COMMENTS ON SESSION 2
FISCAL IMPULSE

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1 The assessment of fiscal impulse in the recent crisis scenario: A comment

The current debate about discretionary fiscal policy was somewhat stimulated by the fiscal action policy makers put in place to support economic activity during the recent crisis. Action came before theory. *The Economist* describes this situation bluntly: "*It is the biggest peacetime fiscal expansion in history. Across the globe countries have countered the recession by cutting taxes and by boosting government spending. The G20 group of economies … have introduced stimulus packages worth an average of 2 per cent of GDP this year and 1.6 per cent of GDP in 2010. Coordinated action on this scale might suggest a consensus about the effects of fiscal stimulus. But economists are in fact deeply divided about how well, or indeed whether, such stimulus works*".[1] The last sentence sounds like a slap in the face of the economists for having been unable to get a sense of the policies needed to counteract crisis and for leaving policy makers to play it by ear.

After a dominance of policy advice based on models featuring frictionless markets and inter-temporally optimizing forward-looking agents (where any expenditure expansion would eventually give rise to increases in taxes and therefore to negative wealth effects and decreasing private consumption), to the external observers the revival of fiscal multipliers may actually look like a paramount switch in the profession's perspective or a nostalgic comeback of old-fashioned views.

Past wisdom inherited from the '80s fixed the focus on "normal" and "peacetime" concerns about real business cycle and definitely established the failure of discretionary fiscal policy for stabilisation purposes (due to implementation lags, small multipliers' size, etc.). Policy makers were even warned against possible destabilising pro-cyclical effects from its misuse. The widespread scepticism on the ability of fiscal policy to work as a stabilisation instrument emphasized the role of automatic stabilisers and shifted the focus on long term budgetary outlook.[2] This view has not changed, basically: at the beginning of the recession, when the issue of discretionary fiscal policy re-emerged in the debate, the old concerns were firmly restated: "*Fiscal stimulus is critical but could be counterproductive if it is not timely, targeted and temporary*" (Summers, 2007). The resort to fiscal policy was primarily envisaged as a consequence of the reduced efficacy of monetary policy in low interest conditions and in a liquidity trap situation.[3] What has changed in the meantime is the perception about the seriousness of economic context, particularly the depth and the duration of the crisis (Auerbach and Gale, 2009), and about the nature of the current recession, which – contrary to the previous crises of the '70s and the '90s that were supply side induced – is demand side driven (Röger and in 't Veld, 2009), Under these

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[1]   From *The Economist* (2009a), our bold.

[2]   See, for instance, Blanchard, Dell'Ariccia and Mauro (2010), pp. 5-6.

[3]   "*If policymakers are able to act quickly and effectively, fiscal policy can work more rapidly than monetary policy, which has about a lag of a year between the change in the federal funds rate and its maximum impact. Moreover, the efficacy of monetary policy may well be diminished by capital constraints that limit the ability of banks to lend or by creditworthiness constraints that limit the ability of businesses to borrow. As important, the extent to which monetary policy can be prudently used in the current environment is limited by concerns about the dollar as well as about the bubble creating effects of very low interest rates. Finally certain problems – such as the impact of mass foreclosures on affected communities – are not easily amenable to monetary policy.*" (Summers, 2007).

circumstances a return to fiscal policy as a macroeconomic tool sounds somewhat less contradictory: *"some of the past problems in using fiscal policy to stimulate demand may be less an impediment in the current circumstances"* (Feldstein, 2009).

As a matter of fact, the disagreement among the economists *"about how well, or indeed whether"* fiscal stimulus may work is more a signal of the **difficulty in reconciling theoretical and empirical results consistently enough**. Such difficulties were already a concern of the economists before the crisis imposed the issue of sustaining the economic activity in the policy agenda, but they were still unsolved. The last wave of New Keynesian models may be interpreted precisely as an attempt to reconcile theoretical predictions with empirical analysis, by neutralising in macroeconomic models the negative response of private consumption to government expenditure shocks as a result of rational expectations and Ricardian behaviours inherited from the micro-foundations. The key mechanisms to this aim are found in real frictions and nominal rigidities, that allow real wages to increase, and devices to obstruct, someway, the working out of negative wealth-effect[4] (e.g., liquidity constraints that prevent at least some agents from optimising their consumption choices).

Some authors depict the current status of the art in macroeconomics as the result of a **philosophical divide between two opposite approaches**, more than a stage in the evolution of macroeconomics.[5] One is a "theory first"/Walrasian approach, which *"sees the macro economy as a system that we can best understand through the lens of formal micro-founded theory"* (Colander, 2009) and *"insists on a complete theoretical model of the phenomena of interest prior to data analyses"* (Campos, Eriksson and Hendry, 2005); it has recently flown into DSGE models. The other is a "reality-first"/VAR family approach, which *"sees the macro economy as more complex than that and does not see a rigid microeconomicly grounded theory as especially helpful in shedding light on most macroeconomic problems"*[6] since the economy is *"a complicated, dynamic, nonlinear, simultaneous, high dimensional, and evolving entity"* due to continuous changes in social systems, laws, technological innovation, etc.[7] The divide, in Colander opinion, opposes US and European schools, with the US "theory-first" approach prevailing, primarily due to a "publish or perish" selection mechanism in journals publication that encourages the profession to invest more in assumptions based modelling and less in complex and judgemental demanding data analysis.[8] One less extreme position could recognise that both approaches are needed and both can provide useful insights. The crucial point when tackling the crisis is that policy receipts may be extremely different. The recent debate about fiscal multipliers seems a long way from end.

Auerbach and Gale (2010) summarise the **evidence on the effects of discretionary fiscal policy on economic activity** considering all main approaches in the literature, from the micro evidence on individual agents behaviour (capturing only direct effects), to the macro evidence on overall economy (capturing both direct and indirect effects). On the macro side, the authors distinguish: the large-scale macroeconomic models, that track all the channels relating prices, quantities, and policy variables and are estimated by regression techniques; reduced form SVAR models, that directly relate changes in output to changes in policy variables and are estimated based on assumptions for the identification of fiscal policy shocks and their effects; dynamic general equilibrium models (like DSGE), with relative small number of equations, that are strictly grounded in microeconomic theory and are partly-estimated and partly-calibrated. Limitations of the three approaches are to be found respectively: in the Lucas critique applying to the estimated

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[4]   For instance, Hall (2009), par. 5.

[5]   As, for instance, Woodford (2009).

[6]   Colander (2009).

[7]   Campos, Eriksson and Hendry (2005).

[8]   Colander (2009), pp. 5-7.

parameters of macroeconometric models; in the possibility of SVAR to address policy effects only under the economic conditions prevailing within the sample and if complemented by a "narrative approach"; in the enormously wide spectrum of multipliers DSGE may provide depending on the modelling assumptions (Auerbach and Gale report values ranging from "*the essentially zero estimate provided by Cogan* et al. *(2009) to estimates in the range of 3 or 4 provided by Christiano* et al. *(2009)*"). From the analysis of case studies of previous crises (the US Great Depression and the Japanese Lost Decade) the authors conclude that sustained fiscal policy expansion was not attempted in either case and that was to some extent due to the predominance of concerns about the budget over concerns about the state of the economy.

The debate has therefore shifted on the size of fiscal multipliers. Multipliers size vary with: *non-fiscal factors* like the size, the structure, the frictions, the openness, and the state of the economy, the interactions of fiscal policy with other policies; *fiscal factors* like, the different channels chosen to inject the fiscal stimulus, the fiscal institutional framework affecting the implementation of the policy, the permanent or temporary nature of the fiscal stimulus, the framing/packaging of interventions (via announcement effects, transparency, etc.); households and firms *behavioural assumptions and potential nominal and real rigidities* in the models that are used to estimate the multipliers (reflecting different micro-foundation).[9] As to the last point, it matters in particular whether agents formulate forward or backward-looking expectations, are Ricardian or non-Ricardian, are subject to constraints on liquidity, borrowing, cash flow, (Galí, López-Salido and Vallés, 2004, 2007; Coenen and Straub, 2005). The size of multipliers also reflects the "*fiscal space*" allowed for more aggressive response by policy makers (Blanchard, Dell'Ariccia and Mauro, 2010) and may be dictated by debt and fiscal sustainability conditions (Corsetti, Meier and Muller, 2010). Another factor that recently attracted the attention of the economists, in the light of the coordinated fiscal expansion strategy undertaken by policy makers, is the magnitude of cross-border fiscal policy spillovers due to changes induced by fiscal shocks in imports, exports, exchange rates and interest rates. These channels act both in positive and in negative ways on the multipliers, and the assessment of the net effect varies according to the modelling of domestic and foreign economies and the underlying assumptions (Cwik and Wieland, 2009; Corsetti, Meier and Muller, 2010).

As Blanchard *et al.* (2010) argue, **there is a lot we still need to learn about multipliers**.[10] However, Spilimbergo, Symanski and Schindler (2009) in the IMF Staff Position Note that gives background information to policy makers on fiscal multipliers, correctly stress that the fiscal multipliers available for some countries "*should be carefully re-examined in the light of current events*", but they also advice against reestimating their size in the present situation since structural parameters have changed, violating one of the crucial estimating assumptions. They conclude that "*past research on multiplier estimates … can provide guidance in developing multiplier estimates, but judgement, based on current conditions, is important*", someway validating the detachment between economists and policy makers in the current situation.

One relevant issue in this debate concerns the **size of fiscal multiplier under zero interest or liquidity trap conditions**. It probably deserve some more attention. The debate on this topic in the economic literature has revived after the Japanese experience of the Nineties and the US experience in the recent financial crisis. However, "*much of this debate was, explicitly or implicitly, within the context of old-fashioned Keynesian models or the frictionless neoclassical growth*

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[9] See, for instance, Hall (2009).

[10] " *… the wide variety of approaches in terms of measures undertaken has made it clear that there is a lot we do not know about the effects of fiscal policy, about the optimal composition of fiscal packages, about the use of spending increases versus tax decreases, and the factors that underlie the sustainability of public debts, topics that have been less active areas for research before the crisis*" (Blanchard, Dell'Ariccia and Mauro, 2010, p. 9).

model" (Eggertsson, 2010). The basic idea does not seem to have significantly moved away from Keynes suggestions that fiscal multipliers were likely to be much larger during severe downturns than in normal times (Keynes, 1936). In a simple IS-LM framework, a demand equilibrium occurring in the horizontal (liquidity trap) segment of LM curve implies null effectiveness for monetary policy and maximum effectiveness for fiscal policy and the same shift in the IS curve is associated with decreasing changes in output (Figure 1). The supply side is affected by the

Figure 1

Liquidity Trap: A Simple IS-LM Representation

choice of fiscal instrument insofar as taxation may interfere with price formation mechanisms, and possibly with expectations.

Eggertsson observes that "*the principal goal of a policy at zero interest rates should not be to increase aggregate supply by manipulating aggregate supply incentives. Instead, ... should be to increase aggregate demand – the overall level of spending in the economy. ... At zero interest rates, output is demand-determined. ... policy should not be aimed at increasing the supply of goods when the problem is that there are not enough buyers*". A receipt that closely resembles the Keynesian arguments against Say's Law and the explanation of the Paradox of Drift.

However, the use of new Keynesian DSGE models may significantly add to our knowledge of the effects of the specific fiscal instruments. For instance, Eggertsson finds that tax cut are effective only in case of temporary reductions of sales taxes and investment tax credit, whereas cutting taxes on labor or capital may prove to be contractionary. As he argues: "*policies aimed at increasing aggregate supply are counterproductive because they can create deflationary expectations at zero interest rates*". Erceg and Lindé (2009) find results that "*suggest a somewhat nuanced view of the role of fiscal policy in a liquidity trap*". In studying the effects of expanding government spending in a liquidity trap environment they conclude that by allowing an endogenous duration of the liquidity trap, fiscal multipliers depend on the scale of the fiscal expansion: "*For an economy facing a protracted recession and for which monetary policy seems likely to be constrained by zero bound for a very prolonged period ... there is a strong argument for increasing government spending on a temporary basis. ... for shorter-lived liquidity traps ... the multiplier is larger than under "normal conditions" for small increases in spending, but drops relatively quickly at higher spending levels.. Thus, larger spending programs may suffer from sharply diminishing returns, and may boost government debt significantly*". As for the state of the art of macroeconomics, pictures are not as clear-cut as policy makers would probably like…
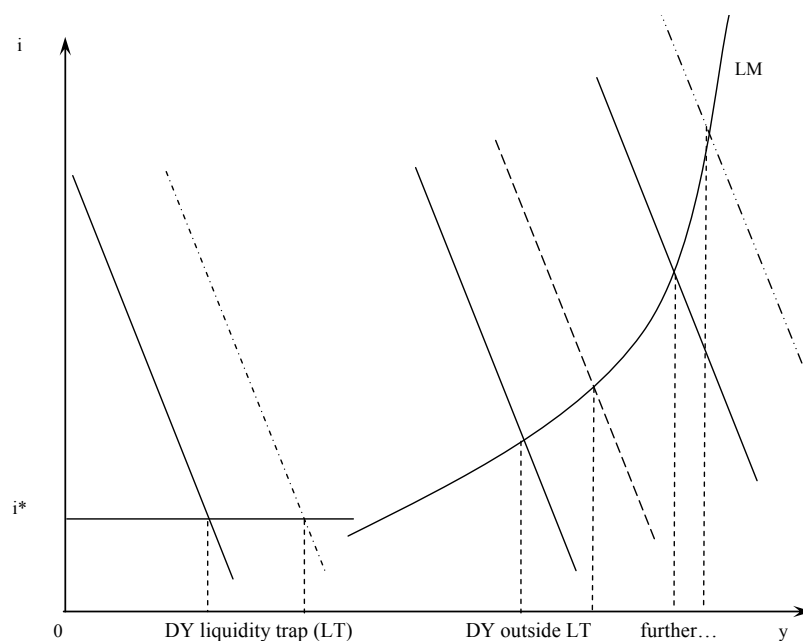
Under these circumstances a warning may be particularly useful: "*Convenience, not conviction, often dictates the choices economists make. Convenience, however, is addictive. Economists can become seduced by their models, fooling themselves that what the model leaves out does not matter. ...*".[11]

2 Comment on the papers

The papers presented in Session 2 give a broad overview of state of the art as reported above. They provide us with an interesting insight about the difficulties policy maker must confront in these days when approaching the use of macroeconomics to look for policy guidance. The three papers by Kaniovski and Schratzenstaller, Valli Jorge and De Carvalho, and Röger and in 't Veld differ in many respects (Table 1): the first one uses a medium scale macroeconometric model, while the others use DSGE models; it also simulates the effects of policy packages actually implemented by Austria and its main commercial partners *vis-à-vis* the current crises, while the other two present predictions from different fiscal instruments changes, subject to specific fiscal rules.

All of them, however, try to contextualise their own findings in the present crisis scenario: they address common issues like the role of spill-over effects from cross-border flows (in the light of the significant role policy makers attached to fiscal policy coordination in the international agenda) and the need to take on board somehow the peculiar conditions of the monetary and financial markets in the aftermath of the financial crises.

The **Kaniovski and Schratzenstaller** paper is a typical example of macro model simulation. Results from Macromod (the macroeconomic model of the Austrian economy developed at WIFO) are supplemented by the spillover effects from Austria's ten most important trading partners on the Austrian economy, that are estimated by OEF (the Oxford World Macroeconomic Model). The two models are linked so that simulations can take into account both of changes in terms of trade, interest rates and the Euro/US Dollar exchange rate from the OEF World model and of the much more detailed description of the institutional features of the Austrian economy from the domestic WIFO model.

The richness of details about domestic economy is a classical advantage of macroeconometric models and represents the real value added in using this tool for assessing the impact of fiscal policy. Some more description by the authors of the working through of the macro model would therefore be appreciated (possibly in an appendix). Fiscal multipliers reported in the paper are in line with other macro models: for government expenditure are above 1, while for the personal income are around half percentage point ("slightly below"). Inclusion of the economy openness is the main addition.

The spillover effects from the additional stimulus by foreign fiscal packages is estimated to produce an extra gain in real GDP of almost one percentage point from the baseline scenario. In a more detailed description of WIFO model, it would be interesting to understand how spillover work through the single channels, considered in both directions separately, in order to assess whether the policy mix adopted by the states could have been enhanced by a different composition of the packages. In Kaniovski-Schratzenstaller paper the role of the crisis in affecting fiscal policy effectiveness is simply mentioned as a background issue. It is not clear, however, whether such an issue is taken care of, and how, in the simulation (what is happening to interest rates? Are they set fixed, or shocked or what else?).

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[11] *The Economist* (2009b).

Table 1

Kaniovski and Schratzenstaller, Valli Jorge and De Carvalho, Röger and in 't Veld Compared

Comparison complex. Papers use:	**Röger and in't Veld**	**Valli Jorge and De Carvalho**	**Kaniovski and Schratzenstaller**
different models …	NK, DSGE: Estimated; Multi Country	NK, DSGE: Calibrated; Two Country	Macro model: Estimated; (Exogenously) Multi Country
with different assumptions about fiscal stimulus …	Fiscal Policy reaction function	Fiscal Policy reaction function	Discretionary manouvre simulated
under different complementary policies …	Taylor Monetary Policy Rule	Forward looking Taylor Monetary Policy rule	Short and long term interest rates exogenous
different exercises …			
Consumption Behaviour			
Household heterogeneity	**Three Households types (with ≠ reactions)**	**Two Households types (with ≠ characteristics)**	**No household heterogeneity**
(expectations, constraints, etc.)	Ricardian (RIC) have RE (counter-react to policy)	Ricardian (RIC) have RE with some habit persistence; **also** high skilled in labour mkt	No forward looking expectations (apparently)
	Credit constrained (CC) are RIC + Credit Constraint (optimise but under additional constraint)		
	Liquidity constrained (LC) followpure Rule of Thumb (RoT) (do not optimise just consume)	Liquidity constrained (LC) optimise but cannot access complete financial markets; **also** low skilled in labour mkt	No micro foundation
	Share of each group crucial for multipliers size RIC lowest multiplier; CC higher; LC highest	**Share of each group crucial for multipliers size** RIC earn more for same hours; LC earn less for same hours	
Policy			
Fiscal policy feeds private economy:	directly on $RIC \leftarrow B$, tc, tw, tk, Tls, **itc** , TR indirectly on $RIC \leftarrow CG$, IG (supplied by FF) directly on $CC \leftarrow -B$, tc, tw, tk, Tls, itc, TR directly on LC (RoT) $\leftarrow tc$, tw, Tls, TR directly on $Ffinterm$, $G \leftarrow KG$ (externality)	directly on $RIC \leftarrow B$, tc, tw, tN, tk, tD, Tls, TR * directly on $LC \leftarrow tc$, tw, tN, Tls, TR * directly on FF (intermediate) $\leftarrow KG$ (**input** together with K_{PR}) affect output (not only via externality) realistic role for public investment indirectly on FF (intermediate) $\leftarrow TR$, tw (via $v\omega$, *i.e.* bias in favour of Skilled L)	Demand side channels: On the revenue side: personal taxes, business taxes, consumption taxes, social security contributions and a residual category of other revenues. Expenditure traeted only as one category
Fiscal policy instruments:	Taxes (except tw), Investment subsidies (≠ from Govt. investment) Govt. investment $\rightarrow KG$ (generate externalities)	TR biased towards constrained HH IG responds to I * CG endogenously derived	Actual Govt anti crisis package simulated
Fiscal rule:	t_w responds to debt target b *; on all HH (no ≠ labour types across RIC, CC, LC)	SP responds to B and output growth deviations from SS *(counter-cyclical)*	No fiscal rule mentioned
Spill-over (Cross-border)			
Openess modelling	**6-region version of the model** bilateral calibration of trade flows open economies (trade channel) exchange rates (Euro Area vs. others) symmetrical behaviour of the two sub-regions	**2-country model** Brazil vs. RoW (US+EA) Same structural model but different calibrated parameters Symmetric except for policy rules. RoW: Fiscal policy $\rightarrow CG$, TR tools; t_{LS} adjust to B *)	**Multi-countries model** exogenous embed in domestic model no interaction involved (small economy hypothesis) 10 main commercial partners simulate their own packages

The **Valli Jorge and De Carvalho** paper gives an example of policy analysis based on DSGE micro-founded theoretical approach. Their model is very rich, therefore results are complex to interpret and are very restricted by inevitable model-depending. Fiscal policy modelling is particularly articulated. The set of fiscal channels affecting the economy includes several tax instruments (τ^c, τ^N, τ^{W_h}, τ^{W_f}, τ^K, and τ^D, *i.e.* rates of taxes levied on consumption, labour income, social security from workers h, social security from firms f, capital and dividends, and expenditure from Government consumption G, transfers TR, and investment I_G).

The authors attribute an interesting role to government capital K_G. It directly enters the intermediate good production function as an input with a weight ω_k in the technology, that is interpreted as an indicator of the economy's degree of dependence on government investment, possibly a relevant policy variable. Fiscal authorities follow a primary surplus rule reacting to deviations of public debt and economic activity from their steady state levels and Government consumption is endogenously determined by this rule.

The model embed standard new Keynesian hypothesis of heterogeneous households, distinguished between Ricardian households (RIC, optimising consumption and investing) and Rule of Thumb households (RoT, who only consume all their disposable income and therefore feature higher multipliers). The novelty is in overlapping this consumption heterogeneity with an analogous heterogeneity in labour supply quality: RoT household consume more out of an increase in their wage, but are also less skilled and are paid less for the same amount of worked hours. Interestingly, these features also interact with the use of government transfers as policy instruments for distributional goals, which advantages less skilled workers. The interaction of these assumptions is complex to follow and to assess on qualitative grounds. It would be interesting to disentangle the impact of each channel on the multiplier and explain whether this interaction ends up by increasing or decreasing the size of fiscal multipliers and under what conditions. It could well be the case that the distributional policy play some relevant role.

It seems from the authors discussion that the constrained fiscal framework reduces the impact of the fiscal instruments (government expenditure on investment and transfers), by the implied adjustment of government consumption to raise primary surplus *vis-à-vis* increases in public debt. If this is so, it is not clear why tax rates are not considered as potential endogenous instrument to be adjusted by the primary surplus rule, as well, or whether there is any reason for this choice other than modelling convenience. Another possibility offered by the richness of the fiscal side of the model could be the use of the degree of dependence from government capital as a policy target to be pursued by the public investment policy. By setting investment in order to fulfil a steady state government capital level that corresponds to a desired degree of dependency, policy makers may decide how much private sector may rely on the public sustain. This seems to be a relevant issue for the Brasilian economy, as it can be inferred by some statement in the paper, and could possibly deserve some thought by the authors.

Much attention is given in the paper to the interactions between fiscal and monetary regimes. Maybe some consideration could be added in order to place the current crisis scenario inside the description of the alternative monetary policy rules.

The **Röger and in 't Veld** paper get on board all the three issues addressed in recent literature: the assessment of different fiscal multipliers, the spillovers from cross-border interactions, the impact of the crisis on fiscal policy effectiveness. They use a 6-region version of Röger and in 't Veld (2009) DSGE model.

The most relevant feature of their model is definitely the household heterogeneity assumption: on top of the usual Ricardian (RIC, with the lowest multiplier) and liquidity constrained (RoT) household type (with the highest), the authors consider a third type represented by credit-constrained households (CC). CC households consume and invest in housing capital; they

optimise as the RIC households, but under an additional constraint due to the collateral requirement on borrowing. The consumption rule of CC households is characterised by a higher sensitivity to interest rate. This is captured by a parameter in the Langrangian multiplier representing the premium on interest rate, related to the degree of tightness from the collateral constraint. The potential effect of this extra constraint on the size of the multipliers is not immediately clear. It presumably depends on the different types of fiscal stimuli an don the way through which they influence the credit conditions and the interest rate. CC multiplier is likely to be higher than Ricardian households' whenever the fiscal impulse may actually generate an extra effect on CC consumption from the loosening of the credit constraint. The authors also assume a higher rate of time preference for CC than for RIC households, *i.e.* more impatience, which presumably helps in raising the consumption multiplier of the overall economy even more. This assumption is not directly related to the credit constraint, but is presumably connected. Some more elaboration on this may help. The relative shares of the different heterogeneous household types, which are crucial variables for the size of multipliers, are calibrated.

Röger and in 't Veld explicitly simulate a crisis scenario by a combination of domestic shocks to the optimality conditions of investment and housing capital through the relevant parameters (for instance in the arbitrage conditions). The set up of the exercise does not involve the share of CC households, which is kept constant; this amounts to distribute the crunch, so to speak, across the same households. One can argue that the simulated scenario would probably ask for a rise in the CC share and that this would presumably produce different results. A higher share of CC households in a crisis scenario would anyway affect the impact of fiscal policy to counteract the downturn, its desired composition, the mix in terms of temporary and permanent measures. Although complex, and probably irrelevant for the equilibrium of the model, the introduction of some link between the share of CC households and the monetary/credit conditions would probably be ppropriate in case one wants to use the model to study the behaviour of the economy in extreme crisis scenarios like the present ones.

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