Response to Referee Report 2

Ms Paper 2062

March 28, 2017

we would like to thank the referee for taking the time and effort necessary to provide these valuable comments as we appreciated his constructive criticisms. we would like also to state that we agree with all of the referee concerns that will definitely improve both the exposition of the model and explanations of the major results and as mentioned, with such insightful guidance,we believe that we will be able to address them in an updated version of the paper.

Our response to the referee combines the 2^{nd} , 3^{rd} and 4^{th} major concerns on model presentation and 1^{rst},5^{th} and 6^{th} points on the structure and clarity of the paper by addressing them simultaneously,While 7^{th} point is dealt simultaneously.

At the outset, we would like to discuss the description of the model that need to be improved in line of your recommendations .

the **Two** regime threshold VAR model is specified as follows:

$$Y_t = \psi_0^1 Y_t + \psi_1^1(L) Y_{t-1} + \left(\psi_0^2 Y_t + \psi_1^2(L) Y_{t-1}\right) I[c_{t-d}^* > \gamma] + \epsilon_t$$

the equation presented in the paper Consider the **structural** threshold vector autoregression where contemporaneous effects might also differ across the regimes, indeed $\psi_0^1 Y_t$ and $\psi_0^2 Y_t$ reflect the structural contemporaneous relationships between variables in the two regimes respectively.

Y_t is a is a vector of endogenous variables, containing output growth ,asset price developement index, the reel effective exchange rate (REER) and monetary policy variable (i).

Y_t=$[output, priceindex, REER, i]$

$\psi_1^1(L)$,$\psi_1^2(L)$are lag polynomial matrices that describe the dynamics of the TVAR system,and ϵ_t is vector of disturbances.

we denote threshold variable c_t^* at lag order d (the delay parameter) that determines which regime the system is in, and $I[c_{t-d}^* > \gamma]$ is an indicator function that equals 1 when $(c_{t-d}^* > \gamma)$[1] and 0 otherwise.

The threshold variable, c_{t-d}^* used to distinguish between different regimes is modeled as a variable in vector Y_t to allow for regime switching be endogenously determined in the system itself. Since TVAR modeling considers all variables in the system as endogenous, shocks to any of the variables in Y_t may- via their impact on the variable c_{t-d}^* - induce a shift to a different regime.This implies that shocks to the monetary policy variable (i) can determine whether the economy moves to a low or high financial regime (appreciation or depreciation).

In the TVAR model estimated in this paper, there are two regimes, the apprecation and depreciation regimes, defined by a boundary which is equal to certain value of the threshold variable.

We define respectively, the two regimes by R1 and R2 where:

- R1 is the regime in which asset prices are low or exchange rates weak (depreciation regime); in this regime credit constraint is supposed to suddenly binds.

- R2 corresponds to the state of the economy where asset prices are high or, respectively, exchange rates are in a state of appreciation (Appreciation regime) indeed in this regime credit constraint are not binding.

[1]The integer d is the delay lag and typically it is unknown so it must be estimated along with the other parameters.

Since the focus of this paper is on the effect of pecuniary externalities for generating non-linearities, asset prices and exchange rates are respectively considered as switching variables.

Threshold models work by splitting the time series endogenously into different regimes. Within each regime the time series is assumed to be described by a linear model, each regime is defined by boundaries (equal to certain values of the threshold variable) and coeffiients of the VAR system are specific to each regime.

hence, the process within each regime (which is derived from the above equation) to be estimated with **one threshold** is:

$$Y_t = \psi_0^1 + \psi_1^1(L)Y_{t-1} + \epsilon_{1,t} + \left(\psi_0^2 + \psi_1^2(L)Y_{t-1} + \epsilon_{2,t}\right) I[c_{t-d}^* > \gamma]$$

comes to the reviewers concerns on the structure and clarity of the paper outlined in the 1^{rst},5^{th} and 6^{th} points.based on your guidance, we believe that we could provide a more balanced presentation of our arguments and results in an updated version.Hence :

- we agree with your recommendations, most of the part of the literature review section should be altered to include introduction section, also referencing formatting, typos will be revised.

- a section data will be added where we describe the time period, and sources of the dataset.

comes to 7^{th} major concerns where referee state that The authors argue in the introduction that one needs financial frictions to explain the impact of the financial crisis in emerging economies, and that this is clear in the academic literature. This needs additional support from the literature. I am not sure that this is the case.

- Reponse

Several financial crises and periods of high financial stress has exposed the weakness of simplifying assumption of the standard New Keynesian model that financial markets work perfectly so that the interest rate set by central banks uniquely determines the cost of credit for borrowers. As such, there is clear interest for policymakers in having a better understanding of the impact of these high financial stress episodes on the transmission mechanism of monetary policy and the macro economy, most importantly, interactions between credit market frictions and effectiveness of conventional monetary policy via various transmission mechanism channels during periods of low and high financial stress.

For the emerging market economies, a similar debate also rolls on but is augmented by several additional factors that are not central to the contemporary experience of the industrial countries. Among these are foreign currency denominated debt - widely referred to as liability dollarization, incomplete asset markets where the price of the collateral plays role in generating a negative feedback loop between real and financial sectors.

Equally important , the need to extend the model to a dynamic setting, with an ad hoc simplification, to derive policy prescriptions that can be conveyed in relatively clear language is a particularly important consideration from the point of view of influencing the way policymakers think about the transmission process of monetary policy.

This is a particularly relevant consideration for Tunisia:

- Where its financial system is dominated by state controlled banks with weaknesses in the legal system and a distorted collateral regime and where direct access to capital markets is typically available to only a small group of crony firms that often make it difficult for lenders to seize collateral in case of default

- Where the presence of liability dollarization makes the balance sheets of the financial system sensitive to the changes in exchange rates and the aforementioned reluctance to use interest rate to stabilize inflation and output resulted in a very low variability of the policy rate and short-term money market rate.

From that perspective, the choose of Tunisia as a case study becomes relevant , although the microeconomic foundations of financial frictions itself is unexplained in the model but , could be related to standard adverse selection or moral hazard considerations, the nature of the lender-borrower relationship, the degree of competition in the credit market.

.