Business Drain: Aggregate Effects of Startup Relocation

Clemens Domnick Astrid Esparza Marta Prato Stefan Weik

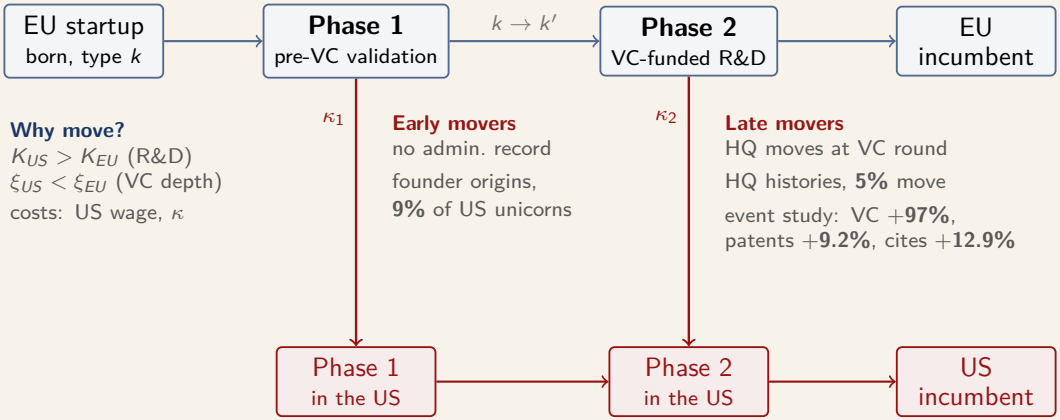
Discussion by **Lucía Casal (CREi)**

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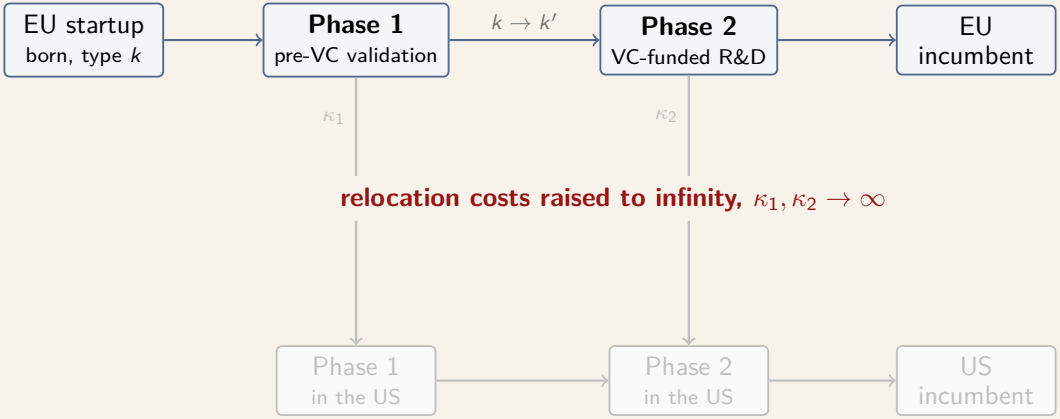
The Paper

- **Question:** drivers of startup relocation and its aggregate growth implications
- **Model:** relocation driven by VC funding and R&D efficiency gaps
- **Data:** EU-founded US unicorns, plus HQ relocation event study
- **Counterfactuals:** what if...
  - (i) relocation were infinitely costly?
  - (ii) the EU–US VC funding gap closed?
  - (iii) the R&D efficiency gap closed? (WiP)

The startup phases

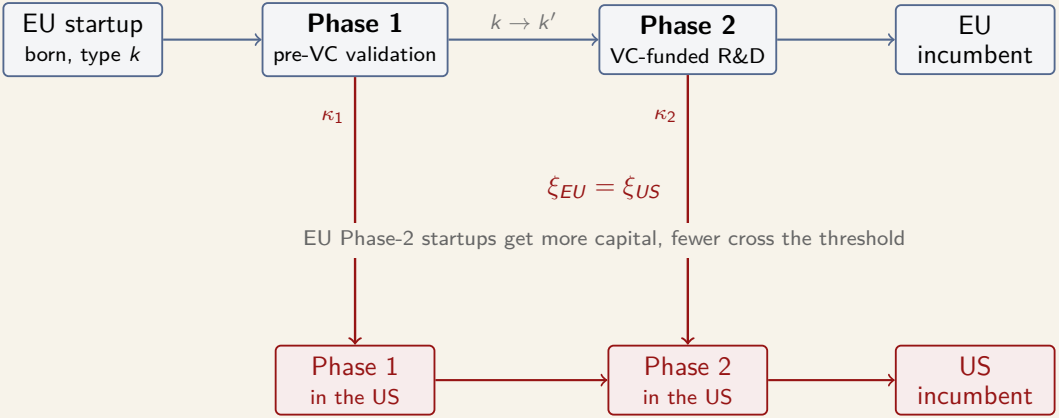


Counterfactual 1: shut down relocation



– EU innovation $+7.4\%$, US innovation -3.6%, wage ratio -10%, growth -2.0% (2.67 bps of 1.35%)

Counterfactual 2: EU VC frictions set to US level



- Relocation -60.8%: VC frictions are the main driver
- EU entrant innovation $+15.5\%$, wage ratio -3.3%, world growth -0.1%

Assessment

– **Great paper!** Important and timely question

> "[VC] is very small in terms of available funding, but its *relative impact* is huge. Of the 1,300 or so companies that became public in the U.S. over the past four decades, **40% were backed by venture capital** and they accounted for **82% of the R&D expenditures** of all those firms. Of the 10 that went on to become the biggest by market capitalization, **eight began with VC funding**."
>
> — Ilya Strebulaev, Stanford GSB Insights (2018)

And the paper does the hard work:

– **New data:** hand-collected founder origins for 3,031 unicorns, ∼8,000 founders

– **New evidence:** matched event studies — movers raise **97%** more VC than stayers

– **Careful discipline:** 16 targeted moments; separates **selection** from **treatment**

– **Macro:** two-country GE growth model quantifies the aggregate implications

Discussion Outline

1. **Who counts as a European-origin firm?**
2. **How to define a firm's location?**
3. **Implications for aggregate growth**
4. **Complementary explanations** and their **relevance for policy** (if time)

Who counts as a European-origin firm?

The paper's definition

- Earlier work measures relocation from **headquarters histories**
  - misses founders who move *before* incorporating
  - *Stripe:* founded in CA by the Collisons 2–3 years after emigrating
- **This paper: hand-collected** founder origin, 3,031 unicorns, ∼8,000 founders
  - Europe loses **21%** (HQ moves) to **42%** (founder origin) of its unicorns
- **Caveat:** the measure records **origin**, not **timing**

  "...over-counts founders who migrated long before any entrepreneurial intent (WhatsApp: one of two co-founders arrived in the US at age sixteen)"

How this matters for calibration

US-headquartered unicorns, US–Europe corridor

	N	Share	Calibration target
Founded in EU, HQ moved to US	82	6%	Phase-2
EU founder team, *no* HQ move	**119**	**9%**	Phase-1
EU-origin US unicorns (upper bound)	201	16%	

- Phase-1 is the **residual**: EU founder teams minus recorded HQ movers
- Both are targeted moments; κ_1, κ_2 match the two margins

Suggestions:

- treat only part of the **119** as genuine founder moves
- or restrict Phase-1 to founders who moved *close to* founding

$\Rightarrow$ how much do κ_1 and the counterfactuals shift?

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In the model, when a startup relocates, **all** inputs and output move with it

Five firms the paper places in the business drain (Figure 1):

Startup	HQ	Output (% in US)	Inputs
UiPath Bucharest → NY	New York	46%	30% of staff in Romania, 26% in the US
Unity Copenhagen → SF	San Francisco	28%	77% of 4,412 staff outside the US
Datadog founded in NY	New York	68%	15% of staff in France; R&D in NY and Paris
Snowflake founded in CA	Menlo Park	75%	R&D in Bellevue, Menlo Park, Berlin, Warsaw

Source: 10-K filings.

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Is **HQ or founder location** the state variable, or where **inputs and output** are?

When does the firm fragment?

The paper **already anticipates this** in Section 5.1.:

> "The baseline model ties each firm's employment to its headquarters location (...) relocated firms may return part of the activity to Europe (...) Quantifying the extension is the natural next step of this research."

Maybe the firm fragments **at the move**, not only **later as it scales**?

Suggestions: Look in the data

- **PATSTAT inventors**: where R&D workers are, year by year
- **10-K filings**: sales and assets by geography, US-listed firms
- **Orbis**: accounts of the European subsidiary, where filed
- **Worldscope**: sales by subsidiary, listed firms worldwide

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Aggregate Implications of Startup Relocation

Implications for aggregate growth

The paper is framed around this number:

"Shutting down relocation narrows the EU–US innovation and wage gaps but **lowers global growth by 2%**"

- But it is 2% *of the growth rate*: "2.67 basis points of a 1.35% baseline"
- g goes from **1.350%** to **1.323%** (and to **1.348%** when EU VC efficiency = US)

Horizon	10y	25y	50y	100y
Output vs. baseline	−0.27%	−0.67%	−1.33%	−2.6%

Own calculation, $\exp(-\Delta g \cdot T)$.

- Relocation moves **entrants**, and entrants are only ∼**19%** of world innovation
- **Reallocation** is larger: EU innovation +7.4%, US −3.6%, US–EU wage ratio −10%

Some ways to push this further

1. Plot the sensitivity of the aggregate effects to key parameters

- Agglomeration spillover $\zeta_1 = 0.10$, taken from Chikis et al. (2026)
- EU–US R&D efficiency gap: $K^s_{EU} = 0.53$ vs. $K^s_{US} = 0.97$
- *how large would these have to be for growth implications to matter?*

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2. Include trade costs or imperfect substitution

- Within a line, EU vs. US goods are **perfect substitutes**
- Profits per line equal across all lines and locations
- *no market-size or market-access motive to relocate*

Some ways to push this further

3. Focus on the distributional consequences

- Current version: wage gap and the reallocation of **innovation rents**
  what is the level of the wage gap?
- **Who owns the firms?** $\nu \in [1/2, 1]$
  how is it calibrated? if EU households hold large share of EU-origin firms, loss is smaller

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4. Run the mirror counterfactual: US VC as bad as EU

- The engine of growth here is **US VC depth**. What if it worsened?
- $\xi_{US} = \xi_{EU}$, and the same for R&D efficiency, $K_{US} = K_{EU}$
- *may be optimal for EU firms to raise VC in the US and expand back*

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5. Extend the event study to real outcomes

- Matched DiD covers VC raised, patents, citations
- *revenue, net income, employees*

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Complementary explanations

and their relevance for policy

Where does each explanation land in the model?

Explanation	Evidence	In the model
Market size	AI used by 43% of US workers vs 32% in Europe Bick et al. (2026)	one global final good; one market
Competition	Markups 1.84 in the US vs 1.63 in Europe De Loecker & Eeckhout (2021)	one γ ($= 1.13$), one global τ
Regulation	$\sim$100 tech-focused laws, 270+ regulators Draghi (2024)	only inside ξ_c, and only for VC
Public R&D	EIC Pathfinder €256m vs DARPA \$4.1bn Draghi (2024)	absent: all R&D privately financed
Talent	Scaling talent ranks 4th among triggers EIB (2026); Kerr & Lincoln (2010)	homogeneous labour, one wage
Sectorial	Movers are 38% software, stayers 21% Guzman (2019); their Table B.2	one κ, no sectors

teasing these motives apart matters for the policy implications

Great paper!

it makes you think a lot

It opens the door to many more questions on

startup creation $\leftrightarrow$ innovation $\leftrightarrow$ firm entry

multinationals $\leftrightarrow$ market power ... and more!

looking forward to seeing the next iterations