

# Discussion of "Collateral Requirements and Asset Prices" by J. Brumm, M. Grill, F. Kubler and K. Schmedders

Francisco Gomes  
London Business School

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  - The impact of collateral constraints on other assets.
  - The determinants of collateral constraints.
- All of these in a calibrated general equilibrium model.

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- But, how will they affect other important variables: volatility, liquidity, trading volume?
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- Also, how do they affect other assets?
- Finally, how are they **endogenously** determined in **equilibrium**?

- Most of the previous work has been in the context of models that are very hard to calibrate and that have an exogenous/constant riskless rate (e.g. Aiyagari and Gertler (RED, 1999), Brunnermeier and Pedersen (RFS, 2008), Rytchkov (WP 2009), or Wang (WP 2011)).

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  - Endogenous collateral constraints.

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- Since loans are non-recourse, investors will default whenever

$$C_H^j(s^{t+1}) < 1$$

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  - Note: a bond that defaults in all states is obviously redundant.
- Bonds backed by the second tree (“Equity”,  $E$ ) are subject to an exogenously specified margin requirement (which in turn determines the equilibrium collateral requirement).



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  - Small default costs (10%) enough to shut down other default bonds.

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- In future models: assume default costs of “25%” so that only the no-default bond is traded.

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- As the authors acknowledge, these particular effects are not necessarily new, but the contribution here is to show that this effect is very large in full GE (i.e. with an endogenous risk-free rate), in a model calibrated to match the observed market price of risk.

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  - Constraints more likely to bind in equilibrium  $\implies$  more frequent de-leveraging  $\implies$  (since LRA tend to sell E only) lower  $Std(R_E)$

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## Model 2: Two Lucas Trees (cont.)

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  - $Std(R_H)$  is a monotonically decreasing function of the MR on E.



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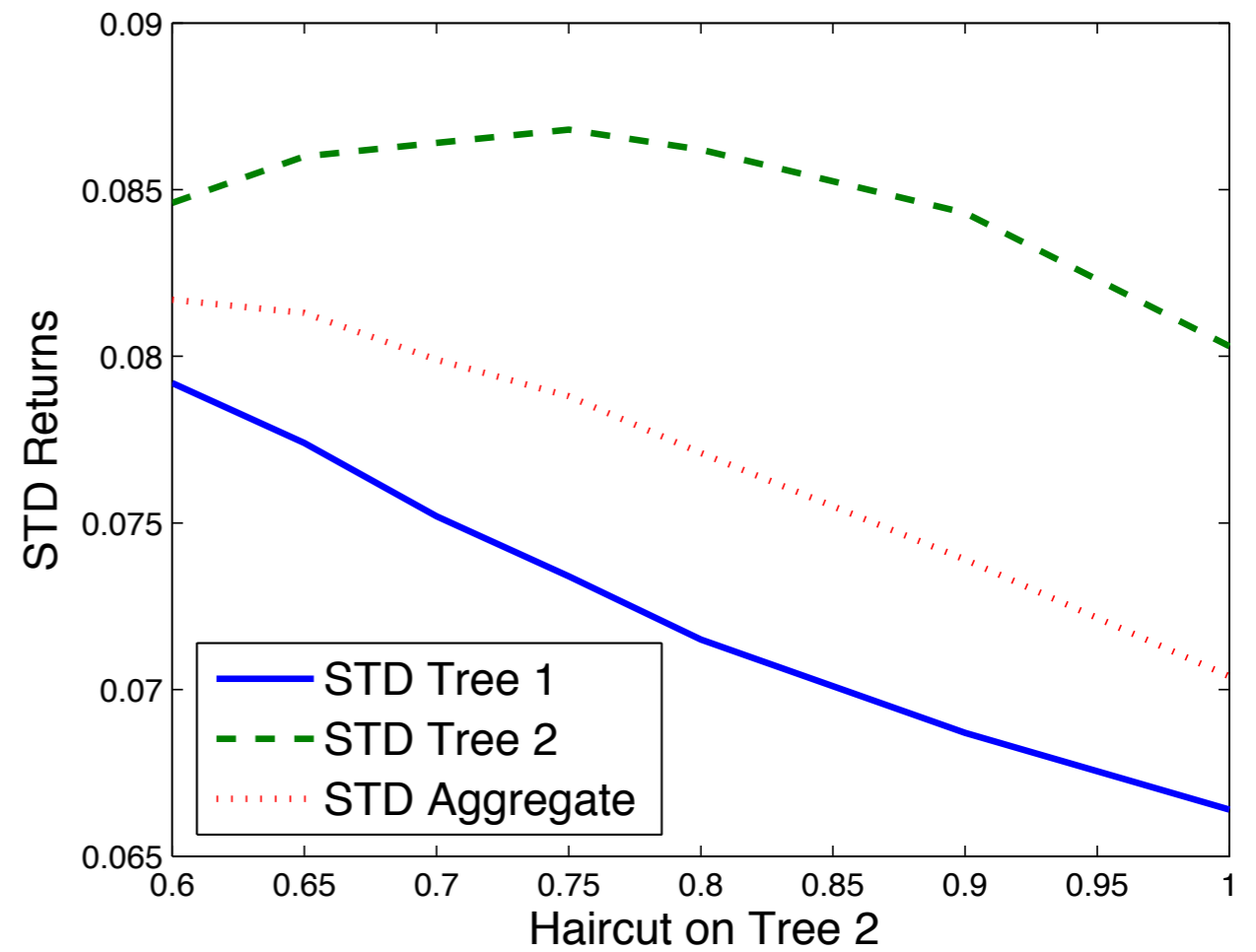
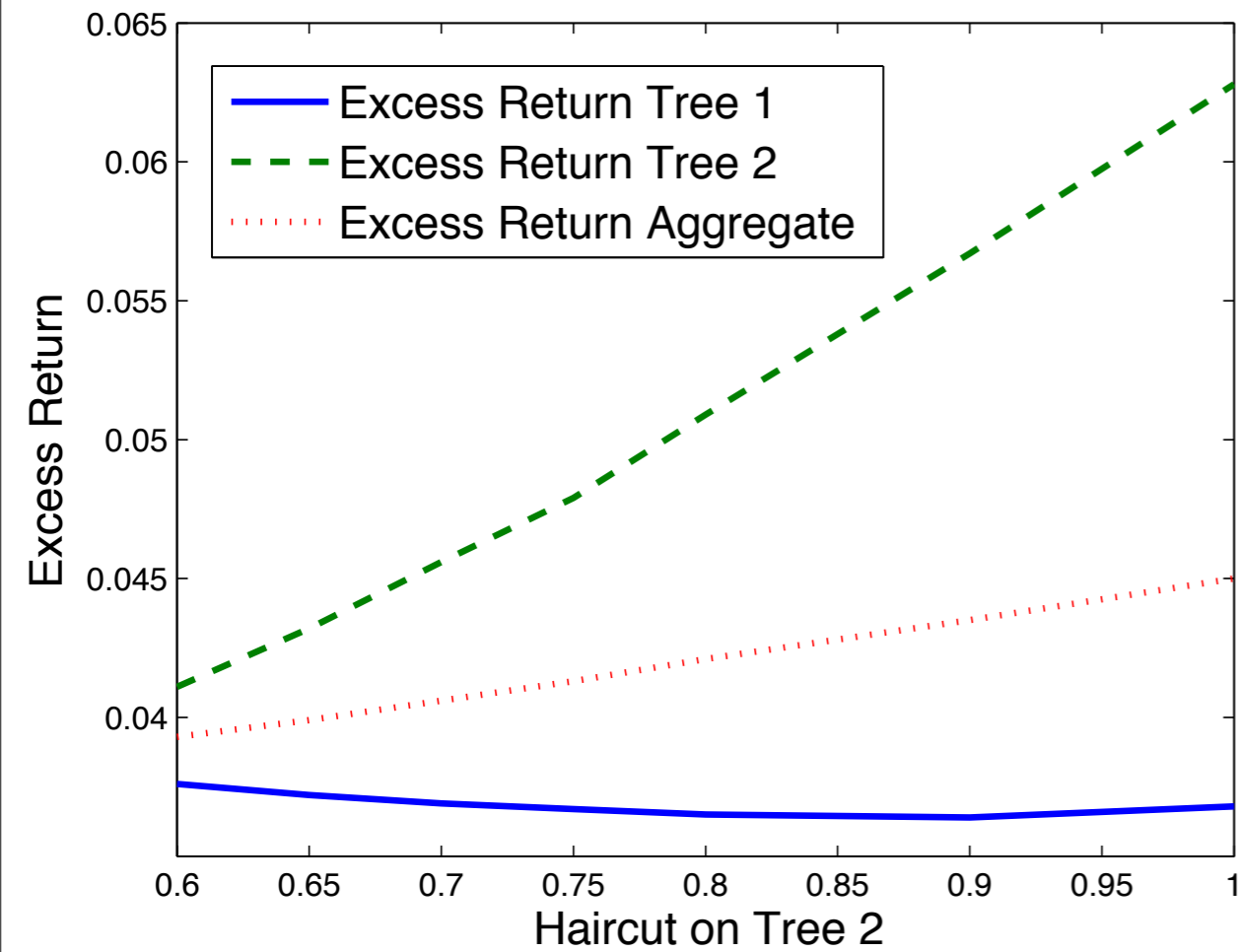
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  - Maybe not ... this model can actually deliver that!

# First and second moments



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  - Within the model, track endogenous changes in MR for the first tree, and see if we get those effects.



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- Wang (WP, 2011) finds important asymmetries regarding the impact of SM and LM (they are also more likely to bind in different states of the world) and consequently different implications for regulation.
- Probably very hard to add this as an active margin in the model (e.g. with asymmetric information), but it would be very interesting if possible.

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  - Explore the model further: what does it imply about liquidity and volume (for example)?
- For example, Mayhew, Sarin and Shastri (JF, 95) find that decreases in margin for equity options lead to increase in spreads for the underlying stocks, while spreads on options decrease, suggesting a change in the relative allocation of informed traders between the two markets.