Center for International Development
at Harvard University

Finance and Diversification in Resource Rich Countries

Asim Ijaz Khwaja
Center for International Development
Harvard Kennedy School of Government
Harvard University

Outline

- The Perils of too Much Liquidity
  - Macro & Micro Evidence
- Finance and Entrepreneurship: Challenges & Failures
  - Why it's so Hard
  - Where Banks, VCs, Micro-Finance fall short
- The Opportunities Ahead – Diversifying Financial Processes and Innovation
  - Some thoughts on what's needed/possible

Money, Money everywhere and ….?

- Conventional view
  - Under-Development is about lack of capital
  - Supply-side response - Drive to increase investment by:
    - Savings mobilization
    - FDI
    - Aid

- BUT increasingly realizing forcing supply may not be sufficient

- In fact too much money can create problems – a Finance Resource Curse?
  - Inefficient Financial markets (why improve when can throw money at the problem?)
  - Even worse
    - Speculation & bubbles (equity markets, real estate)
    - Rent-seeking

Money, Money everywhere and ….?

- Macro-evidence
  - Current Financial crises not as much an anomaly
  - Many such crises and often preceded by Liquidity surplus/infusion leading to consumption/real estate boom
    - Mexico 1994, Thailand 1997; U.S. 2007
      - This Time Is Different: Eight Centuries of Financial Folly (Rogoff & Meinhart)
  - Increasingly realizing forcing supply may not be sufficient
  - Financial Frictions lead to inefficient Allocation
    - Lucas Puzzle deepens: South-North Flows larger and Increase even as South (India, China) grows
      - Gourinchas & Jeanne, 2006; Prasad, Rajan & Subramanian,2007; Cabellero, Farhi & Gourinchas, 2007

Figure 3: Current Account Balance/GDP on the Eve of Banking Crises

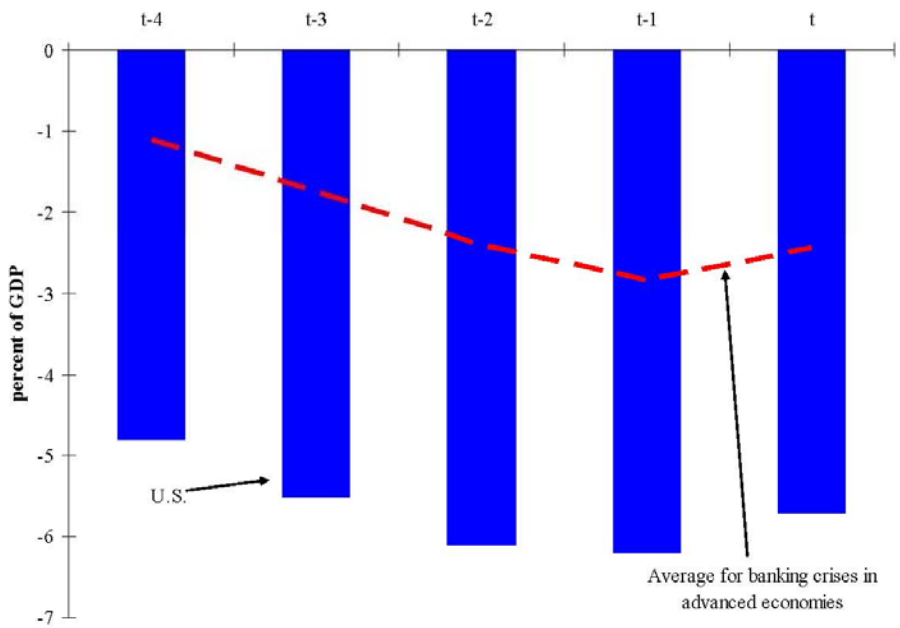
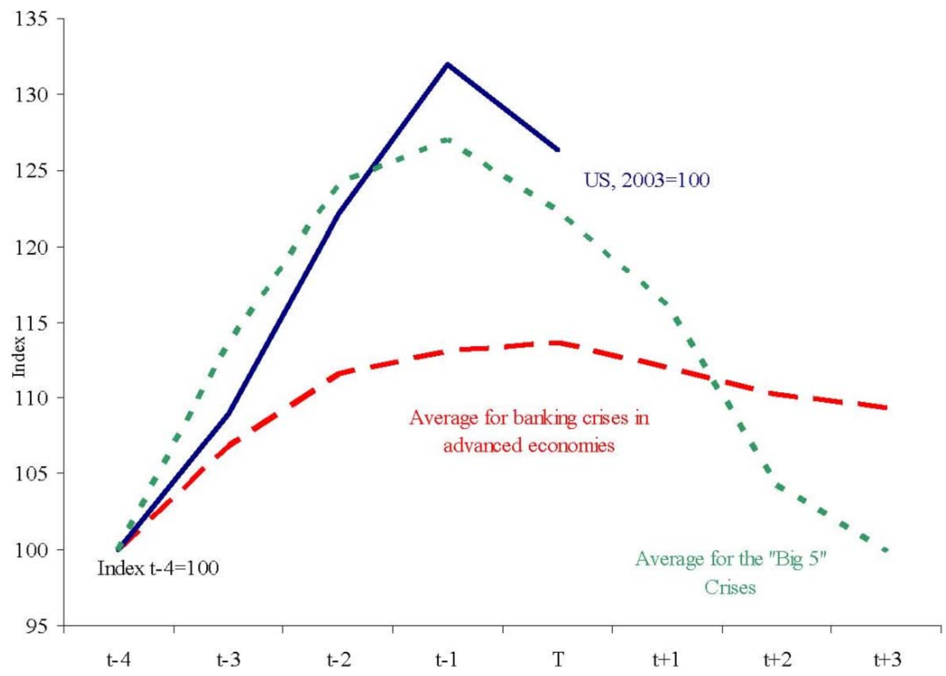


Figure 1: Real Housing Prices and Banking Crises



Source: Rogoff & Meinhart 2008

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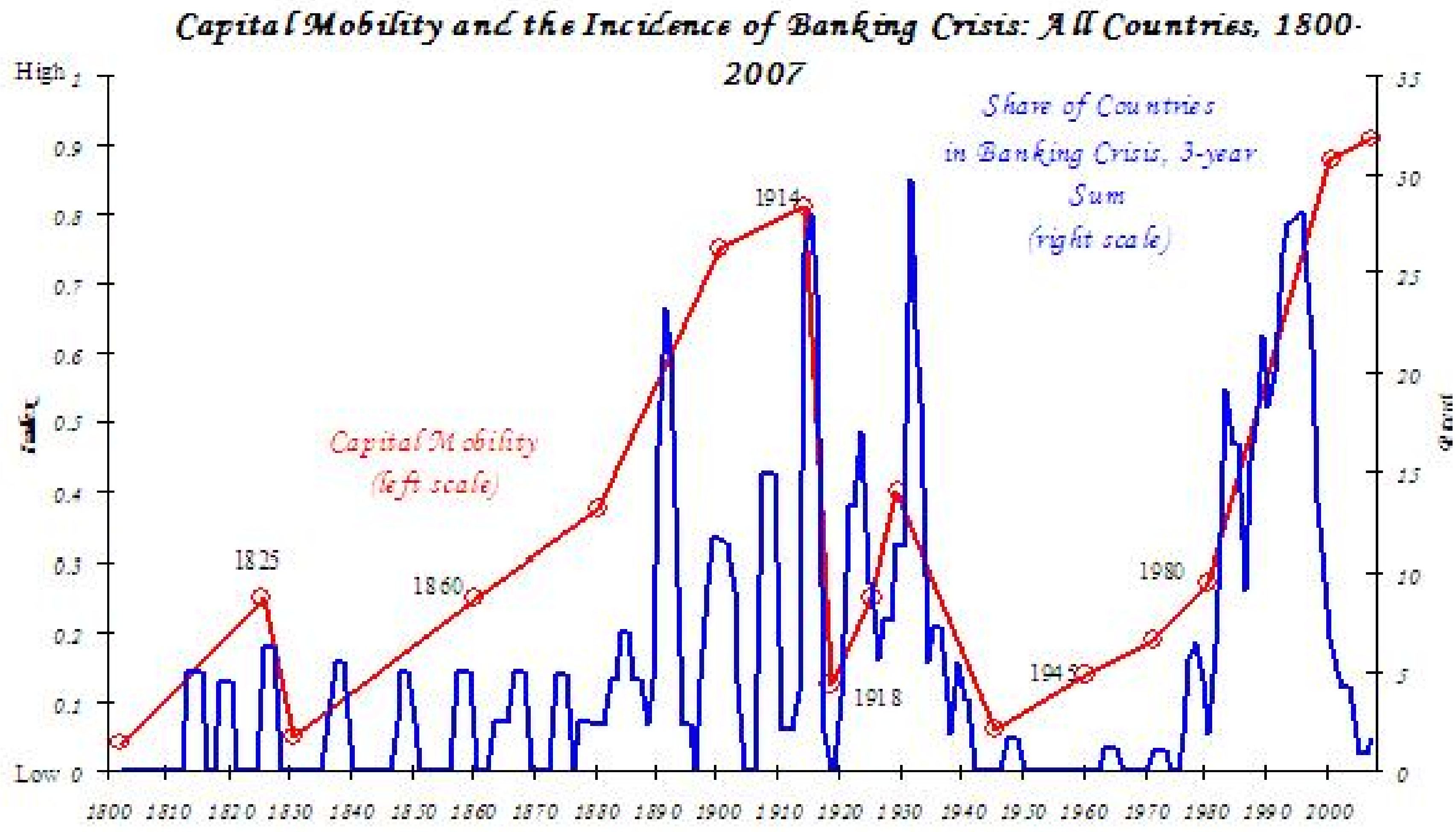
Figure 2.



Source: Rogoff & Meinhart 2009

Micro-Evidence: Inefficient lending & Bubbles

- What do economies do when flush with liquidity? (Khwaja, Mian, Zia JFE 2010)
  - Pakistan after 9/11 – large liquidity surge (sanctions lifted & *reverse* capital flight)
  - Evidence

- Answer:
  - Pretty much nothing!
  - No increase in lending to firms
  - Speculation
    - Booming equity market (with little new issuance)
    - Booming real estate (banks effectively lent to do so)
  - Why?
    - Because no increase in firm collateral
    - Primary financial lenders (Banks) not designed to lend against NPV (net present value) of projects

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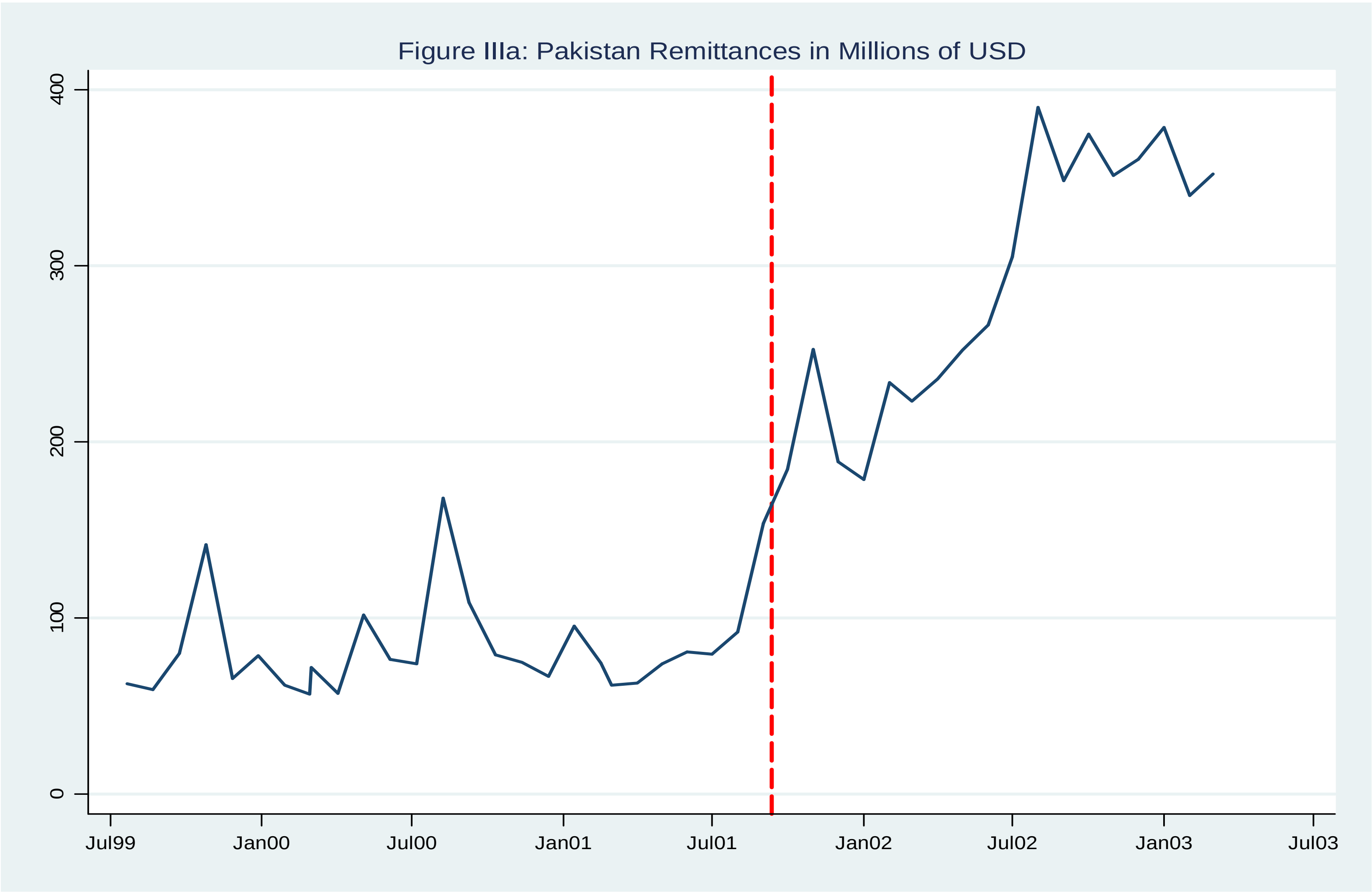
9/11 and Pakistan – Liquidity Inflow



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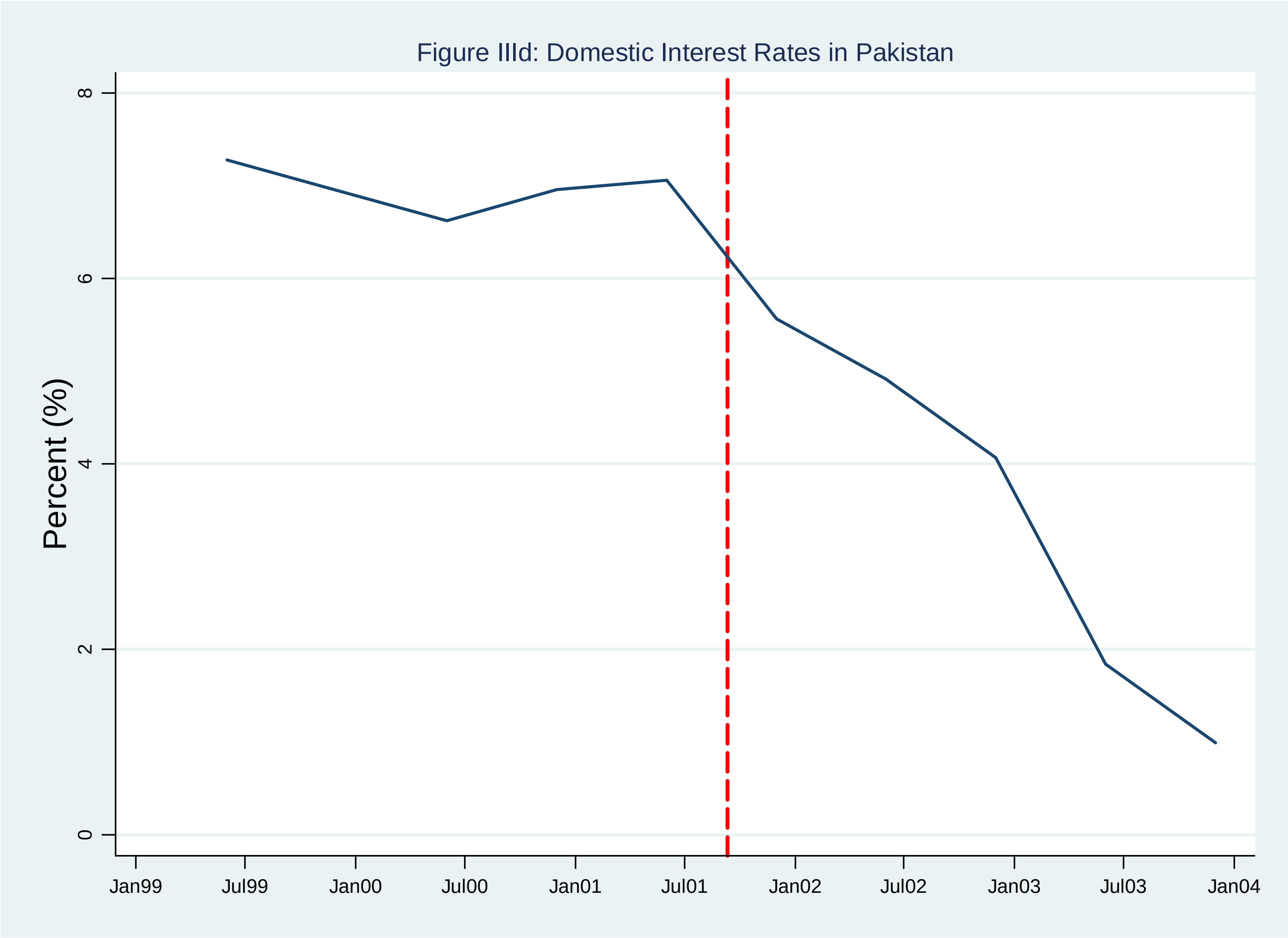
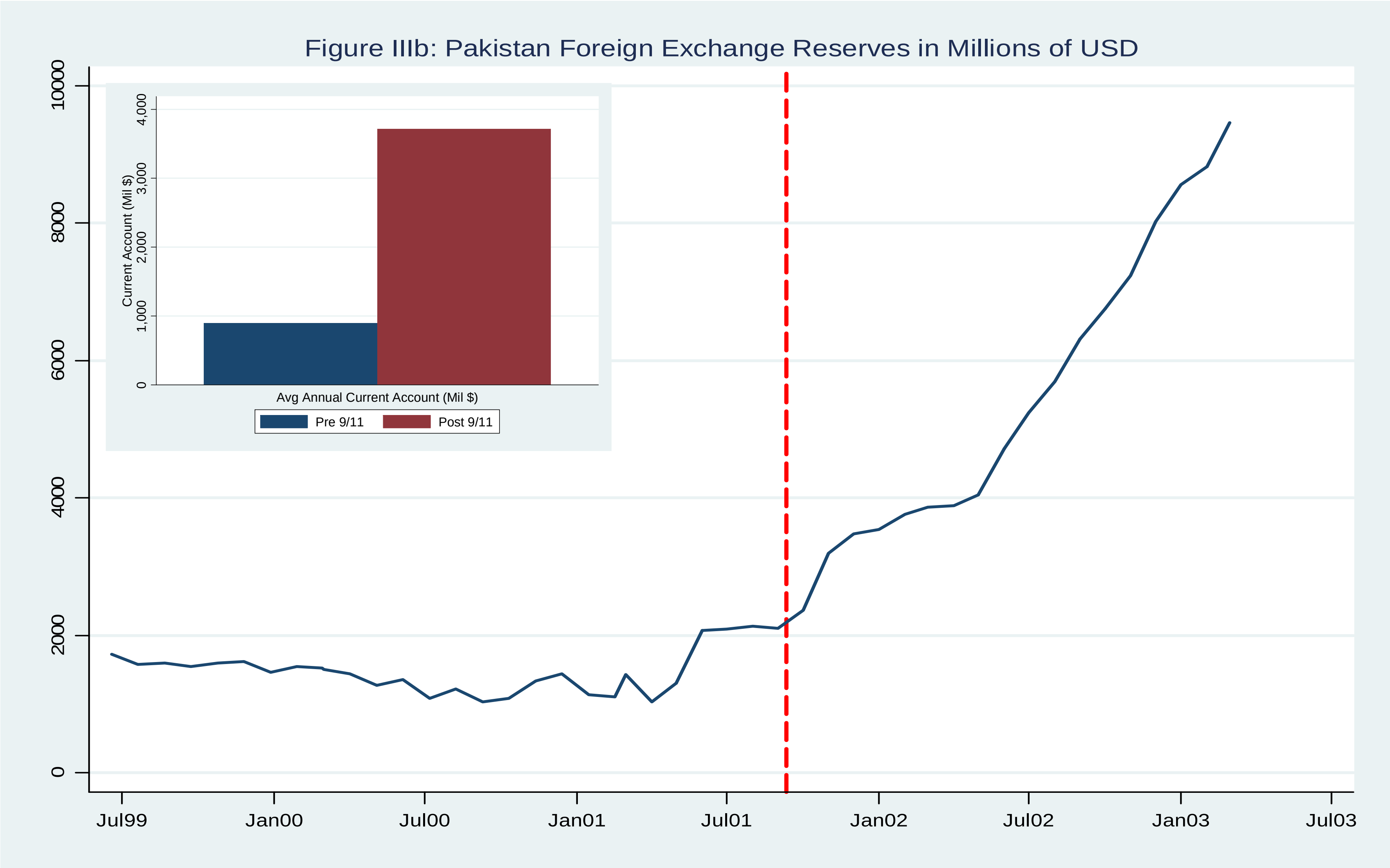
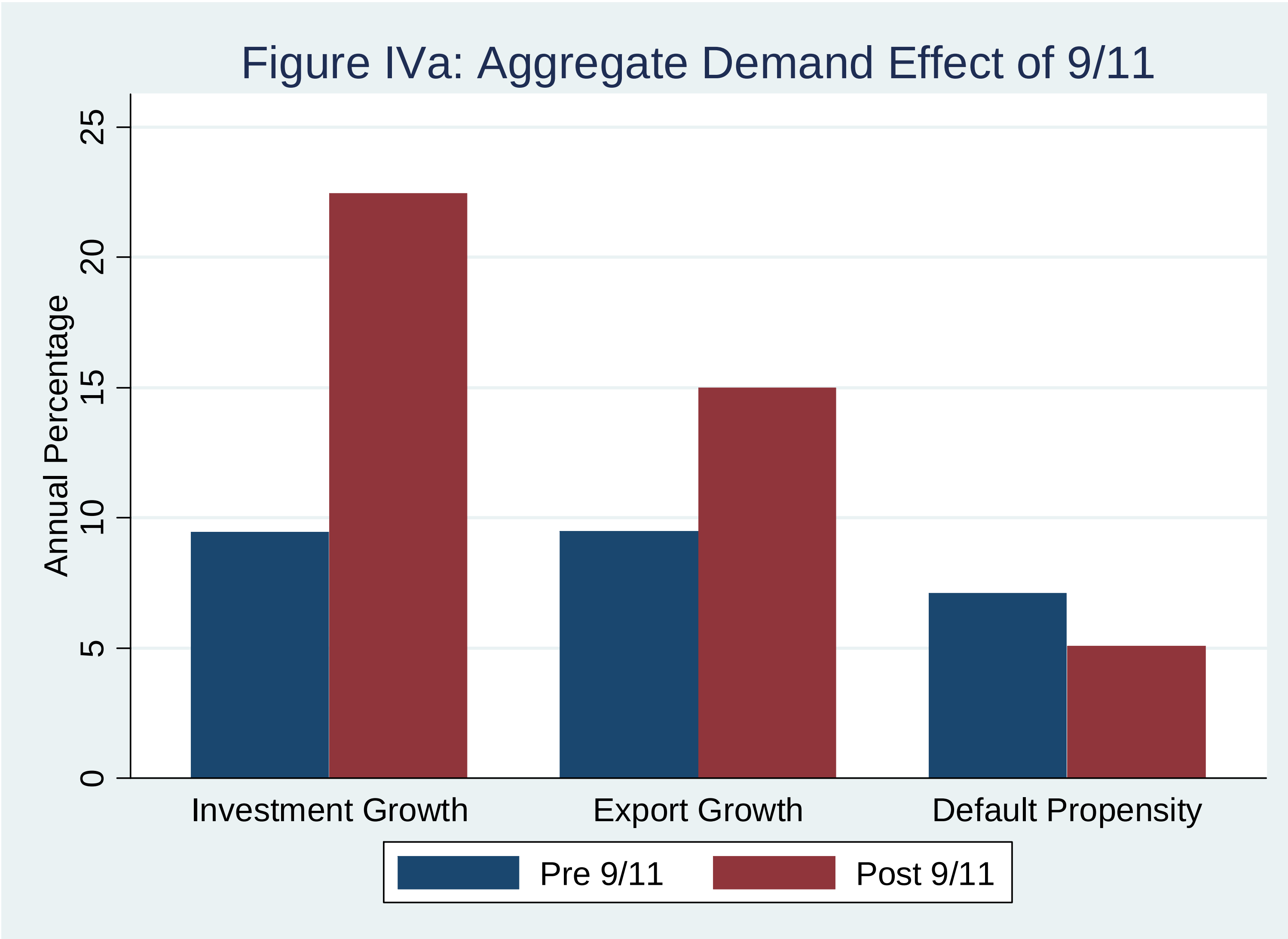
9/11 and Pakistan – Liquidity Inflow



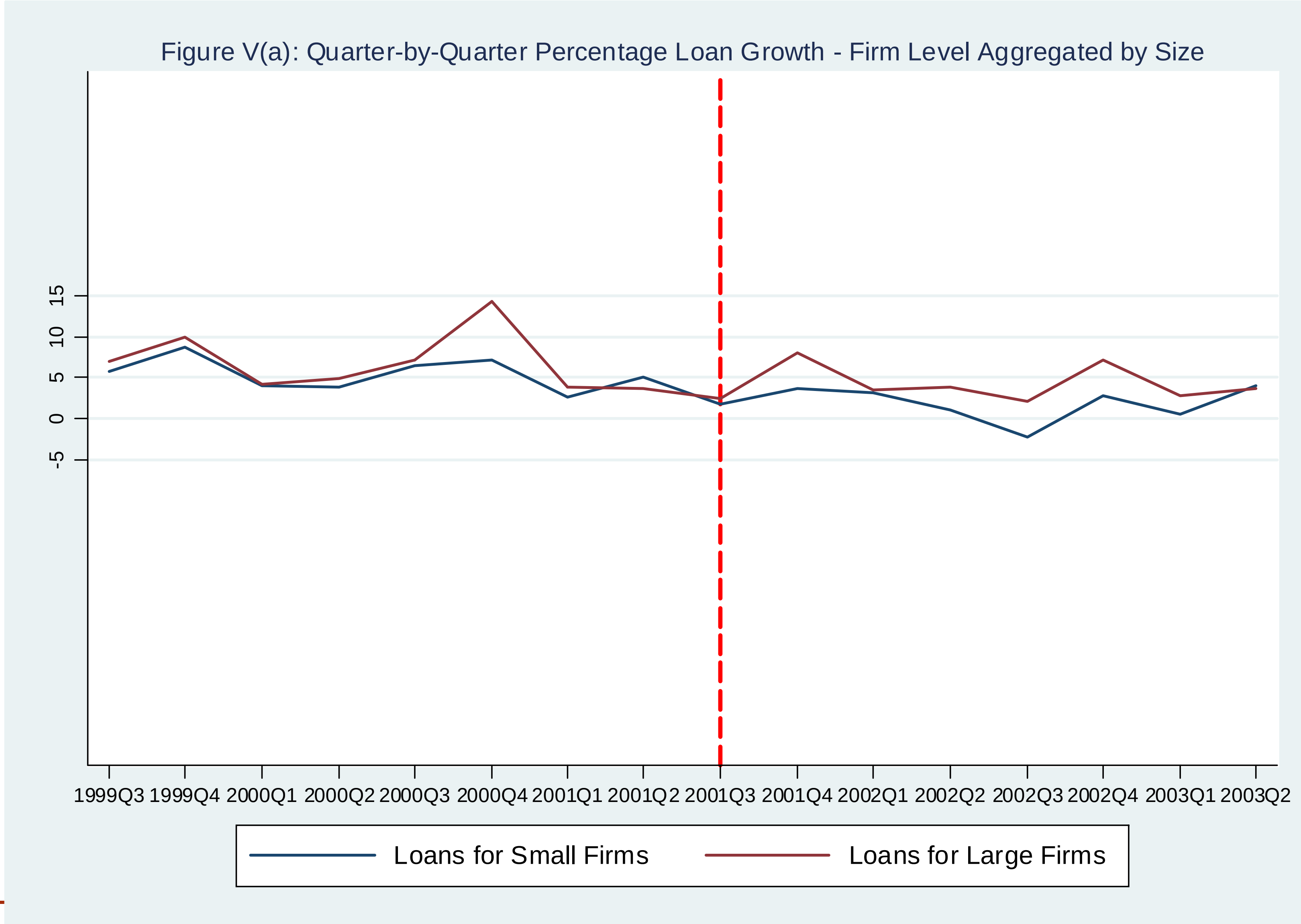
9/11 and Pakistan – Liquidity Inflow



9/11 and Pakistan – Aggregate Demand Jump



Lending to (existing) Firms



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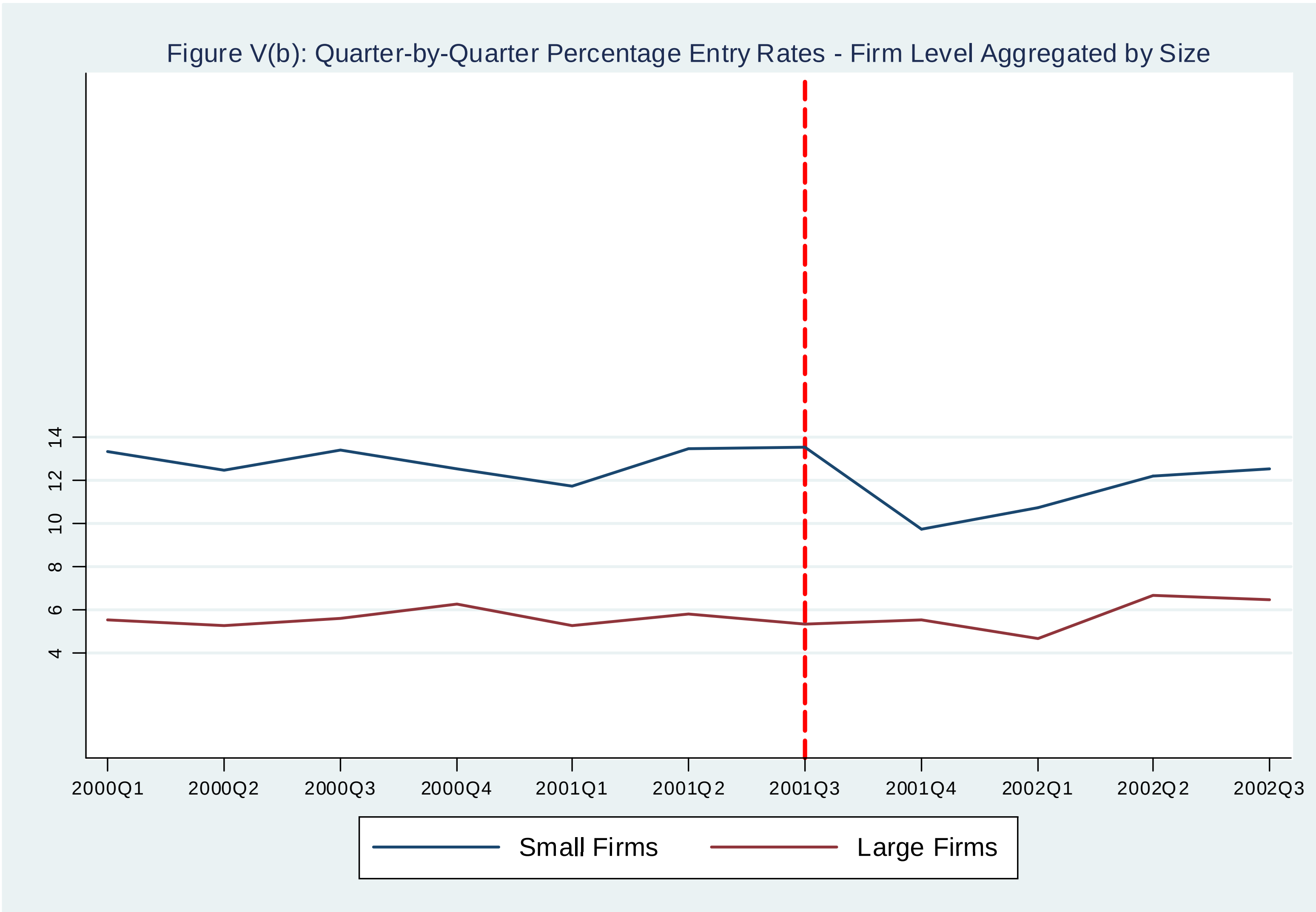
Lending to New Firms



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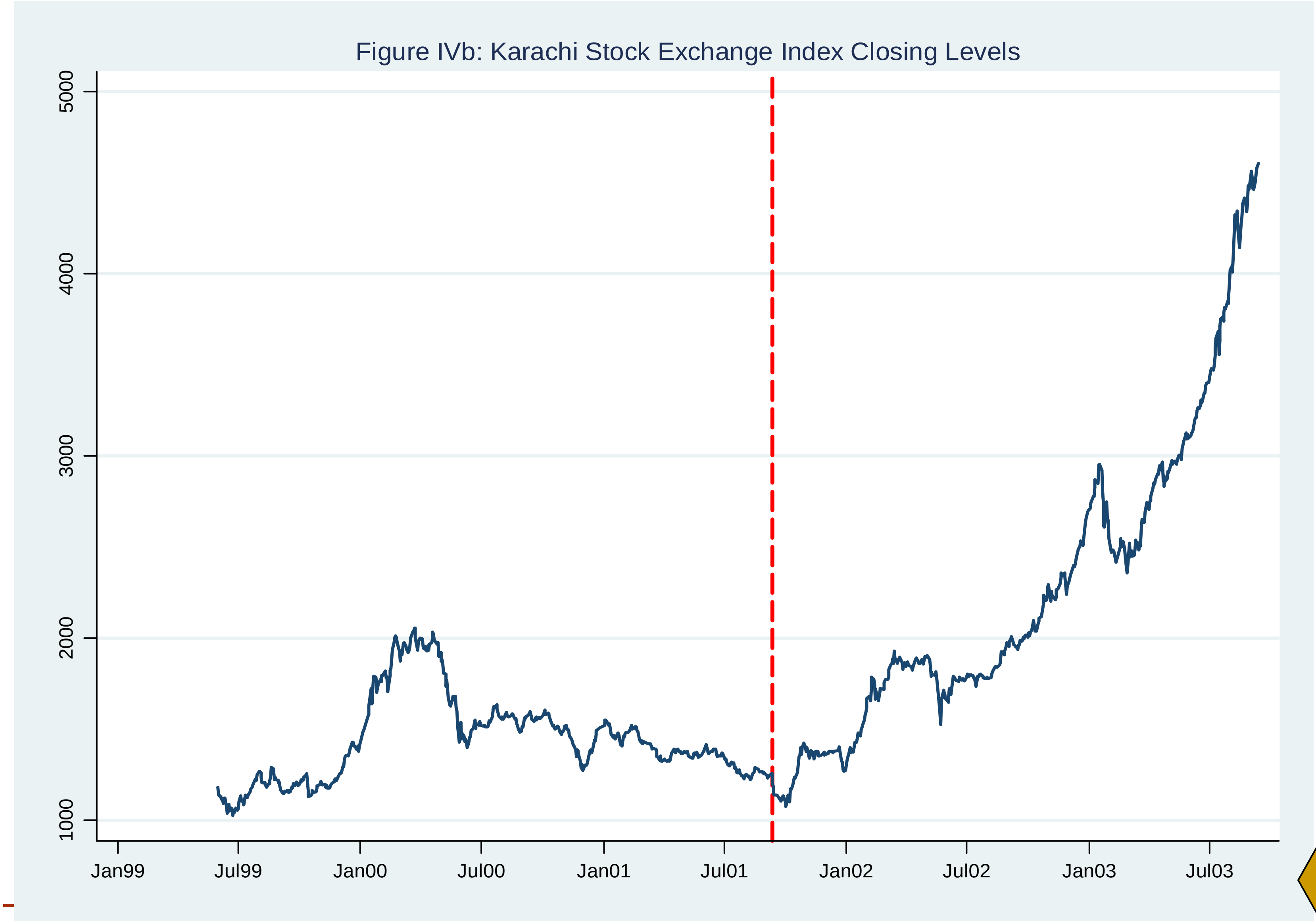
9/11 and Pakistan – Equity Mkt Bubble?



Micro-Evidence: Rent provision & Soft Money

- Related Lending:
  - Mexico – (Laporta et. al. Qrtly Jrnl of Ec, 2003)
  - Find 20% of loans to firms controlled by bank owners
  - These (related) loans 4 % pts lower interest, 33% more likely to default and 30% lower recovery rates.

- Political Corruption:
  - Pakistan: (Khwaja & Mian, Qrtly Jrnl of Ec, 2005)
  - Use data on every single loan made in an emerging economy – Pakistan – over a 5 year period and find:
    - Politically Connected (PC) firms (board member politician) get 45% more loans AND 50% higher default rates
    - Estimate Economy-wide *annual* costs of up to 1.6% of GDP

Finance and Growth

- Finance and Entrepreneurship/Growth:
  - Poor financial intermediation leads to “lost” investment opportunities
  - Better finance unlocks entrepreneurial potential

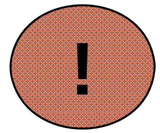
- Also Important (but not focus today)
  - **Finance and Poverty Alleviation:**
    - Poor have limited access to borrowing, saving, insurance etc. instruments
    - E.g. consumption/shock smoothing, educational loans, weather/health insurance
    - Micro-Credit/Micro-finance revolution

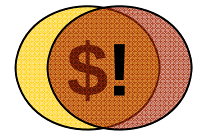
Finance and Growth

- Macro-evidence:
  - Positive (and causal) relationship between financial development & economic growth X-ctries (*Ross Levine – Jrnl of Ec Lit 97*)
- Micro-evidence:
  - Poor, small firms – credit constrained
  - Failures of financial intermediation in Emerging markets (inefficiency, rent provision) – impose large economy-wide costs
- How Finance affects growth:
  - Market frictions (information & transaction costs) $\rightarrow$ Limit Financial markets ability to mobilize savings, allocate resources etc.$\rightarrow$ dampen growth (K/tech accumulation)
- Large differences X-countries/time in quality & instruments of finance

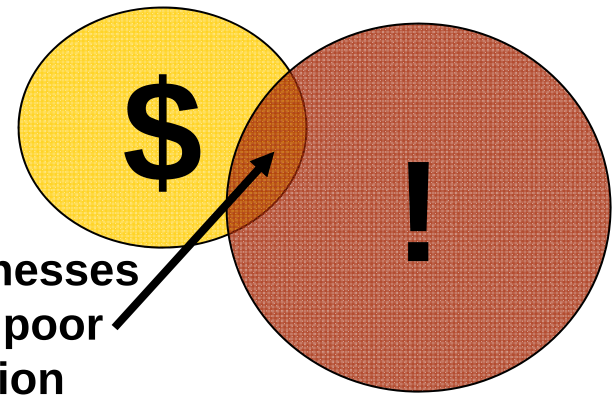
Financial Intermediation

- What is (growth-enhancing) financial intermediation?
  - ***Matching*** 

Money 

to Ideas: 

- Why needed?
  - Because typically distribution of wealth and ideas does not fully overlap:



These are the only businesses you see when there is poor financial intermediation

- Why countries w/ poor financial intermediation have family-controlled conglomerates, foreign-owned firms
- Results in few productive firms, high inequality, idle capital, and many lost but profitable ideas

Financial Intermediation

- How do economies do this?
  - Formal:
    - Fund entrepreneurs directly: Banks, VCs, Equity Markets, Angels/Seed Investors
      - Sergey Brin & Larry Page at Google
    - Fund firms who hire entrepreneurs
      - Employees at Google
  - Informal:
    - Family & Friends, Money Lenders, Trade credit, Credit cards

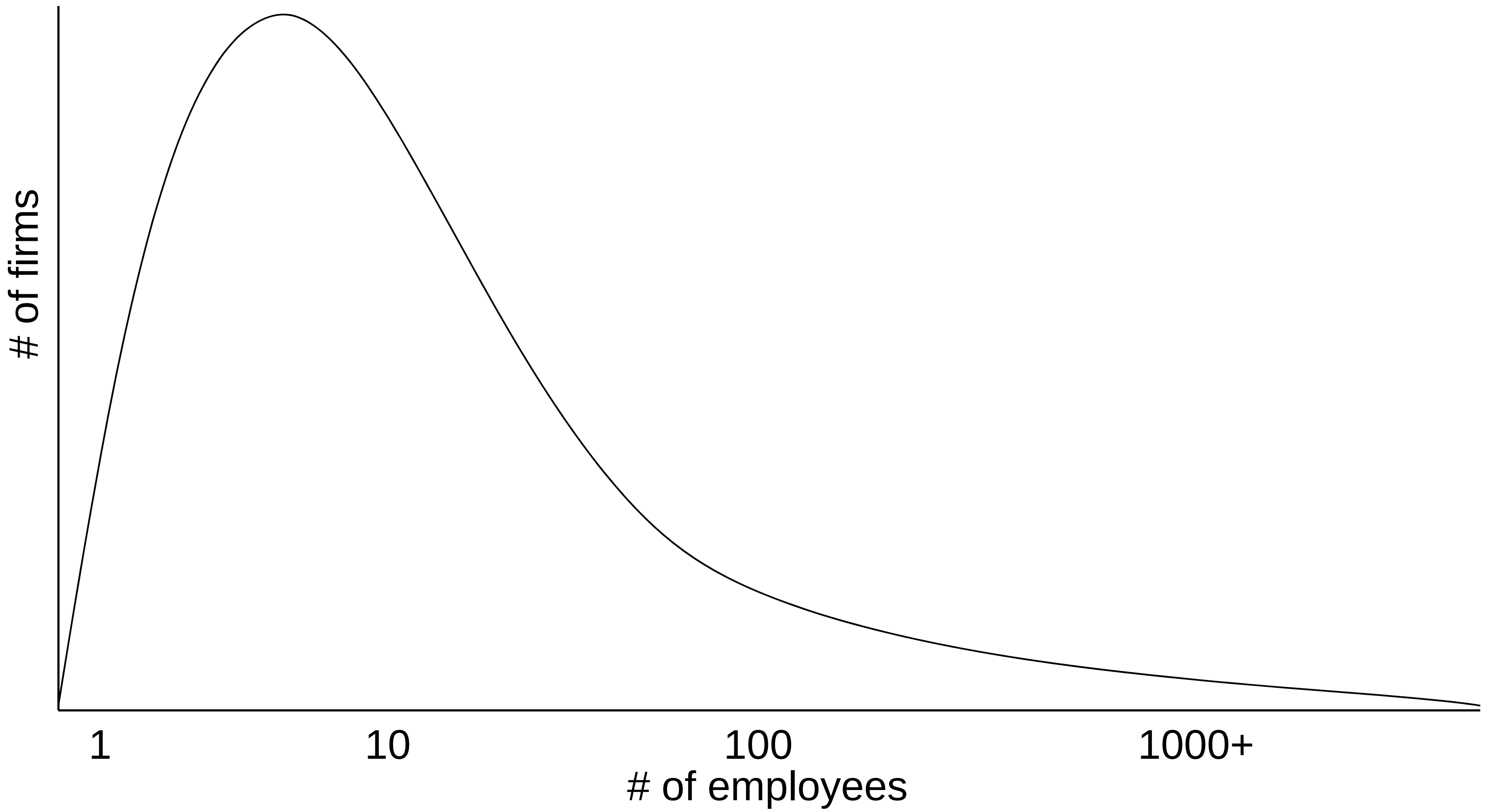
Why is it so hard?

- **The Screening problem:**
  - Investor needs to identify and value ideas
    - Identify: How do you find the potential entrepreneurs?
    - Value: How to you determine future value of an idea?
  - Very costly to screen:
    - Banks – performance/credit history; VCs – elaborate due diligence

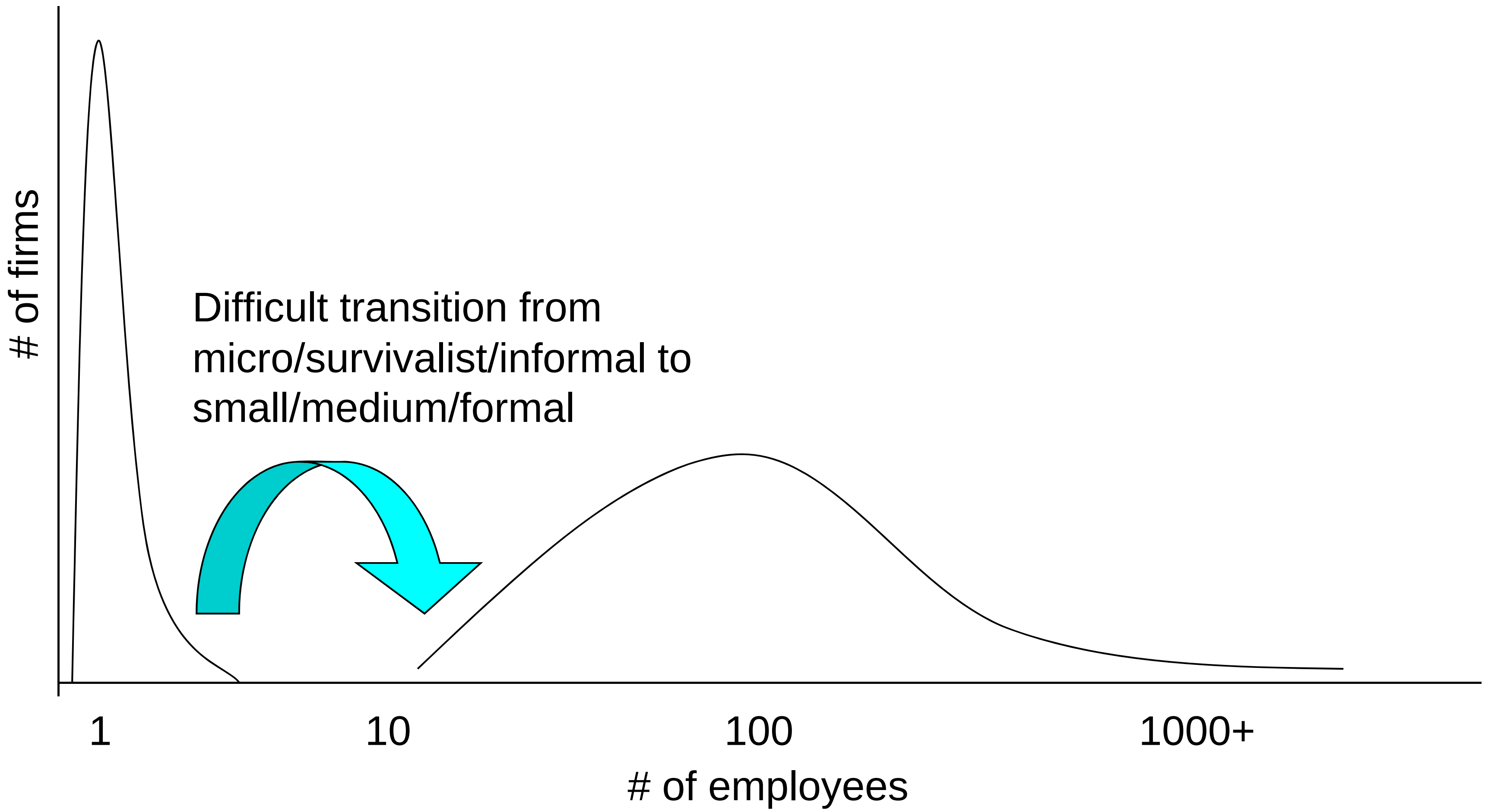
- **The Monitoring problem:**
  - Investor needs to ensure pay-back
    - Moral Hazard – entrepreneur may misuse/hide money
  - Very costly to set up monitoring mechanisms
    - Banks – collateral; VCs – direct monitoring

- **As a result of these Informational problems**:
  - Little financing for the “Smart poor” in Developing countries
  - The “Missing Middle”

Typical Firm Size Distribution in Rich Countries



Typical Firm Size Distribution in Developing Countries – The Missing Middle



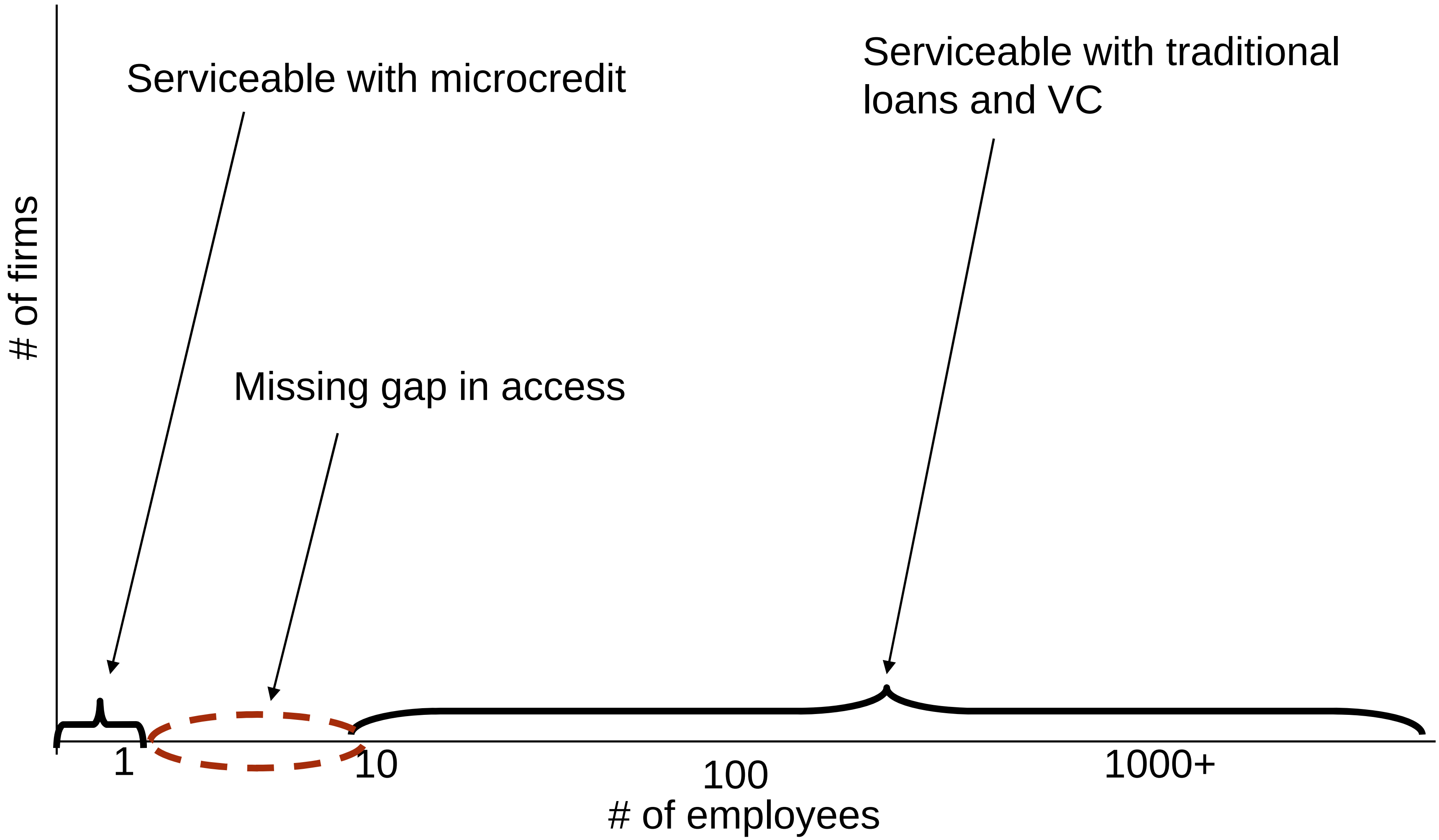
Source: Tybout, “Manufacturing firms in developing countries: how well they do and why?”

Financing the Missing Middle?

- Firms consistently report finance as key constraint (Investment Climate Surveys – WB)
- Yet Very High Returns in this Gap
  - Evidence is robust & consistent X wide variety of countries
    - Banerjee & Duflo 2003 (India)
    - McKenzie & Woodruff 2006 (Mexico)
    - de Mel, McKenzie & Woodruff 2007 (Sri Lanka)
- Returns in excess of 5% *a month (80% annual)*
- Huge missing potential
  - 3.6 trillion dollars of missing GDP !
  - 3 million new jobs in Indonesia, 1 million in Egypt, 8 million in Brazil, …

So why aren't these firms being financed?

Our old friends: Screening & Monitoring



Microcredit?

- Microcredit allows poor to start up informal 0 – employee micro-enterprises (MEs)
- BUT MEs rarely grow to become SMEs (survivalist to opportunity-based) & suffer persistently low productivity (Brookings 2007)
- Micro-credit solves Screening & Monitoring through joint liability:
  - Screening – get local group/borrower to identify "good" borrower
  - Monitoring – get local group/borrower to monitor borrower
- Why microcredit & group lending doesn't work for such firms:
  - Joint Liability not as effective at enforcement
  - Amounts needed are too large
  - Group lending has too little risk tolerance & too short a term structure for capital investment

Banks?

- Ask yourself:
  - What is likelihood S&L could have gotten a bank loan to start Google?
- Banks (mostly) designed to lend money against money:
  - Large Collateral requirements
  - Need credit history:
    - Most firms in LICs don't have this history
    - Chicken and Egg problem – how can smart poor have a credit history when no one lends
  - Since no upside for banks care less about entrepreneur's future worth than current net worth
- Increasing evidence that banks plagued by rents, inefficiencies, cater to large firms

What about VCs?

- Do care about entrepreneurs' upside
- Appetite for financing innovations
- Screen for good ideas and Monitor though equity stake

- BUT:
  - Have long and expensive screening process
    - Because a low failure rate is necessary
    - And because selection mechanisms aren't automated
    - Too costly for missing middle firms

  - Profits are earned through 'exit' (selling or listing the firm)
    - Limited exit options for missing middle firms

Financial Innovations -What Can One Do?

- Need to Develop:
  - Cheaper/automated ways to screen & monitor
  - Capture upside (without exiting)

- Learn from Developed Economies?
  - Main innovation in US to fill missing middle
    - Treat small firms like individuals (as VCs do):

      Judge the person
    - Don't evaluate business plans and estimate cash flows (costly)
    - Instead, lend based on a credit model drawing mainly on the owner's individual credit history (Fair Isaac)
    - Innovation Key as it lowered costs (replace loan officers with credit scoring models)

  - Not surprising since large fraction of businesses in US setup on credit card debt

So is that it? Are we done?

- Why can't developing countries do the same thing?
  - There aren't (yet) enough detailed credit histories
    - Chicken & Egg again
  - Could wait but not certain How long & at what cost?

Opportunity Ahead

- Information innovation:
  - Find **cheap** (automated) ways to identify idea/entrepreneur
    - but without relying on wealth, credit history, family links

- Once identified, **cheaply** ensure:
  - Entrepreneur puts in effort
  - Entrepreneur does not “take the money and run”

- Embed the above in a financially viable/profitable tool:
  - Need banks/VCs/Funds to see this as profitable opportunity to get scale
  - This innovation could unlock billions of idle capital worldwide and (even more) idle ideas in LICs

Some ideas we've been working on

- Screening Innovation:
  - VCs say get a 'pretty good idea' about ability in 15 minutes
  - Use psychometric evaluation tools to automate this
    - "Measure" Entrepreneurial ability etc.
    - Prevalent, commercially viable in other contexts (Employment screening etc.), empirically linked to entrepreneurial success
  - Tests are designed to overcome gaming
  - Ultimately build an Entrepreneurial Score database (like FICA etc.)
- Financial Innovation:
  - Subsidize failed investments with the successes (80% yr)
  - Tie in with **micro-equity** to capture upside
  - Tie in with Social Investment Funds and Islamic Finance

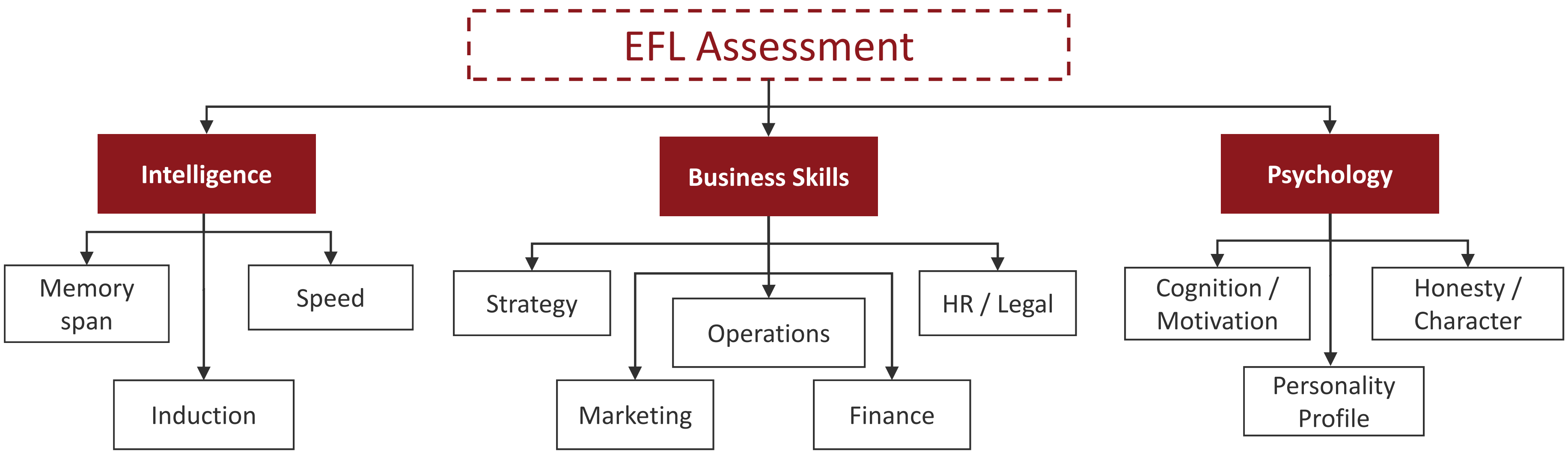
Why we think this can work

- Entrepreneurship research has a set of consistent results
  - And on samples much more difficult to evaluate:
    - Mostly attempts to distinguish successful managers from successful entrepreneurs
  - SME owners in developing countries have greater variance in ability, tighter link between entrepreneur and firm outcomes
  - Indeed, studies on this particular group have even *stronger* results
    - E.g. Frese et al in South Africa, Zimbabwe and Namibia, de Mel McKenzie & Woodruff in Sri Lanka, and our own pilot results (Business Partners) in South Africa

- 30% of US companies use the services of the over 2500 firms that offer employment screening tests
  - Huge market take-up and evaluations in academic research suggest they are quite effective
  - Despite the incentives for test-takers to 'game' the tests

Preliminary Work

- We are currently testing this idea - **Entrepreneurial Finance Lab – Research Initiative** @ Harvard
  - 30-40 minute automated assessment
  - Self-take by loan applicants on a touch-screen computer
  - Analyzes key dimensions spanning intelligence, business skills, and psychological parameters



Preliminary Work

- Strong evidence to date:
  - Can reduce default rates by 25-40% over standard screening processes
  - Decrease screening costs
  - Expand market
  - Validated on over 1500 clients in 8 financial institutions (spanning microfinance, SME banking and venture capital segments) across 7 countries, 2 continents & 8 languages
- Now in the process of expanding to more markets/banks (Standard Bank etc.)

Conclusion – Financial Diversification

- Huge growth opportunity if we can finance missing middle:
  - There is a 100 dollar bill (actually, a 3.6 trillion dollar bill) lying on the ground
- Existing Tools insufficient:
  - BUT everyone is trying:
    - Micro-Finance increasing scale; Banks/VCs reducing it
- Need Financial Diversification & innovations
  - Example – psychometric screening; Micro-Equity
- Experimenting is cheap (esp for Resource Rich economies)
- And if it works, the pay-off is **enormous**