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**Discussion of**  
**“Grown-Up Business Cycles”**  
**by Benjamin Pugsley and Ayşegül Şahin**

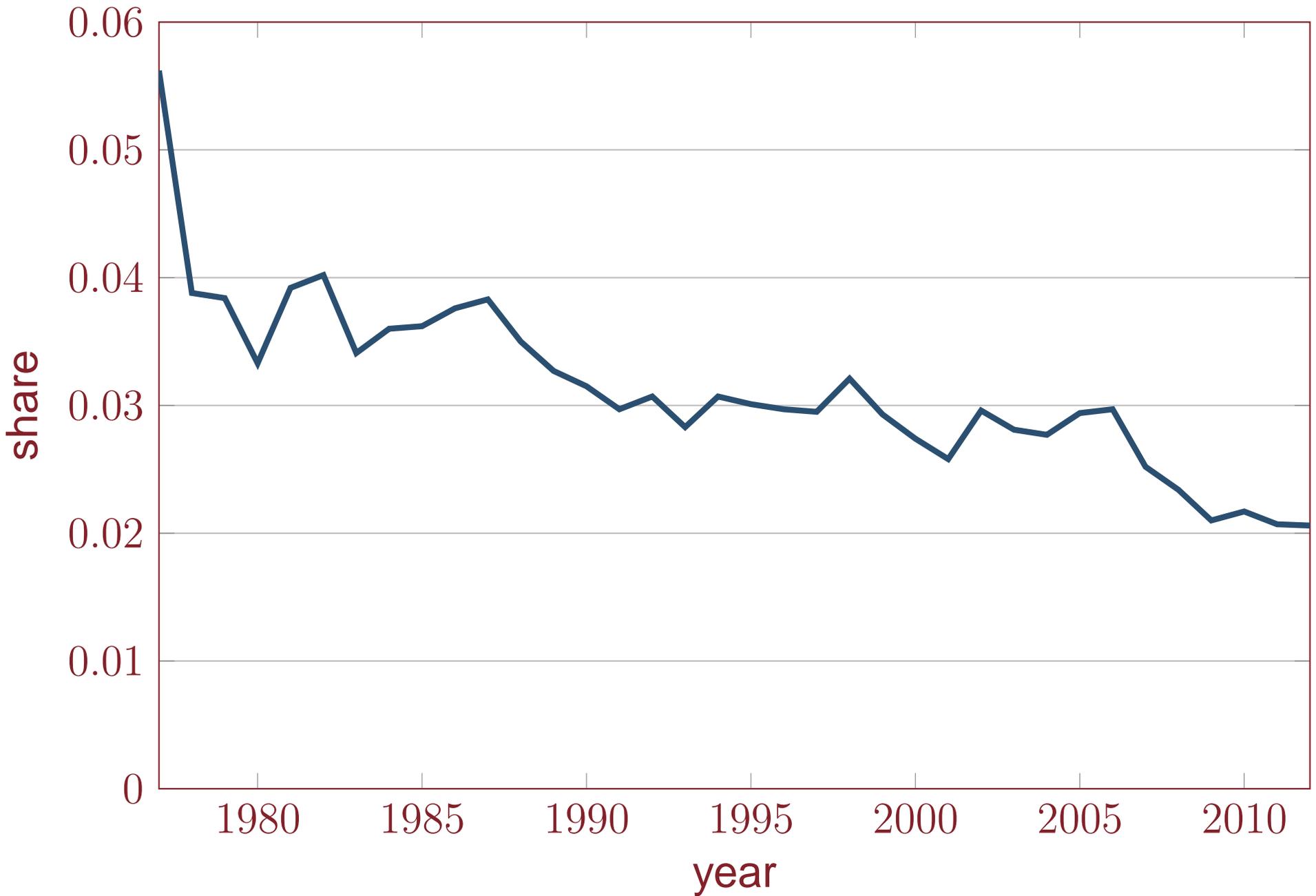
Robert Shimer  
University of Chicago

February 26, 2015  
EFJK Meeting, San Francisco

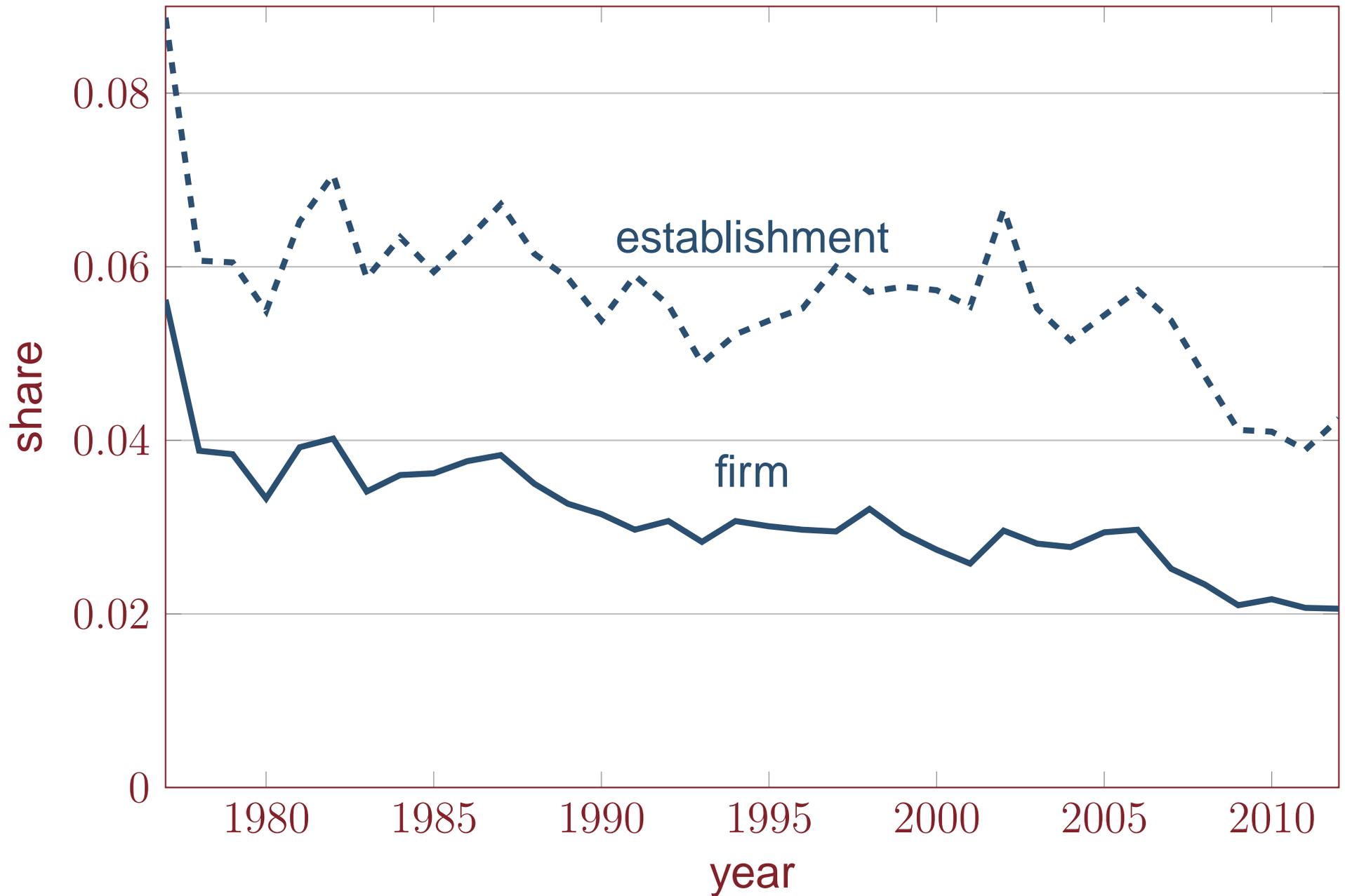
# Convincing Facts

- changing age distribution of firms and establishments (stocks)
  - ▶ sharp decline in share of younger firms and establishments
  - ▶ more than offset by increase in older firms and establishments
  
- small changes in entry and exit rate (flows)
  - ▶ net employment growth conditional on age is stable
  - ▶ no obvious trend in growth rate of new firms and establishments
  
- how can stocks change without flows changing?
  - ▶ transitional dynamics

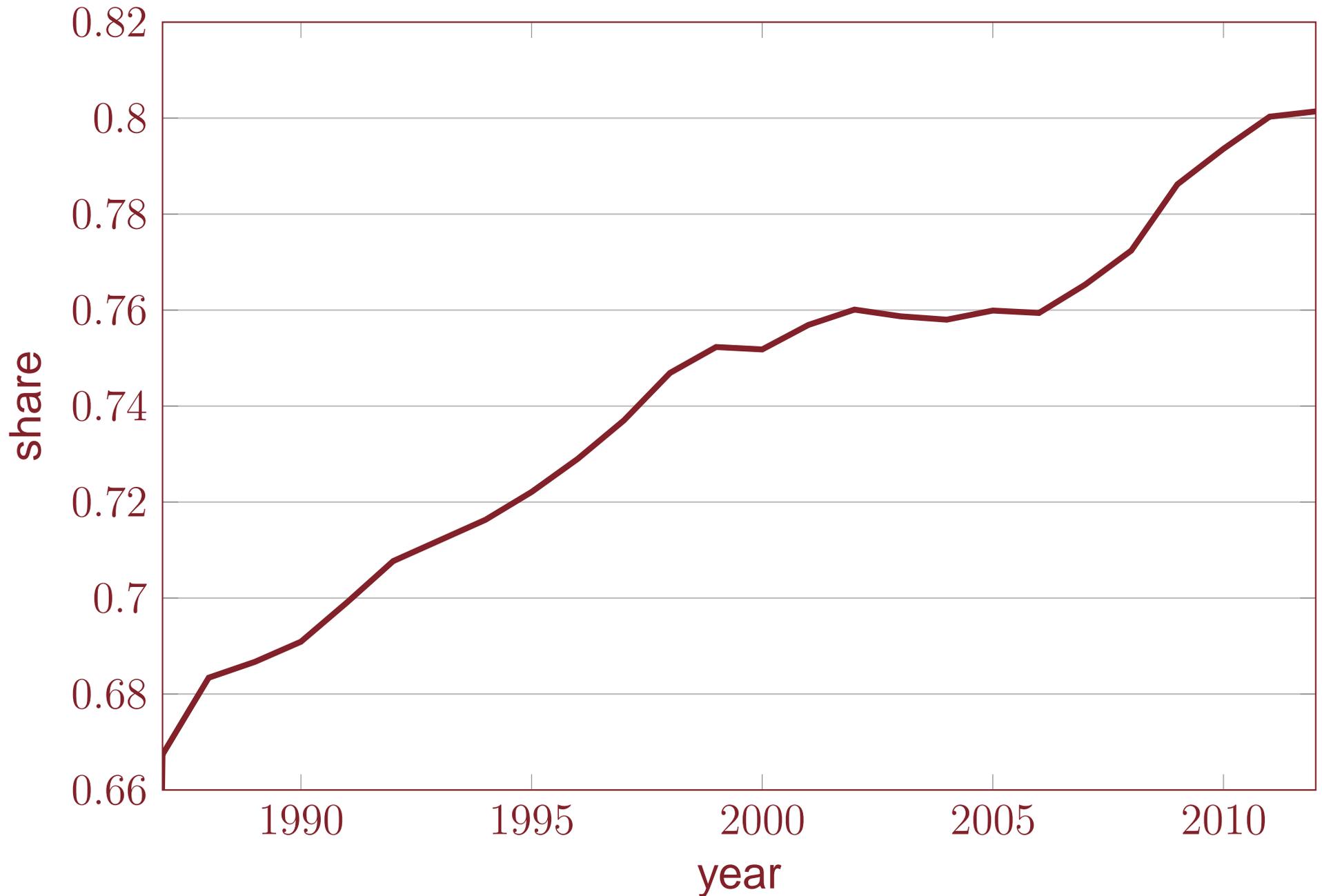
# Share of Employment in Startup Firms



# Share of Employment in Startup Establishments



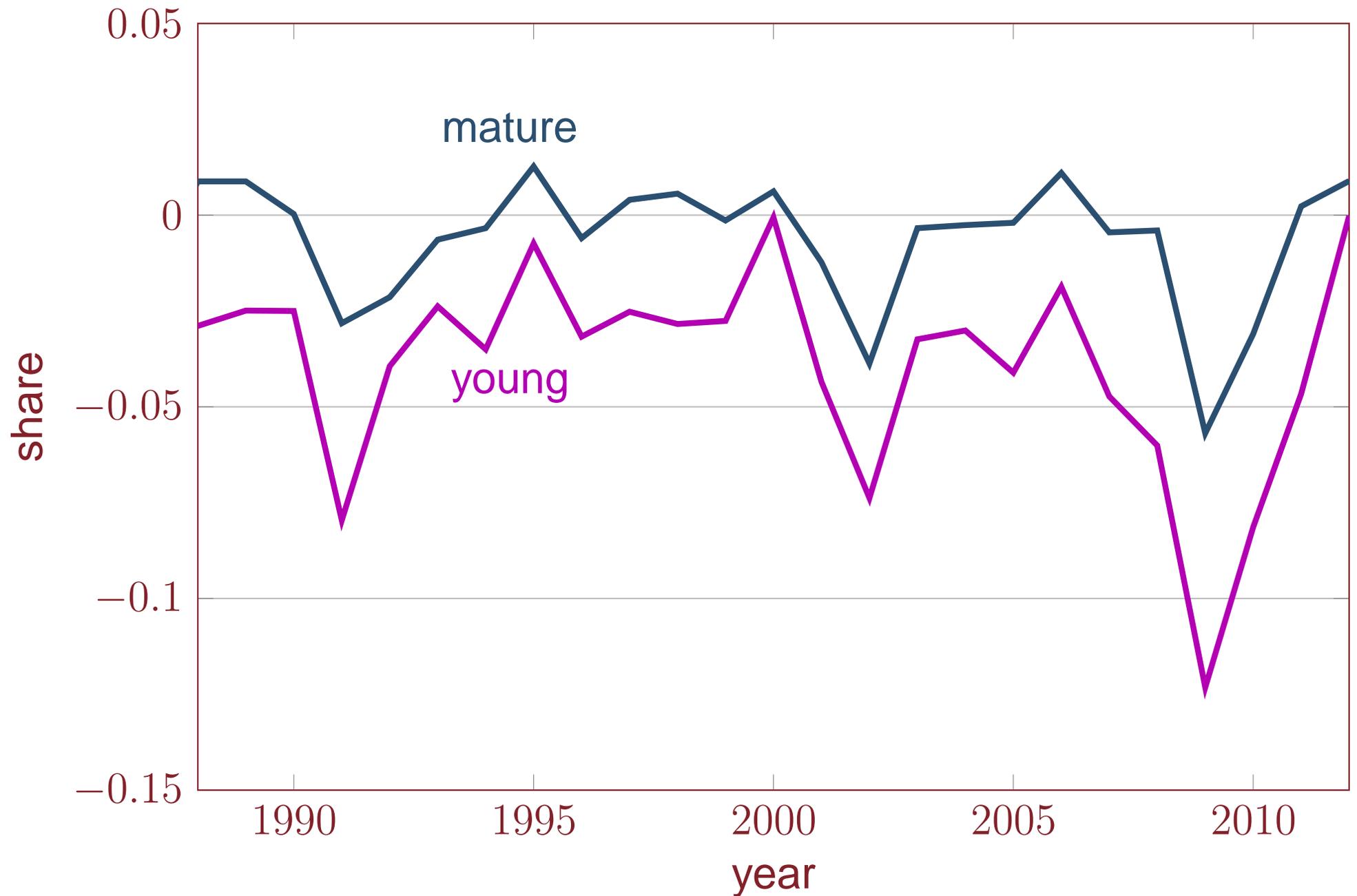
# Share of Employment in Mature Firms



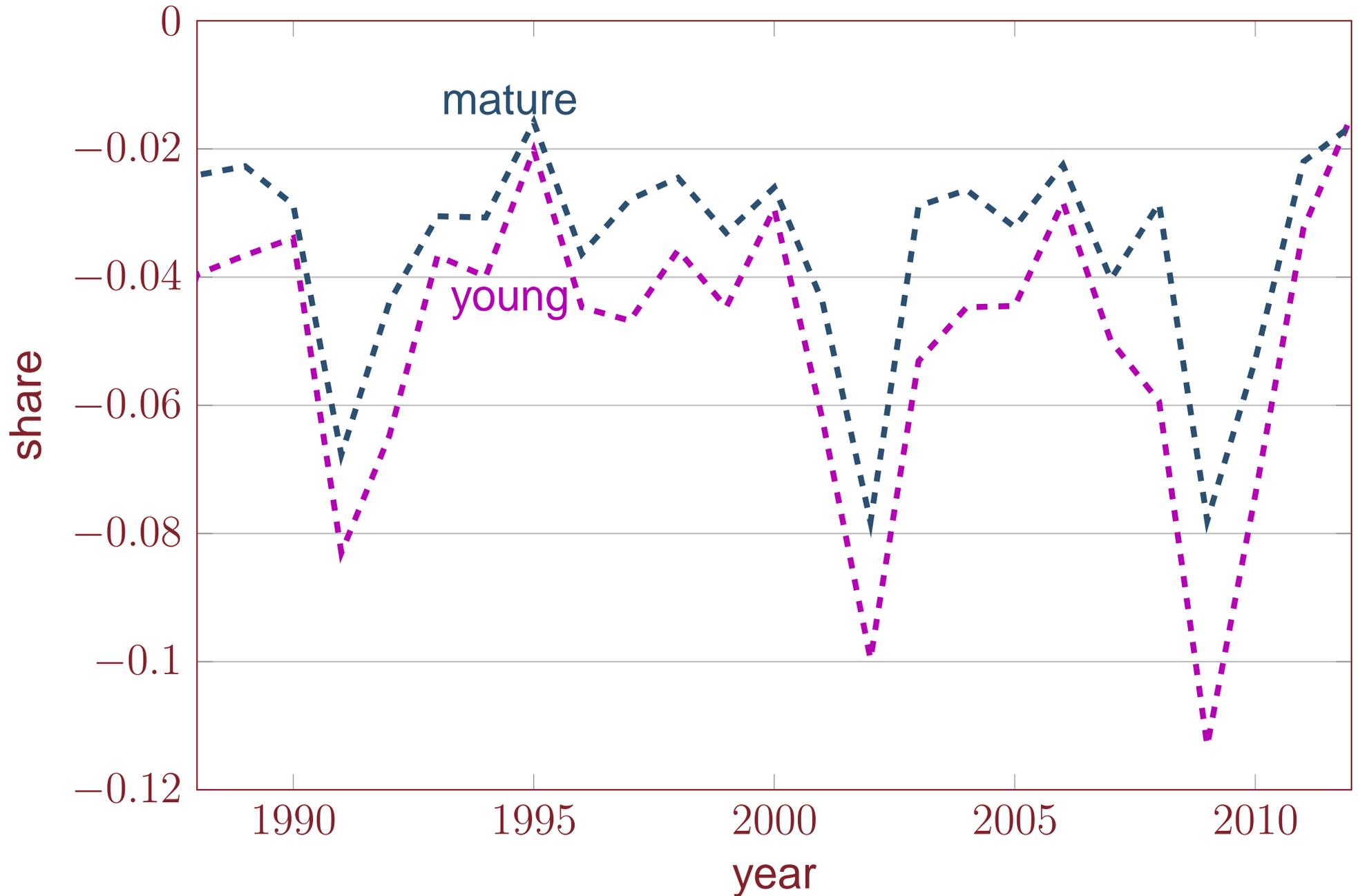
# Share of Employment in Mature Establishments



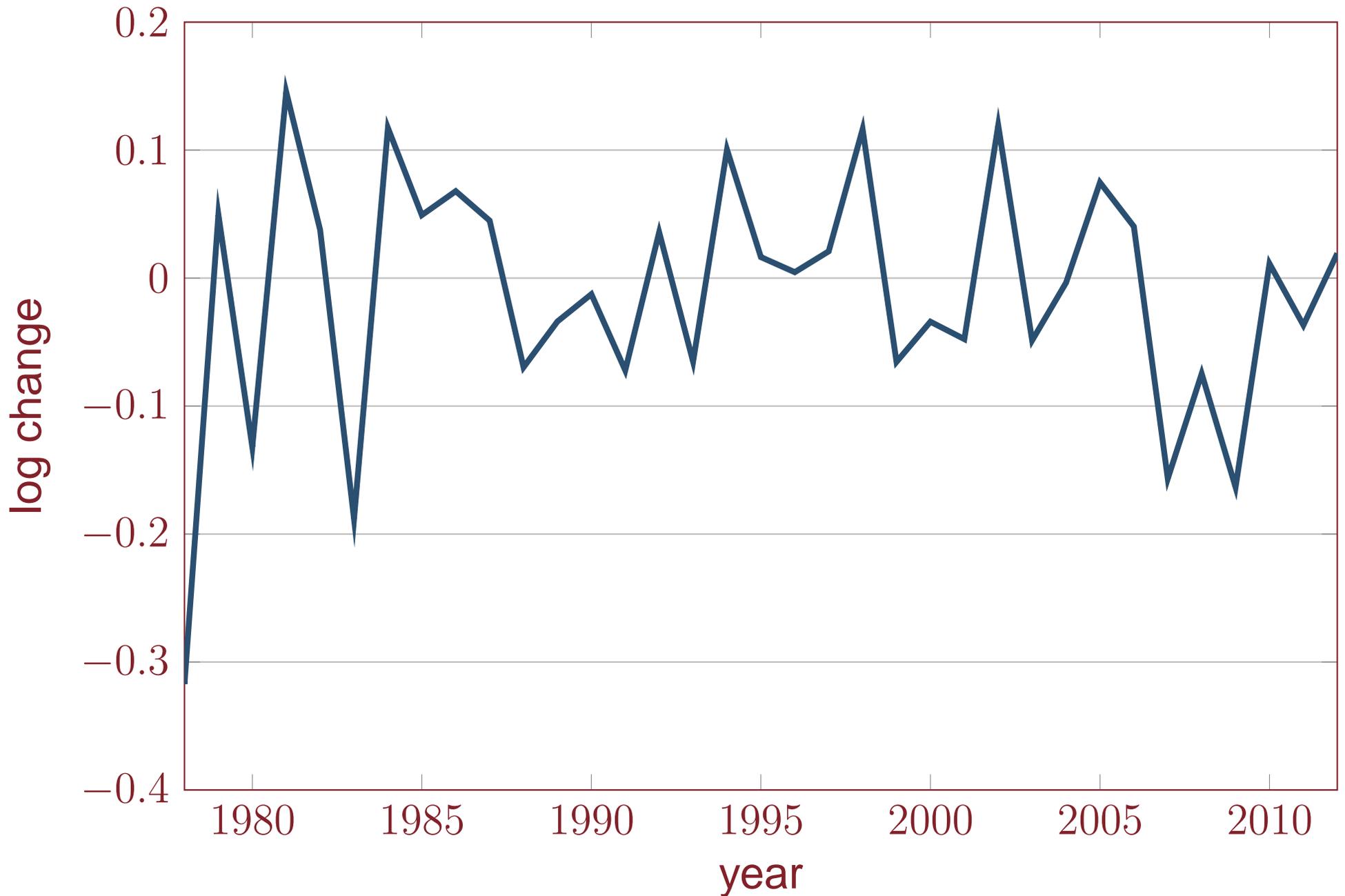
# Growth of Employment in Existing Firms



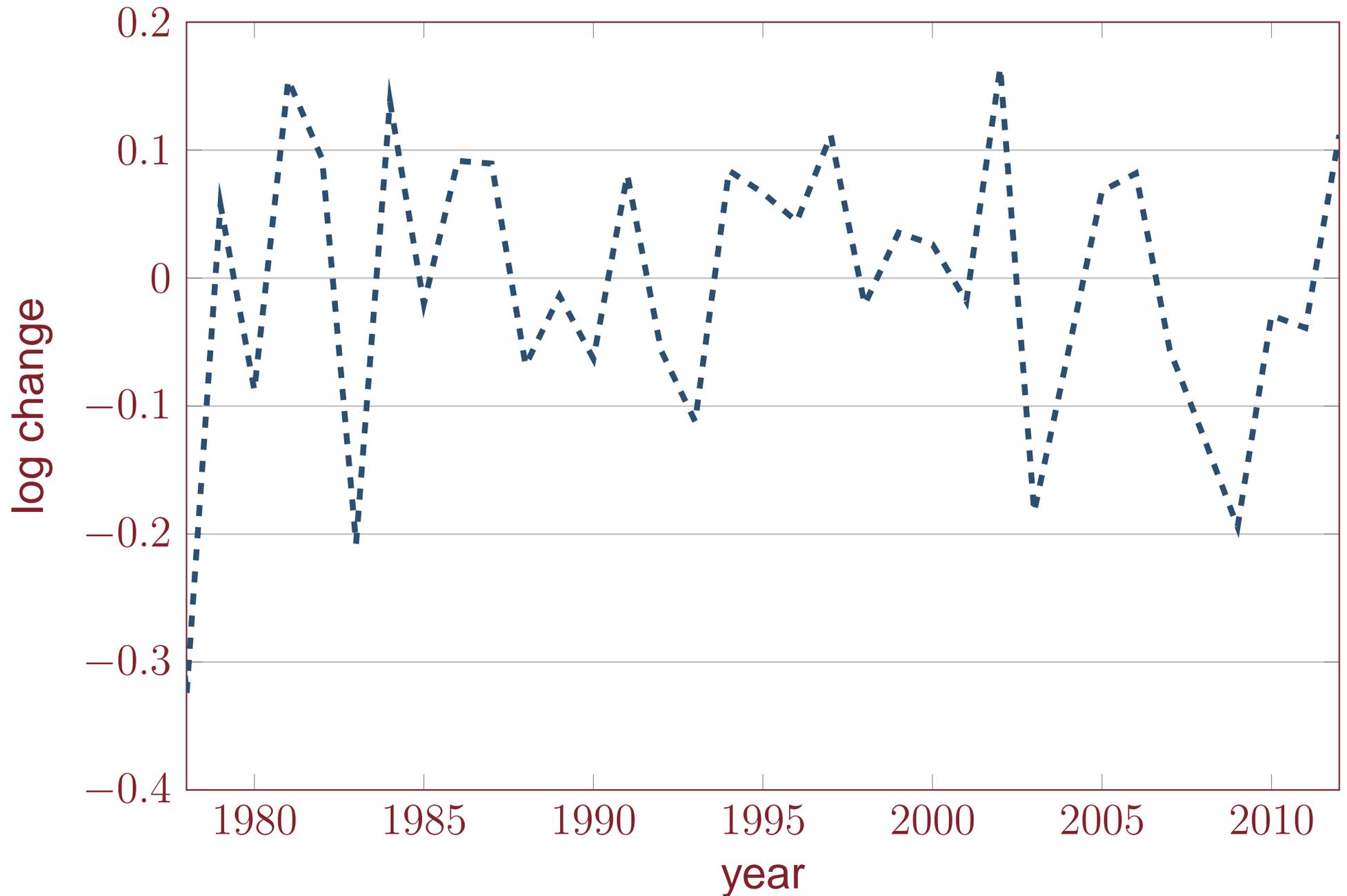
# Growth of Employment in Existing Estab.



# Growth of Employment in Startup Firms



# Growth of Employment in Startup Estab.



# Summary of Facts since 1987

- growth in young firms:  $g^y = -0.039$ 
  - ▷ young establishments:  $-0.050$
  
- growth in mature firms:  $g^m = -0.007$ 
  - ▷ mature establishments:  $-0.036$
  
- growth in number of startup firms:  $S_{t+1}/S_t - 1 = g^s = -0.011$ 
  - ▷ startup establishment:  $-0.003$
  
- huge standard errors around all these, especially the last

# From Flows to Stocks

□ in theory, the stocks should evolve as

$$S_{t+1} = (1 + g_{t+1}^s)S_t$$

$$E_{t+1}^y = (1 + g_{t+1}^y)(0.9E_t^y + S_t)$$

$$E_{t+1}^m = (1 + g_{t+1}^m)(E_t^m + 0.1E_t^y)$$

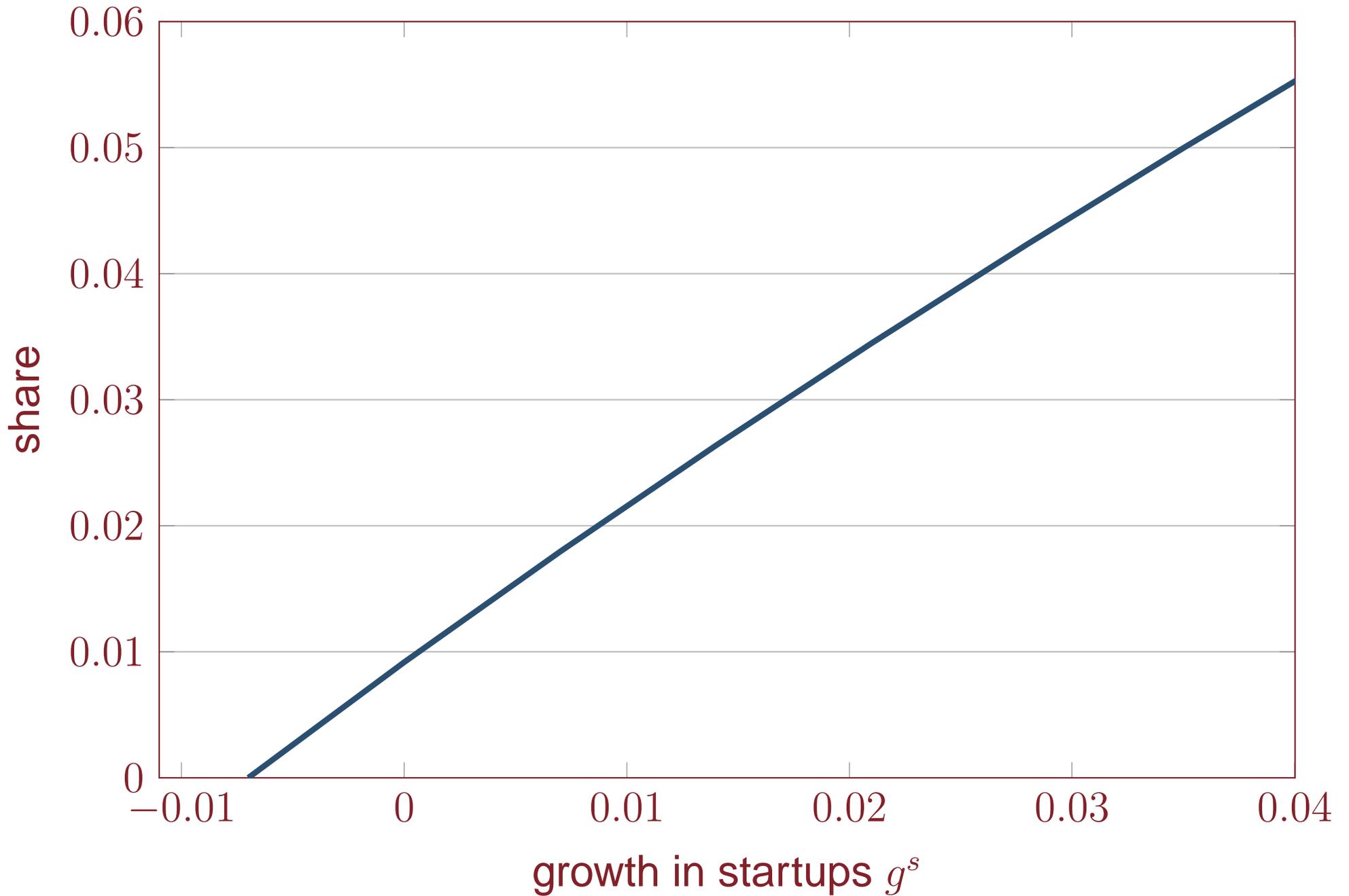
□ assume  $g^y = -0.039$  and  $g^m = -0.007$ , constant (firm data)

□ solve for steady state

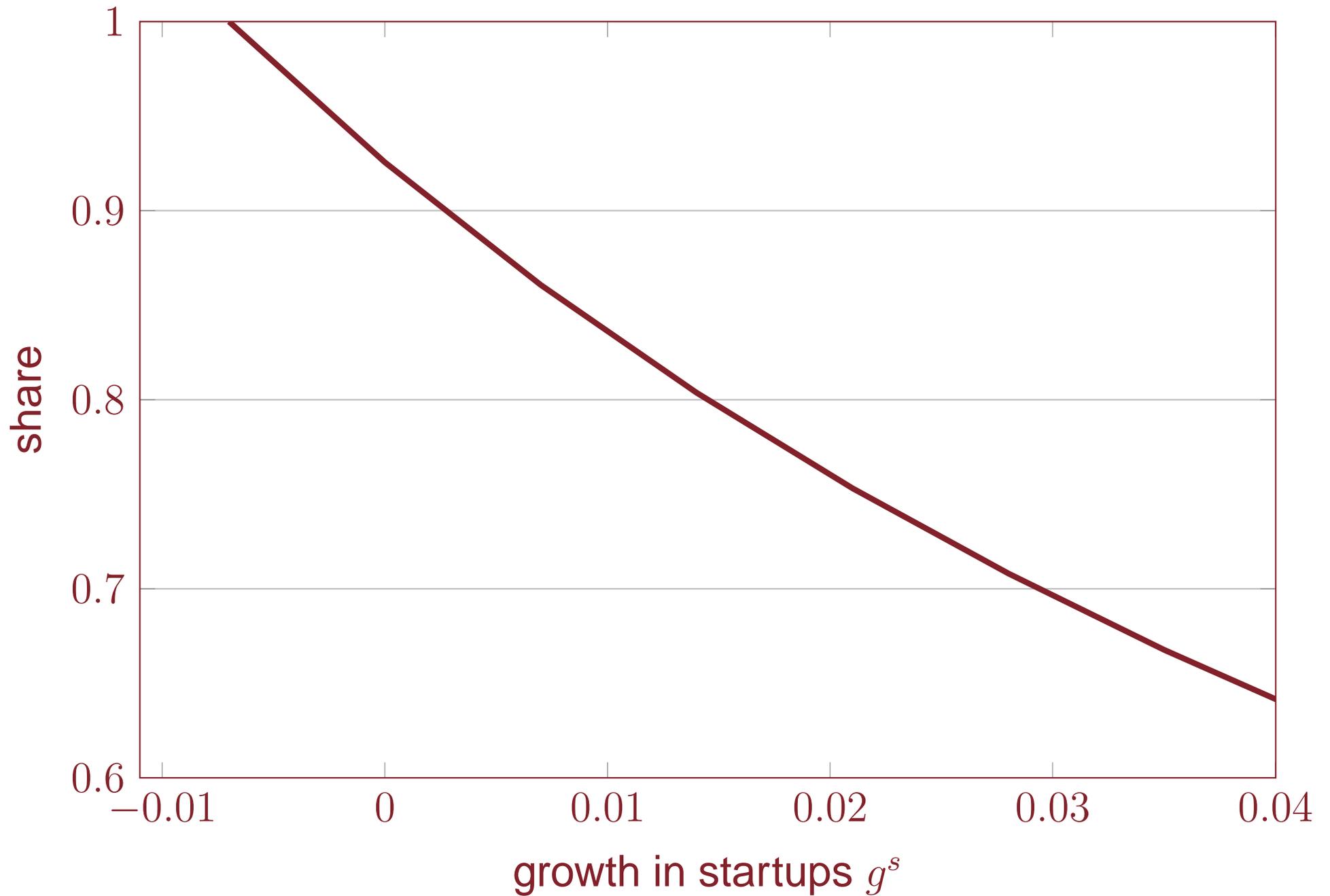
▷ if  $g^s < g^m$  (as in the firm point estimate), there is no steady state

▷ for  $g^s > g^m$ , shares depend on growth rate

# Steady State Startup Share



# Steady State Mature Share



# Interpretation

- gradual decline in  $g^s$ 
  - ▷ move (essentially) along the steady state locus
  - ▷ gradual movement in age distribution of employment
  
- shortcoming:  $g^s$  did not decline gradually
  
- sudden decline in  $g^s$ 
  - ▷ when? before 1977
  - ▷ slow transitional dynamics

# Nonstationary dynamics

- fix  $g^y = -0.039$  and  $g^m = -0.007$
- start in steady state with  $g_t^s = 0.05$  for all  $t \leq 1976$
- assume  $g_t^s = -0.011$  for all  $t \geq 1977$

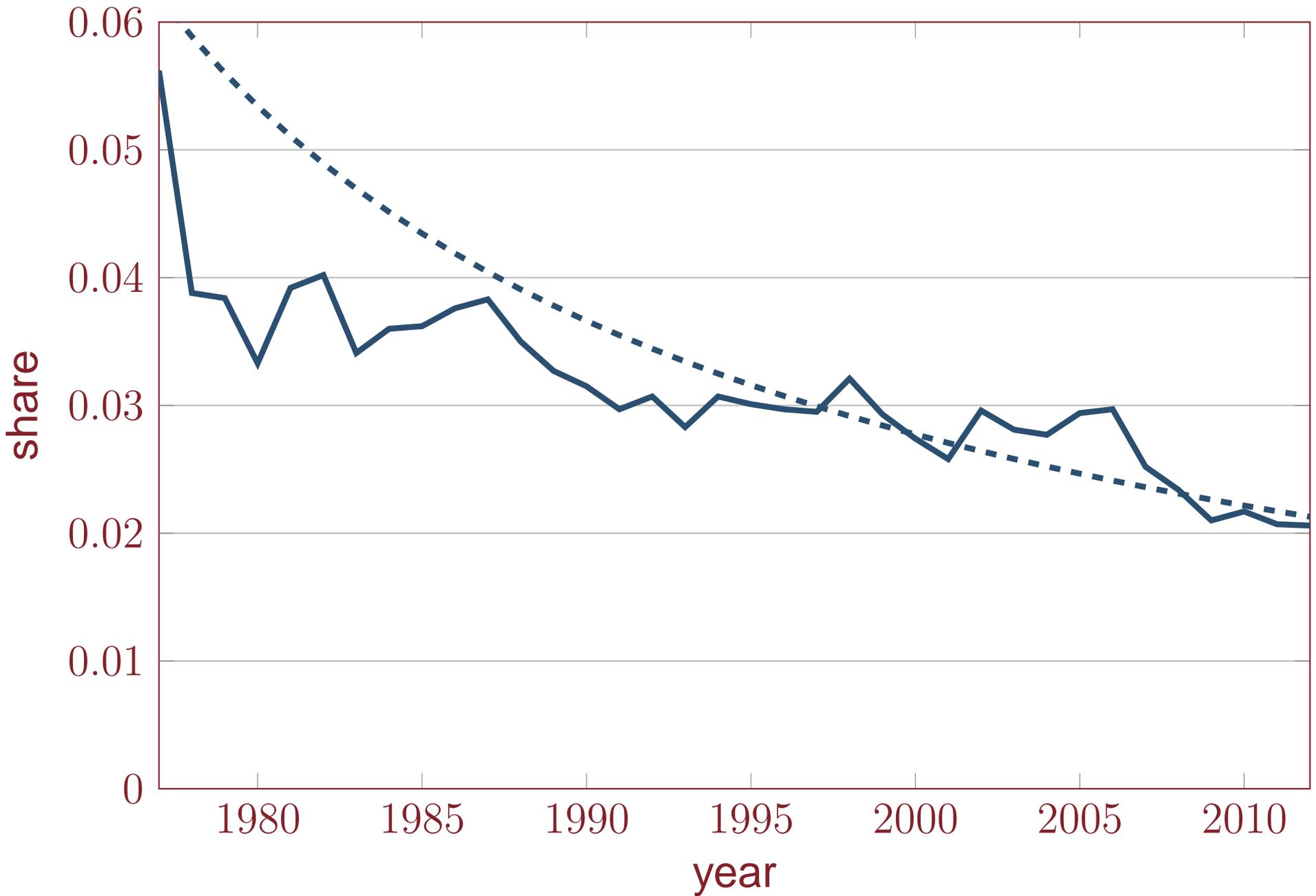
$$S_{t+1} = (1 + g_{t+1}^s)S_t$$

$$E_{t+1}^y = (1 + g^y)(0.9E_t^y + S_t)$$

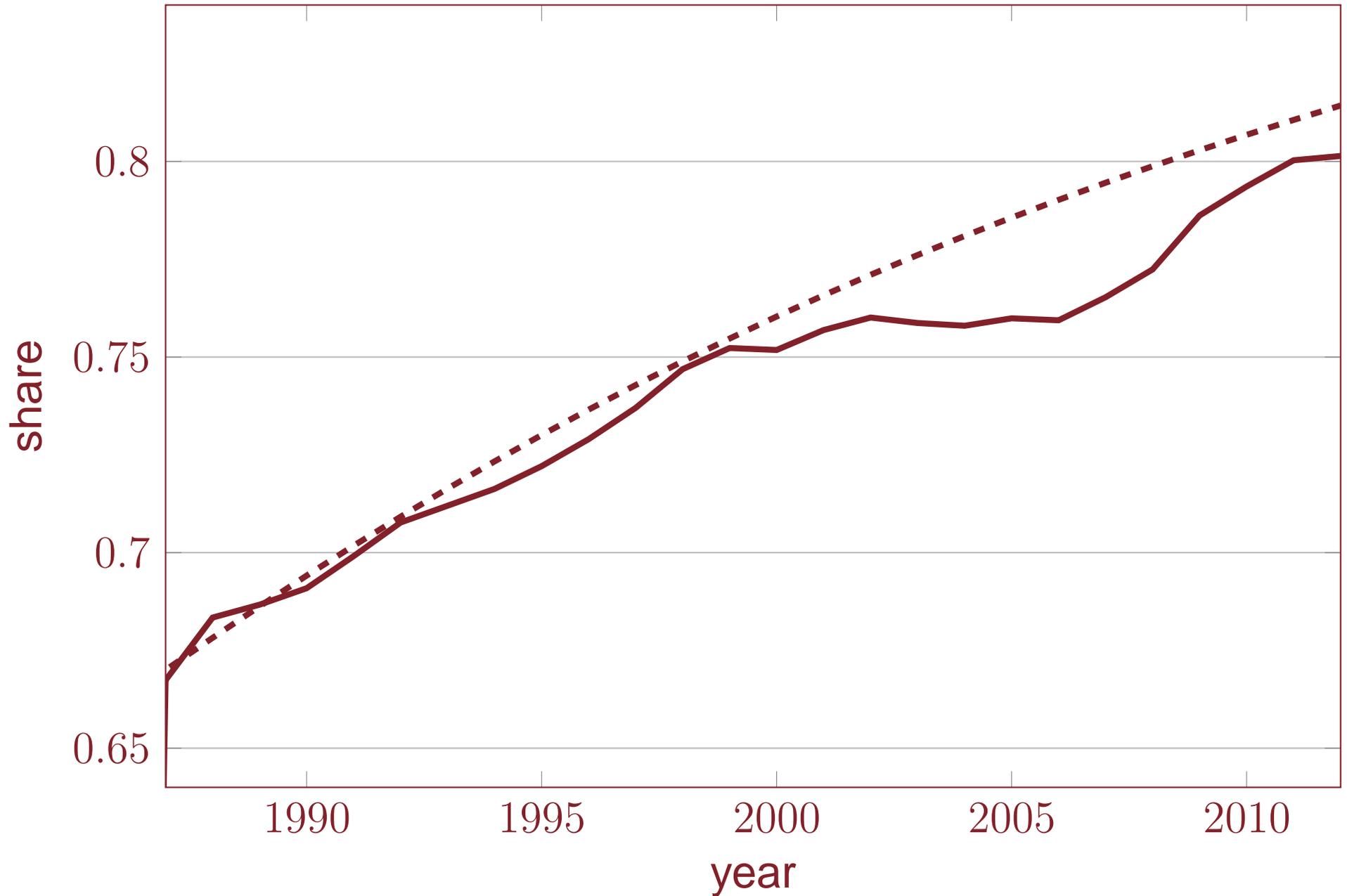
$$E_{t+1}^m = (1 + g^m)(E_t^m + 0.1E_t^y)$$

- this model exhibits a prolonged adjustment

# Share of Employment in Startup Firms



# Share of Employment in Mature Firms



# Conclusion

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- ❑ startup deficit appears to be a long-standing issue
- ❑ some of the usual suspects may be innocent
  - ▶ demographic shifts
  - ▶ change in organizational structure of firms
  - ▶ Obama
- ❑ other suspects should be investigated
  - ▶ legacy of high firm exit during the Great Depression
  - ▶ sample design issues

# Final Questions

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- when did “excess churn” become “new business dynamism”?
- what about labor supply?