



**Comments on Session 4**  
**Economic Crisis, Credit Restriction**  
**and Consumption Decision**

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**Banco Central do Brasil**

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**The**  
**Financial**  
**Crisis**  
**of 2008**

Credit Markets and Effects on  
Developed and Emerging Economies

# Household Response to the Economic Crisis and Aggregate Consumption

Petr **Jakubik**, European Central Bank

It was a pleasure to read it  
and to learn a little bit about Czech economy

- The paper studies...

The recent-crisis effect on the Czech household “finance/consumption decisions”

- Results can be divided in two parts
  1. Micro data were simulated and the author provides a link between macroeconomic environment and default rates
  2. Claim: consumption decline is typically under estimated by conventional models because important channels are typically neglected. Such channels are presented.

First Result: micro data were simulated and the author provides a link between macroeconomic environment and default

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The strategy for the model specification and the estimation procedures are not totally clear in the paper

- Goal: to bypass the lack of micro data on Czech household balance sheets
  1. Micro data were simulated based on:
    - Aggregate data from Bank Credit Registry
    - Merton-Type one-factor model
  2. Household insolvency was linked to macroeconomic variables by OLS
- Simulation procedure is based on a model that has already been published on the Czech Journal of Economic and Finance
  - But still, some information should be provided in the paper
    - » See Appendix...but where is it?

- Reported Specification/Estimation procedures:
  - The model is calibrated to maximize the likelihood function (see Appendix?)
  - Household default rate is based on OLS
  - Variable selection is based on the highest predict power
  - Optimal time lag procedure
  - Restriction: coefficient signs are in line with the economic theory
  - Various specifications were tested
  - Estimation is based on monthly data and quarterly data must be interpolated
- **All these information is “zipped” into the same paragraph**

The reader would like to see all these specification/estimation procedures in details because the final results are great...



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- Micro data on Czech Household Finances are not available
- The author has simulated it to provide some macroeconomic evaluation
  - Results are based on Merton-Type one-factor model
  - It is a contribution by itself !!
  - Has it already been published?
    - » Micro data set should be described

<b>Macro-Variable</b> Its growth/variation helps to explain Czech household default rates	<b>Estimated Coefficient Signal</b> Effects on the Czech household default rates
Interest Rate	+ 3.4%
Real GDP	-2.8%
Unemployment	+1.2%
Nominal Wage	-1.2%

–Variables are ranked by the coefficient size (absolute value)

» Good and intuitive results. It is a contribution !!

–The paper should focus on such results, called “the first part of the empirical analyses”

**Second Result:** Consumption decline is typically under estimated by conventional models because important channels are typically neglected

## Non-conventional effects on consumption

CONSUMPTION GROWTH IN TERMS OF GDP DEPENDS ON THE ...

- 1) GDP growth effect (direct effect)
- 2) New unemployed consumers effect
- 3) New defaulted consumers effect

The following scenario was presented in the paper:

- Change in GDP (-1%)
- Defaulted consumers (+1%)
- Unemployed consumers (+1%)

Model Output:

Resulting change in consumption (in % of GDP): (-1.47%)

Defining it as the baseline scenario

Baseline Scenario but Increasing Unemployment by more than 1%  
(+1%) to (+7%)

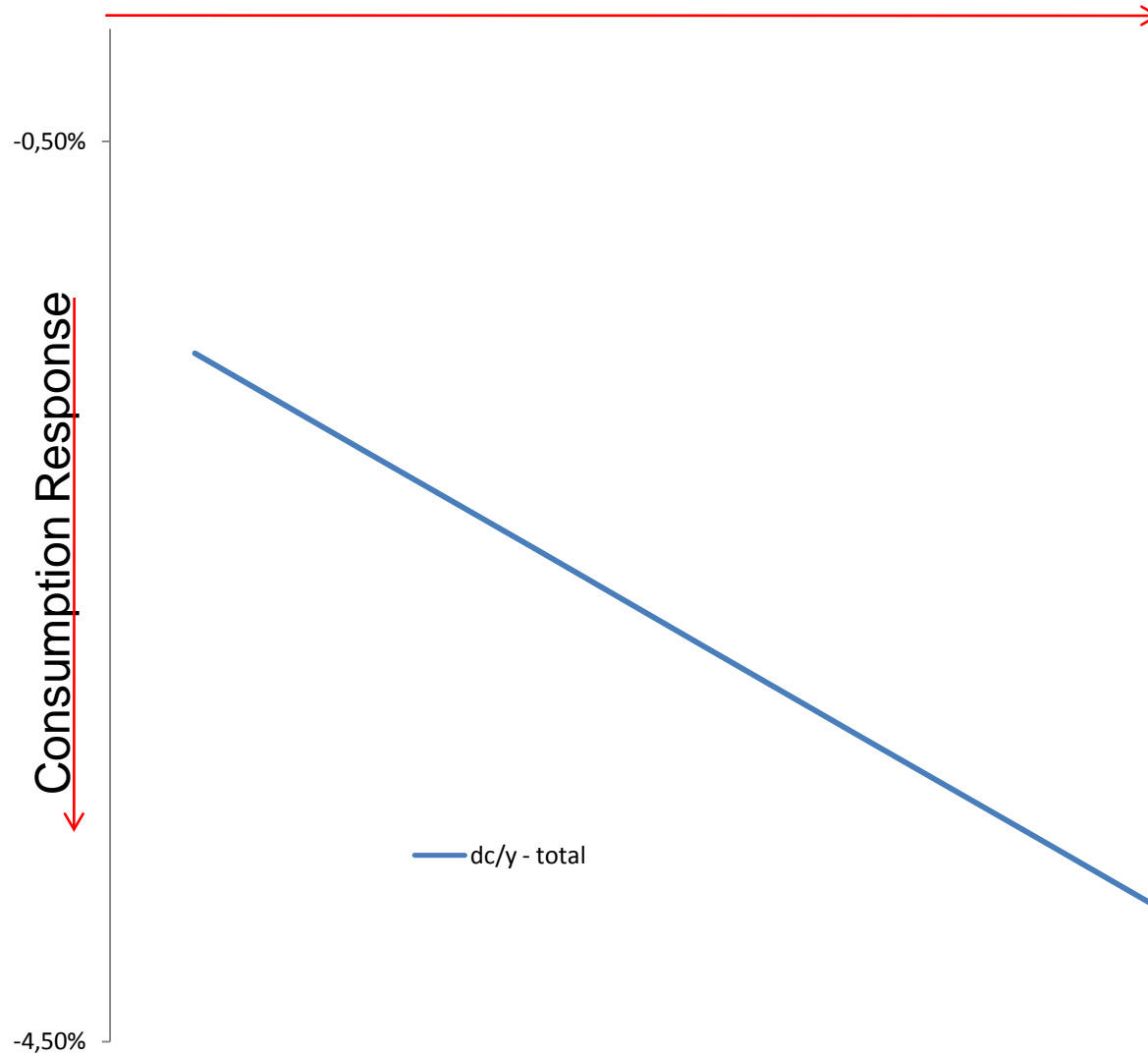


Baseline Scenario but Increasing Unemployment by more than 1%  
(+1%) to (+7%)

Consumption Response

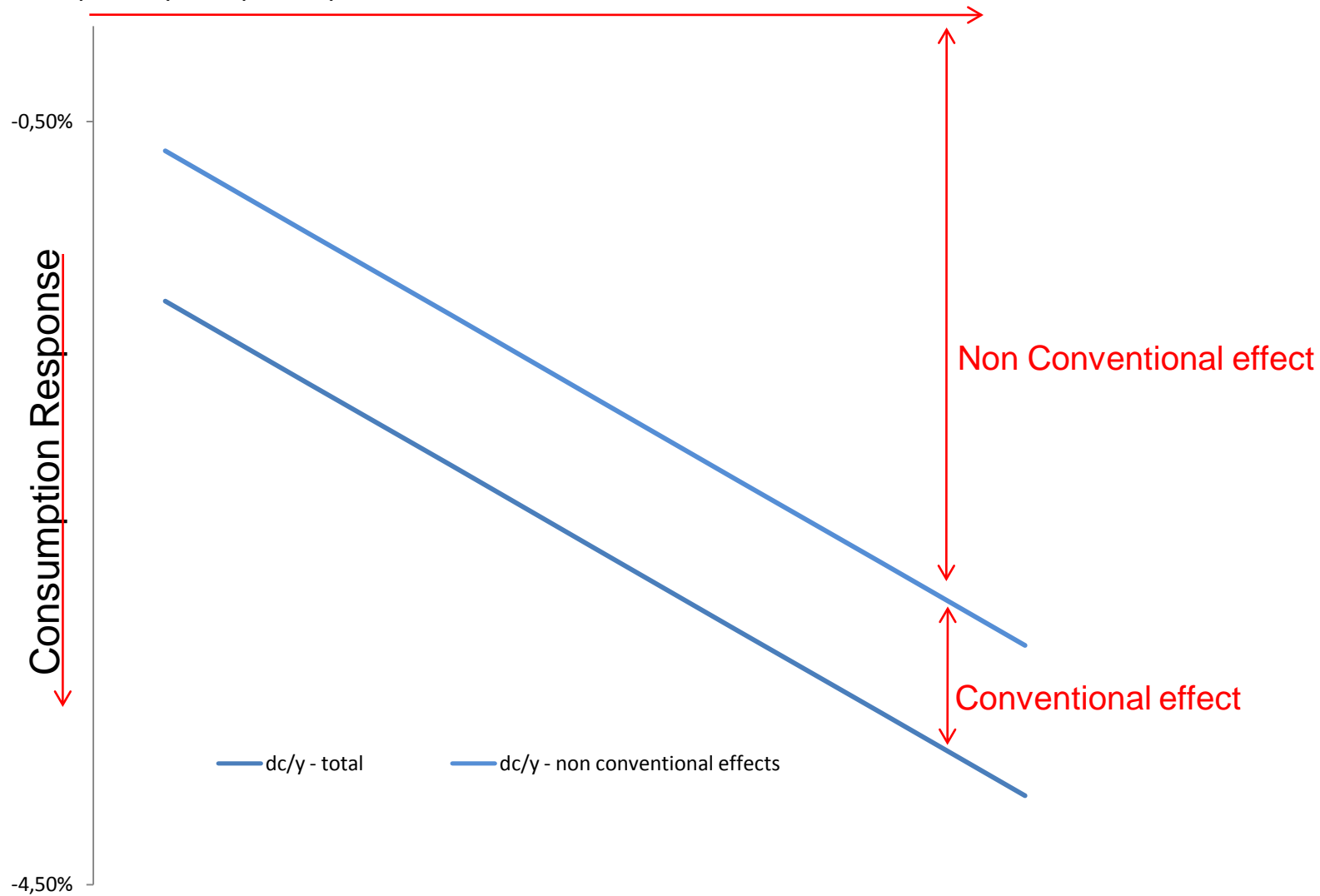


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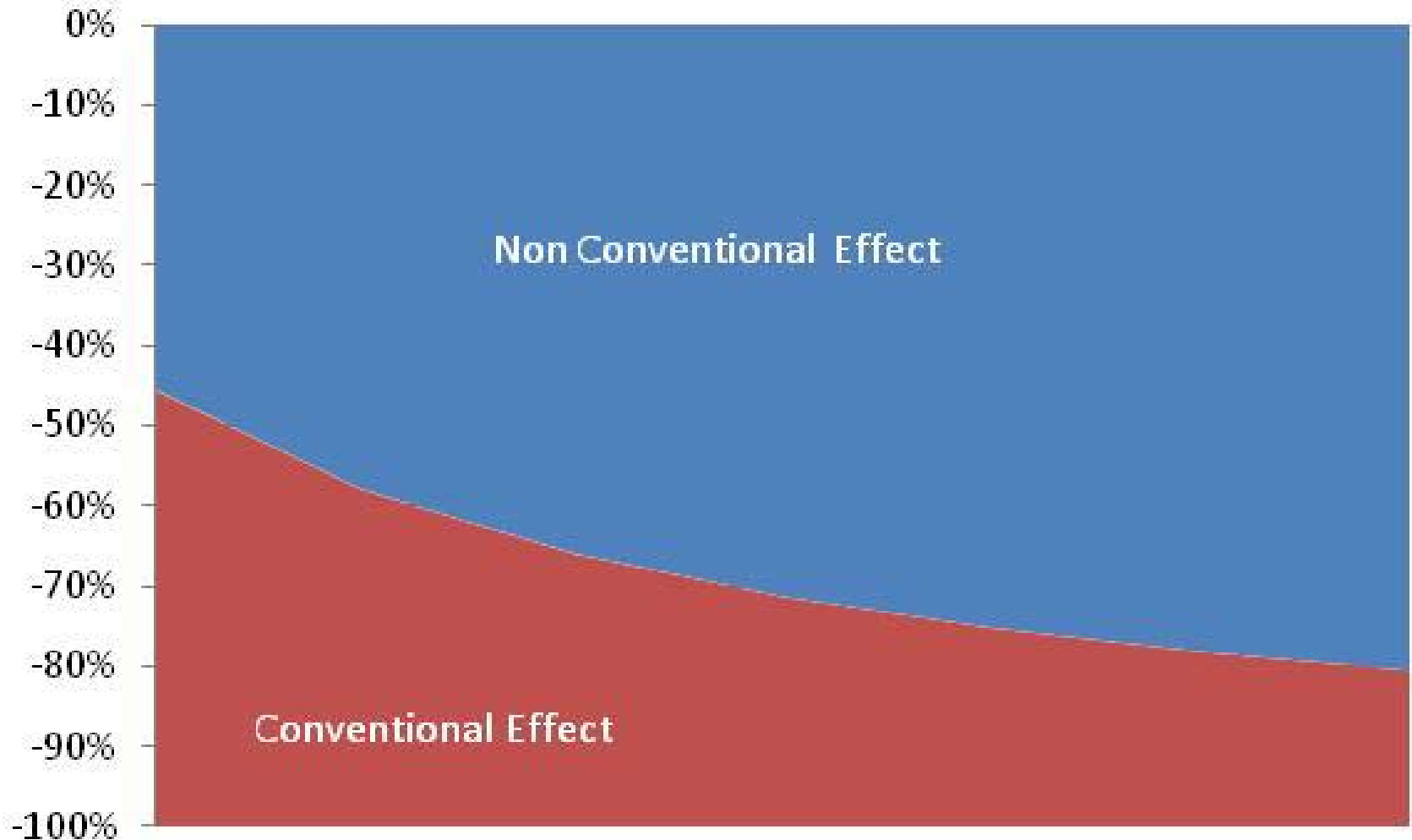




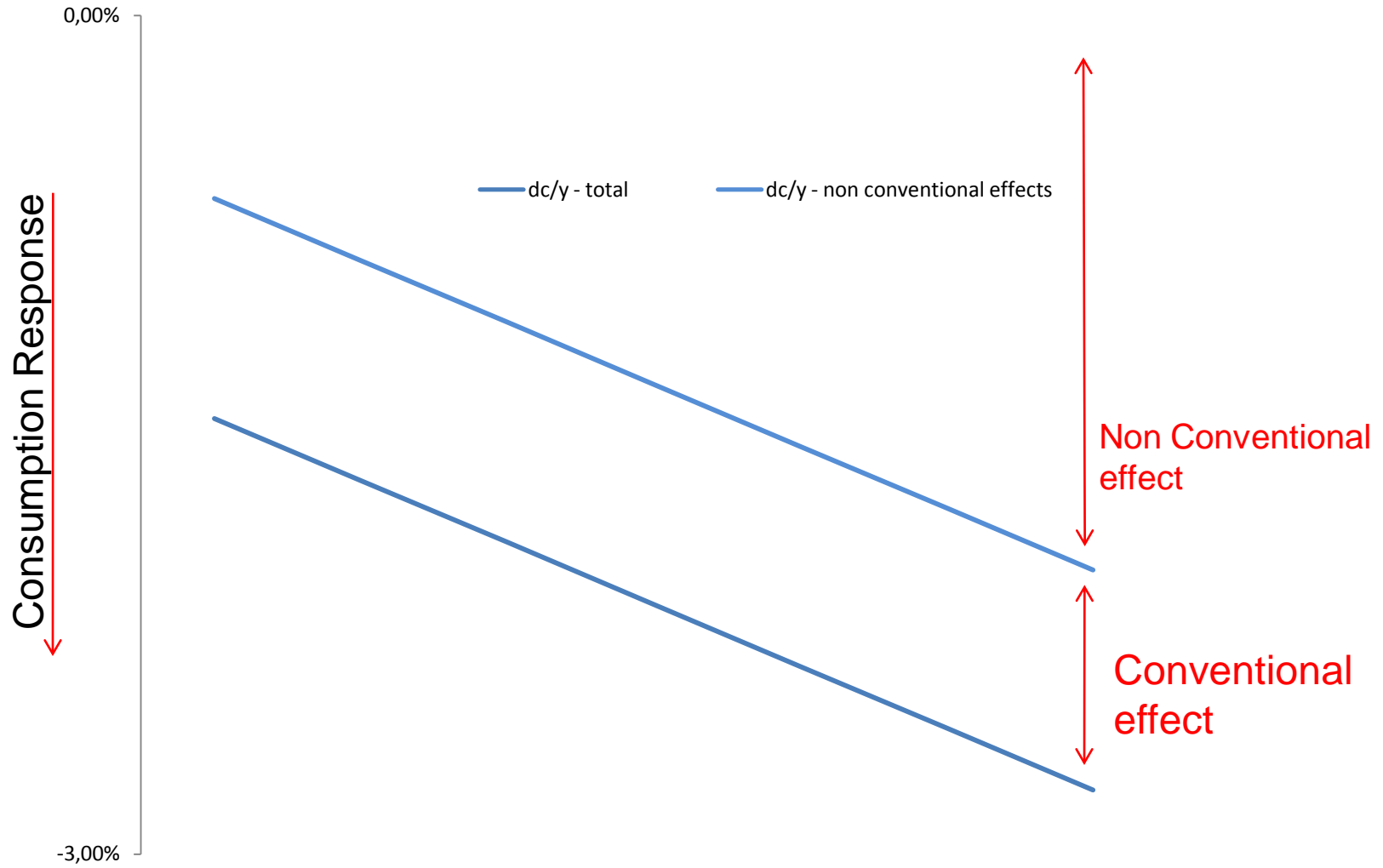
# Baseline Scenario but Increasing Unemployment by more than 1% (+1%) to (+7%)



Baseline Scenario but Increasing Unemployment by more than 1% (+1%) to (+7%)



# Baseline Scenario but Increasing Default by more than 1%



Second results are very interesting from the theoretical point of view

Empirically, they depend much on the calibrated values

Example: marginal propensity to consume for unemployed consumer??

- Really non-observed...how to infer its calibrated value?
  - Lack of data
  - Lack of literature

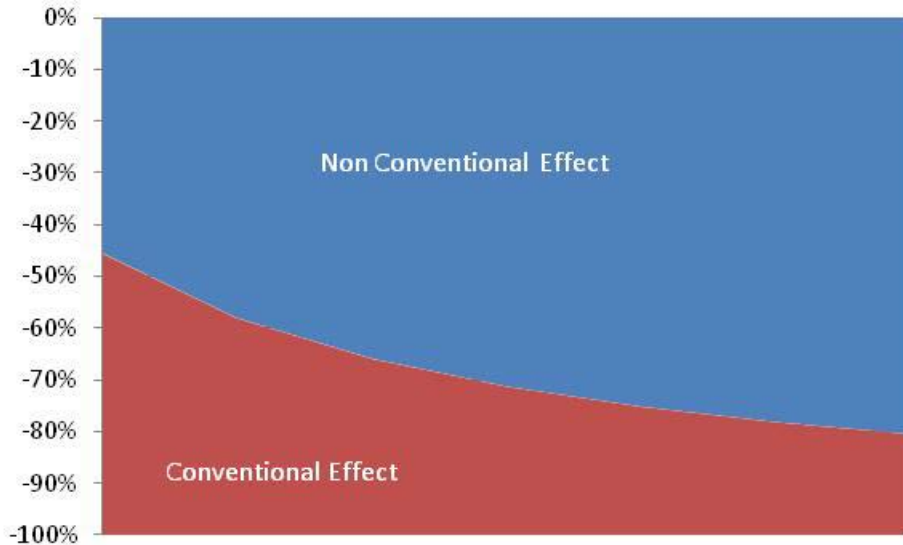
Do results change a lot after increasing this parameter?

(0.8)

(Closer to the MPC for employed, 0.9)

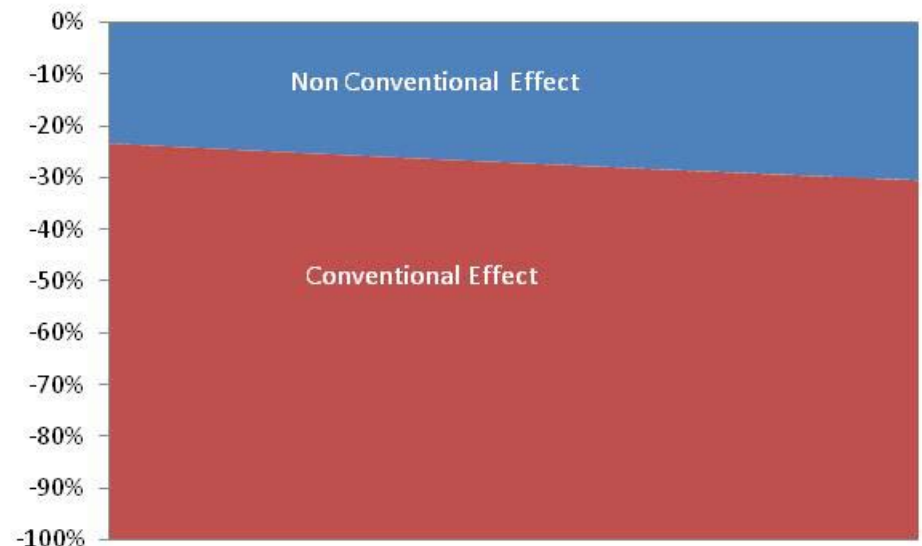
(But still, employed savings = 2 \* unemployed savings)

## Increasing Unemployment under Baseline Scenario ( Increment varies from (+1%) to (+7%) )



Case of the Paper:  
second order effect is very  
important

Case of the Paper but with higher  
 $C_u (=0.8)$ : second order effect  
becomes less important



The difference between two marginal propensities to consume: one coming from unemployed, other coming from employed... How big is it? How important is it to explain aggregate consumption response?

**It is difficult to test, and also it is difficult to defend its importance (in my view).**

**Goal: to avoid underestimations on consumption response during crisis**

It might be easier to look for the links between macro-variables and the propagation channels

“higher unemployment causes lower GDP and higher default rate, which in turn causes lower credit, and then lower GDP again...”

How important is the credit market?

**Multiple sector/equations set-up like a DSGE framework might be a better approach to look for the propagation channels**

# Consumption, Credit Restrictions, and Financial Stability: A DSGE approach

Soler and Estrada, Banco de la República de Colombia

It is a great text, it was a pleasure to read it.

But, again ...



Authors have made reference to a non observable Appendix A and to a non observable Appendix B.

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It doesn't matter. You do not need an appendix.

The strategy for the model specification and the numerical procedures are totally clear in the paper

Authors have developed a DSGE with banking sector and endogenous default to appraise financial stability *versus* structural shocks. Regulation was also appraised.

**Ambitious (and important) goal.** Banking sector with endogenous default has not been successfully introduced in DSGE models yet (to my knowledge).

## Intuitive and interesting results:

- Under negative productivity shock
  - Households and firms postpone their credit repayment
- Under preference shock (Beta reduction)
  - Households postpone credit repayment
- Regulation: credit is limited based on past profit and repayments
  - It reduces instability but also reduces the credit supply

## Brief comments on:

- Default technology assumption
- Risk sharing assumption
- Regulation Approach
- Results and shock selection

- Default technology
  - It is typically not continuous
    - Decision is usually to default with high cost or not to default with no-cost

(see Cole and Kehoe/Geanakoplos)
    - Quadratic Cost Assumption ( $t+2$ ) plus the Debt Repayment Fraction **Choice ( $t+1$ )** look more like a liquidity premium associated with the postponement repayment (longer maturity)

- Risk sharing assumption
- Consumer and firm decide how much to repay back to the bank (decision is about default size)
  - Bank profit is really volatile and depends (contemporaneously) much on a consumer preference shock, for example
    - This shock should affect new credit, not repayment
- On the other hand, the share of the firm profit to be re-invested (distributed) is fixed
  - Capital investment decisions need to be adjusted through the banking sector. Reinvested profit is taken as given by the firm

- Regulation Approach
  - Is it better to focus on the capital structure instead of focusing on flows?
  - There is a role for collateral/leverage level, isn't it?



- Results and shocks selection
- Spread results should be much more explored
  - Important from policy perspective
- Consumption Boom Exercise
  - Why do you define it based on preference shock?
  - The framework is claiming for a credit shock to characterize consumption boom

- Thank you for your patience