

We Don't Have Nearly Enough Startups

Nnamdi Iregbulem

Lightspeed Venture Partners

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Introduction

Introduction

- ▶ Key question: **What drove the explosive growth in venture activity?**
- ▶ **Two possible drivers:** investor exuberance and founder fervor
 - * Did investors become substantially more favorable toward private startups?
 - * Or, did we all become much more entrepreneurial?
- ▶ **Common narrative:** the bonanza in venture activity over the last decade reflects growing entrepreneurialism, the ease of starting a company, etc.
 - * **Spoiler alert:** *not really*

Introduction (Cont'd)

- ▶ **Source:** PitchBook data, 2010-2022
- ▶ **Note:** Since we're focused on growth, most data is in logarithms
- ▶ All analysis done in **R**, code and data can be found here:

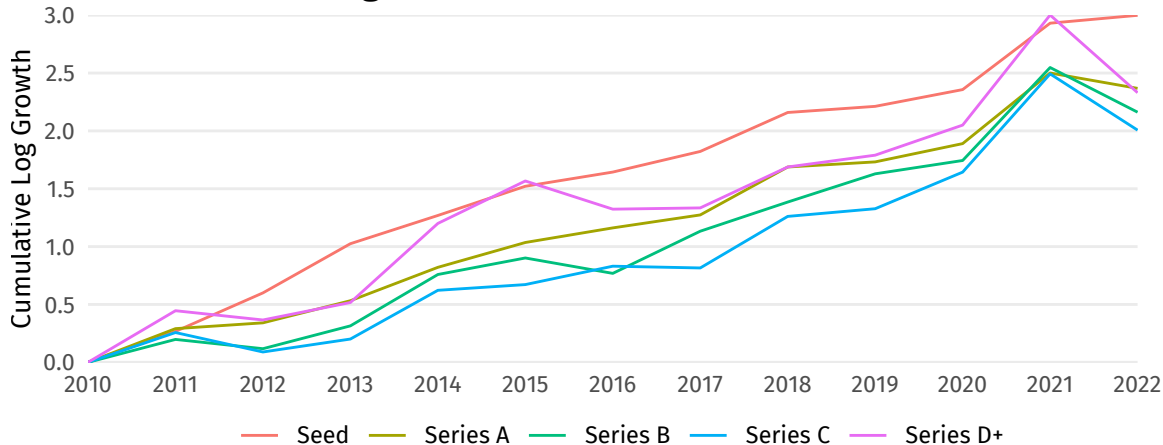
<https://github.com/whoisnnamdi/startups-pres0>

Up and to the Right

A Rising Tide Lifts All Stages

- From 2010, venture funding grew at ~25% CAGR through the 2011 peak

Growth in Funding Volume



Some Quick Algebra

► Can think about \$1 of invested capital as having **three components**

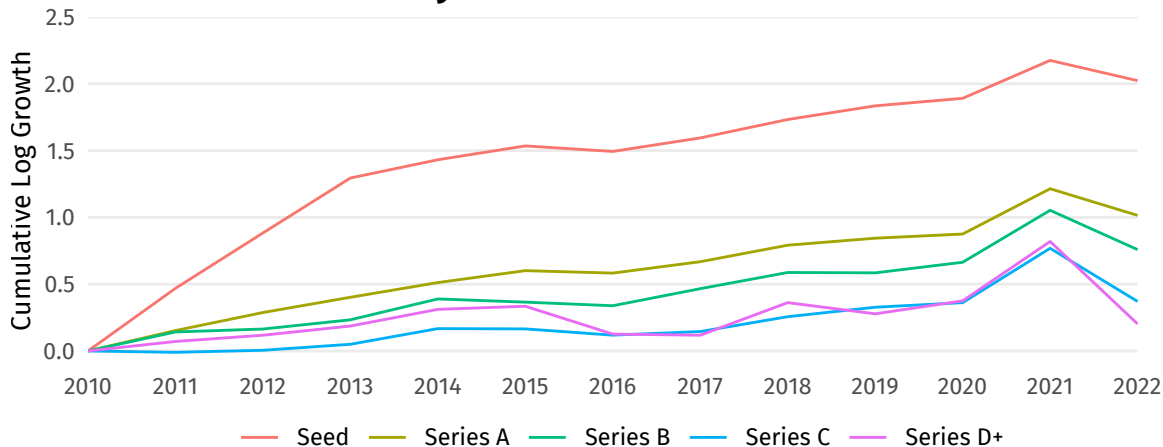
- * # of deals
- * \$ average valuation
- * % average dilution

$$\text{Funding} = \text{Deals} \times \text{Valuation} \times \text{Dilution}$$

Planting the Seeds

- Deal counts have ballooned across all stages, but the Seed stage stands out

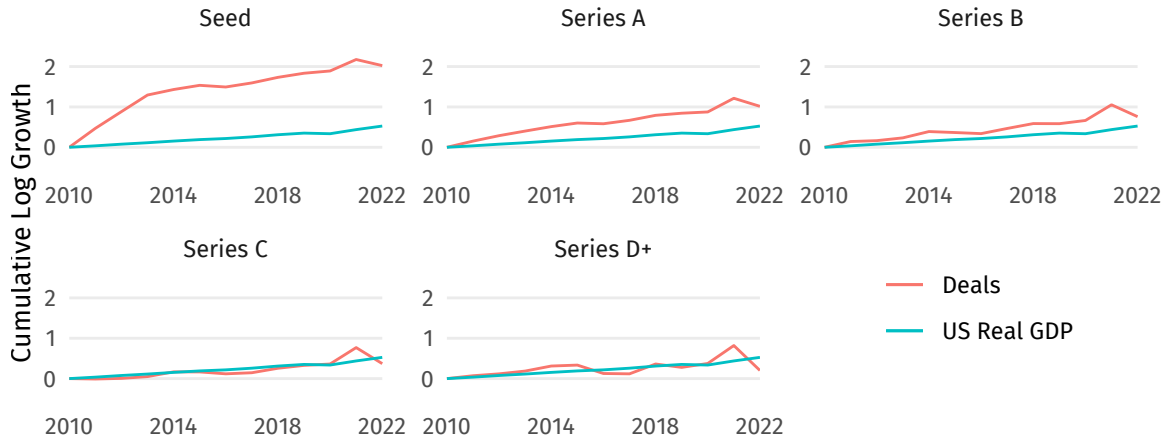
Growth in Deal Activity



Too Real

- ▶ Venture deal activity is anchored to the broader economy, especially at the late-stage

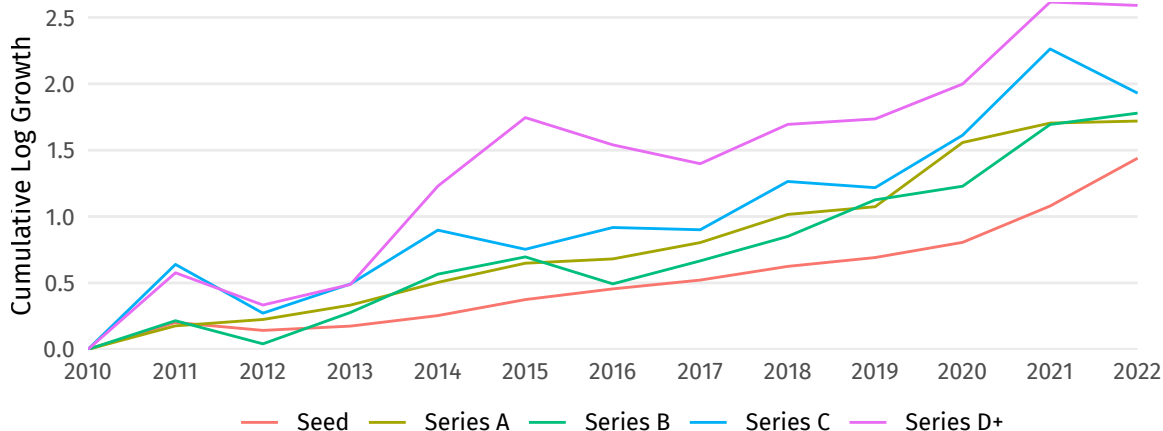
Growth in Quarterly Deal Count vs US GDP



Valuation Inflation

- ▶ Valuations have grown dramatically across all stages

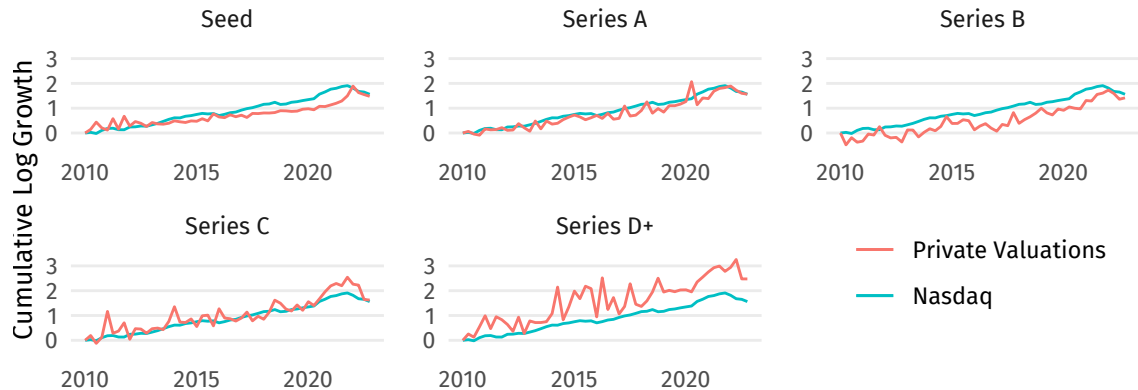
Growth in Average Deal Valuation



Tracking the Nasdaq

- ▶ Private valuations closely track prices in the public tech market
 - * Importantly, this holds true even though different companies raise capital each quarter

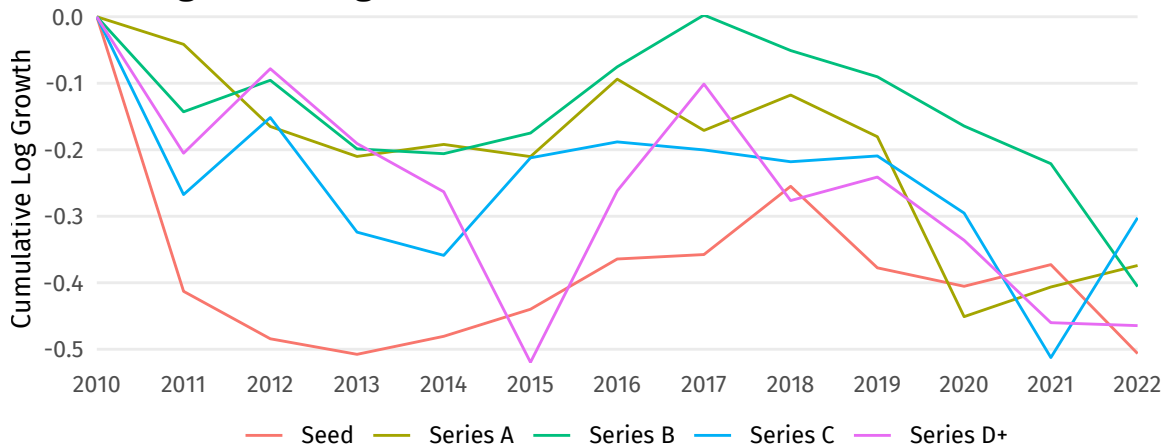
Private Valuations vs. The Nasdaq Composite Index



The Evolution of Dilution

- Dilution has fallen in every stage since 2010

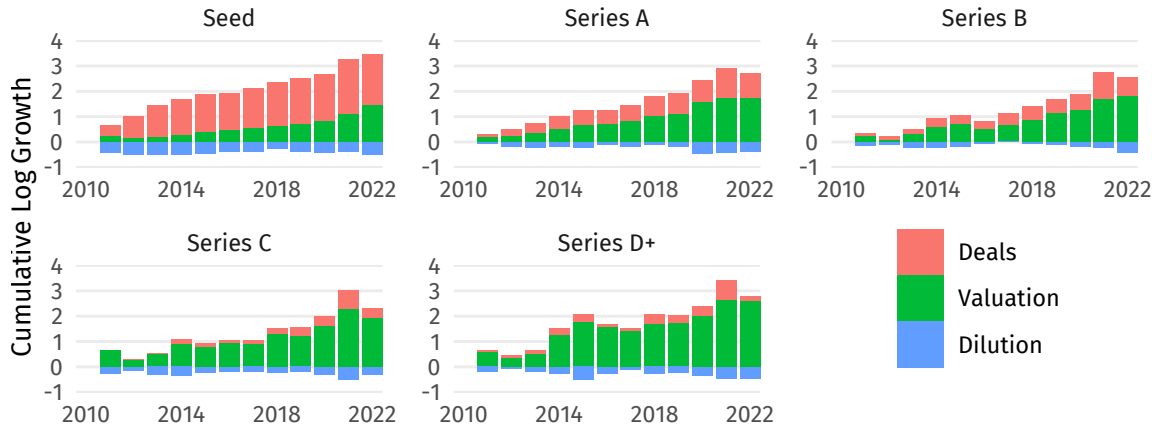
Change in Average Dilution



It's Valuations (Almost) All the Way Down

- Rising valuations drove most funding growth across stages

Funding Growth Decomposition



Algebra II

► “Price adjust” venture funding: divide by valuation

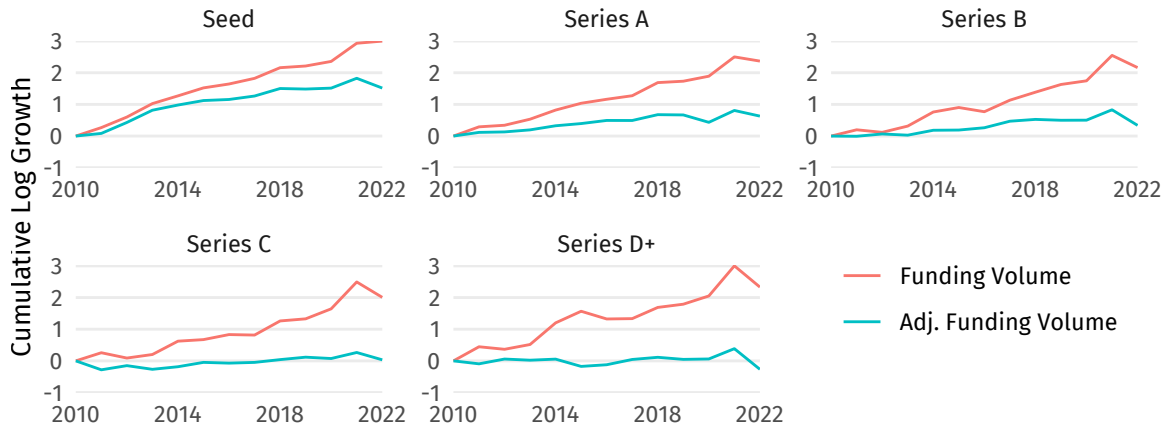
- * Analogous to adjusting nominal GDP with inflation to get real GDP

$$\begin{array}{ccc} \boxed{\text{Funding}} & / & \boxed{\text{Valuation}} \\ & = & \\ \boxed{\text{Deals}} & \times & \boxed{\text{Dilution}} \end{array}$$

"Real" Funding Growth is Slower Than You Think

- ▶ A decade of zero real growth in late-stage funding activity until the bonanza of 2021

Growth in Raw vs Valuation-Adjusted Funding Volume

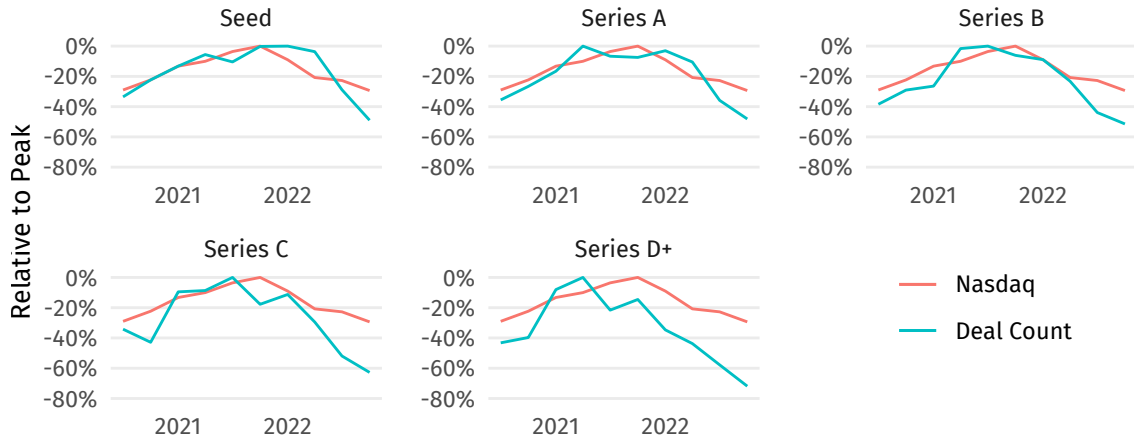


The Great Venture Recession

The Comedown

- Deal activity is down 50-70% from its all-time high

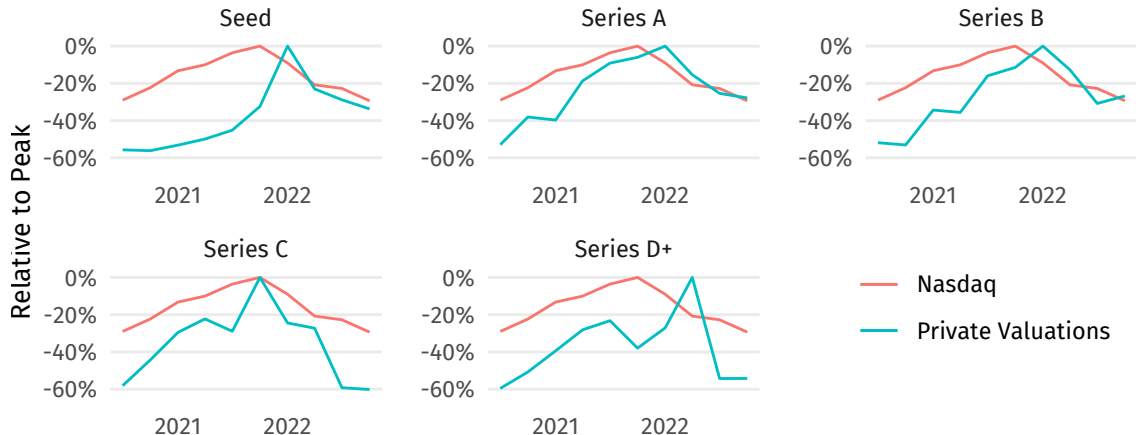
Deal Activity Relative to Peak



Descent from the Peak

- ▶ Private valuations are down 30-60% from their peak

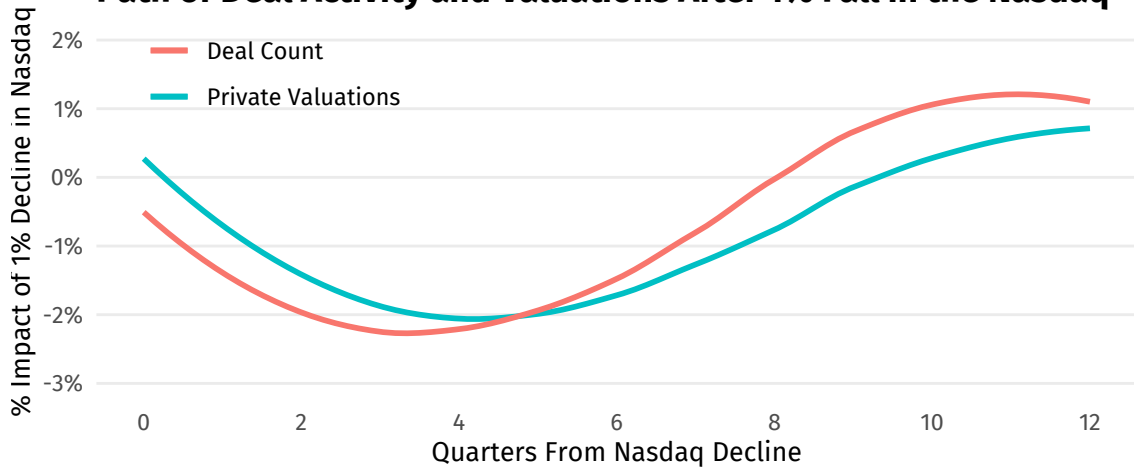
Valuations Relative to Peak



The Path to Recovery

- Deal activity and valuations decline for 3-5 Quarters, **2-3 years for full recovery**

Path of Deal Activity and Valuations After 1% Fall in the Nasdaq

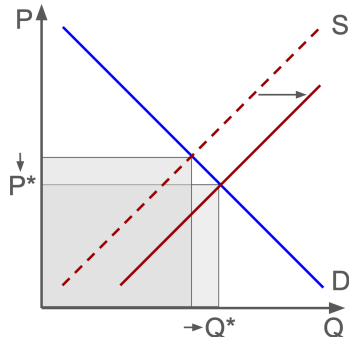
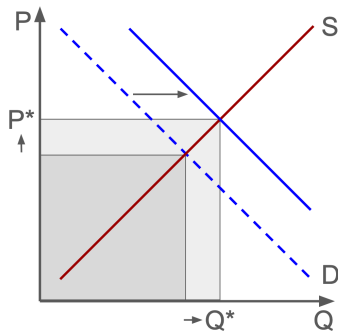
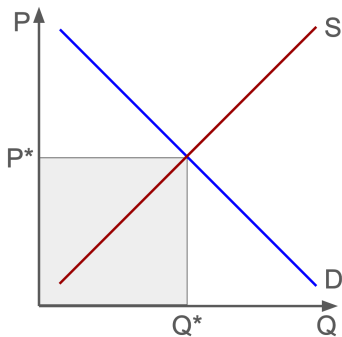


Attribution

Economics 101

► A simple but powerful model: supply and demand

- * **Demand:** When everyone wants to buy the same thing, quantities and prices both rise
- * **Supply:** When everyone wants to sell the same thing, quantities rise but prices fall

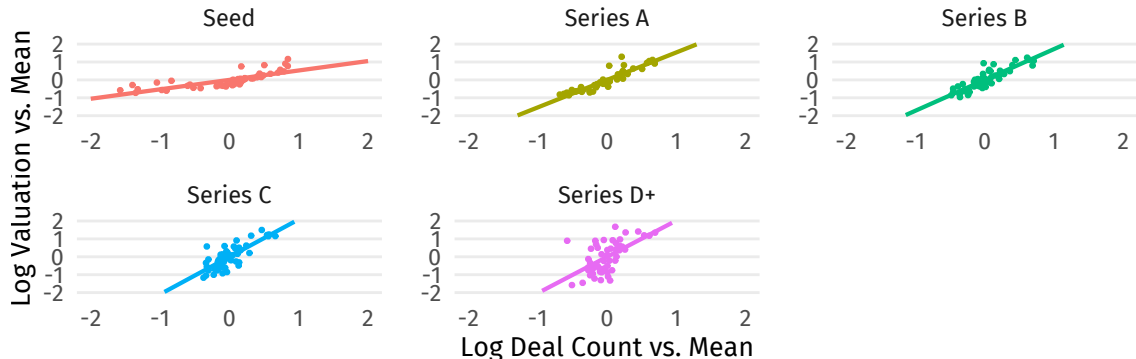


Two Peas in a Pod?

- Deal activity and valuations grow together

- * **Warning:** This doesn't necessarily mean much
- * Need to detrend both variables first, otherwise correlations are meaningless

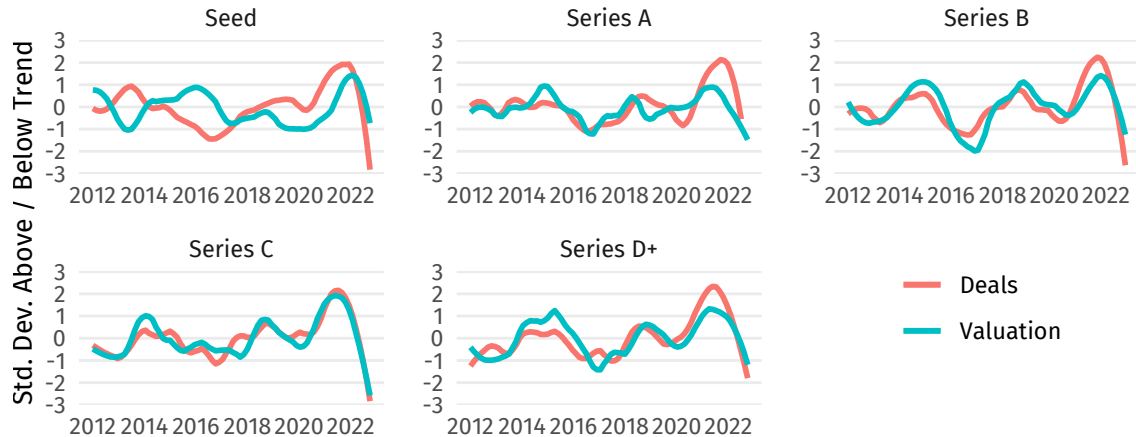
Deal Count vs Valuation



Bucking the Trend

- Deal activity and valuations fluctuate together, suggesting demand matters most

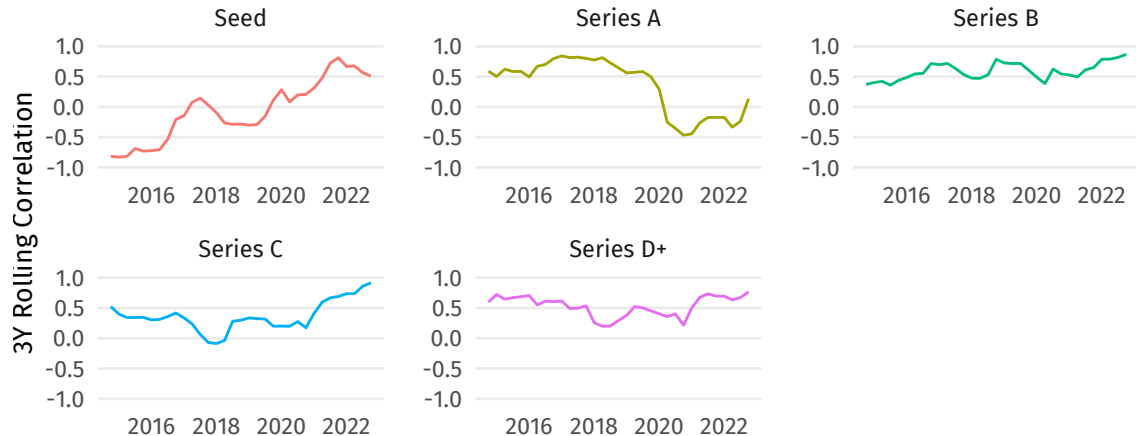
Deal Activity and Valuations Relative to Trend



Correlation Implies Inflation

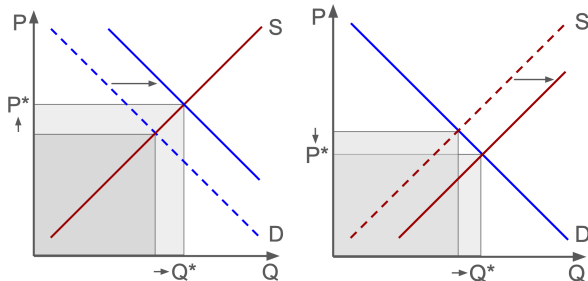
- ▶ Across most stages, financing activity and valuations are positively correlated

Correlation Over Time Between Deal Count and Valuation



Supply and Demand

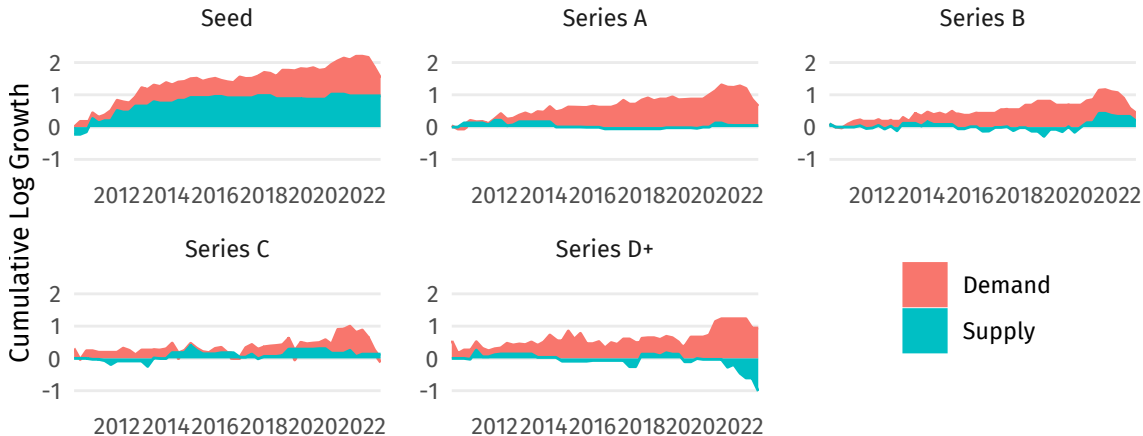
- ▶ Can we explain the last decade of venture growth in terms of supply and demand?
 - * When demand changes, quantities and prices move together
 - * When supply shifts, quantities and prices move in opposite directions
- ▶ Attribute growth each quarter to demand or supply depending on how deal activity and valuations co-move; cumulate to get the full historical decomposition



We Don't Have Nearly Enough Startups

- Demand accounts for majority of growth in deal activity

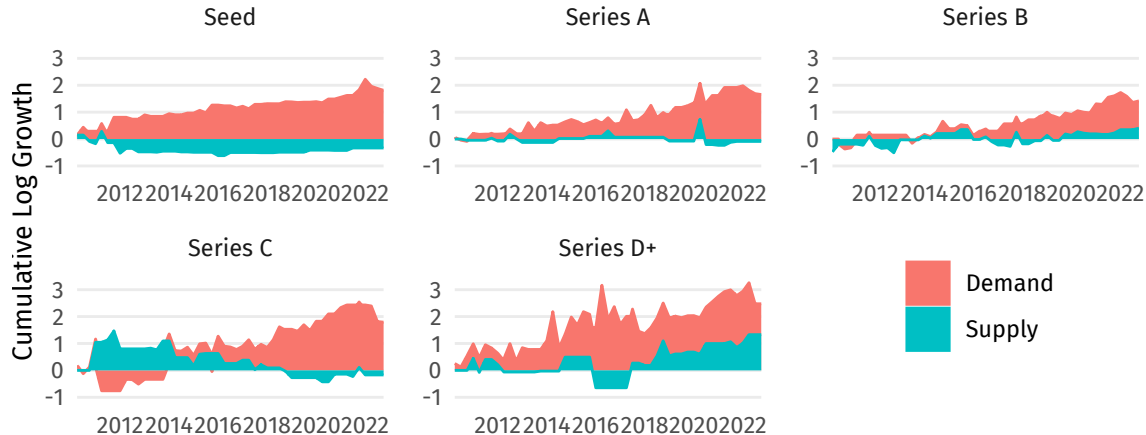
Growth Decomposition of Deal Activity



We Value Your Business

- Demand drove most of the increase in venture valuations

Growth Decomposition of Valuations



Conclusion

Conclusion

- ▶ Surging investor demand for the venture asset class drove the increase in deal activity and valuations over the last decade
- ▶ More startups than ever before, but this seems to be a **reaction to cheap and plentiful capital** rather than attractive market opportunities
 - * Ideally, venture activity should reflect growing capacity and ability of entrepreneurs to start successful new businesses
 - * If venture activity merely reflects investors needing increasingly speculative places to park money, we have a big problem
- ▶ The demand side got a bit ahead of itself; it's time for the supply side to catch up