Why Are Returns to Private Business Wealth So Dispersed?

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Discussion by E. McGrattan

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Motivation

Q: Why are private business *accounting* returns dispersed?

A: BGM investigate

- Partial insurance for business income risk
- Collateral constraints limiting borrowing

$\Rightarrow$ Factor misallocation

Main Exercise

- Parameterize model of entrepreneurial dynamics
- Ensure model predicts enough dispersion in ROEs
- Quantify roles of uninsurable risk and limited borrowing

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Next, consider BGM model of business owner

Problem of BGM Business Owner

$$\max E_0 \sum_{t=0}^{\infty} \beta^t \frac{c_t^{1-\theta}}{1-\theta}$$

$$\text{st } c_t + \underbrace{k_{t+1} - b_{t+1} - (k_t - b_t)}_{\text{change in equity, } a_{t+1} - a_t}$$

$$\leq \underbrace{z_t \epsilon_t (k_t^{\alpha} l_t^{1-\alpha})^{\eta} - W l_t - \delta k_t - r b_t}_{\text{net income, } \pi_t}$$

$$b_{t+1} \leq \xi k_{t+1}$$

$$\log z_{t+1} = \rho \log z_t + u_{t+1}$$

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Let's Take a Closer Look...

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Problem of BGM Business Owner

$$\max E_0 \sum_{t=0}^{\infty} \beta^t \frac{c_t^{1-\theta}}{1-\theta} \qquad \leftarrow \text{Only 1 owner}$$

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Weathering Tukey g-h shocks

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With only business income ↙

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$$\leq \underbrace{z_t \epsilon_t (k_t^{\alpha} l_t^{1-\alpha})^{\eta} - W l_t - \delta k_t - r b_t}_{\text{net income, } \pi_t}$$

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$\uparrow$

$\leftarrow$ Without bankruptcy or default

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Without rental markets

plus timing assumption : choose k, l before shocks

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Without independent contractors ↙

plus timing assumption : choose k, l before shocks

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Without informal workers ↙

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Without family workers ↙

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Without opportunities to publicly list

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Without possibility of paid-employment ↓

$$\leq \underbrace{z_t \epsilon_t (k_t^{\alpha} l_t^{1-\alpha})^{\eta} - W l_t - \delta k_t - r b_t}_{\text{net income, } \pi_t} + \ldots$$

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Without government help ↓

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Without spousal income ↓

$$\leq \underbrace{z_t \epsilon_t (k_t^{\alpha} l_t^{1-\alpha})^{\eta} - W l_t - \delta k_t - r b_t}_{\text{net income, } \pi_t} + \ldots$$

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Without Mom's basement!

↓

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Quantitative Findings

Eliminating Collateral Constraints

- Increases
  - Productivity 0.02%
  - Output 0.15%
  - Wages 0.02%

$\Rightarrow$ Almost no change

Eliminating Collateral Constraints

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  - Productivity 0.02%
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  - Wages 0.02%

Is this surprising?

Eliminating Collateral Constraints

- Increases
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  - Output 0.15%
  - Wages 0.02%

Is this surprising? Not really

Insuring Risk

- Increases
  - Productivity 5.7%
  - Output 8.2%
  - Wages 15.5%
  - Value of businesses by 700%

$\Rightarrow$ Huge changes

Insuring Risk

- Increases
  - Productivity 5.7%
  - Output 8.2%
  - Wages 15.5%
  - Value of businesses by 700%

Is this surprising?

Surprising?

- Perhaps given
  - Magnitudes are so large
  - Impact of risk on saving/investment not obvious
- Perhaps not given
  - Few sources of insurance in the model
  - Owners have small-scale operations to avoid losses
  - Only firm-level data used for calibration

A Look at Data from US

In Related Work

- Assembled longitudinal database of business owners
- Estimated life-cycle income profiles for 35,000 groups
- Compared similar self- and paid-employed (SE&PE)
  - Growth and volatility patterns
  - Determinants of entrpreneurial choice

See: *On the Nature of Entrepeneurship*
(Bhandari, Kass, May, McGrattan, and Schulz)

Of Particular Relevance for BGM

- Comparisons of *attached* SE and PE
  - Same employment status for 12+ years
  - Fewer than 2 switches in status during sample
  - No intermediate non-employment years
- Information from individual filings
  - All income sources (plus W2s,K1s, etc)
  - Plus related family incomes
- Information from business filings
  - Income statements
  - Balance sheets (if large enough)
  - Links to employees/other businesses/other owners

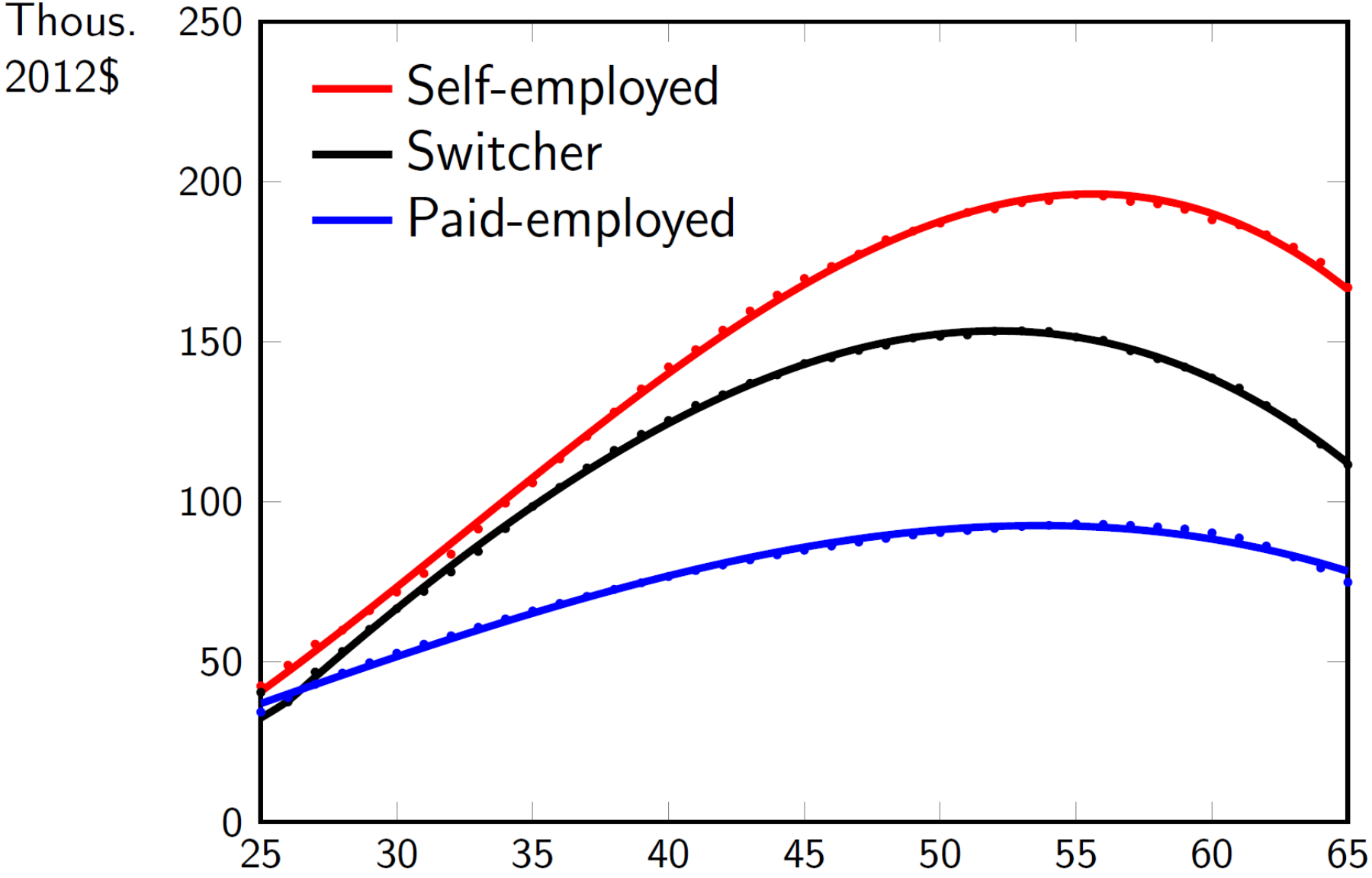
Relevant Findings

- For individual i, time t, cohort c, age a, group g, estimate:

$$y_{it} = \alpha_i + \beta_{g(i),t} + \sum_a \gamma^a_{c(i),g(i)} + \epsilon_{it}$$

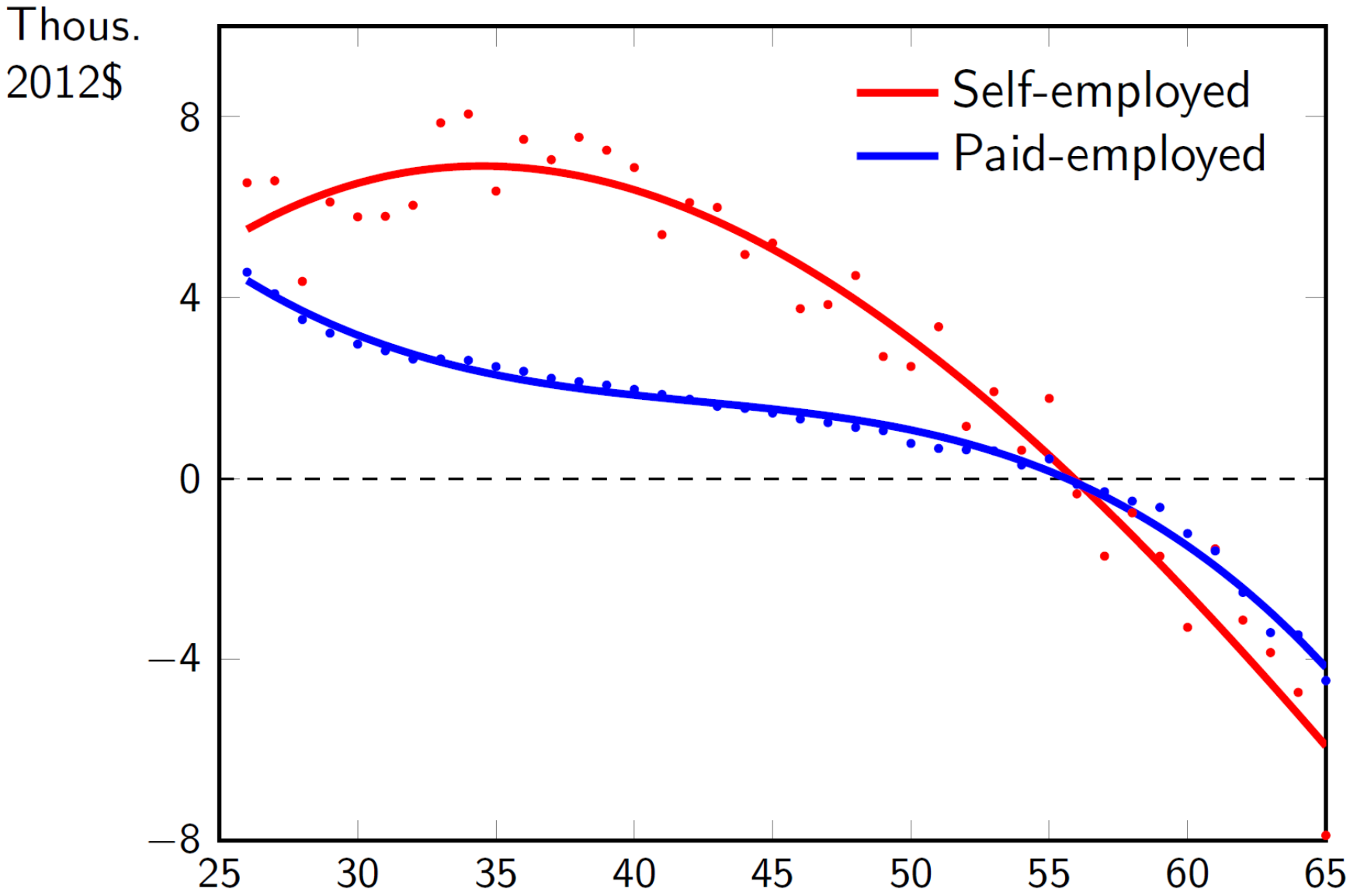
- Find:
  - Attached SE:
    - Start out similarly to PE peers, *but*
    - Have higher and more persistent growth
    - Have losses and incomes 3 times more volatile
  - Entrants to SE (including non-attached):
    - Have lower asset income before entry
- How possible without some insurance?

Estimated Income Profiles



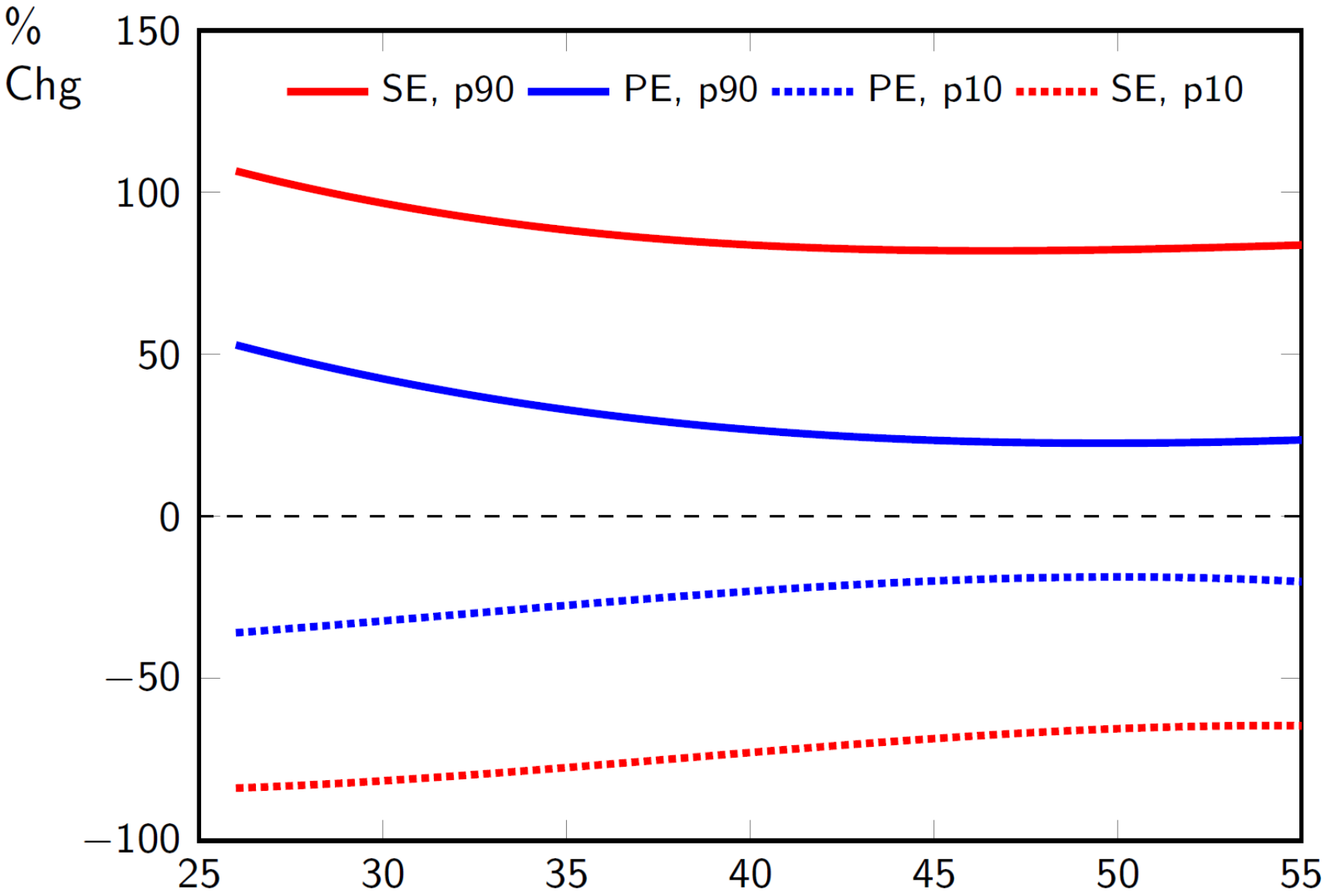
- SE start out similarly but grow much faster

Estimated Growth



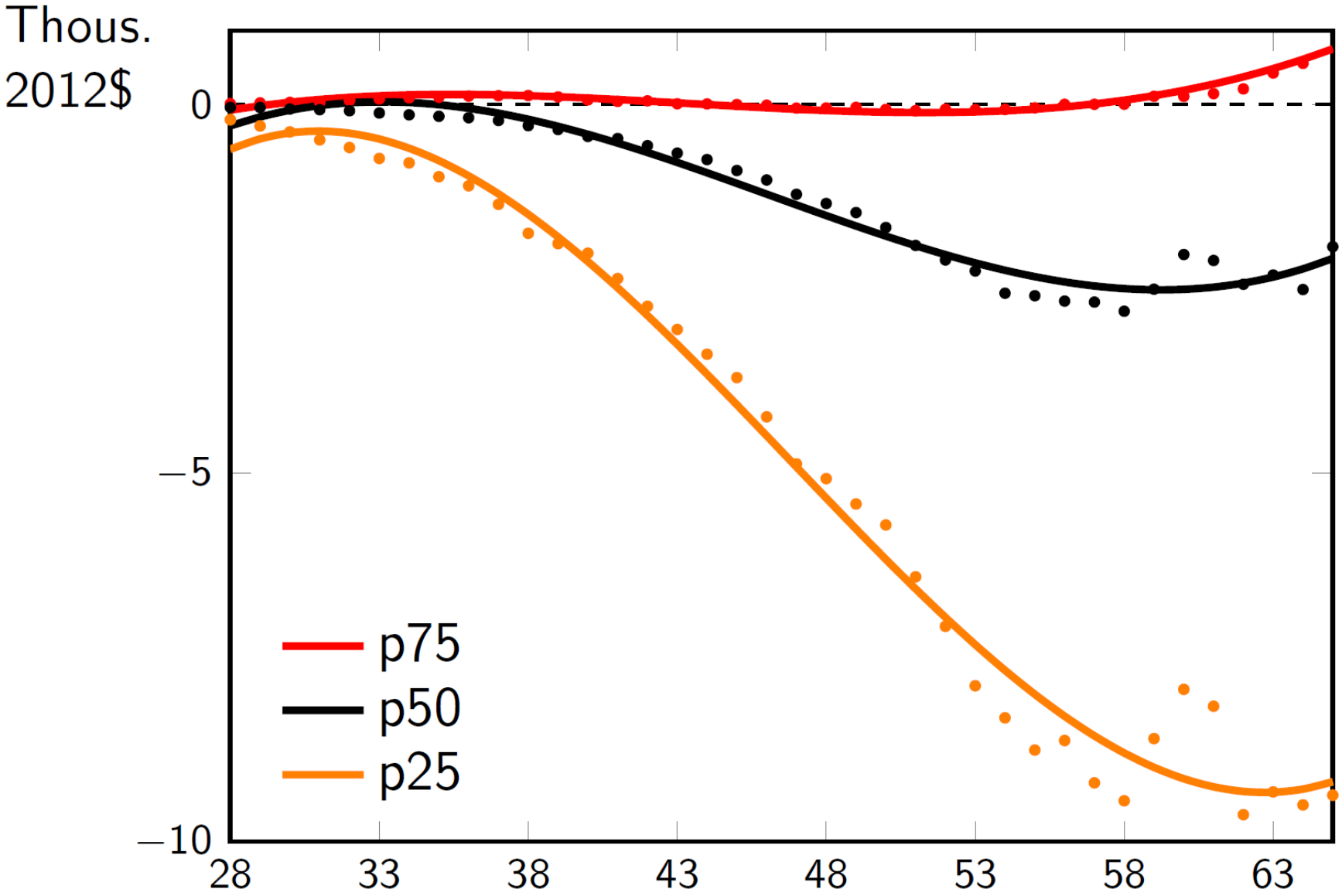
- SE rewarded for early firm-specific investments

Income Changes for Attached SE/PE



- Volatility in SE about 3 times that of PE

Difference in Past Asset Incomes



- Past asset incomes *lower* for entrants

How Possible?

- Spousal wages provide insurance
- Businesses have multiple owners
- Owners have multiple businesses
- Rental/labor markets are fluid
- Debt financing not always needed
- Public listing always an option
- Paid-employment always an option

How Possible?

- Spousal wages provide insurance
- Businesses have multiple owners
- Owners have multiple businesses
- Rental/labor markets are fluid
- Debt financing not always needed
- Public listing always an option
- Paid-employment always an option

- And...there is always Mom!

Disclaimer

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