Discussion of "The Finance-Uncertainty Multiplier," by Alfaro, Bloom and Lin

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Overview

- How do uncertainty shocks affect the real decisions of firms?
- One answer has been explored a lot: fixed costs (hiring, investing) can interact with increases in uncertainty to produce recessions
- This paper explores whether financial frictions can amplify this
  - "big" investment model : $\uparrow$ uncertainty $\implies$
    - investment & employment fall;
    - firms "save" more (reduce debt issuance, hold more cash).
  - stronger effect when financial frictions active
  - consistent with effects of (Bartik)-instrumented measures of uncertainty

Comments

1. Interesting use of fixed adjustment costs for capital structure; could do even more, by looking at frequency and size of debt adjustments & fitting them in the model.

2. Look into how the finance-uncertainty multiplier produces amplification in a two-period version of the model.

Comment 1: "Lumpy" debt adjustment?

- Fixed costs everywhere! Including in debt issuance
- Workhorse model — Hennessy and Whited (2007):
  - cost of debt = deadweight losses in liquidation
  - endogenous "liquidation risk premium" + borrowing limit
  - trade this off with tax benefits when deciding issuance — smooth
- Here, instead:
  - keep the tax benefits part
  - all debt is risk-free (collateral constraint)
  - but upon changing the face value of debt outstanding, the firm must pay a cost:

$$\Phi(B_t, B_{t+1}, K_t) = \chi \mathbf{1}_{\{B_t \neq B_{t+1}\}}$$

- This should generate infrequent debt adjustment — "debt lumpiness".

Why is this an attractive idea? Lumpiness in investment vs. debt issuance

	CH (2006) $\frac{I}{K}$	Compustat $\frac{I}{K}$	Compustat $\frac{\Delta B^+}{B}$	Compustat $\frac{\Delta B^-}{B}$	Compustat $\frac{\Delta B}{B}$
mean	12.2%	23.1%	36.7%	35.8%	0.01%
median	n.a.	16.5%	10.2%	17.4%	−2.7%
fraction $\|i\| \leq 0.01$	8.1%	1.4%	37.8%	9.5%	8.4%
fraction $i > 0.2$	18.6%	41.5%	41.4%	46.0%	21.6%
fraction $i < -0.2$	1.8%	0.5%	0%	0%	21.8%

- More than 1/3 of firms report no LT debt issuance at annual frequency (even excluding firms with LT debt outstanding, as in this sample!)
- Only 10% of firms with no repurchases
- Still, roughly 10% of firms with zero net issuance

$$\frac{I}{K} = \frac{capx_t + aqc_t - sppe_t}{(1/2)(at_t + at_{t-1})}; \quad \frac{\Delta B^+}{B} = \frac{dltis_t}{(1/2)(dltt_t + dltt_{t-1})}; \quad \frac{\Delta B^-}{B} = \frac{dltr_t}{(1/2)(dltt_t + dltt_{t-1})}$$

The prevalence of zero-issuance firms

Need better (higher-frequency, issuance-level) data!

Comment 2: the multiplier

- Key theoretical point: financial frictions amplify usual "real options" channel of uncertainty shocks.
- Would be nice to understand which frictions matter for this & why.
- Explore this in a (super-simple) two-period version of the model.

$$
\begin{aligned}
\mathbf{V}(A_1, K_1, B_1) &= \max_{K_2, B_2} C + \beta \mathbb{E}\left[\mathbf{W}(A_2, K_2, B_2)\right] \\
\text{s.t.} \quad & C = A_1 K_1^{\zeta} + B_2 - (1+r)B_1 - (K_2 - (1-\delta)K_1) \\
& \mathbf{W}(A_2, K_2, B_2) = g(A_2) K_2^{\zeta} - (1+r)B_2 \\
& C \geq 0 \\
& B_2 \leq \phi K_1
\end{aligned}
$$

- $\beta(1+r) < 1$
- no equity issuance
- collateral constraint
- $g(.)$ concave — so that $\sigma(A_2)$ matters for investment w/o fin. frictions

- Always take full advantage of the tax shield:

$$\hat{B}_2 = \phi K_1.$$

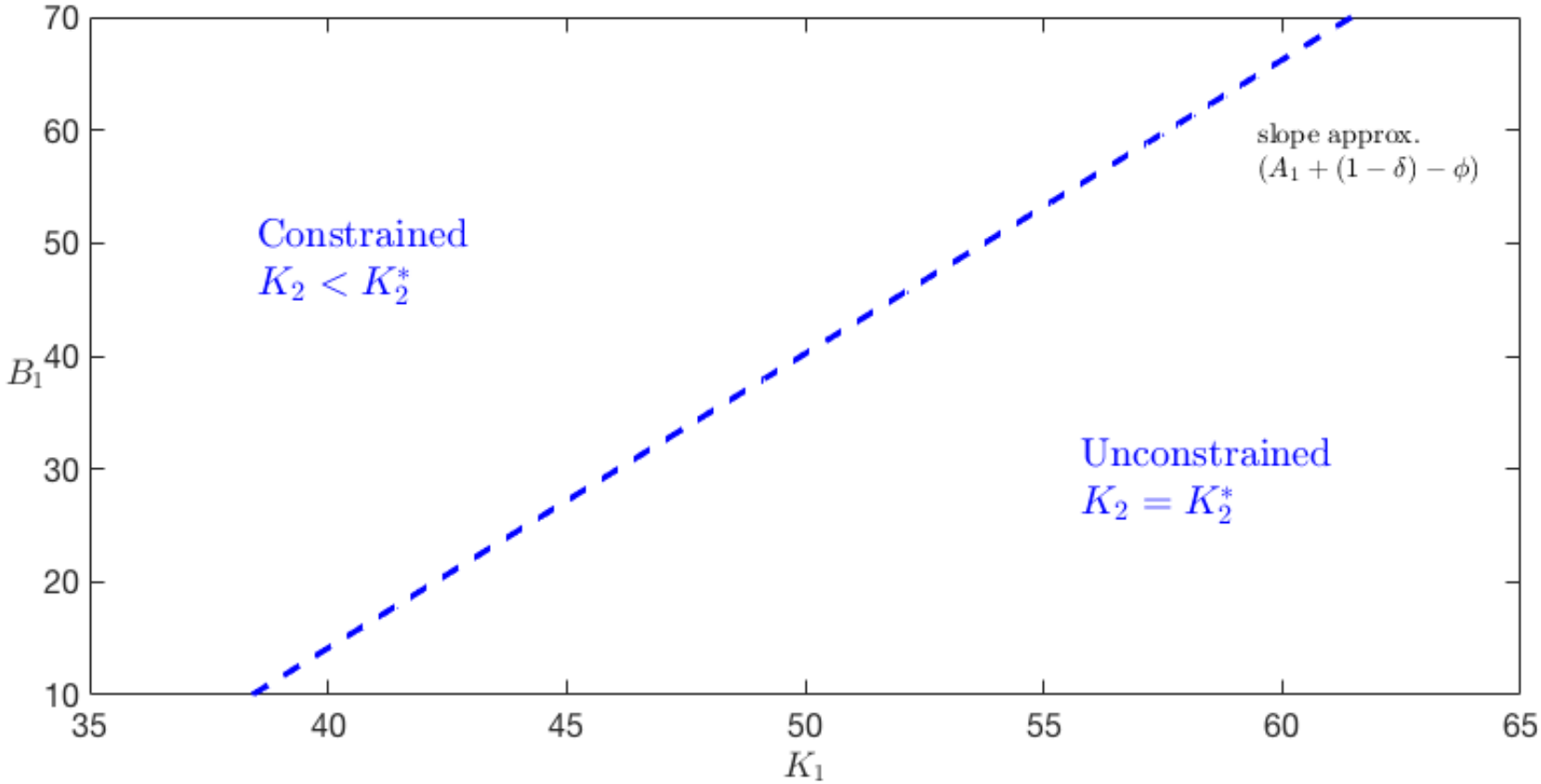
- Unconstrained investment would be:

$$K_2^* = (\beta\zeta\mathbb{E}(g(A_2)))^{\frac{1}{1-\zeta}}.$$

- But still financing frictions, so:

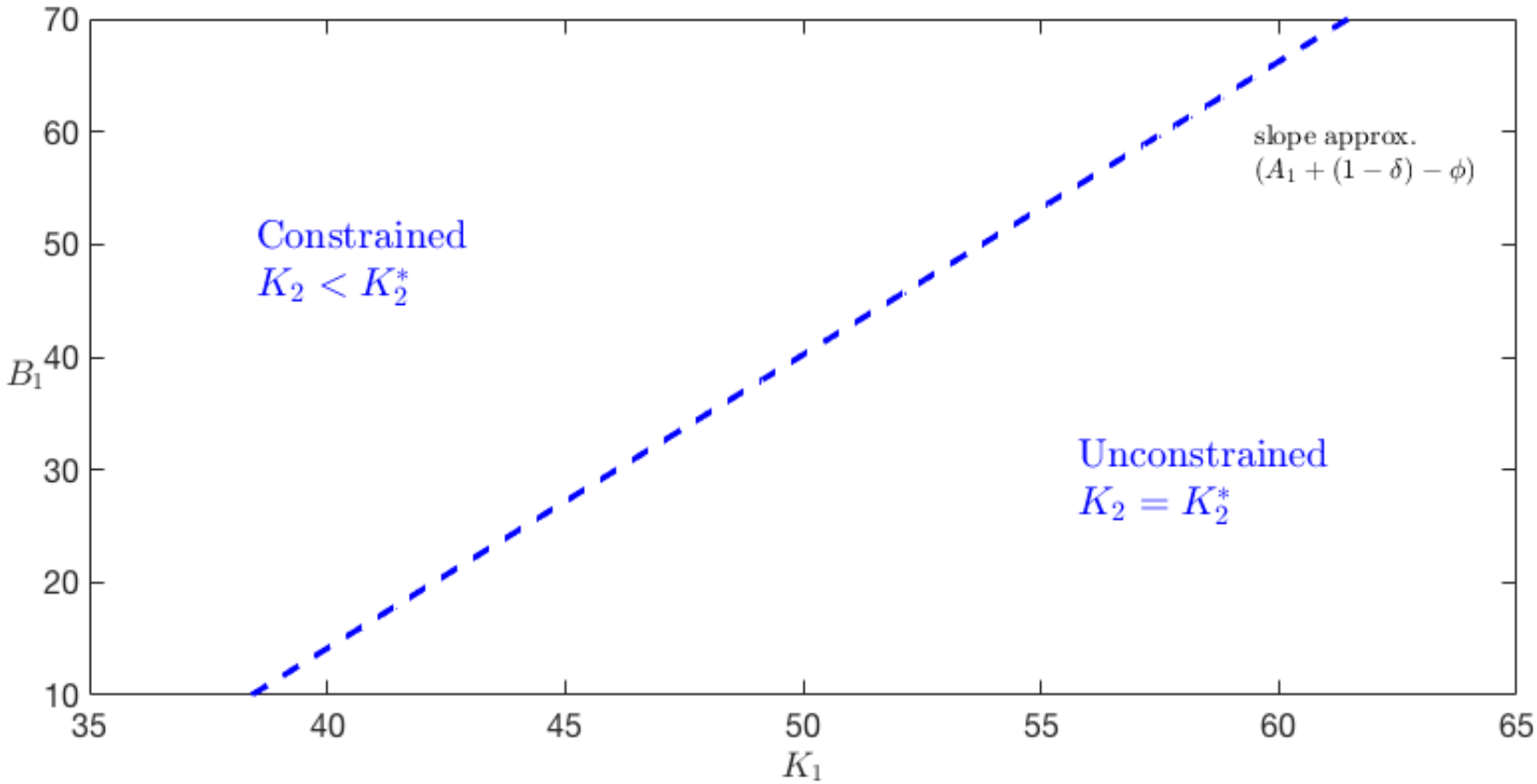
$$\hat{K}_2 = \begin{cases} \tilde{C} & \text{if } \tilde{C} \leq K_2^* \\ K_2^* & \text{if } \tilde{C} > K_2^* \end{cases}$$

Investment w/o fixed financial costs



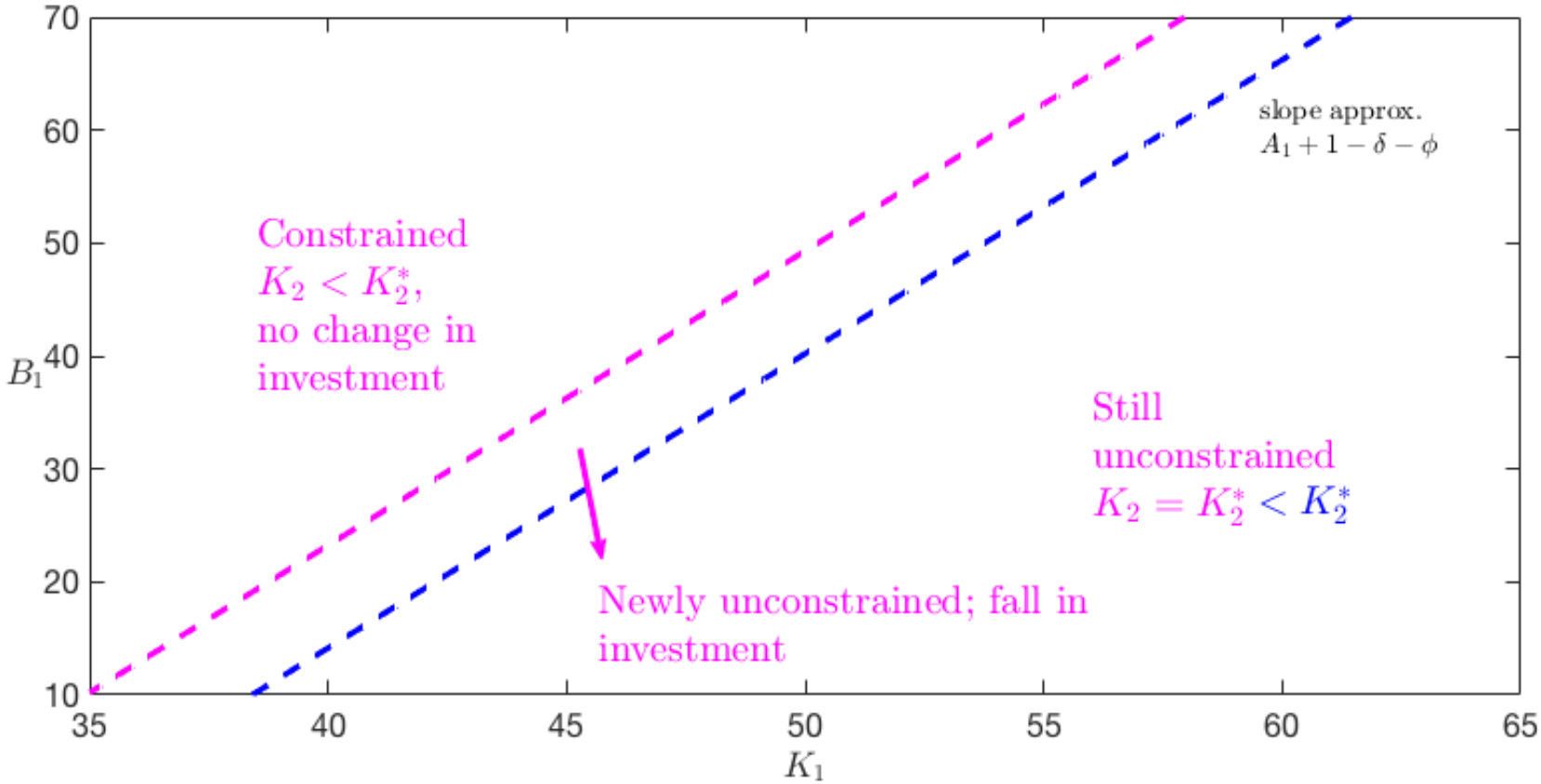
Simple rule: constrained investment if high leverage, unconstrained otherwise.

Investment w/o fixed financial costs



Increase in $\sigma(A_2) \implies (\beta\zeta\mathbb{E}(g(A_2)))^{\frac{1}{1-\zeta}}$ falls.

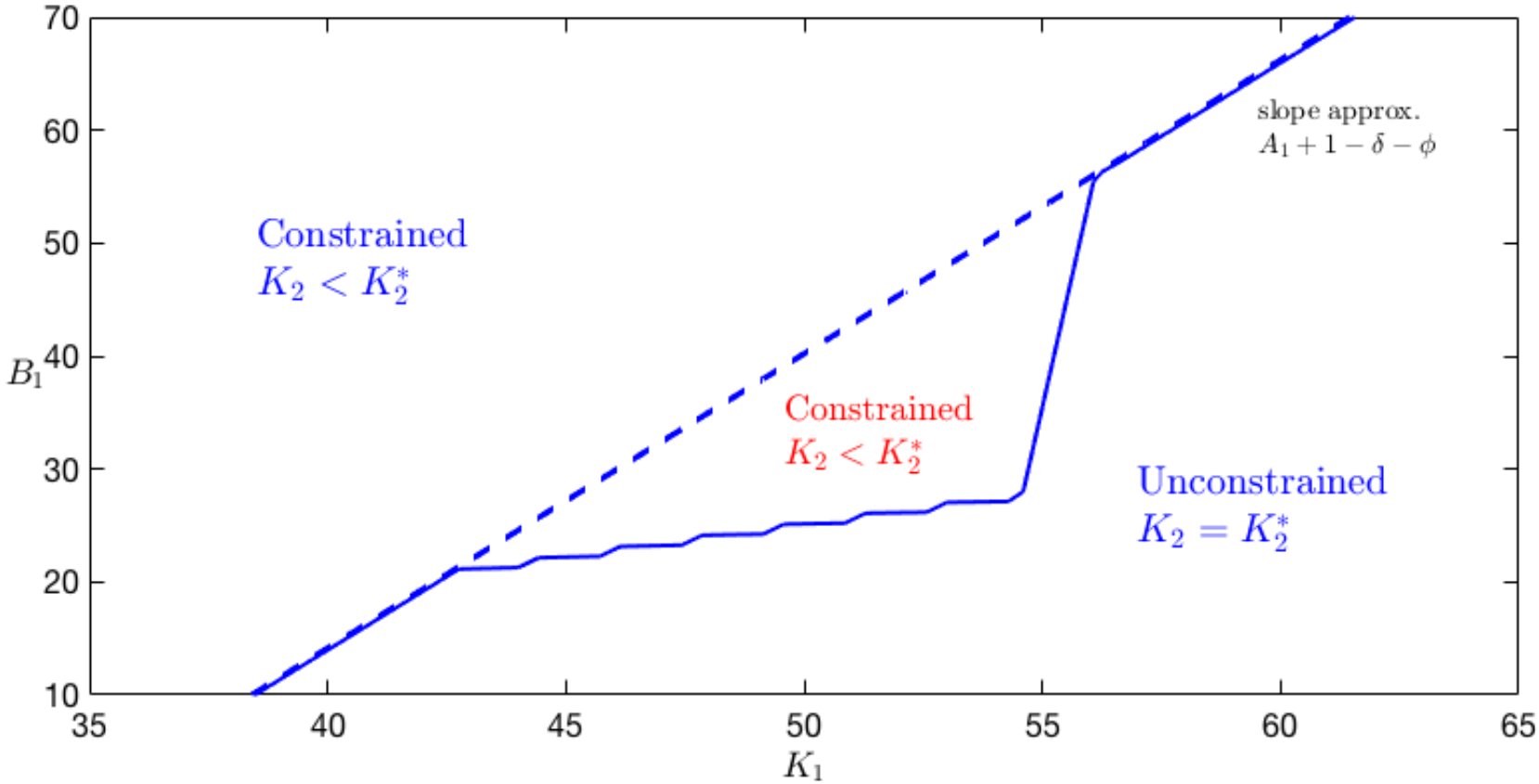
Investment w/o fixed financial costs



Uncertainty w/o fixed financial costs

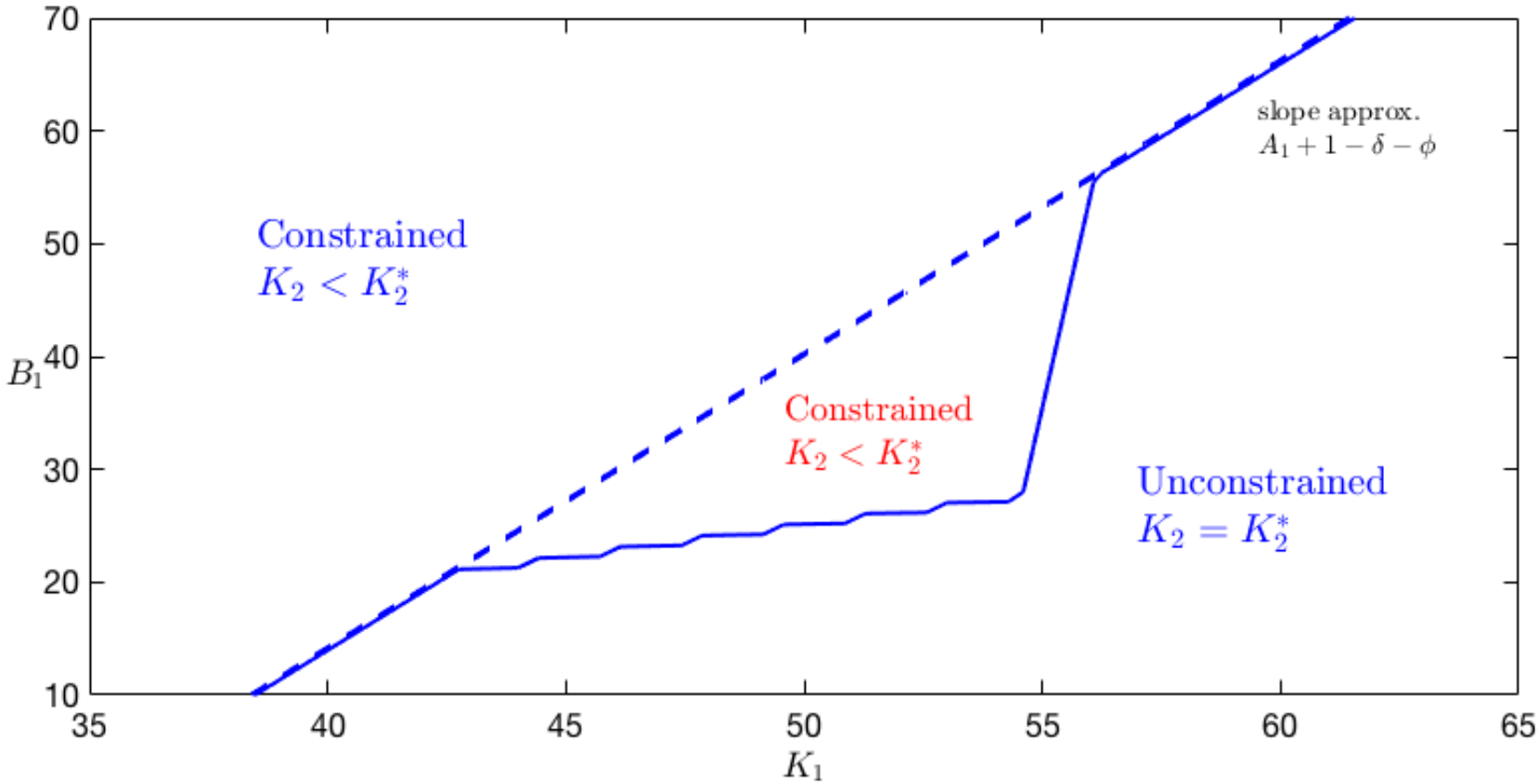
- Increase in uncertainty affects mostly investment of unconstrained firms
- And a little bit investment of previously constrained firms
  - is this the finance/uncertainty multiplier?
- Lines up with empirical evidence in rest of paper?

Investment with fixed financial costs



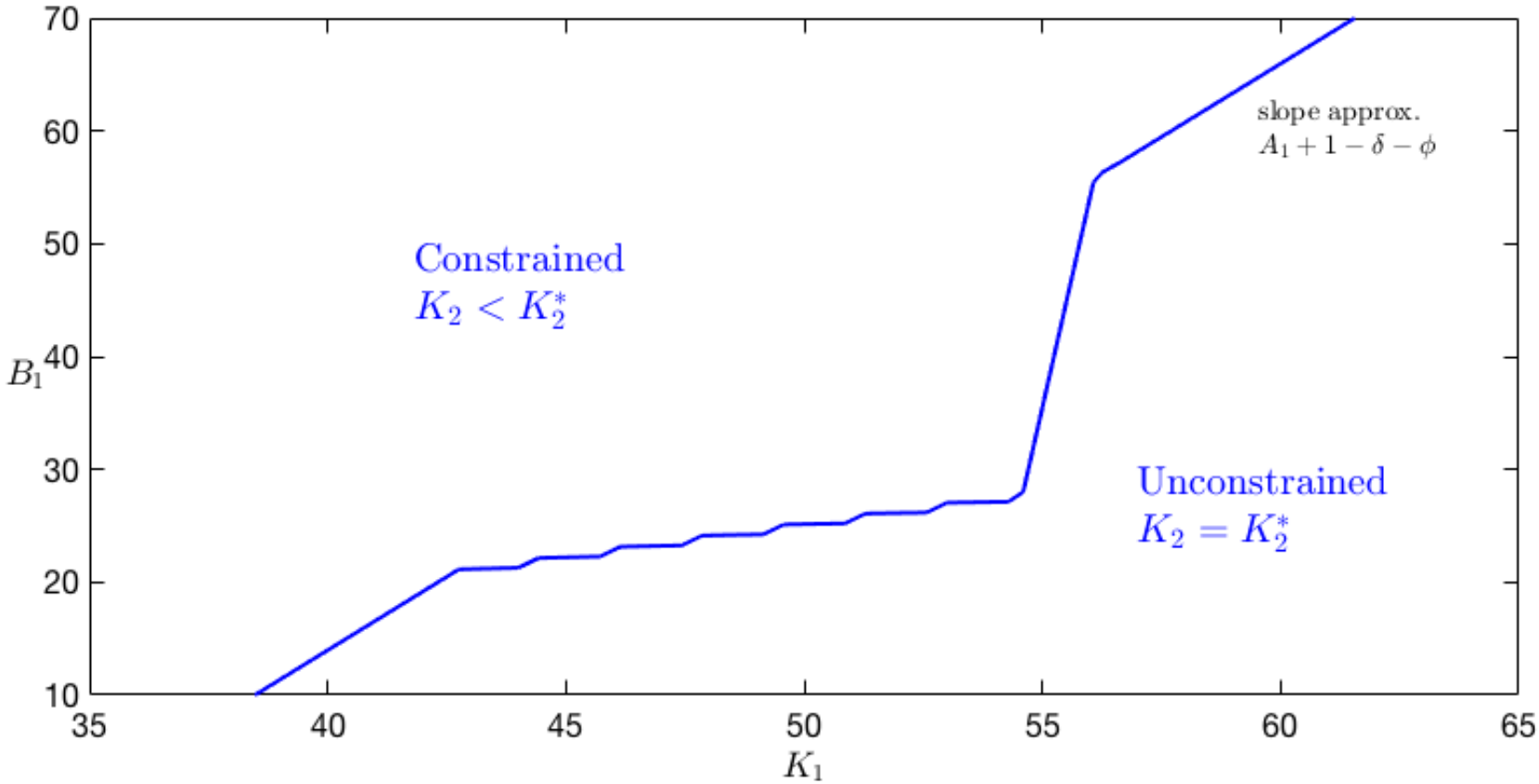
Debt issuance cost: $\mathbf{\Phi}(B_1, B_2) = \mathbf{1}_{\{B_1 \neq B_2\}} \chi$.

Investment with fixed financial costs

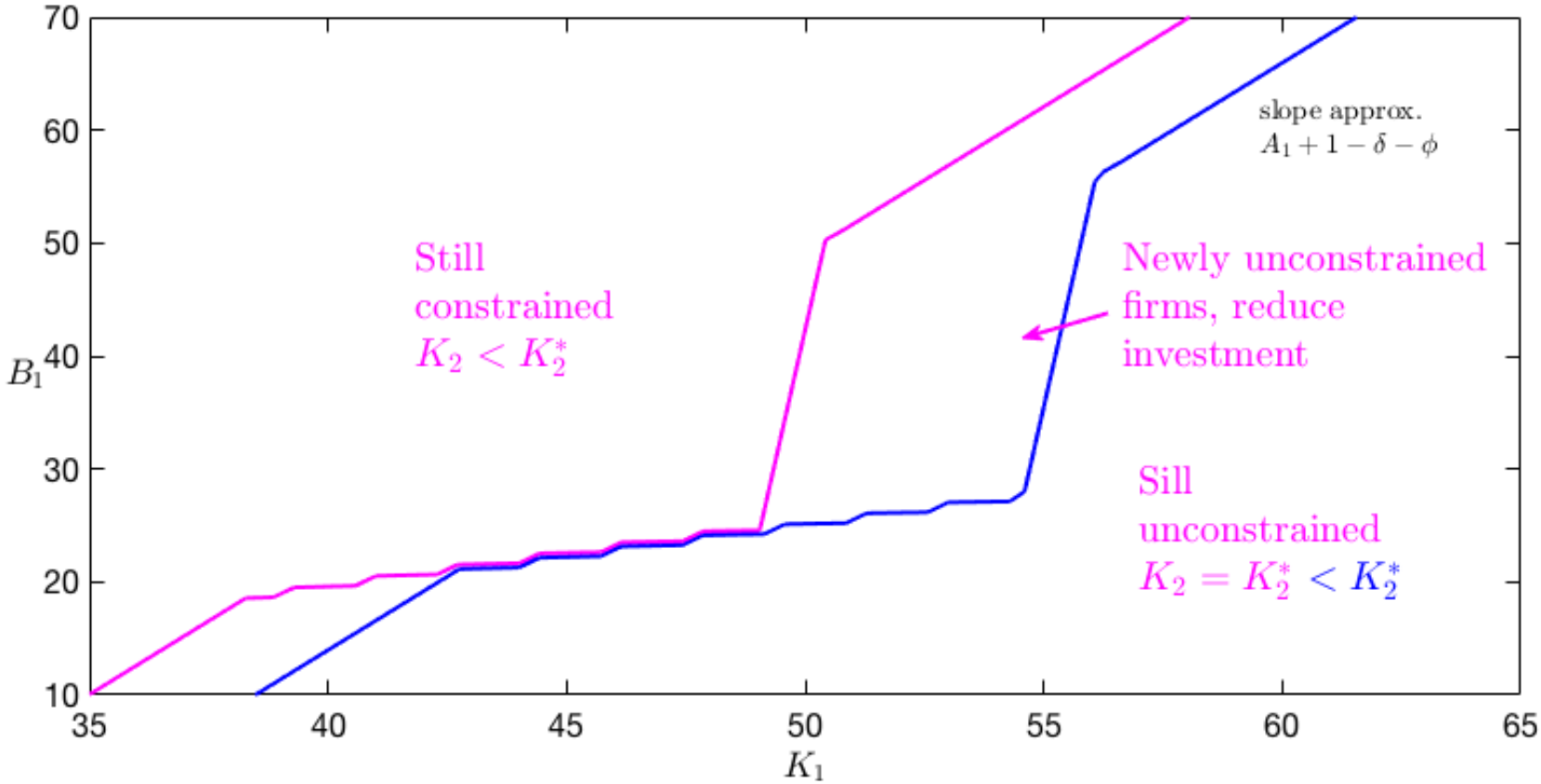


More $K_2 < K_2^*$ firms than before.

Investment with fixed financial costs



The effect of an increase in uncertainty



More "newly unconstrained"constrained firms $\implies$ bigger effect of $\uparrow \sigma(\sigma_2)$?

Uncertainty w/o fixed financial costs

- Potentially stronger effect of uncertainty with fixed costs — from firms that *were not* issuing debt in the past
- Still doesn't upend the basic intuition:
  - firms whose investment reacts most are those **furthest** from being constrained
- This is probably happening in the bigger model too, and worth exploring more!

Conclusion

- Great paper, new direction
- It's not the whole paper, but I particularly like the idea of connecting infrequent capital adjustment and fixed financial costs, & exploring how uncertainty could interact with that
- Room for future papers — what matters and what doesn't for the finance/uncertainty multiplier to work; discipline model with more detailed moments about "lumpiness" of debt issuance