The Asset Durability Premium

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Outline

Durable Asset = Hard to Finance

- Non-durable Asset: $$V_{nd} = \frac{CF_1}{(1+dr)} + \frac{CF_2}{(1+dr)^2} + \frac{CF_3}{(1+dr)^3}\cdots$$
  $$= \frac{K_{nd} \times \pi}{(1+dr)} + \frac{0}{(1+dr)^2} + \frac{0}{(1+dr)^3}\cdots$$
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Equilibrium Prices Imply V_d is Riskier than V_{nd}

- Durable Assets = Hard to Finance (they are "expensive")
- Financially constrained firms prefer "cheaper" capital
- During recession, firms become more financially constrained
- During recession, V_d falls relative to V_{nd}
- V_d is riskier than V_{nd} $\implies$ Asset Durability Premium

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Panel A: Constrained Subsample

	L	2	3	4	H	H-L

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	L	2	3	4	H	H-L
			DIV			
E[R]-R_f (%)	5.39	9.57	9.34	9.03	12.32	6.93
[t]	1.48	2.81	2.81	2.92	3.62	2.86

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E[R]-R_f (%)	6.09	8.24	9.13	9.59	9.65	3.56
[t]	2.13	2.78	3.68	3.78	3.85	2.23

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Panel B: Whole Sample

	L	2	3	4	H	H-L
E[R]-R_f (%)	7.36	8.10	8.12	8.65	8.79	1.44
[t]	2.70	3.49	3.26	4.17	3.55	1.03

The Risk Mechanism

Table 7: **Aggregate Shocks and Price Dynamics**

$$\Delta q_{h,t} = \beta_y \, \Delta y_t + \beta_d \; Asset\ Durability_{h,t} \times \Delta y_t + \varepsilon_{h,t}$$

	(1)	**(2)**
dy	1.51	1.02
[t]	11.71	3.89
Interaction		1.06
[t]		3.28
Observations	4,830	4,760
Asset FE	Yes	Yes
Cluster SE	Yes	Yes

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Table 10: **Cash Flow Sensitivity**

	L	**2**	**3**	**4**	**H**	**H-L**
TFP	1.16	1.29	1.63	1.58	1.78	0.62
[t]	14.95	8.88	17.82	10.30	9.06	4.25
GDP	1.33	2.01	2.10	2.08	2.54	1.21
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Table 11: **Estimating the Market Price of Risk**

Panel A: Portfolio Risk Exposures						
	L	**2**	**3**	**4**	**H**	**H-L**
TFP	0.36	1.92	1.37	1.48	2.33	1.89
[t]	0.75	1.93	1.34	1.73	2.16	2.15
GDP	-0.09	2.97	1.63	1.48	3.32	3.37
[t]	-0.03	0.83	0.51	0.37	0.75	1.85

The DSGE Model

- A representative household solves:

$$U_t = \underset{\{C_t, B_{i,t}\}}{Max} \left\{ (1-\beta) \cdot C_t^{1-1/\psi} + \beta \cdot \left(\mathbb{E}_t \left[U_{t+1}^{1-\gamma} \right] \right)^{\frac{1-1/\psi}{1-\gamma}} \right\}^{\frac{1}{1-1/\psi}}$$

s.t.

$$C_t + \int B_{i,t} di = W_t \cdot L_t + R_{f,t} \cdot \int B_{i,t-1} di + \int \Pi_{i,t} di$$

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$s.t.$

$$q_{d,t} \cdot K_{i,t+1}^d + q_{nd,t} \cdot K_{i,t+1}^{nd} \;=\; N_{i,t} + B_{i,t} \qquad (with\ \delta_d < \delta_{nd})$$

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Model Fit: The Asset Durability Premium

Table 6: **Asset Durability Spread, Data, and Model Comparison**

Variables	**L**	**2**	**3**	**4**	**H**	**H-L**
			Panel A: Data			
Asset Durability	7.69	9.99	11.45	14.24	18.00	
Depreciation	0.19	0.16	0.15	0.13	0.11	
Book Lev.	0.13	0.19	0.21	0.28	0.32	
ROE	0.12	0.17	0.18	0.22	0.23	
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Asset Durability	8.33	10.05	11.12	14.28	20.08	
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Book Lev.	0.19	0.27	0.33	0.39	0.45	
ROE	0.06	0.08	0.09	0.11	0.13	
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1) Constrained vs Unconstrained Firms

- Equilibrium $q_{d,t}$ and $q_{nd,t}$ $\Rightarrow$ Asset Durability Premium
- Equilibrium $q_{d,t}$ and $q_{nd,t}$ depend on constrained firms, but they should affect all firms (constrained and unconstrained)
- Empirically, the Asset Durability Premium exists only among constrained firms
- Can you add unconstrained firms to the model and show that such firms do not display the Asset Durability Premium (and explore the mechanism)?

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2) Jointly Study Durability and Collateralizability Premia

- $B_{i,t} \leq \theta \cdot \sum_{h \epsilon \{d,nd\}} q_{h,t} \cdot K^{h}_{i,t+1}$
- θ should be higher for durable assets
- It matters: Ai et al. (2019) indicates higher colllateralizability lowers the riskiness of assets
- Page 6 states "...we also consider a variation of the model with Rampini (2019) type of collateral constraint", but I could not identify the results related to this analysis
- I suggest jointly studying durability and collateralizability in a model with (δ_d, θ_d) and $(\delta_{nd}, \theta_{nd})$ firms
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3) The Growth Premium

- The durability premium arises because of high $q_{d,t}$, which makes durable capital "expensive", and thus hard to finance
- Does that imply the model generates a Growth Premium (as opposed to a Value Premium)?
- It is not clear because "durable firms" are quite profitable (and thus have short equity duration) in the model
- I suggest you explore this issue explicitly in the paper
- Jointly studying the durability and collateralizability premia may also shed light on this matter

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- Does that imply the model generates a Growth Premium (as opposed to a Value Premium)?
- It is not clear because "durable firms" are quite profitable (and thus have short equity duration) in the model
- I suggest you explore this issue explicitly in the paper
- Jointly studying the durability and collateralizability premia may also shed light on this matter

4) The Risk Premium Channel

$$\underbrace{\tau_{d,t} - \tau_{nd,t}}_{\text{User cost Difference}} = \underbrace{(\vartheta_{d,t} - \vartheta_{nd,t})}_{\text{Rampini (2019)}} + \Delta_{rp,t} + \ldots$$

- "...according to the first component durable capital is costly because it requires more down payment"
- "... according to the second component, durable capital requires higher risk premium"
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- How can $dr_d > dr_{nd}$ increase the user cost difference?

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Other (less important) Comments/Questions

1. I would present all empirical evidence upfront

2. Do we have $\int \Pi_{i,t} di = \lambda \cdot N_{t+1}$?

3. In Ai et al. (2019), you have household and firms. Why entrepreneurs (instead of firms) here?

4. Typo in Equation (15)? $C_t + I_t + G(I_t, K_t^d + K_t^{nd}) = Y_t$

5. Why focus on asset durability relative to industry? The argument should also hold across industries...

6. Might be too much, but I think θ_t would make the Asset Durability Premium stronger in the model

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Outline

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- I expect it to publish well

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