

Did fiscal stimulus pull developing
Asia out of global crisis?
A preliminary empirical investigation

Seminar by Donghyun Park, Economics and Research
Department, Asian Development Bank (ADB)
Fukino Symposium, Tokyo, 20 February 2010



Outline of presentation

- Introduction
- State of fiscal health in developing Asia (henceforth Asia)
- Size and structure of Asia's fiscal stimulus packages
- Empirical framework
- Empirical results
- Concluding observations



1 Introduction

- Asia suffers a severe trade crisis in 2008-9
- Enormous political pressures on Asian governments to “do something”
 - Weak tradition of countercyclical macro policy
 - Global has rekindled interest in countercyclical macro policy
- Asia has staged a spectacular V-shaped recovery
- According to conventional wisdom, fiscal stimulus played a key role in the recovery.



1 Introduction

- Another conducive factor was the relatively healthy state of public finances in Asia.
 - Result of a tradition of fiscal responsibility
 - Region has plenty of fiscal space
- Is countercyclical fiscal policy effective?
 - Economists are deeply divided about effectiveness
 - Flurry of recent empirical studies find a wide range of multipliers



1 Introduction

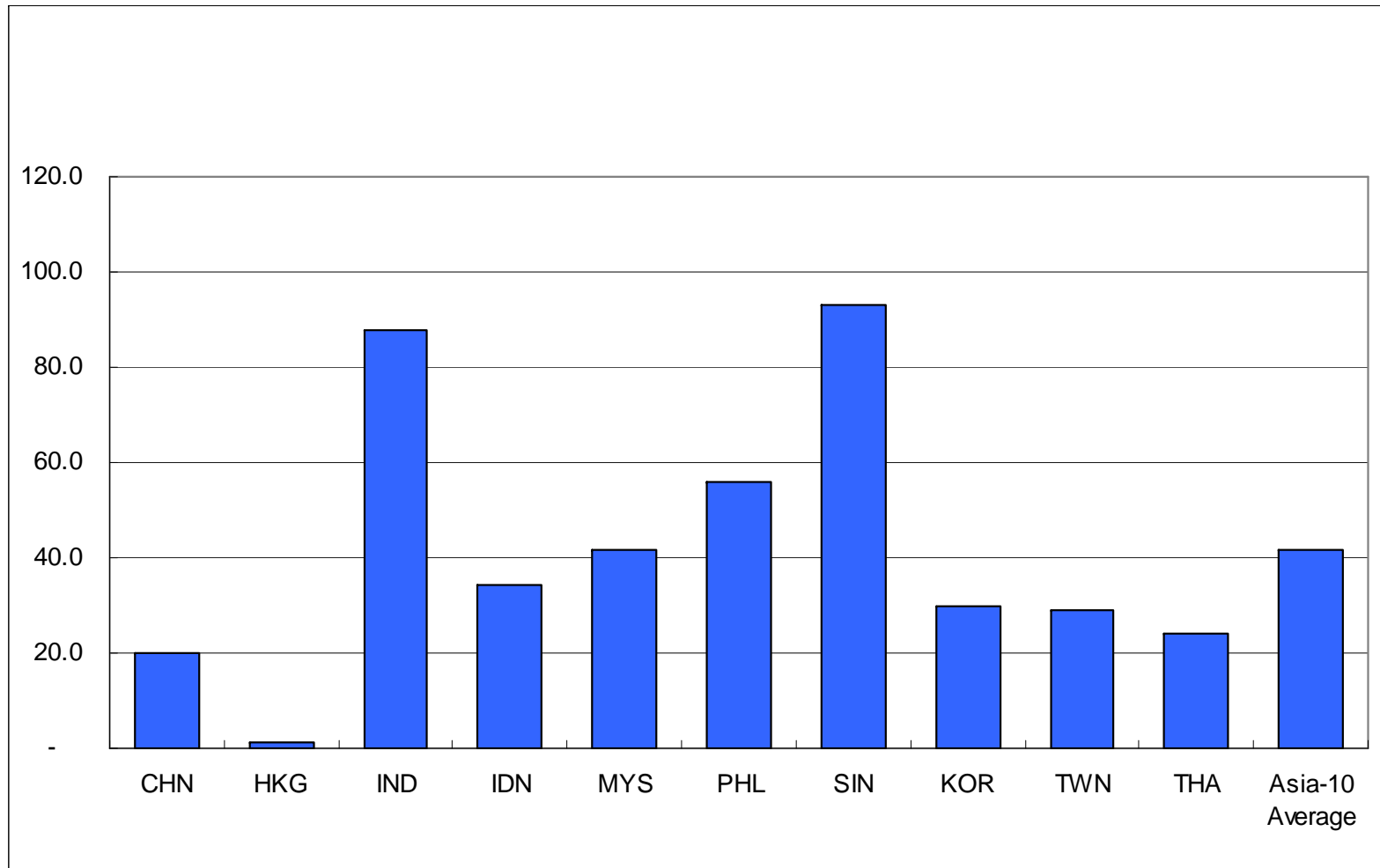
- Our central objective is to empirically test the conventional wisdom (CV) that fiscal stimulus played a central role in Asia's recovery.
 - Up to now, this CV has been accepted at face value without any supportive evidence
 - Existing studies on impact of fiscal policy in G3 and there are no Asia-specific
 - Our study is necessarily preliminary and thus far from definitive



2 State of Asia's fiscal health

- Capacity to pursue countercyclical fiscal policy depends critically on fiscal health.
 - Public debt-to-GDP is a key indicator here
 - A lot of concern about fiscal sustainability in G3.
- According to CV, Asia is fiscally healthy and this enabled quick, decisive, large stimulus programs
 - By and large, the stylized facts support this CV.
 - Debt-GDP ratio of 10 major Asian economies in 2007 was 39%, compared to 84% for G7.

Figure 2
Public Debt-GDP Ratio, Selected Developing Asian Countries, 2007



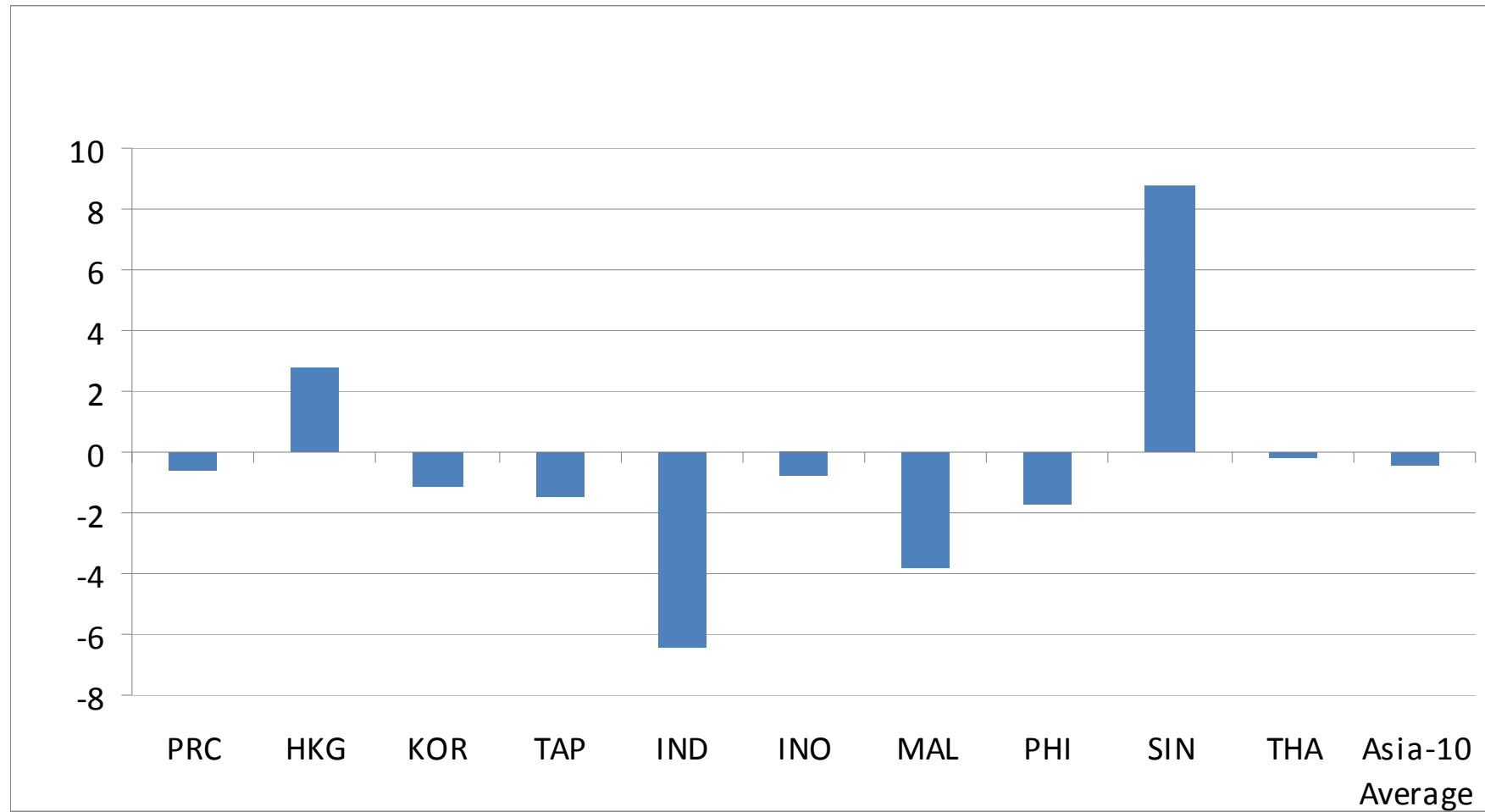
Source: CEIC Data Company Ltd.; Indonesia Debt Management Office; IMF Article IV (for PRC); Reserve Bank of India



2 State of Asia's fiscal health

- However, the rosy scenario is subject to some major qualifications.
 - Developing-country public data are unreliable.
 - Benchmark for debt sustainability is lower for DCs than industrialized countries.
 - Anti-crisis stimulus may harm debt positions.
- Asia's favorable debt position reflects its strong fiscal position and philosophical aversion to fiscal deficits.

Figure 3
Fiscal Balances, Selected Developing Asian
Countries, 5-Year Average, 2004-2008





3 Size and structure of Asia's fiscal stimulus packages

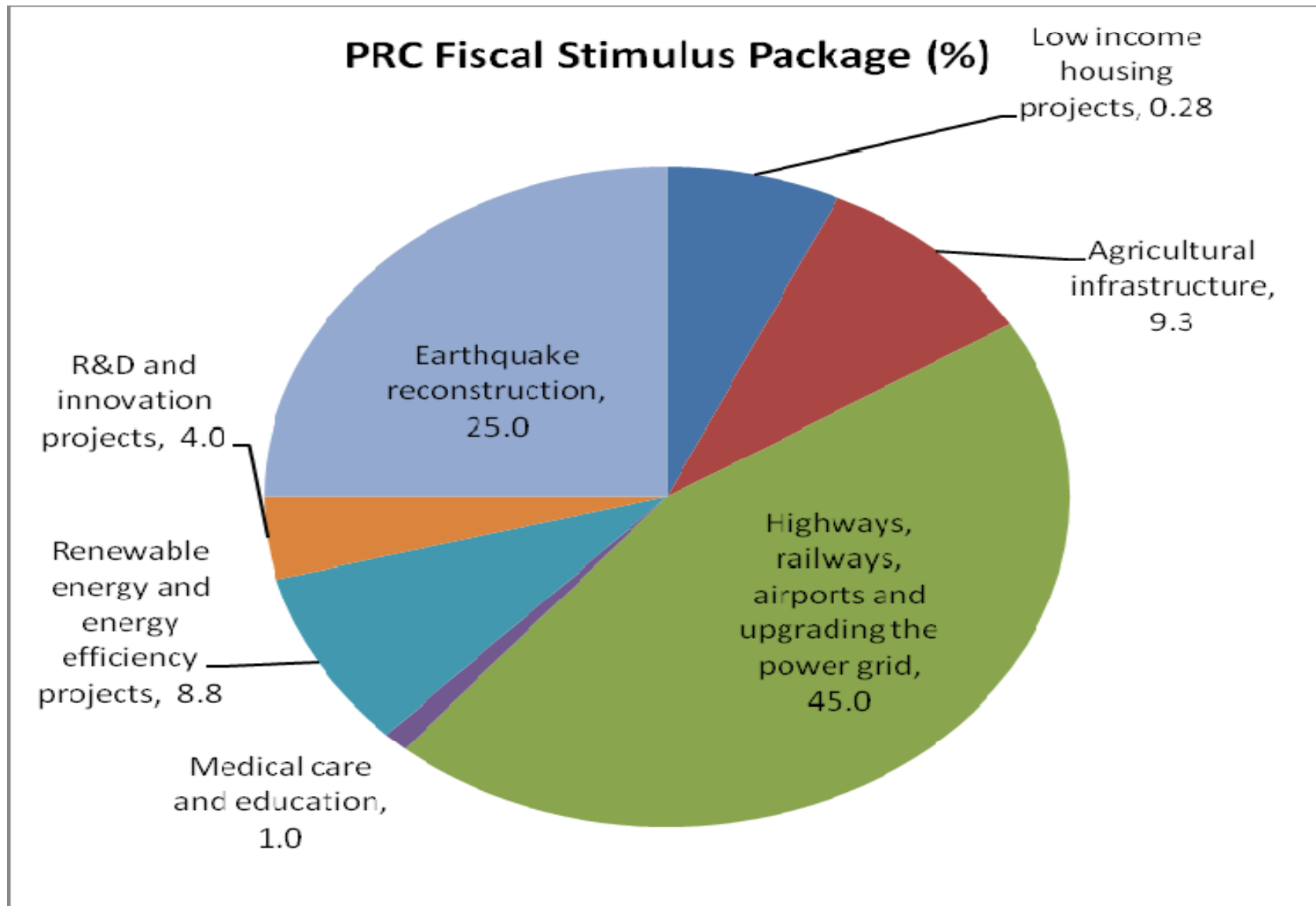
- ❑ Measuring size of stimulus is inherently complex and challenging.
- ❑ Nevertheless, it is worth looking at fiscal measures Asian countries actually implemented.
- ❑ Our paper describes stimulus programs of 4 big countries – China, India, Korea and Indonesia.
- ❑ Appendix also lists the stimulus measures of eight other regional economies.




3 Size and structure of Asia's fiscal stimulus packages

- By far, China has Asia's biggest stimulus package – 13% of GDP until 2010.
- Dominated by spending rather than tax cuts
- Infrastructure investments are a big part
 - Rural infrastructure, transportation infrastructure, post-earthquake reconstruction, environment and others
- Stimulus also seeks to support SMEs.
- Cumulative fiscal expenditures surged by 23% on year-on-year basis through October 2009.

Figure 6
Composition of PRC's 4 Trillion Yuan Fiscal Stimulus Package



Source: Norton Rose Group. The PRC Fiscal Stimulus Package. Available: <http://www.nortonrose.com/knowledge/publications/2009/pub18883.aspx?lang=en-gb&page=all>, downloaded 21 May 2009.



3 Size and structure of Asia's fiscal stimulus packages

- By and large, evidence supports conventional wisdom of heightened fiscal activism during global crisis.
- Governments across region have in fact aggressively cut taxes and increased spending.
- Has the region's new-found fiscal activism has been effective?



4 Empirical framework

- Broadly speaking, the empirical framework consists of two stages.
 - Stage 1: PVAR model generates dynamic GDP forecasts during global crisis – 2008 Q4, 2009 Q1 and Q2
 - Stage 2: Cross-country regression in which we regress the gap between actual GDP and forecast GDP on a number of explanatory variables.



4 Empirical framework

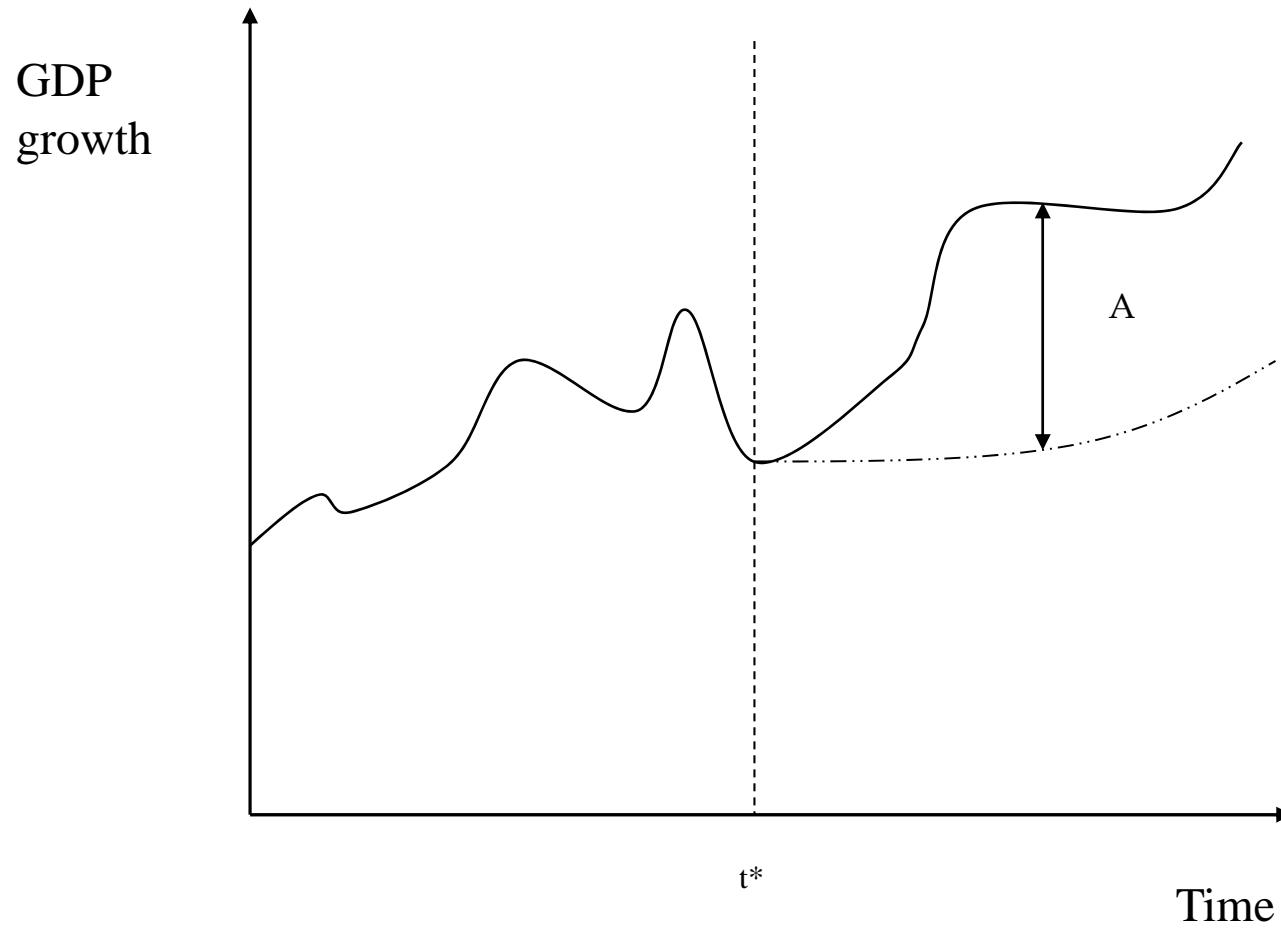
- First stage
 - Before running PVAR, we logarize and detrend real GDP by the Hodrick-Prescott filter.
 - We also compute real global GDP for each country.
 - Using the two variables, we estimate a bivariate PVAR model with 4 lags.
 - Based on estimation results, we compute dynamic GDP growth forecasts for 2008 Q4, 2009 Q1 and Q2.
 - Also, we estimate two 4-variable PVAR models.
 - Include government revenues and spending
 - Same as above model, but replace global GDP with real₅ effective exchange rate



4 Empirical framework

- Second stage
 - We first subtract dynamic GDP growth forecasts from actual GDP growths for 2008 Q4, 2009 Q1 and Q2.
 - We then regress gap between forecast and actual growth (A in Fig 8) on a number of explanatory variables.
 - Fiscal variables: government revenue(-) and expenditures(+)
 - Other control variables: lagged domestic GDP growth(+), global GDP growth(+), policy interest rate(-), term spread(-) and real effective exchange rate(-)
 - Three interaction variables: For us, the key variable is the Asia dummy. Also, historical fiscal soundness and openness¹⁶

Figure 8
Forecast and Actual Post-Crisis Output Growth Path



Note: t^* represents the time period when the crisis broke out



4 Empirical framework

- Our sample consists of G20 economies, which includes China, India, Indonesia and Korea
- In addition, six other Asian economies – Hong Kong, Malaysia, Philippines, Singapore, Taipei and Thailand.
- So total sample is 26, of which 10 are from Asia
- Unbalanced panel of quarterly data – each country's data length based on data availability
- All variables except interest rates are seasonally adjusted



5 Empirical results

- Dependent variable is gap between actual output growth and dynamic growth forecasts generated by the three PVAR models.
- Estimation results of 3 models are broadly similar for the whole sample.
 - Lagged GDP growth, or more precisely unexplained GDP growth, is significant.
 - Monetary policy is significant.
 - Fiscal policy is insignificant.



5 Empirical results

- For the all-important Asia dummy variable, we find that:
 - In 2 out of the three models, government spending is significant – at 10% and 5% levels.
 - In the other model, spending is insignificant.
 - In all three models, government revenues – i.e. tax cuts – are insignificant.
- The other two interaction variables – for historical fiscal soundness and openness – are insignificant in all three models.



5 Empirical results

- Overall, our results lend *limited* support to the notion that fiscal policy has lifted Asia out of global crisis.
 - Limited due to less-than-overwhelming significance
 - Limited also because tax cuts are not significant
- Interestingly, for whole sample, no evidence of fiscal effectiveness.
- This suggests that fiscal stimulus may have been more effective in Asia than elsewhere.



5 Empirical results

- For whole sample, the most striking result is that monetary policy has a consistently significant effect, in contrast to insignificant fiscal policy.
- This implies that monetary stimulus made a bigger contribution to global recovery than fiscal stimulus.



6 Concluding observations

- There is a presumption that fiscal stimulus played a key role in Asia's recovery from global crisis.
- Our paper is a preliminary, first-step empirical testing of that presumption.
- One big strength of our analysis is that we look at impact of fiscal stimulus *during the crisis period*.
- We find limited evidence that the fiscal stimulus, in particular government spending, helped lift Asia out of global crisis.



6 Concluding observations

- The immediate, narrow policy implication is that countercyclical fiscal policy “works” in Asia during severe external shocks.
- But, it is a big mistake to interpret this finding as a call for greater fiscal activism in general.
- Nothing in our finding suggests that fiscal policy will smooth output volatility during normal times.
 - We should not draw inferences about fiscal effectiveness during normal times based on evidence from a once-in-a-lifetime crisis.



6 Concluding observations

- Active use of countercyclical fiscal policy entails serious risks due to political economy factors.
- The broader, more fundamental implication of our findings is that fiscal discipline can entail a highly significant benefit in addition to macro stability.
 - Fiscal space to cope with extreme shocks such as global financial crisis
- Salient policy implication – unexciting but critical
 - More of the same – fiscal policy should continue to provide growth-conducive public goods within hard budget constraints, same fiscal philosophy as before



6 Concluding observations

- In terms of exit strategy, Asian countries should keep a sharp eye on effect of fiscal stimulus packages on their public debt positions.
 - Benign initial debt positions should not lull them into self-complacency
 - All the more so since population ageing and rebalancing will impose additional demands on region's fiscal resources in medium- and long-term.