for the past two decades (IMF 2013).**
  - **Average government debt is estimated at about 79% of regional GDP in 2012 (IMF 2013).**

- **Building resilience is important in order to create an enabling environment for mitigation and stabilization following natural disaster shocks.**

Introduction

- **Government expenditure is forced to increase after a disaster, and comes primarily from borrowing (Koetsier 2017 Melecky and Raddatz 2011, and Cavallo and Noy 2010).**
  - **Government savings and catastrophe risk insurance are generally inadequate (Borensztein et al. 2008).**
  - **International aid is usually not readily available, and there is uncertainty on the amount to be received, and competition from others affected (Melecky and Raddatz 2011 and Wong et al. 2009, and Borensztein et al. 2008).**

Introduction

- **The recurrent use of government expenditure threatens debt sustainability (Koetsier 2017 and Borensztein et al. 2008).**

- **High debt keeps borrowing costs high, discourages private investment, and constrains fiscal flexibility.**

- **High debt negatively affect economic growth (Greenidge et al. 2012).**

Objective

- **To investigate the impact of hurricanes on government debt to GDP ratio in 8 Eastern Caribbean countries for the period 1993-2013.**

Data

- **We construct a quarterly panel data set of hurricane losses (CCRIF), government debt and its components (ECCB) and DMSP nightlight (National Centres for Environmental Information) which act as a proxy for GDP.**

Methodology

- **We use panel regression analysis to quantify the impact of hurricane losses on the debt to GDP ratio with time and country fixed effects, and allow for arbitrary cross correlation and serial correlation as developed by Hoechle (2007) to obtain Driscoll and Kraay (1998) standard errors.**

- **We also use a multiple-equation panel-data procedure to calculate out the shares of the components (central government domestic and external debt and public corporation domestic and external debt) in total debt as developed by Baltagi (2001).**

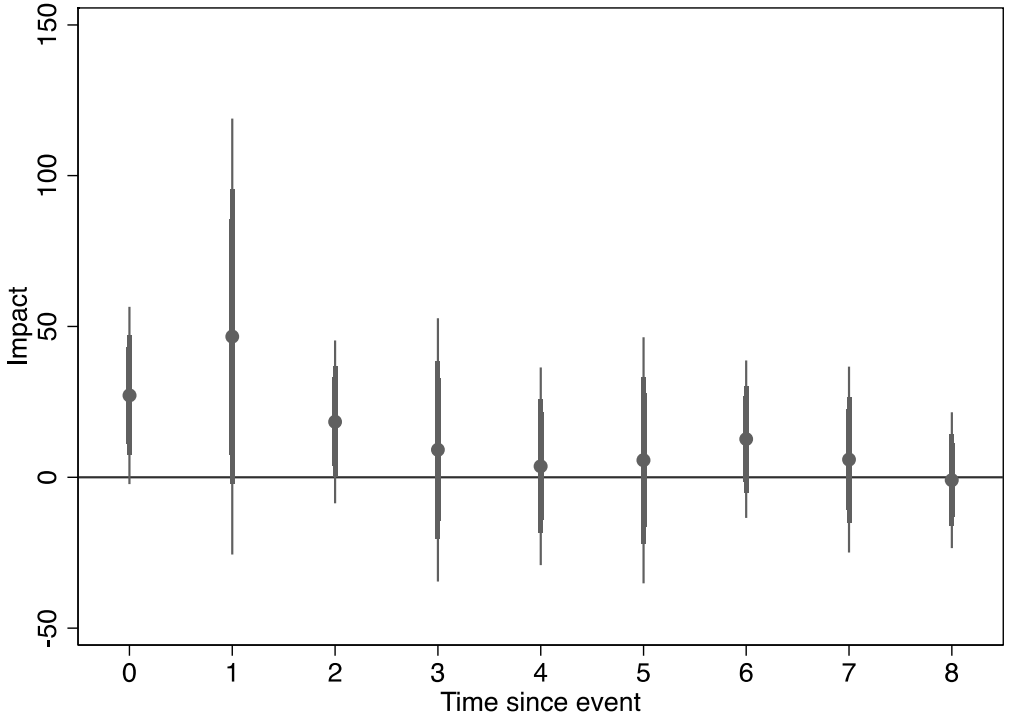
Results

- **Hurricane losses as a percent of exposure immediately increases debt/GDP in the quarter of a hurricane strike and quarter 1 (largest) and quarter 2 thereafter.**

- **Hurricanes increase government debt with lagged impacts for up to two quarters after the event.**

Results

Total government debt/GDP and hurricane strikes



Results

- **In the quarter of a hurricane strike central government domestic debt goes down, central government external debt goes up, and there is no effect on external and internal public corporation debt.**

- **In quarter 1 government central debt is lower, there is no effect on external central government debt, and domestic and external public corporation debt goes up. The same holds for quarter 2.**

- **In quarter 3 there is a small positive impact on public corporation domestic and external debt.**

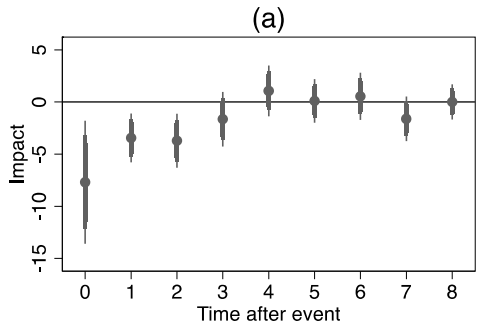
- **In quarter 6 there is a positive significant impact on public corporation external debt.**

- **In quarter 7 after there is a downward impact on central government domestic debt and an upward impact on public corporation external debt.**

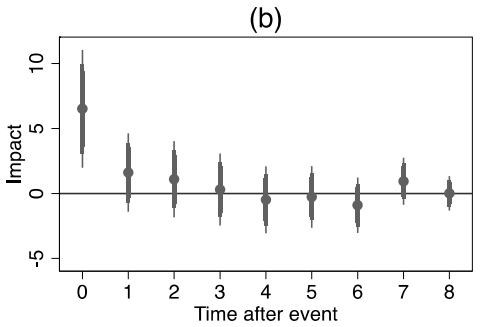
Results

Government debt shares/GDP and hurricane strikes

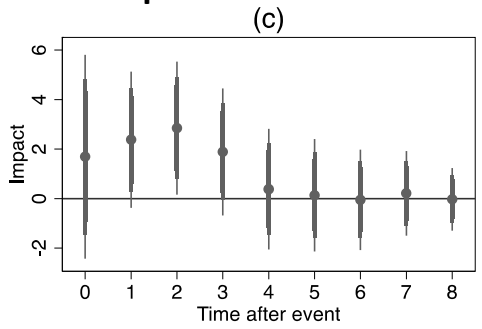
Central Government Domestic Debt



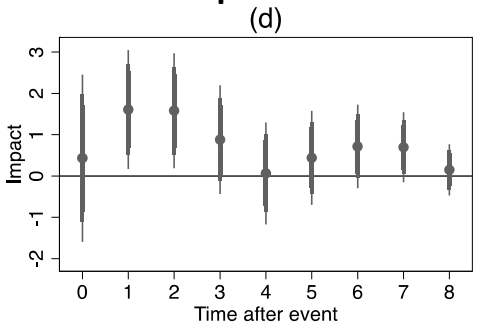
Central Government External Debt



Public Corporation Domestic Debt



Public Corporation External Debt



Conclusion

- **In the Eastern Caribbean hurricanes have an immediate adverse effect on government debt with more permanent effects of up to two years.**

- **Caribbean countries should expect debt to rise in the aftermath of hurricanes, and consequently should attempt to keep sustainable debt levels, and create enough fiscal space to be able to finance their recovery.**

Thank you