**Lecture: Growth of Firms**

**Economic perspectives on the firm**

Neoclassical
- Equilibrium –Marshall
- More general/hybrid: Coase and Williamson/contracts/transaction costs
- NC perspectives tell us little about firm growth, more about market -comp statics

Schumpeterian
- Long waves/ innovation and change
- Big business
- Creative destruction

Penrosian
- Internal growth dynamics
- No equilibrium but optimal growth
- Groth limited
- See Best (1990) for discussion

Institutional/Managerial theories
- Less abstract
- Specificities emphasised

No equilibrium firm size
- Size changes gradually
- Changes in labour and capital takes time
- Firm size not limited
  - U shaped cost curves not common
  - Even if U in SR not LR. L shaped more likely
  - Multiproduct firms can keep expanding
  - Increasing returns to scale

**Growth and Profitability**

Might expect growing firms to be more profitable: profit share (profits/size) increase with size
- Not necessarily
- Problem measurement

Reasons:
- Firm level economies of scale
- Market power

Empirically either:
- Efficient dynamic firms leads to profits leads to investment leads to growth (time series causality)
- Firms operate where profit and growth are negatively related, see positive relation across firms (cross section)

Evidence:
- Against firm level economies of scale
- Profitability doesn't increase with size
- Variability of growth declines with size

**Growth, Integration and Diversification**

Horizontal Integration
- Range of products already deal with
- New to firm but basically same
- Variation on range/geography
- Acquisitions

Vertical Integration
- Extend activities to supplier/customer
- Ratio net output/gross output increase with vertical integration

Diversification
- Extend range- development acquisition
- Difficult to define markets and industries

Horizontal reasons
- Expansion of monopoly power
- Benefits from knowledge, expertise, R&D, learning by doing
- Other economies of scale

Vertical reasons
- Technological: production process, economies of scale
- Transaction costs reduced: Coase and Williamson

Diversification
- Profitable areas
- Economies of scope

Limitations to Expansion
- Economies of scale in producing input
- Loss of capital
- Comparative advantage f specialised firms

**Measuring Firm Size and Growth**

Different measures for different purposes
- Financial value, stock market
- Employment
- Productive capacity
- Value of production
- Value added

Shoul be highly correlated

Focus on sales, employment normally because of availability and comparability and relative ease of interpretation

Reasons why interested in size and growth

Survivor technique: cost conditions (mes) can be ascertained from analysing nature of firms that prosper=grow

Implications of growth for concentration trends: larger grow faster than smaller will lead to increase in concentration (in fact if grow the same will increase conc)

**Gibrat's Law of Proportionate Effects**

Hypothesise that growth is random process

Numerous factors influence growth and effect the proportionate change in size not absolute

Ability of entrepreneur
Changes in product demand
Luck and random shocks
All difficult to measure

Can write as: $S_{it+1} = S_{it}(1 + u_t)$ where $u_t$ is random

$$\log S_{it+1} = \log S_{it} + \log(1 + u_t)$$

with continuous substitution

$$\log S_{it+1} = \log S_0 + \Sigma\log(1 + u_t)$$

Over time the effect of initial size declines and that of the random effect increase
Size distribution tends to lognormal distribution

**Testing the Law**

Means that probability distribution of growth rates I the same for all firms

Proportionate growth rate: $S_{it} / S_{it-1} = e_{it}$

Which can write as: $\log S_{it} = a + b \log S_{it-1} + e_t$

Implies that firms of different size

Have same proportionate growth rate
Have same variance (homoscedastic)
Are not serially correlated

Can test:

$b=1$: growth random: $\log S_{it} - \log S_{t-1} = a + b \log S_{it-1} + e_t$
$b<1$: smaller firms grow faster
$b>1$: larger firms grow faster

Can rewrite

$$\Delta\log S_{it} = a + (b-1) \log S_{it-1} + e_t$$

And then test whether coeff on $S_{it-1}$ is significantly different to zero.

**UK Experience**

Post war inexorable rise in concentration:

- Manufacturing share of100 largest 1935 was 33% in 1970 was 41%
- Bolton report (1971) concern about small firms
- Hannah and Kay: concern over merger wave and concentration
- When recognised it was already changing
  - Increase in share of small firms
  - Decline in top 100 net output share
  - Steady increase in business formation
- Change masked some problems
  - Small firm increase results of problems of large companies
  - Lack of dynamism : barriers to growth; missing middle of size distribution

Dunne and Hughes test the law for the UK and find

- Gibrats law des not hold
- Small firms tended to growth faster than larger
- It was the smaller firms of small firm category that grew fastest

**Conclusions**

Different theoretical perspectives on firms

- Don’t always tell us what makes firms grow
- Static vs dynamic
- Firms vs industry

Theory helps identify likely factors, but may be measuresmnet problems in empirical works so institutional analysis is important

Important to distinguish: Organic growth; Integration (vertical and horizontal); Diversification
Statistical/industrial analysis suggests role for systematic effects
Role for analysisat different levels of abstraction.