# Developing Venture Capital Industry and the Role of Government in Korea:

## Venture Boom vs. Post-boom

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# Part-01 | Venture capital industry in Korea

# Characteristics of venture capital industry in Korea(1/2)

## Venture capital firm as a corporation

1

- Co-management of inside and outside funds
- Possibility of opportunistic behaviors

## Significant role of government in the fund-raising

2

- Government share in outside funds: 27.1% (2001-2005)

## Short life span of outside funds

3

- 5 years: 76.3% (1989-2007)

## Dominant proportion of IPO as a device of exit

4

- Around 95% of total exit

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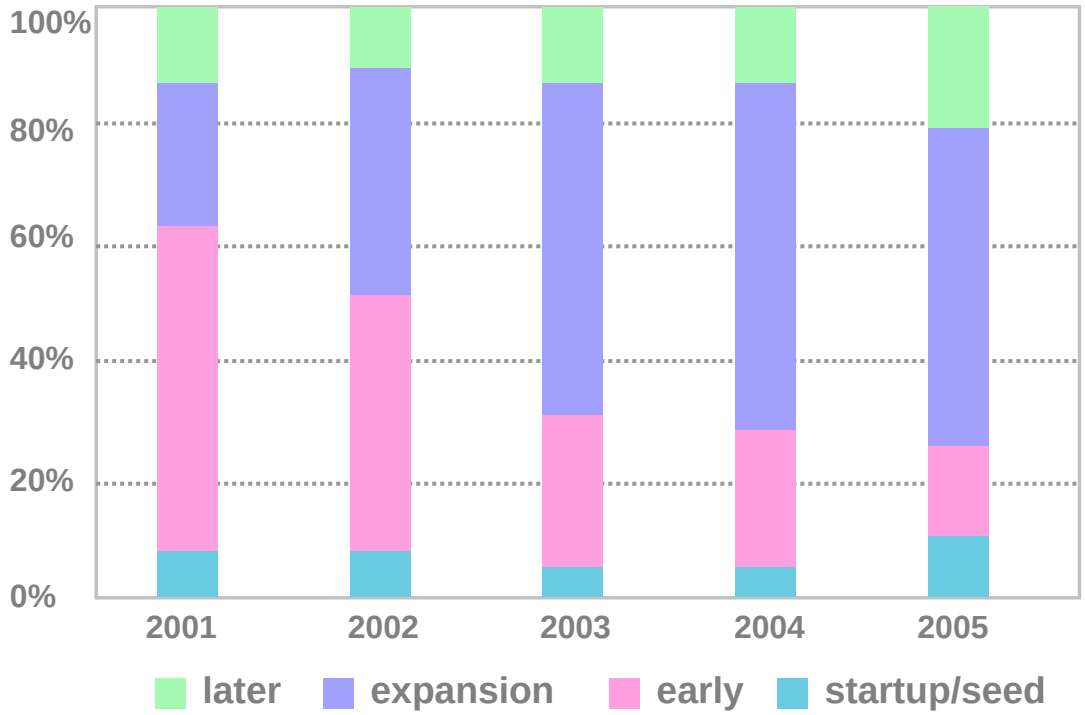
# Characteristics of venture capital industry in Korea(2/2)

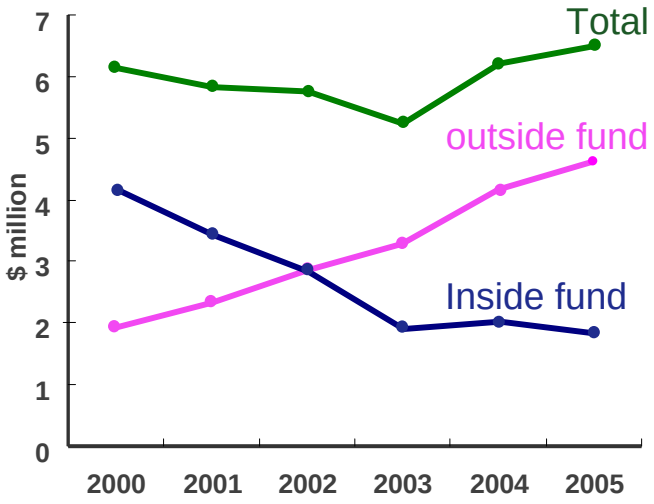
## New investment by invested company stage



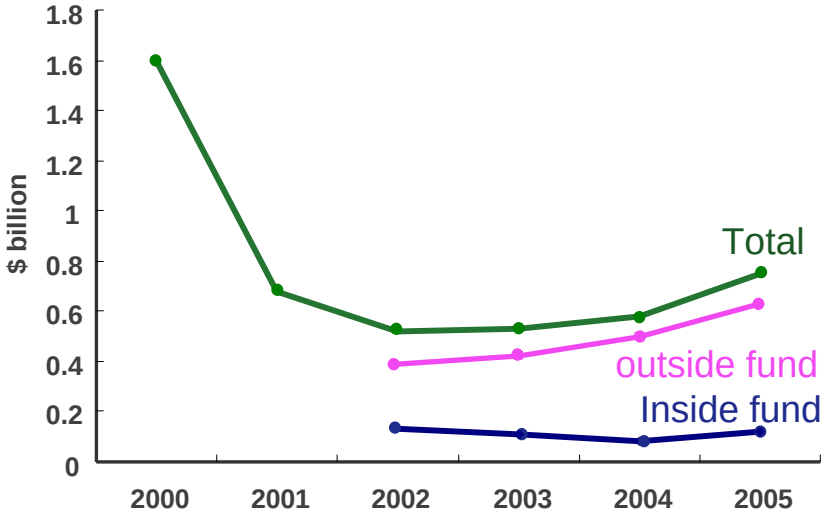
# Current status of venture capital industry in Korea

- **Venture boom (1998-2000) and a steady recovery**
- **Rapid growth of outside funds**

<Trend of fund-raising>




<Trend of new investments>

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# Part-02 | Objectives of paper

# Objectives of paper

❖ **Evaluation of role of government in VC investments**

- "Venture capital has developed… providing capital to firms that might otherwise have difficulty attracting financing. These firms are typically small and young, plagued by high level of uncertainty… Moreover, these firms… operate in markets that change very rapidly. Venture capital organizations finance these high-risk, potentially high-reward projects, purchasing equity or equity-linked stakes…" (Gompers & Lerner, 2001)

❖ **Venture boom period vs. Post-boom period**

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# Part-03 | Data

# Data

Each VC firm has an obligation to report full information on its businesses to SMBA.

Information on each venture capital firm, each outside fund,each transaction, and each invested company

100 VC firms, 290 outside funds, 4663 invested firms, 12530 investments

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# Part-04 | Empirical results

# Empirical results: Role of government in investment stage (1/2)

**Q : government capital commitment ⇒ ave_age ↓ r_cs ↑ r_m1 ↑ r_m12 ↑?**

| Variable | Period | *s_go* = 0 *vs.* *s_go* > 0 | | | |
|---|---|---|---|---|---|
| | | Group1 *s_go* = 0 | Group2 *s_go* > 0 | Diff. | p-value |
| *ave_age(0)* | Venture boom | 2.32 years | 3.03 years | 0.71 year | 0.002 |
| | Post-boom | 3.73 years | 3.69 years | -0.04 year | 0.869 |
| *r_cs(0)* | Venture boom | 86.3 % | 58.7 % | -27.6 % | 0.000 |
| | Post-boom | 32.7 % | 35.8 % | 3.1 % | 0.501 |
| *r_m1(0)* | Venture boom | 33.4 % | 35.8 % | 2.4 % | 0.571 |
| | Post-boom | 40.2 % | 29.5 % | -10.7 % | 0.015 |
| *r_m12(0)* | Venture boom | 42.6 % | 46.8 % | 4.2 % | 0.372 |
| | Post-boom | 52.2 % | 42.1 % | -10.1 % | 0.055 |

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# Empirical results: Role of government in investment stage (2/2)

## ❖ Model: controlling characteristics of outside funds and VC firms

- $$Dep_{ij} = \gamma_0 + \gamma_1 cha(O)\_1_{ij} + \gamma_2 cha(O)\_2_{ij} + \gamma_3 cha(O)\_3_{ij} + \gamma_4 rep_{ij} + \gamma_5 size(O)_{ij} + \gamma_6 hrate_{ij} + \gamma_7 s\_vc_{ij} + \gamma_8 d(s\_go)_{ij} + \sum_k \gamma_{8+k} D_k + e_{ij}$$

## ❖ Regression results

| Dep. Var. | Period | Coefficient(t-value) | |
|---|---|---|---|
| | | *d(s_go)* | *s_go* |
| *ave_age(O)* | Venture boom | 0.586(2.59)** | 0.015(2.32)** |
| | Post-boom | -0.020(-0.11) | 0.001(0.20) |
| *r_cs(O)* | Venture boom | -0.241(-5.16)*** | -0.007(-5.14)*** |
| | Post-boom | 0.033(0.96) | 0.000(0.28) |
| *r_m1(O)* | Venture boom | 0.030(0.52) | 0.001(0.43) |
| | Post-boom | -0.063(-2.01)** | -0.002(-1.88)* |
| *r_m12(O)* | Venture boom | 0.070(1.12) | 0.002(1.08) |
| | Post-boom | -0.047(-1.22) | -0.001(-0.87) |

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# Comparison: Inside vs. outside funds

## ❖ Model

- $$d(ave\_age_i) = \delta_0 + \delta_1 ave\_age(I)_i + \delta_2 year(vc)_i + \delta_3 s\_vc_i + \delta_4 s\_go_i + \delta_5 r\_inv_i + v_i$$

  $$where \;\; d(ave\_age_i) = ave\_age(I)_i - ave\_age(O)_i, r\_inv_i = (\sum_j size(O)_{ij}) / size(I)_i$$

- $$d(r\_cs_i),\; d(r\_m1_i),\; d(r\_m12_i)$$

## ❖ Regression results

| Indep. Var. | *d(ave_age)* | *d(r_cs)* | *d(r_m1)* | *d(r_m12)* |
|---|---|---|---|---|
| *year(vc)* | 0.476(2.43)** | 0.052(0.98) | -0.018(-0.45) | 0.047(1.03) |
| *s_vc* | 0.016(1.81)* | -0.000(-0.14) | -0.002(-1.21) | -0.001(-0.53) |
| *s_go* | -0.023(-2.51)** | 0.007(3.32)*** | 0.003(2.14)** | 0.001(0.82) |
| *r_inv* | -0.045(-1.43) | 0.019(2.65)** | 0.000(0.04) | 0.000(0.03) |

- **Given a value of inside fund, s_go ↑**

  **⇒ ave_age(O) ↑ r_cs(O) ↓ r_m1(O) ↓**

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# Part-05 | Policy implications

# Concluding remarks (1/2)

- **Why s_go>0 or s_go ↑**

  **⇒ ave_age(O) ↑ r_cs(O) ↓ r_m1(O) ↓**

**A possible scenario: the government wants to avoid any risk of losing money while committing capital in outside funds → VCs manage funds more conservatively, thereby inviting the government to the next fund-raising**

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# Concluding remarks (2/2)

## ❖ Policy implications

**Avoiding risk of losing money vs. Selecting qualified VC, monitoring their behaviors, and evaluating their performance**

**Provide only public VCs with subsidies accompanied by a clear stipulation on investment behaviors (ex. SBIC program in the U.S.)**

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# THANK YOU

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