

**EE-402T (CHINGEN 402T, JAPANGEN 402T, KORGEN 402T)
“Entrepreneurship in Asian High-Tech Industries”
Stanford University, 5 April 2016**



Asia Entrepreneurship Update 2016

**Richard B. Dasher, Ph.D.
Director, US-Asia Technology Management Center
Consulting Professor, Stanford University**

Welcome to everyone!

- ◆ **Weekly public lecture / panel discussion series presented by the US-Asia Technology Management Center**
 - ◆ Every Tuesday, through May 31, 2016
 - ◆ Thanks to Stanford Silicon Valley – New Japan Project for financial support of some sessions
 - ◆ See <<http://asia.stanford.edu>> for upcoming schedule
- ◆ **Mission: new information and insights into entrepreneurship in Asia high-tech industries**
- ◆ **Available for credit to Stanford students**
 - ◆ **EE-402T “Entrepreneurship in Asian High-Tech Industries”**
 - ◆ Cross-listed as CHINGEN 402T, JAPANGEN 402T, KORGEN 402T
 - ◆ No pre-requisites, open to undergrads and graduate students
 - ◆ May be repeated in future years for credit; each series is separate

EE-402T Requirements for Credit

- ◆ Obtain Syllabus for official statement of credit requirements
- ◆ REQUIREMENTS MAY BE DIFFERENT THAN FOR OTHER SEMINARS
- A. On-site attendance at seven (7) of nine (9) sessions
 - ◆ This (Req. A) is waived for students registered through SCPD
 - ◆ Evidence: today fill out survey, then weekly sign-up sheet at auditorium – no signature, no credit!
- B. Submit one written comment / summary per session each week for eight (8) of the nine (9) sessions
 - To me (Prof. Dasher) <rdasher at stanford dot edu>
 - cc to Walter Pratt <wpratt at stanford dot edu>
 - ◆ Comment must provide evidence that you watched the session
 - ◆ Each comment is due within two weeks of the date of the session
 - ◆ See Syllabus for details on formatting, etc. (no attached files)

Outline

- 
- ◆ **Welcome / Information for students taking series for credit**
 - ◆ **Introduction: general trends of major Asia economies**
 - ◆ **Participation and attitudes toward entrepreneurship in Asia**
 - ◆ **Ecosystems for entrepreneurial innovation in Asia economies**
 - ◆ **Brief comments:**
 - Future sessions**
 - Connections to Silicon Valley: opportunities and challenges**



General trends in major Asia economies

GDP of the world's five largest national economies (at PPP) – CIA World Factbook

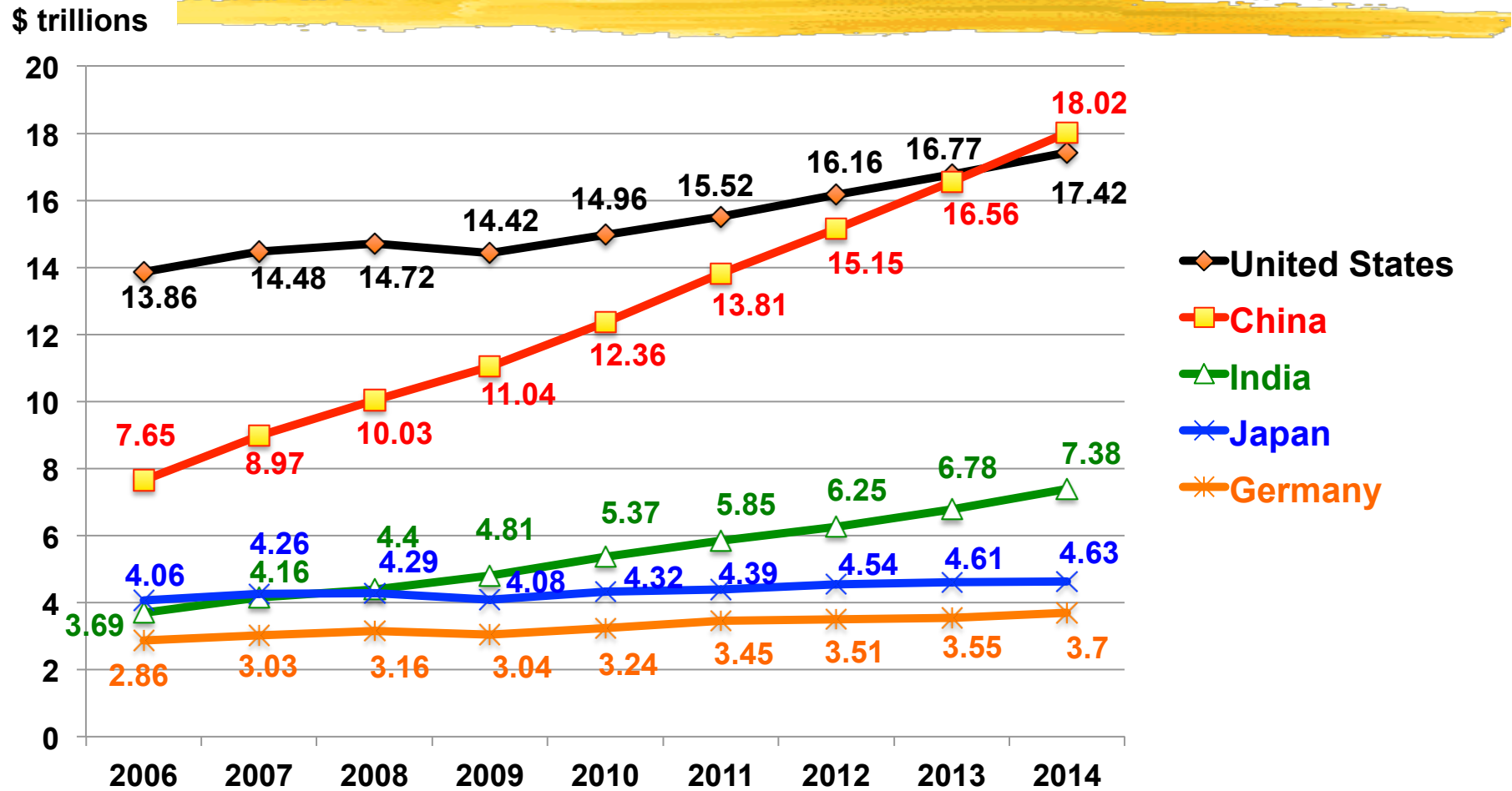
	2013 \$ trillions	2013 GR % over '12	2014 \$ trillions	2014 GR % over '13	2015 \$ trillions	2015 GR % over '14	2015 GDP per cap - \$
World	106.60	3.3	110.30	3.5	113.70	3.0	15,800
1. China	17.02	7.7	18.27	7.3	19.51	6.8	14,300
2. U.S.	17.10	1.5	17.52	2.4	17.97	2.6	56,300
3. India	6.98	6.9	7.48	7.3	8.03	7.3	6,300
4. Japan	4.61	0.8	4.63	1.6	4.66	0.6	38,200
5. Germany	3.73	0.4	3.79	1.6	3.84	1.5	47,400

Red = lower than World Average, Blue = greater

- Excludes the EU, which would be #3 in size after China

Estimated amounts in 2015 dollars, according to PPP
From: CIA World Factbook, data retrieved 4/03/2016

Another (longer) view of Big Five GDP @ PPP: World Bank



<http://data.worldbank.org/indicator/NY.GDP.MKTP.PP.CD>, accessed 4/03/2016

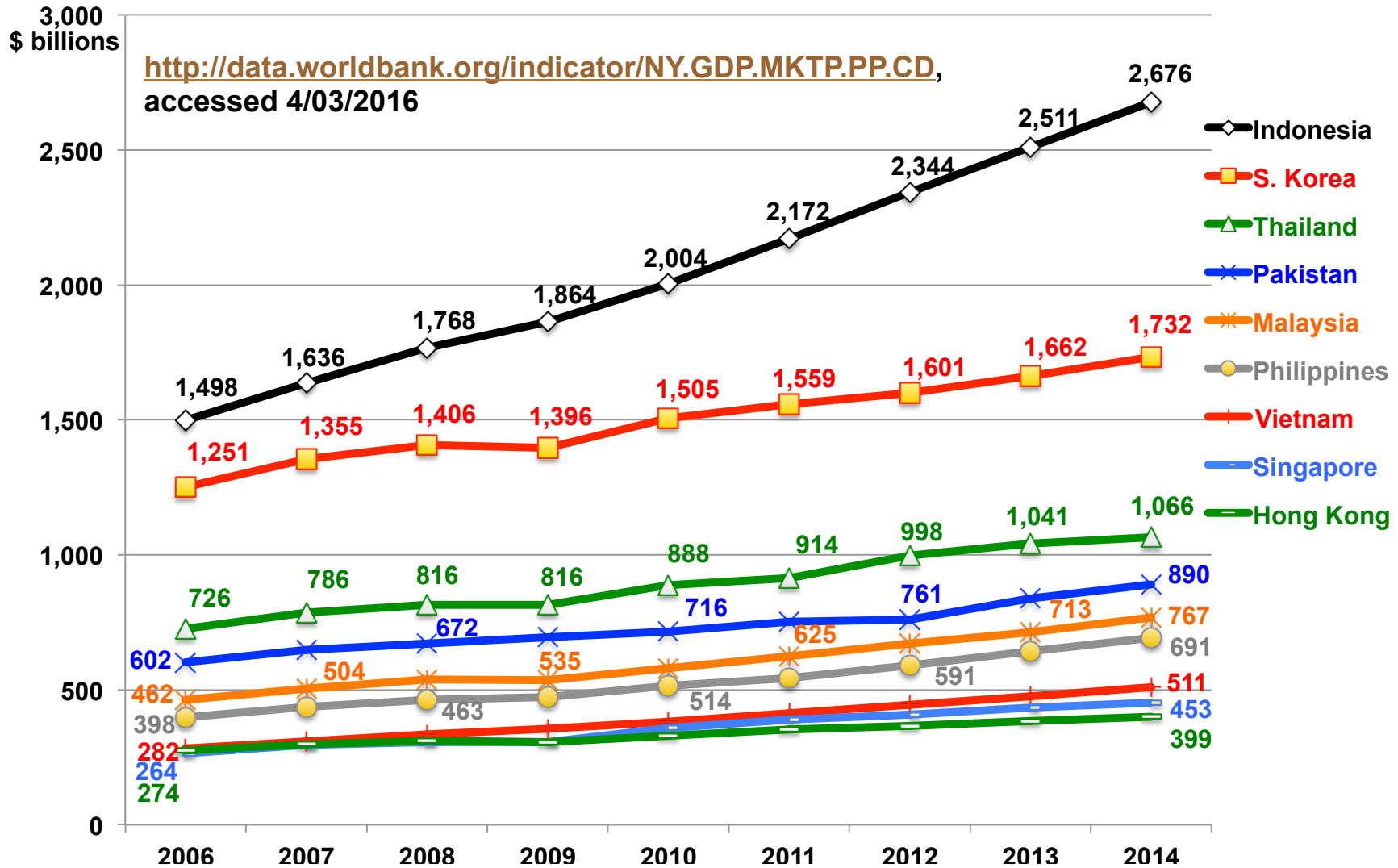
Other Asia economies in world's 50 largest (GDP at PPP) – CIA World Factbook

2015 Economy Size Rank	2013 \$ billions	2013 GR over '12	2014 \$ billions	2014 GR over '13	2015 \$ billions	2015 GR over '14	GDP \$ per cap
9. Indonesia	2,582	5.6	2,712	5.0	2,389	4.7	11,300
14. S. Korea	1,744	2.9	1,801	3.3	1,849	2.7	36,700
21. Taiwan	1,050	2.2	1,089	3.8	1,114	2.2	47,500
22. Thailand	1,071	2.8	1,080	0.9	1,107	2.5	16,100
27. Pakistan	836	3.7	884	4.1	931	4.2	4,900
29. Malaysia	733	4.7	777	6.0	814	4.7	26,600
30. Philippines	660	7.1	700	6.1	742	6.0	7,500
34. Bangladesh	497	5.9	537	6.0	577	6.5	3,600
36. Vietnam	488	5.4	518	6.0	551	6.5	6,100
41. Singapore	446	4.4	459	2.9	469	2.2	85,700
45. Hong Kong	394	3.1	404	2.5	415	2.5	57,000

* Excludes Middle Eastern Countries (Iran, Kazakhstan)

Red = lower than World Average, Blue = greater

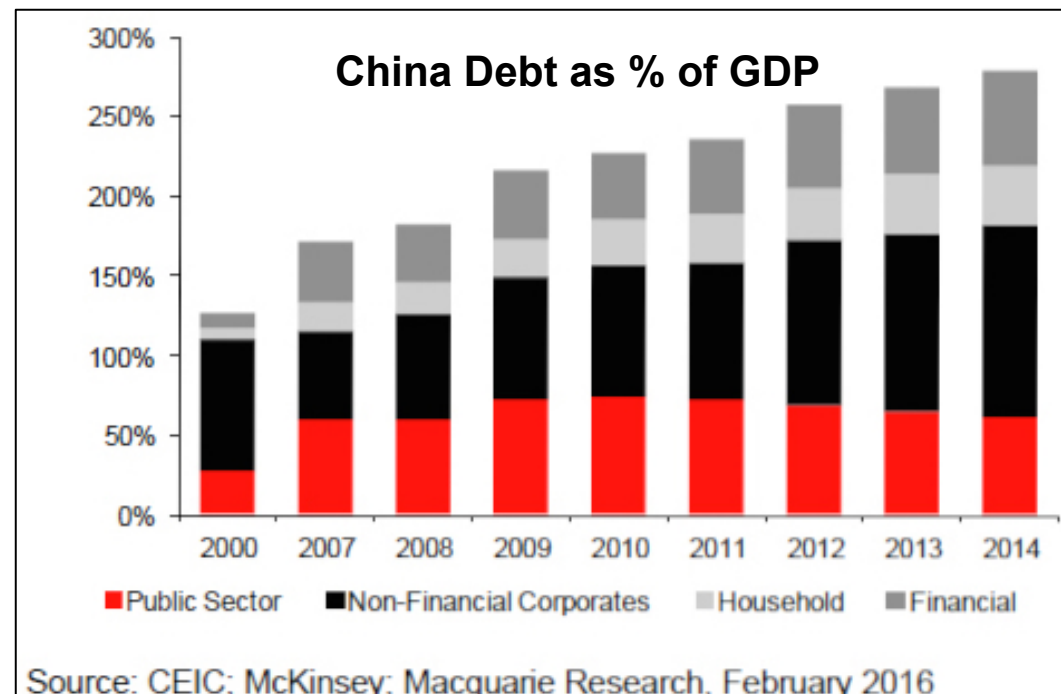
Longer view: GDP of other Asia economies in big 50



Behind the numbers –

1. What's happening in China?

- ◆ China has become the world's largest national economy (when GDP is calculated at PPP)
 - ◆ Exceeds size of EU as well as US (World Bank stats)
- ◆ China's growth rate is slowing down
 - ◆ Credit-driven stimulus (after 2008): debts
 - ◆ Total debt increased 4x from 2007 – 2014
 - ◆ Bifurcation of economy into competitive (new) global firms and inefficient (protected) SOEs – a la post-bubble Japan ...?
 - ◆ Alternative: layoffs



Behind the numbers –

2. New patterns of exporting (to regional markets)



- ◆ **Slowdown of existing global supply chains in which Asia economies supplied world markets**
 - ◆ Pulled down worldwide by China economy slowdown
 - ◆ In turn, less business confidence in U.S. and other advanced economies
 - ◆ EU problems with immigration, terrorism, ...
 - ◆ Decline in raw material exports (connected to lower oil prices)
- ◆ **New pattern of exporting: driven by domestic or regional market expansion**
 - ◆ Especially see among ASEAN countries
 - ◆ Shift of attention to regional markets co-occurring with Trans-Pacific Partnership (and other free trade agreements)
 - ◆ Shift away from raw material extraction to greater value-added



Participation and attitudes in Asia toward entrepreneurship

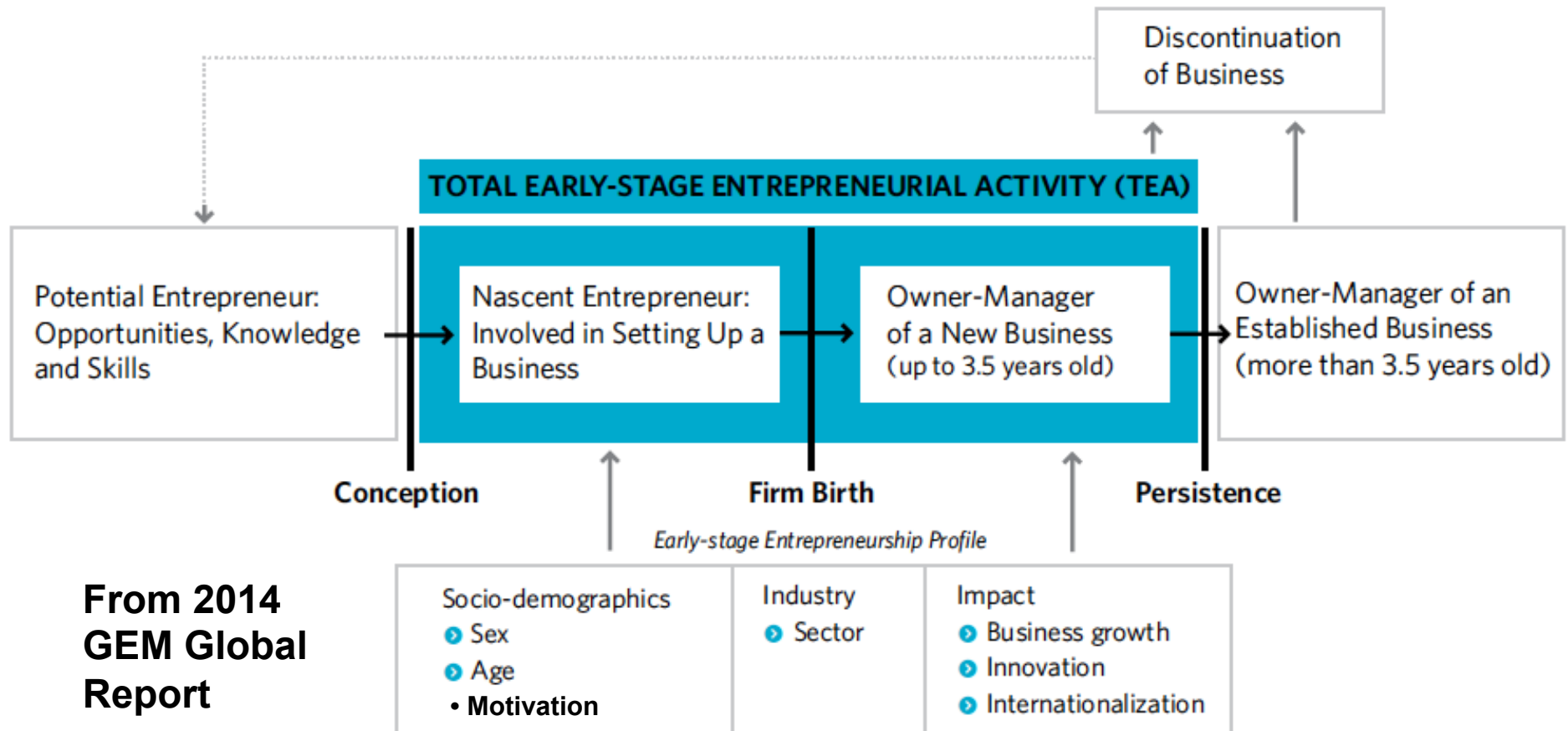
Introduction: Global Entrepreneurship Monitor



- ◆ **Two yearly surveys of 60+ economies around the world**
 - ◆ **Adult Population Survey of at least 2,000 adults in each economy described – often many more (over 206,000 people were surveyed for 2014 report)**
 - ◆ **Their participation in entrepreneurial activities and their attitudes toward entrepreneurship**
 - ◆ **Conducted by local survey teams in each economy**
 - ◆ **(Not using data from National Expert Survey in today's report)**
 - ◆ **Smaller numbers of experts in each economy: they provide (subjective) assessments of ecosystem factors**
 - **Government programs to support entrepreneurship**
 - **Physical infrastructure for entrepreneurship**
 - **Cultural / social norms, etc....**
- ◆ **Most recent: 2015-16 survey is 17th (began in 1999)**

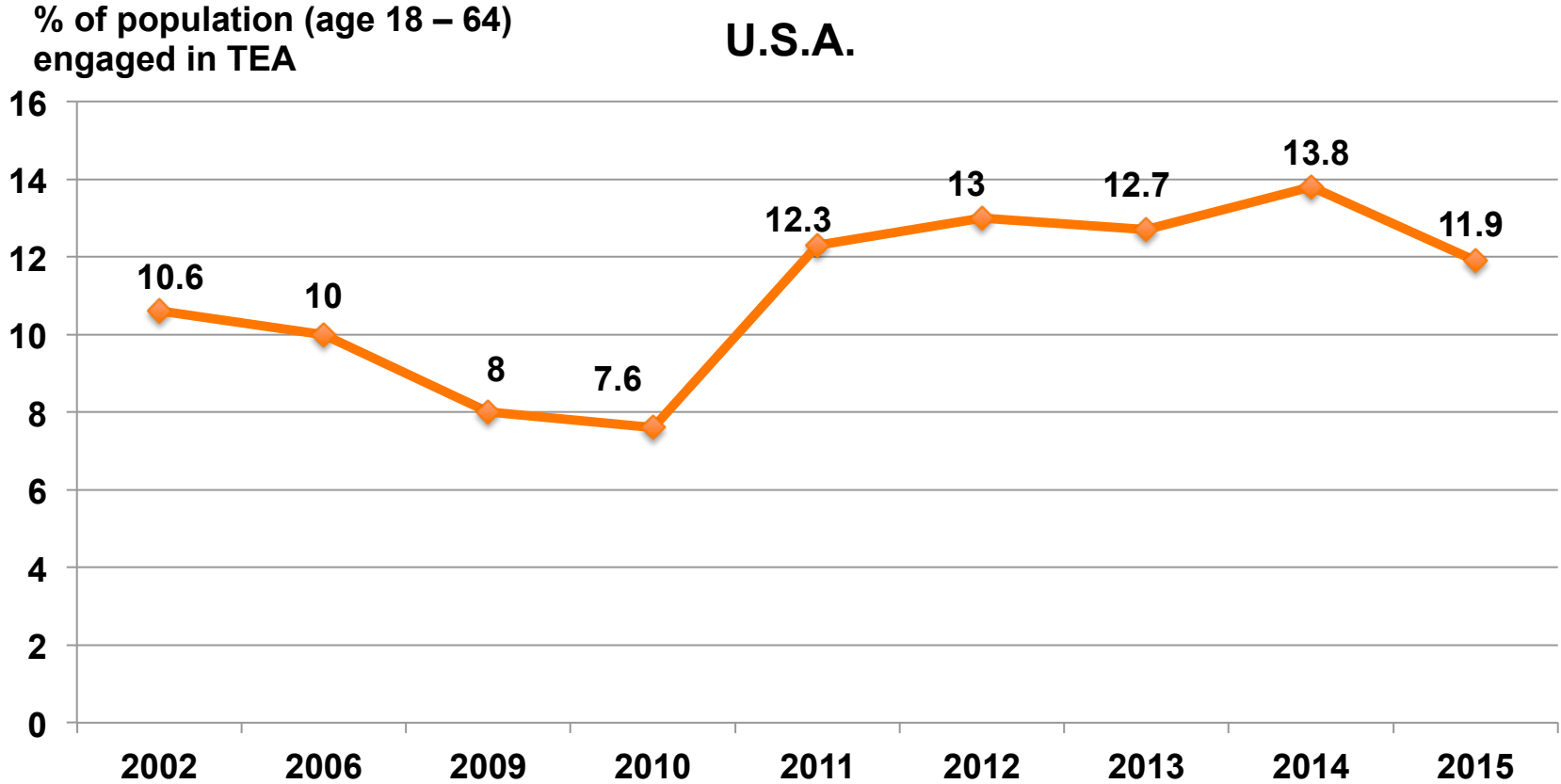
GEM's "TEA Rate" (Total Early Stage Entrepreneurial Activity)

FIGURE 1.1 THE ENTREPRENEURSHIP PROCESS AND GEM OPERATIONAL DEFINITIONS

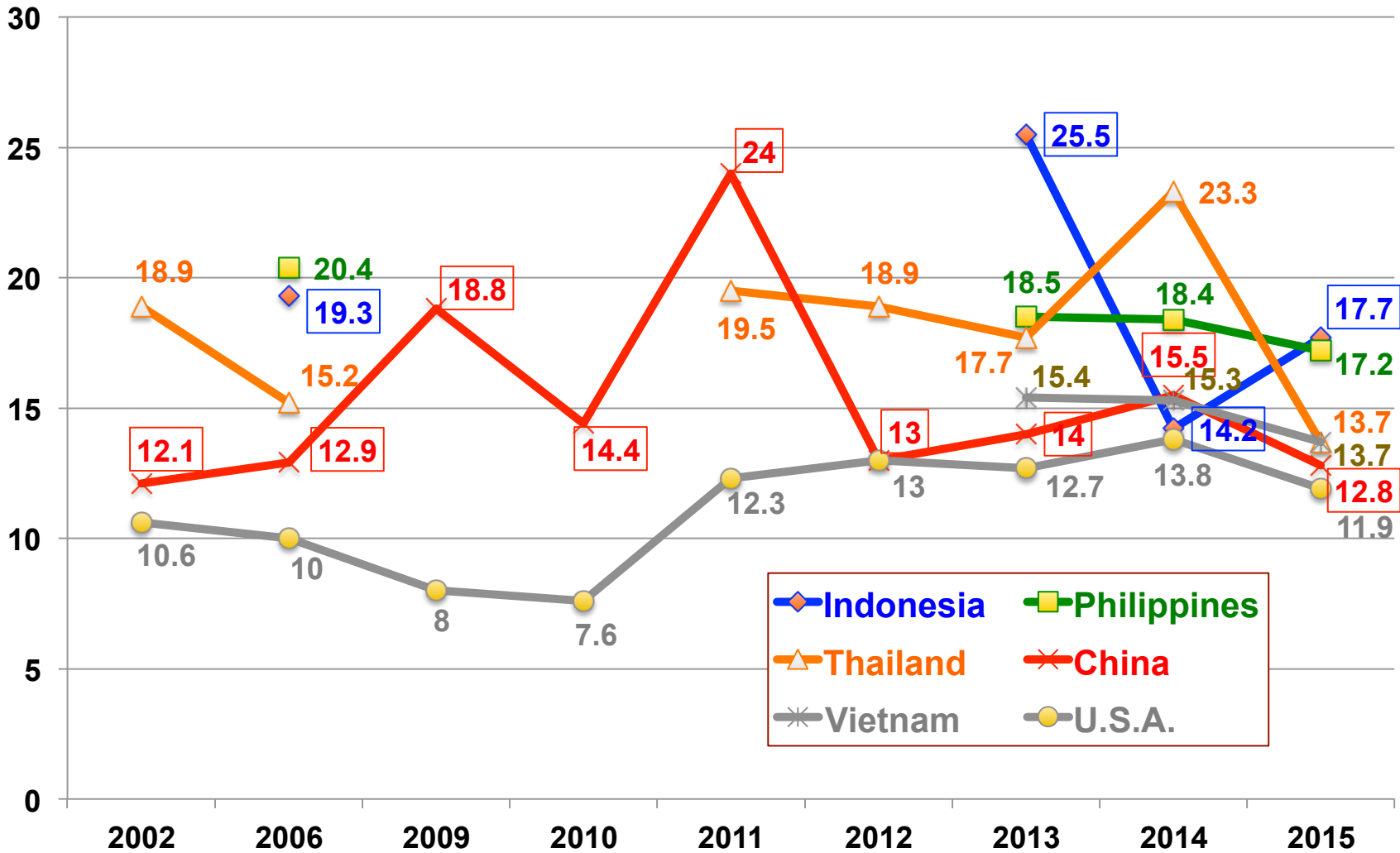


From 2014
GEM Global
Report

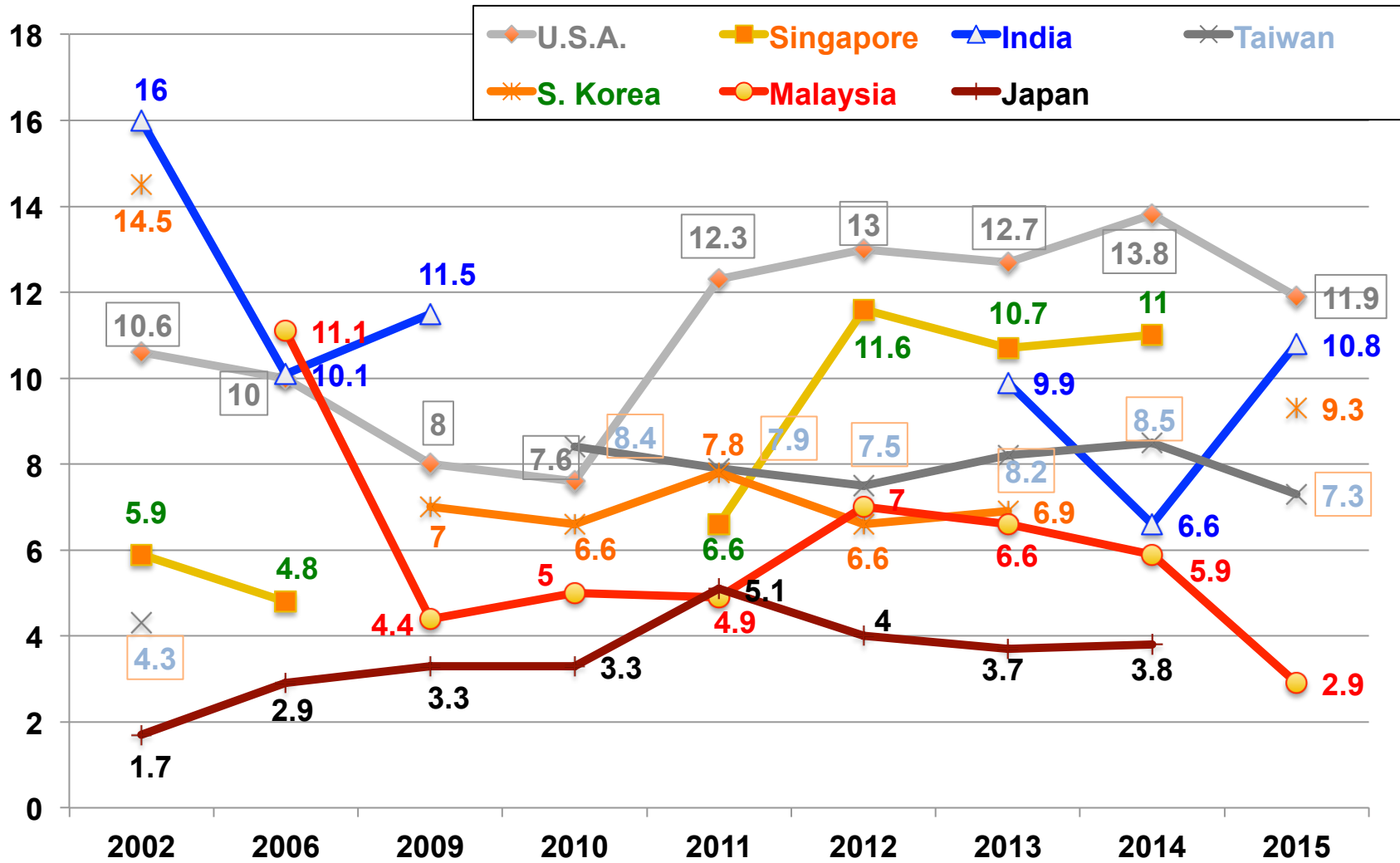
TEA rate of the United States



Asia countries with higher TEA rates than U.S.



Asia countries with lower TEA rate than U.S.

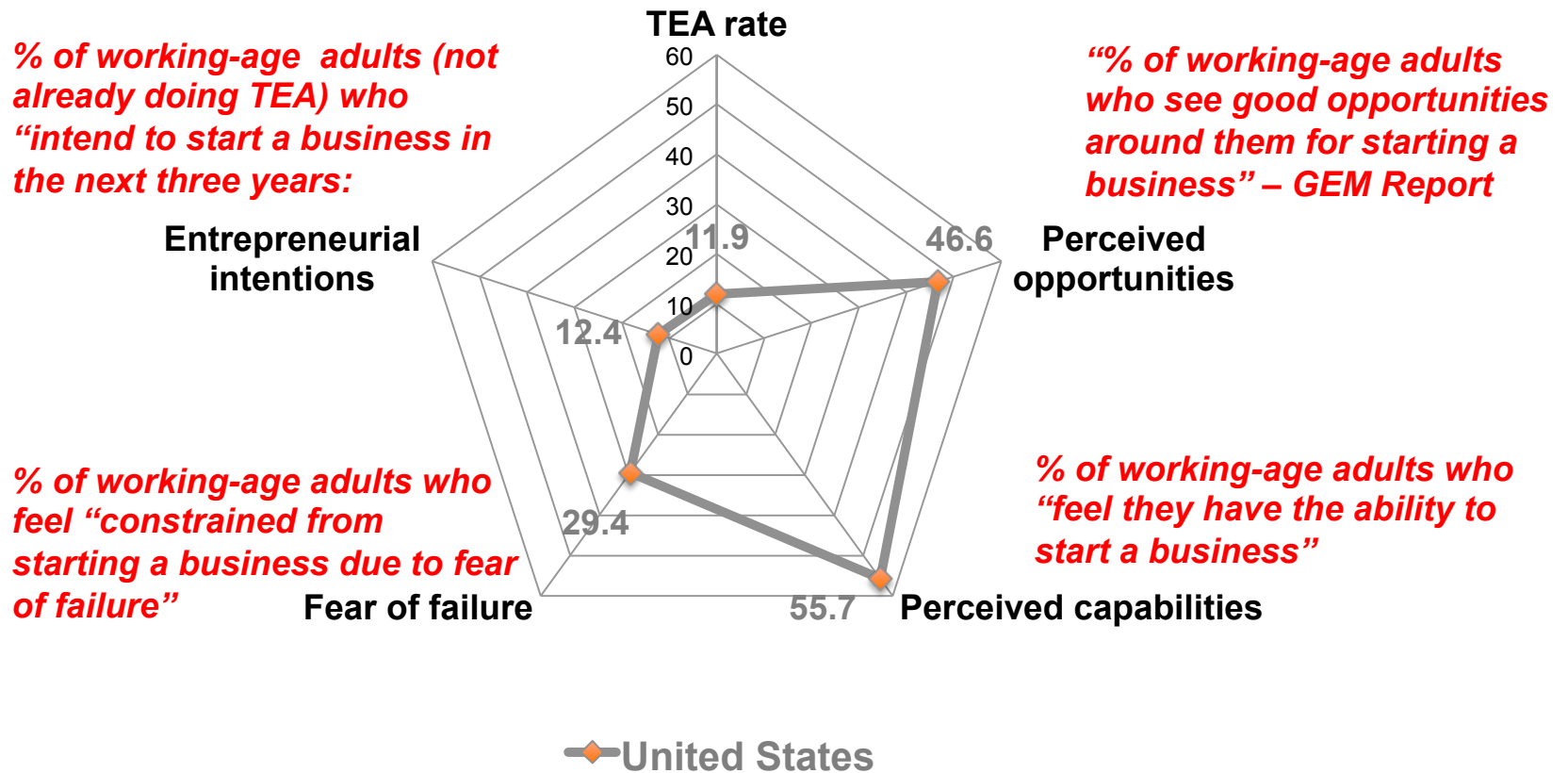


Patterns in the TEA

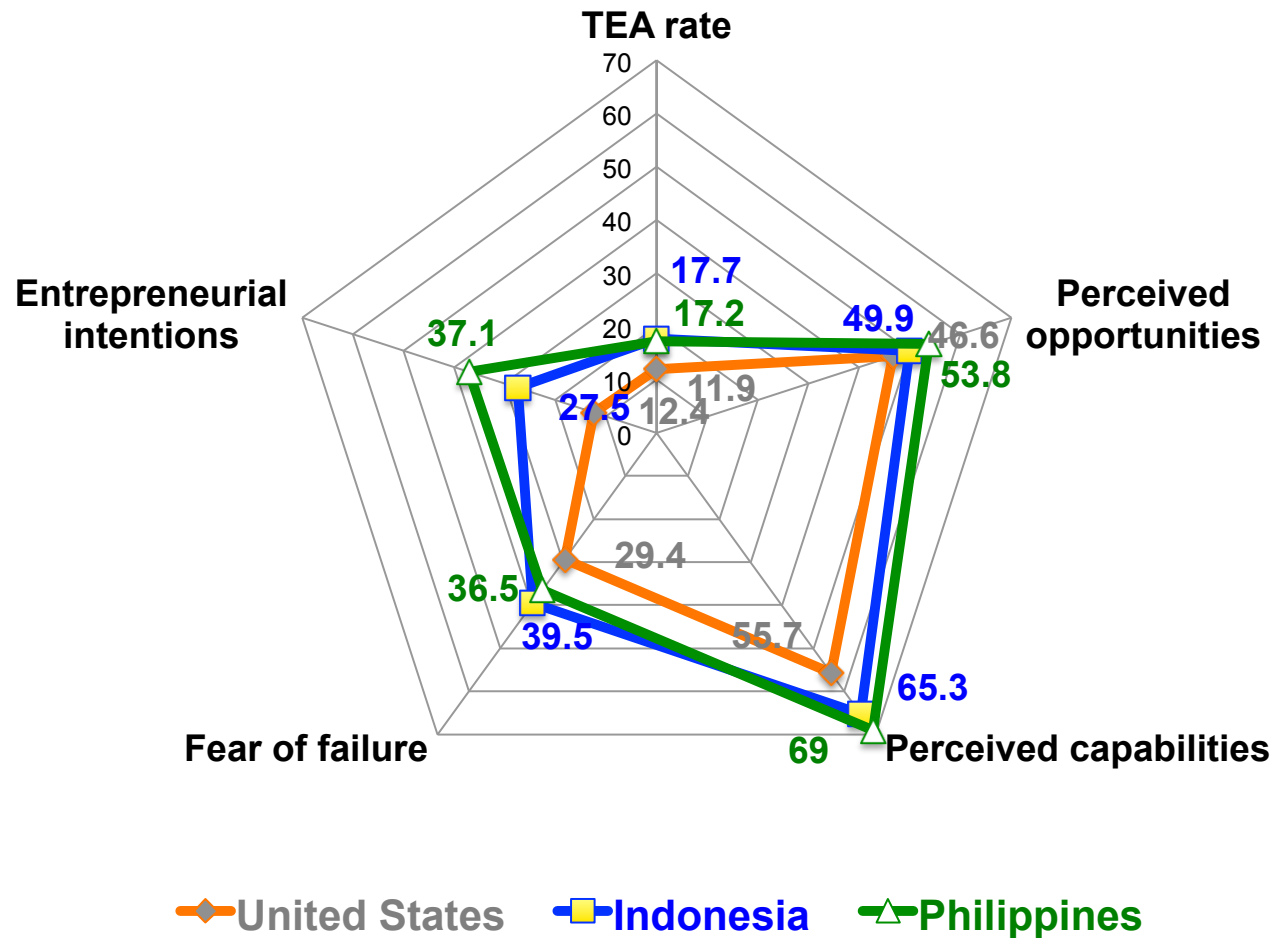


- ◆ **Wild swings in TEA rate, but surprisingly 2015 is not so far different from 2002**
 - ◆ **Exceptions: India (2002: 16%, 2015: 10.8%)**
Malaysia (2006: 11.1%, 2015: 2.9%)
Singapore (2002: 5.9%, 2014: 11%)
Japan (2002: 1.7%, 2014: 3.8%)
 - ◆ **Possible reasons for wild swings:**
 - ◆ **External: political unrest, natural disasters, media promotions...**
 - ◆ **Inconsistencies in surveying? (what about part-time moonlighting?)**
 - ◆ **Psychology: what makes people have or lose interest in entrepreneurship? – next section**
- ◆ **Almost all countries had lower TEA rate in 2015 than in 2014**
 - ◆ **Exception: India**
 - ◆ **Report includes no 2015 data from Singapore & Japan**

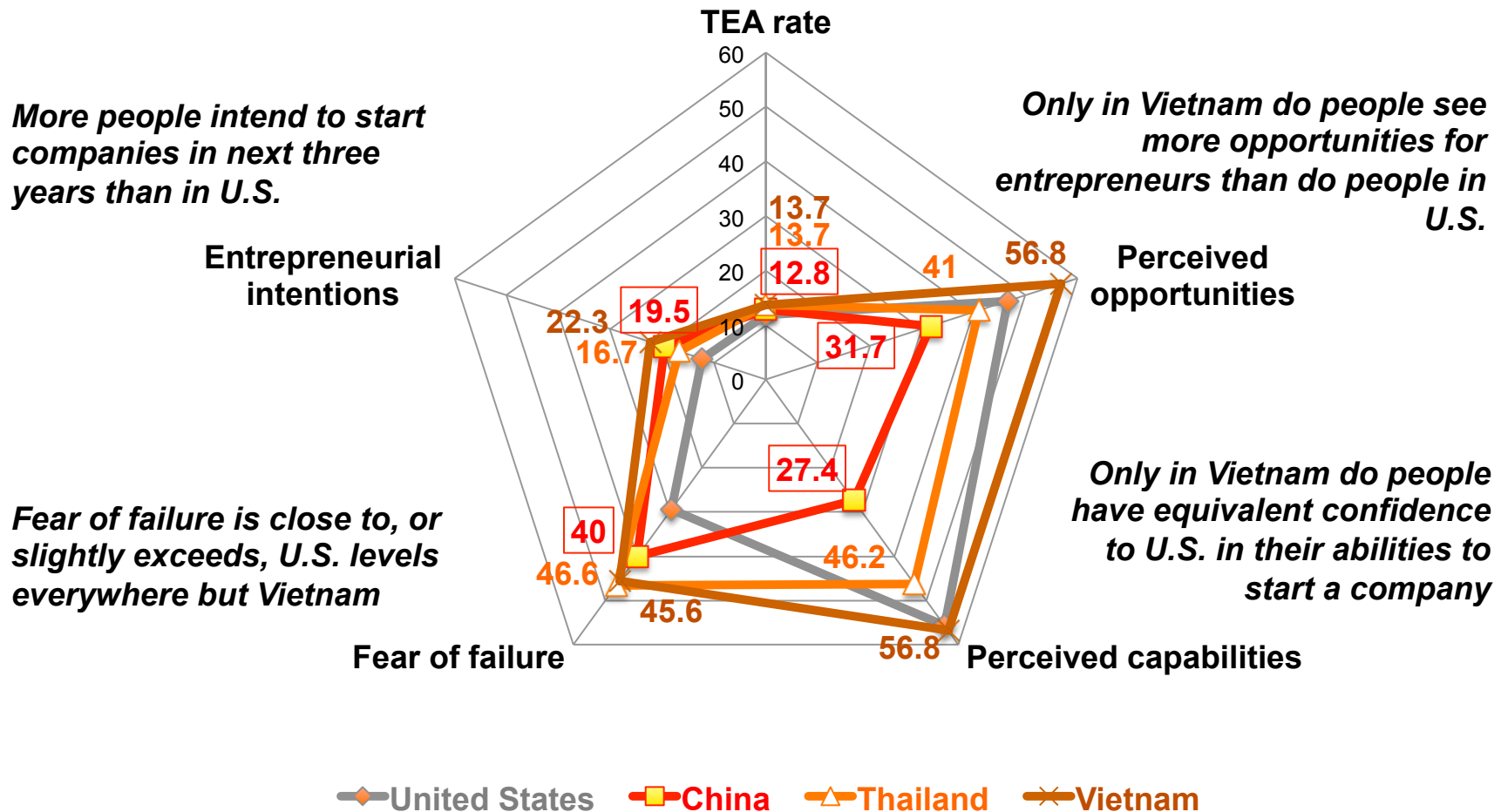
Attitudes toward entrepreneurship (by non-entrepreneurs) – U.S. as baseline



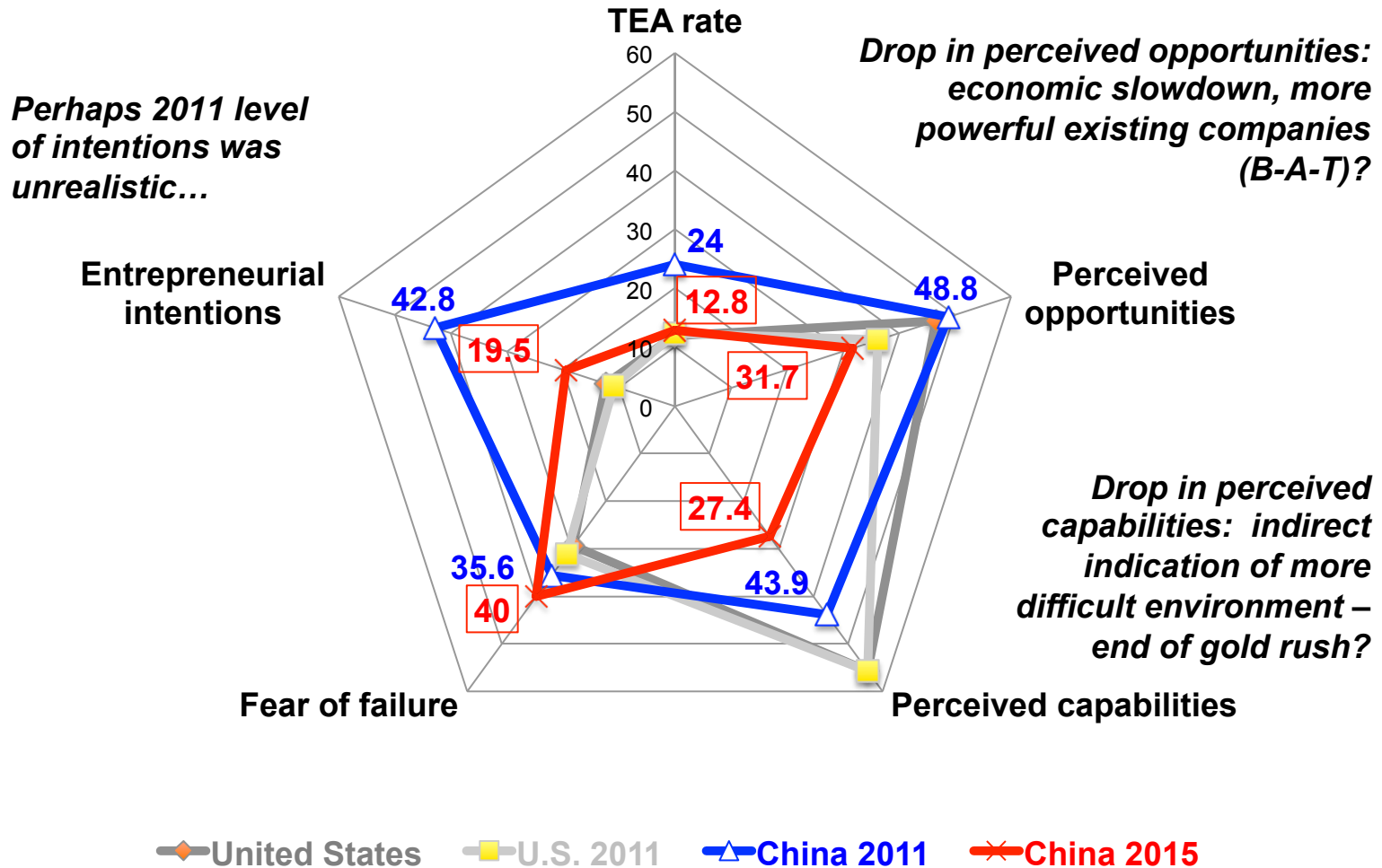
Attitudes toward entrepreneurship: “very” high TEA rate countries in Asia



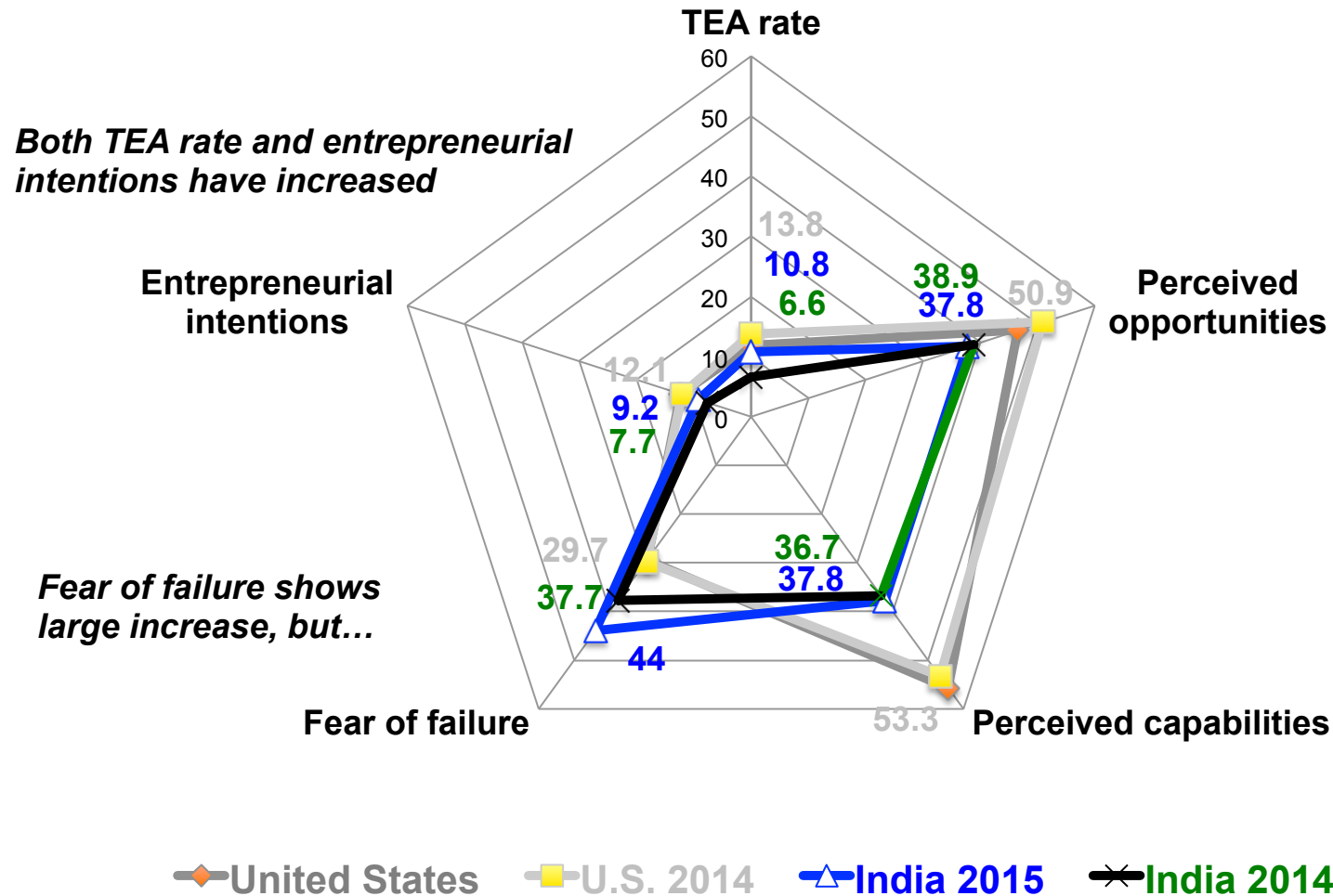
Attitudes toward entrepreneurship: Somewhat high TEA rate countries in Asia



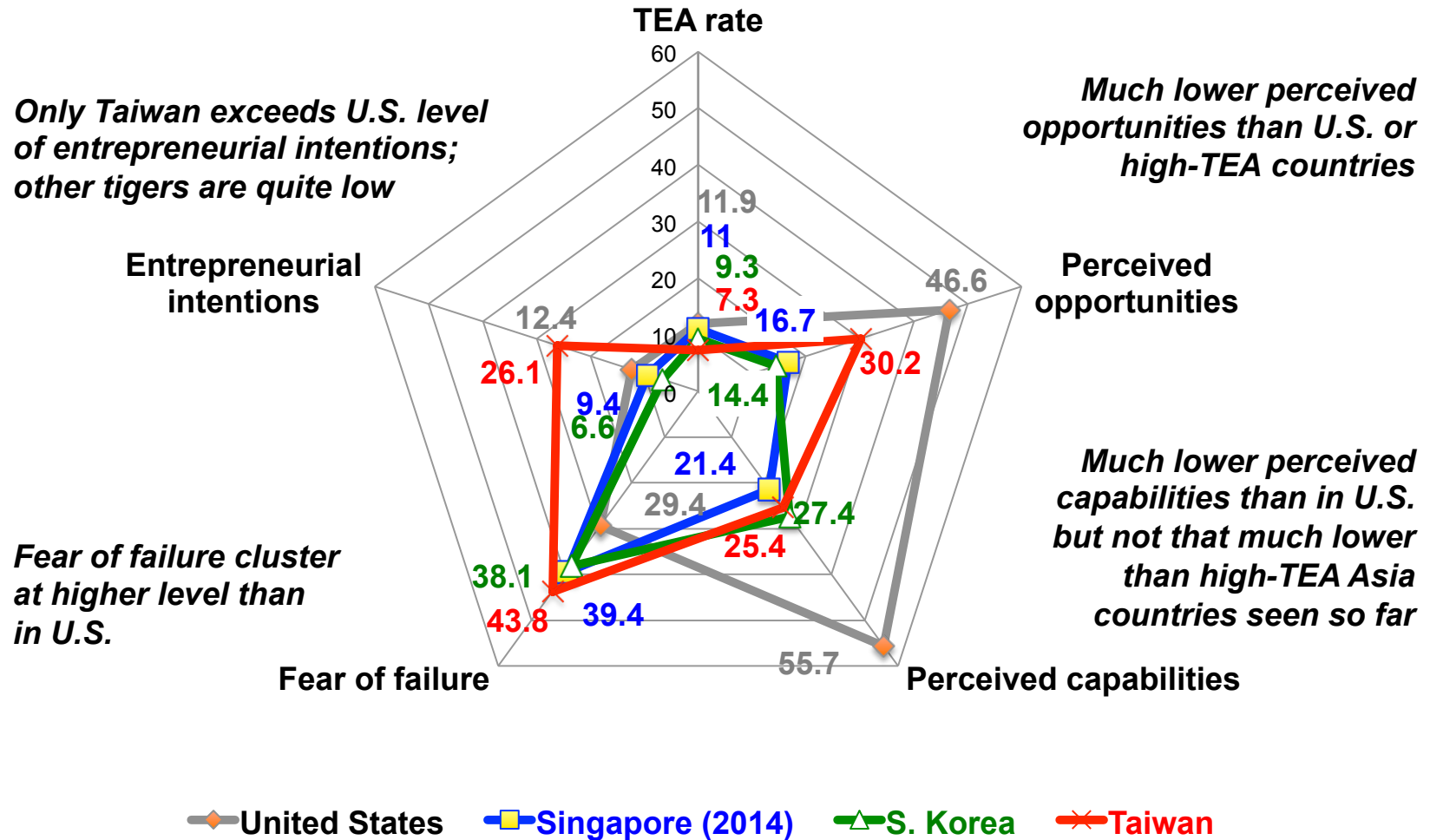
What happened in China?



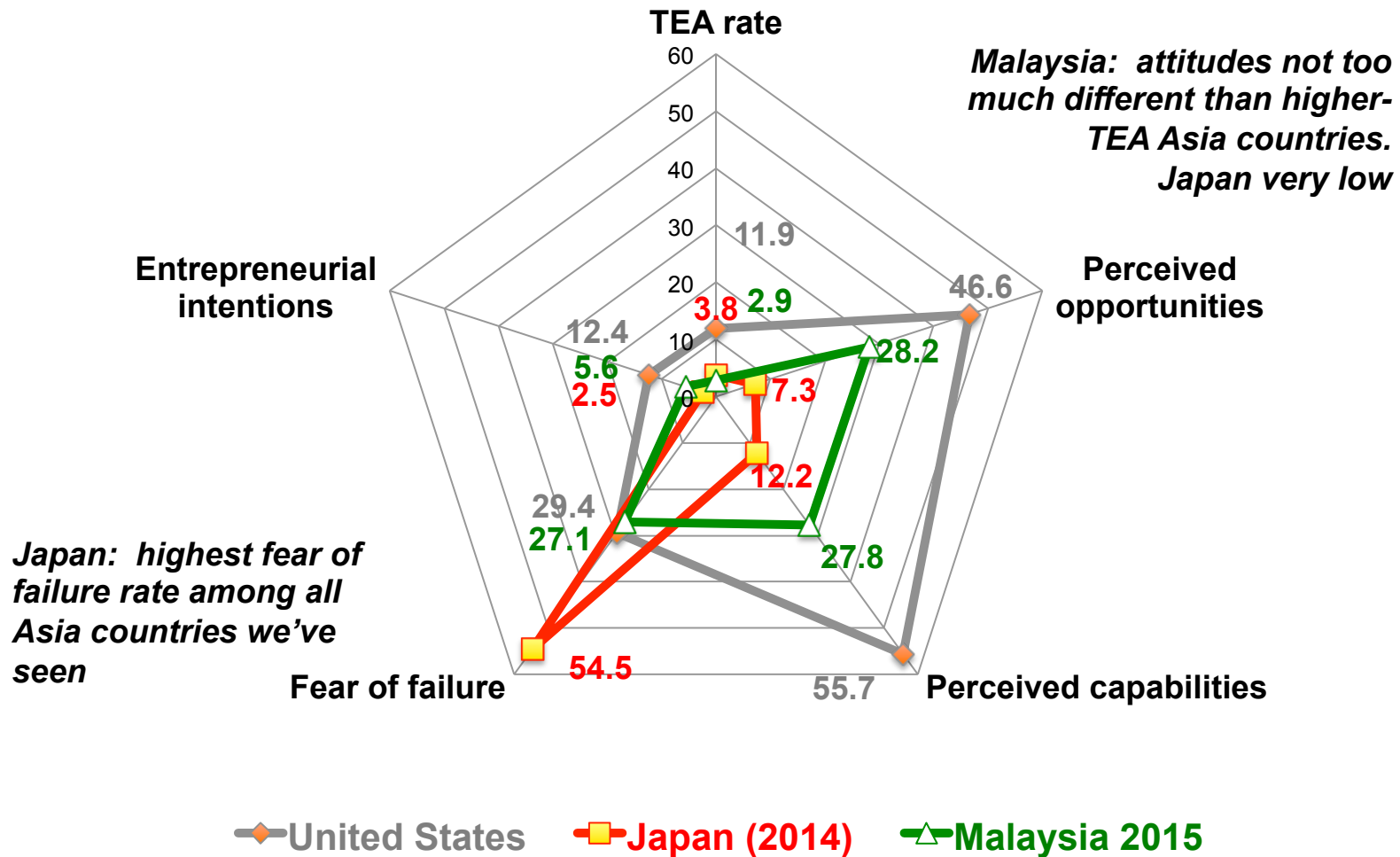
One year's difference in India



Attitudes toward entrepreneurship (2015, except SG) among the Asia Tigers

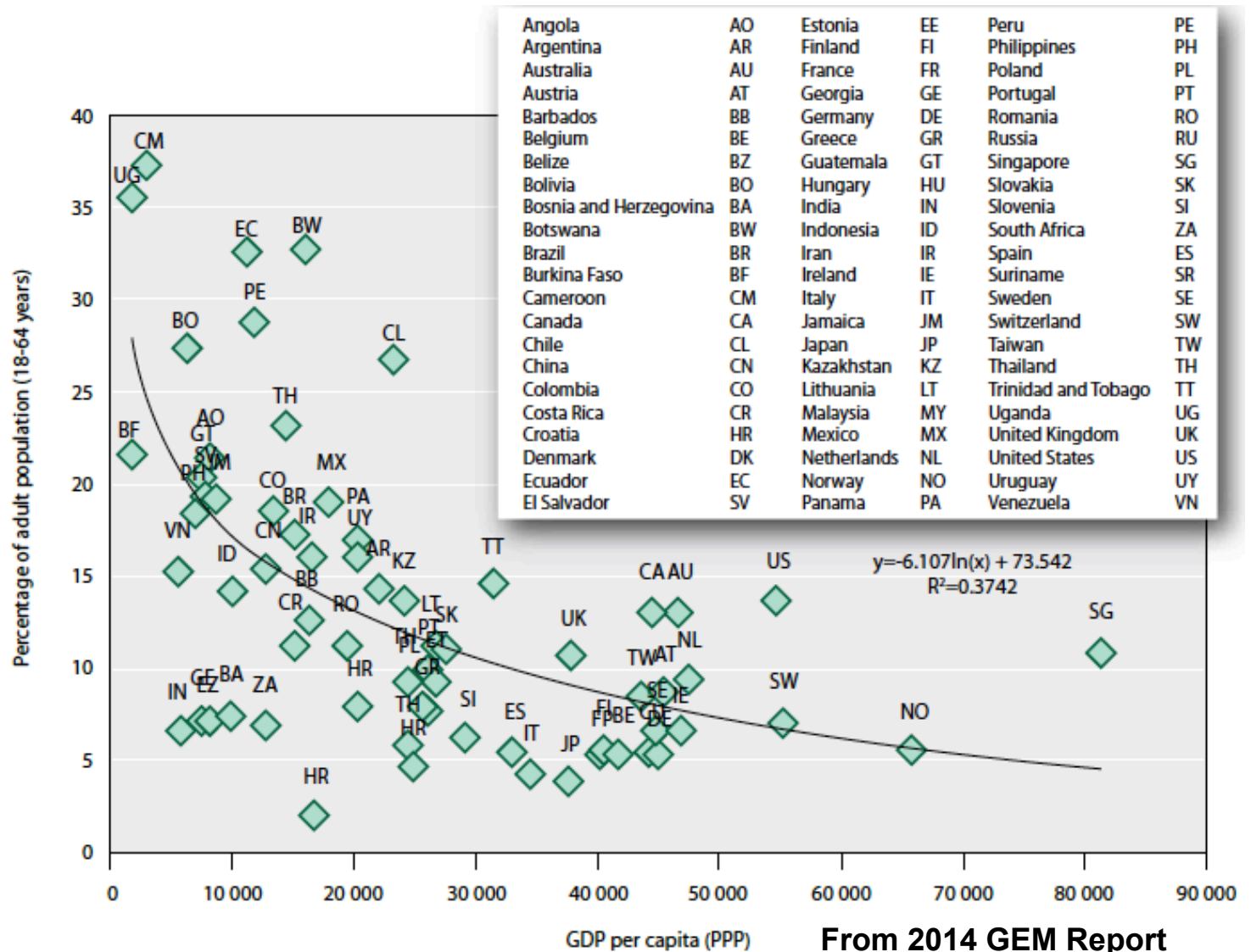


Attitudes toward entrepreneurship among (very) low TEA rate Asia countries



GEM 204 and 2015/16 Reports: lower TEA rates correlate with higher per capita GDP

- More jobs in existing industry
- Mystery: Innovation importance to economic success increases with GDP
- Motivations and type of opportunities change

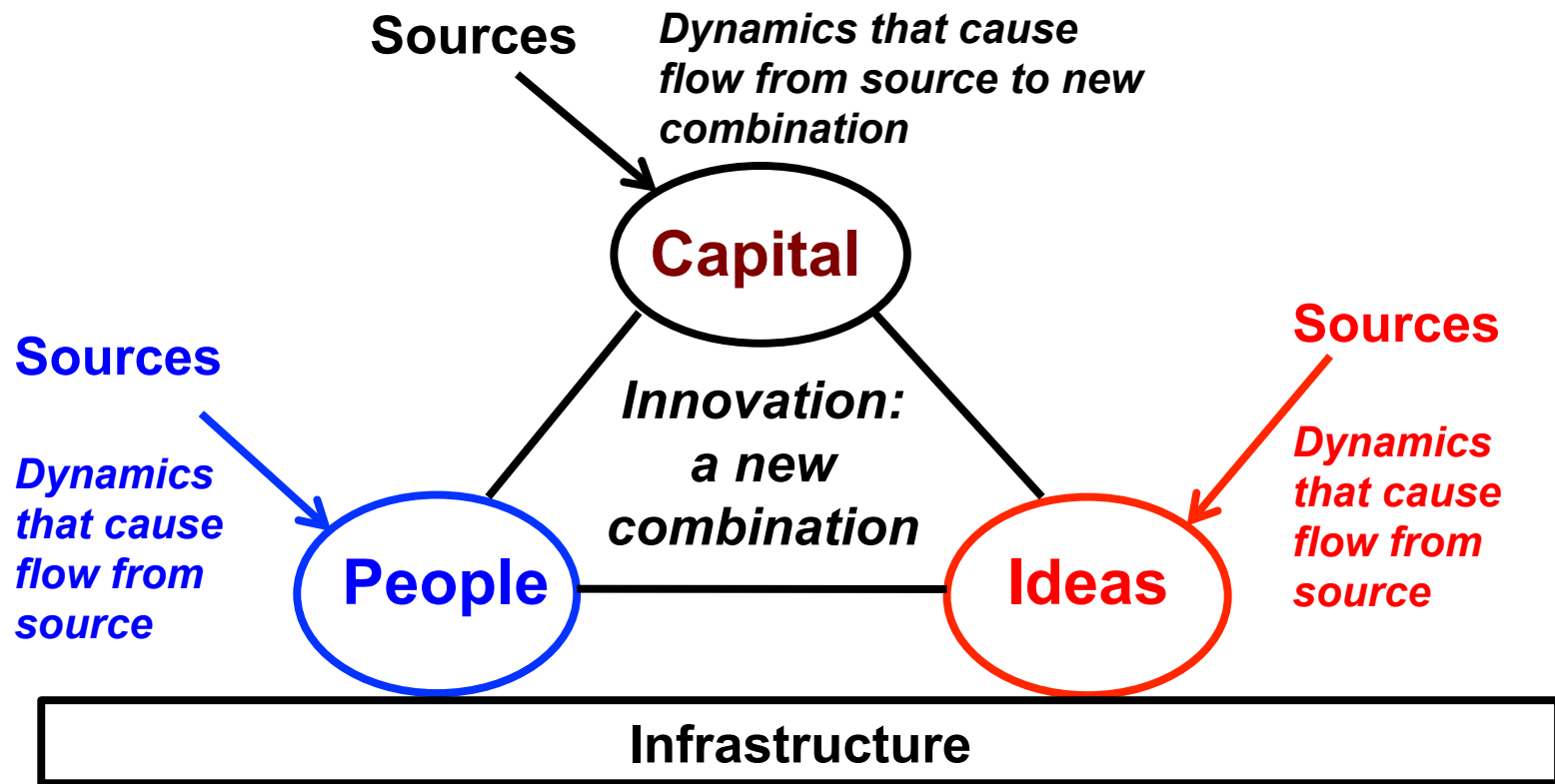




Entrepreneurship ecosystems in Asia

Basic elements of an innovation system

-- certainly applies to entrepreneurial innovation



As an idea is incubated, the needed inflow of people, capital, knowledge may change during the process

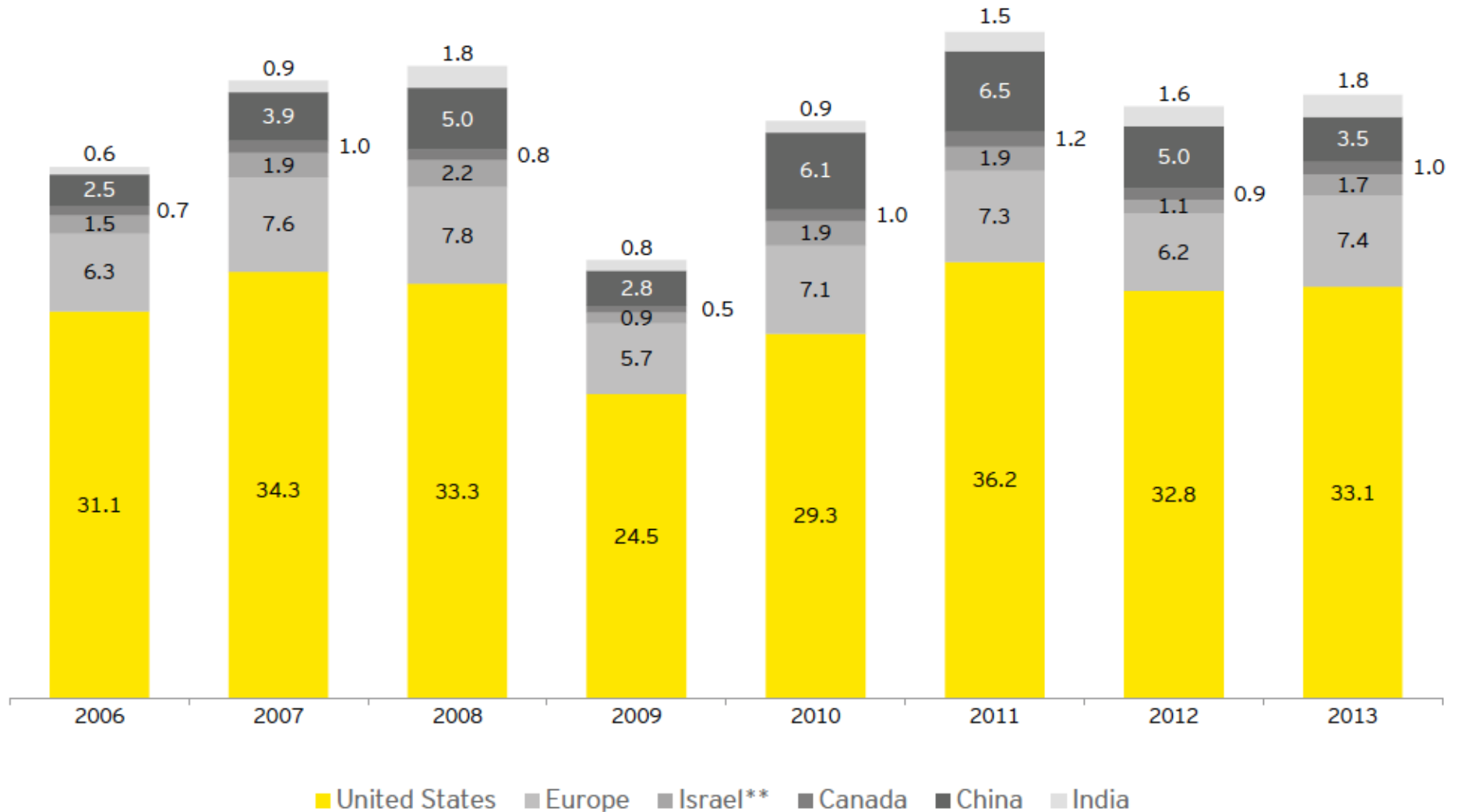
Key elements of ecosystem for startup companies

	Startup creation	Company growth	Exit
Capital	Angel funds	VC funds, (later stage: debt)	M&A or IPO
People	Founders, advisors	Labor force (a) willing to work in startup (b) Capable of growing company	Flexible labor market: post-exit opportunities for founders, employees
Ideas/ knowledge	Access to R&D output, design thinking, access to market & business knowledge	Lean-startup principles, rapid prototyping, investor relations	Probability of realization of idea potential (not killing it) after M&A or IPO
Infrastructure	Physical: incubators Legal and accounting infrastructure, consultants / mentors	Physical location, access to markets, Legal & accounting infra., etc.	Business infra: bankruptcy law, transparent accounting, etc.

Capital flow patterns in Asia

- ◆ Friends and family money seems present in all economies
- ◆ Most Asia economies have insufficient angel investors
 - ◆ See following discussion of people: as much a mentoring problem as a financial problem
- ◆ Venture capital investments have grown in Asia (although some recent slowdowns)
 - ◆ May reflect new government policies promoting VC & innovation
 - ◆ But, selection of investments and investor-management relations in Asia economies tends to reflect traditional financial investing
 - ◆ Recently: seeing more corporate (strategic) VC activities, but most investments are by Asia large firms in U.S., Europe
- ◆ Exit patterns differ greatly
 - ◆ U.S.: 90% via acquisition, much larger IPOs, smaller % held by founders (in comparison to Asia patterns)
 - ◆ S. Korea, Japan: 85 – 90% of exits are by IPO, entrepreneur may keep over 50% of stock

Worldwide VC investments



Source: Dow Jones VentureSource, 2014

**All-site Israeli companies

5 April 2016

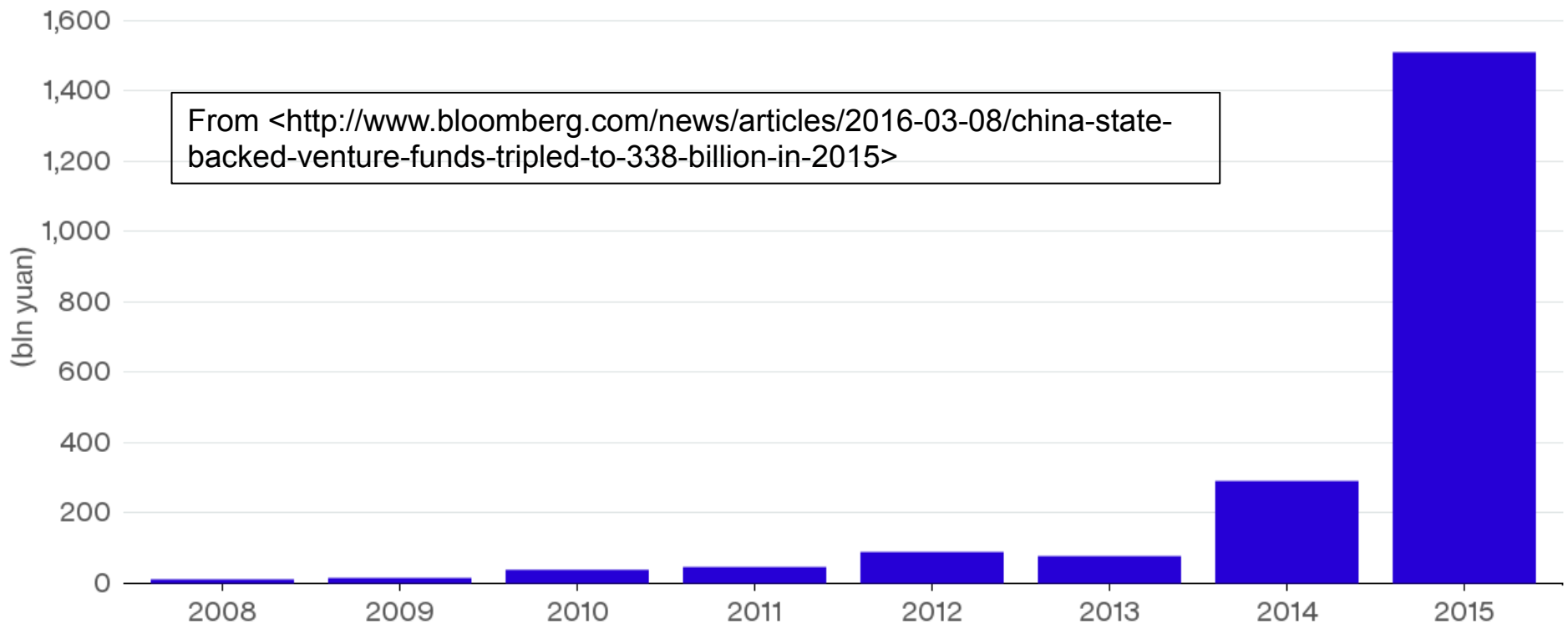
Ernst & Young, Global Venture Capital Insights and Trends 2014

Richard B. Dasher, Stanford University

But, China government now backs \$338 billion in investment funds for ventures

China's Historic Startup Deluge

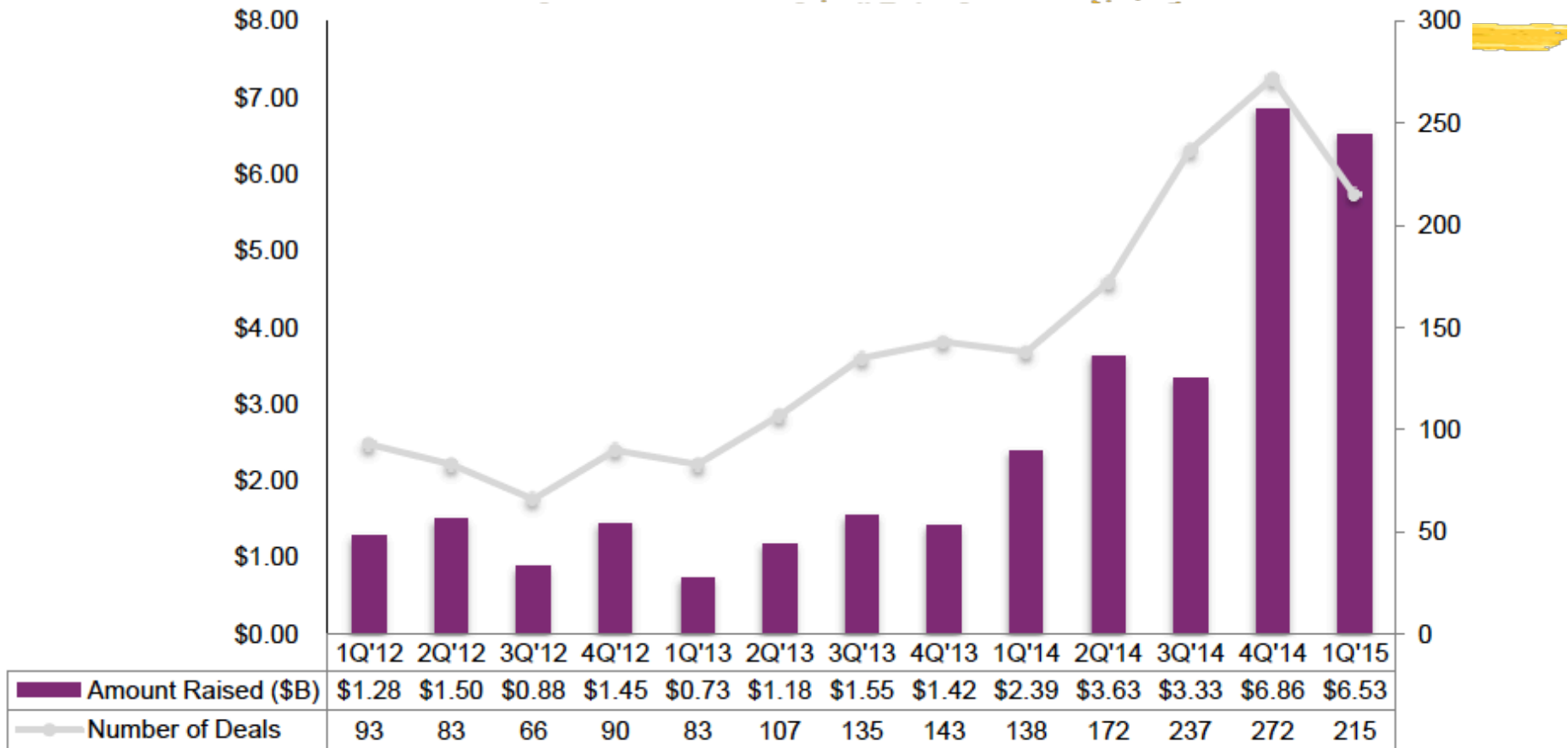
Money pours into government-guided startup funds



Source: Zero2IPO

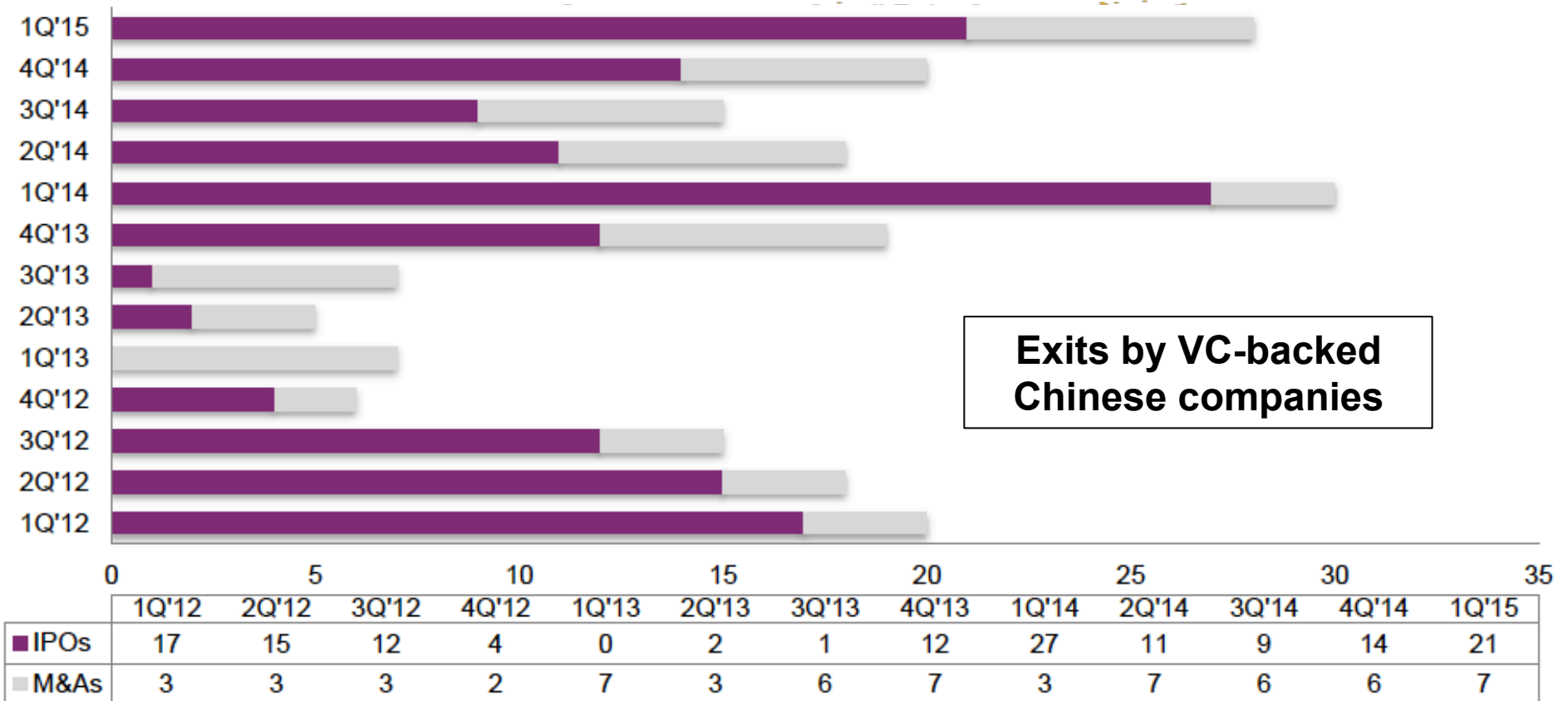
Bloomberg

Definitely see increase in VC funding activities in China



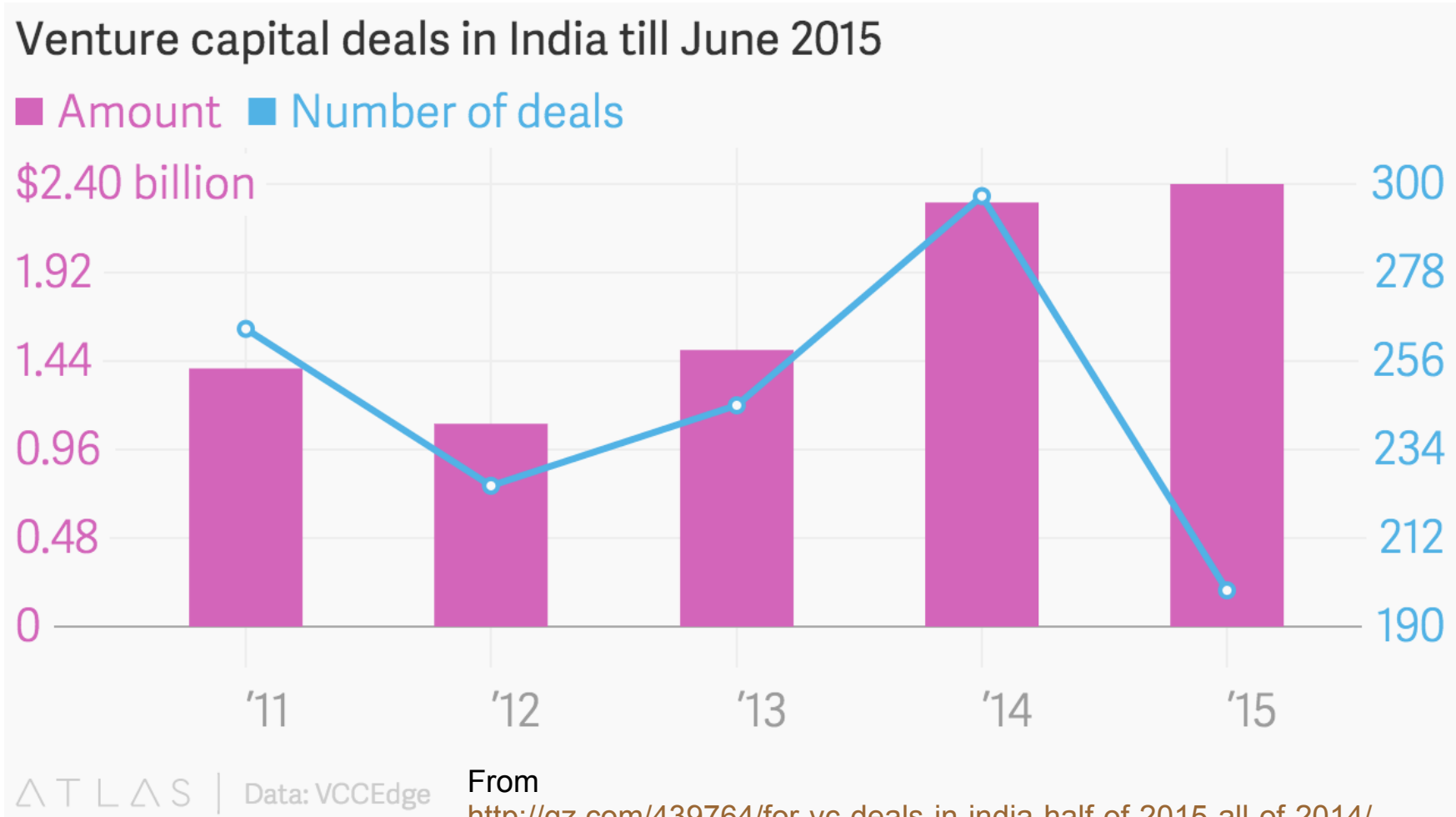
From <<http://images.dowjones.com/company/wp-content/uploads/sites/15/2015/04/Dow-Jones-Quarterly-Venture-Capital-Report-China-1Q15-.pdf>>

Exits in China still predominantly via IPO



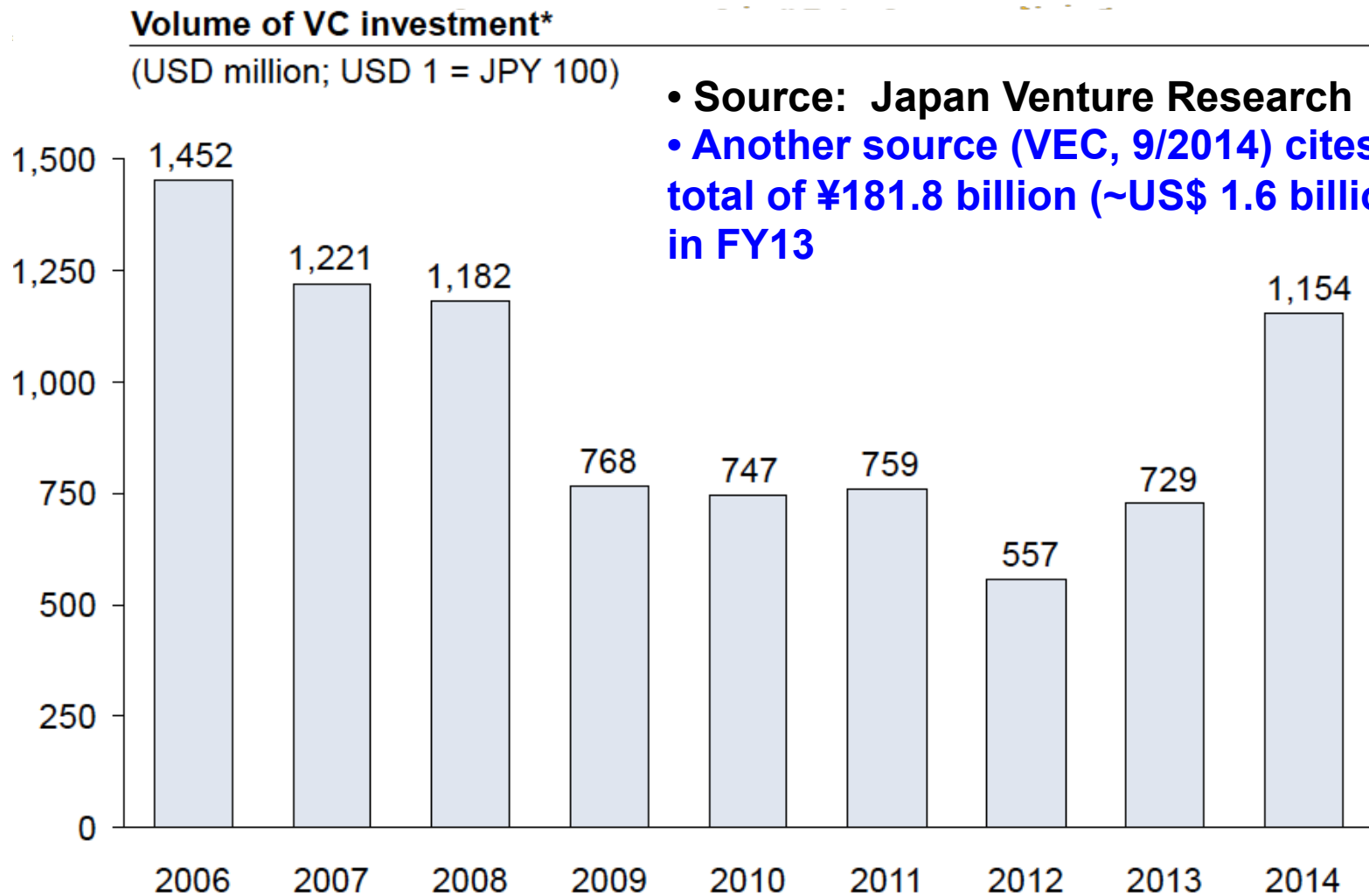
**For comparison: Exits by VC-backed companies in U.S. 2012:
M&A = 449, IPO = 49 (NVCA)**

India: VC investment in 2015H1 equaled all year 2014 (similar pattern in angel investments)



From <http://qz.com/439764/for-vc-deals-in-india-half-of-2015-all-of-2014/>, June 29, 2015

Volume of Japanese Venture Capital Investments

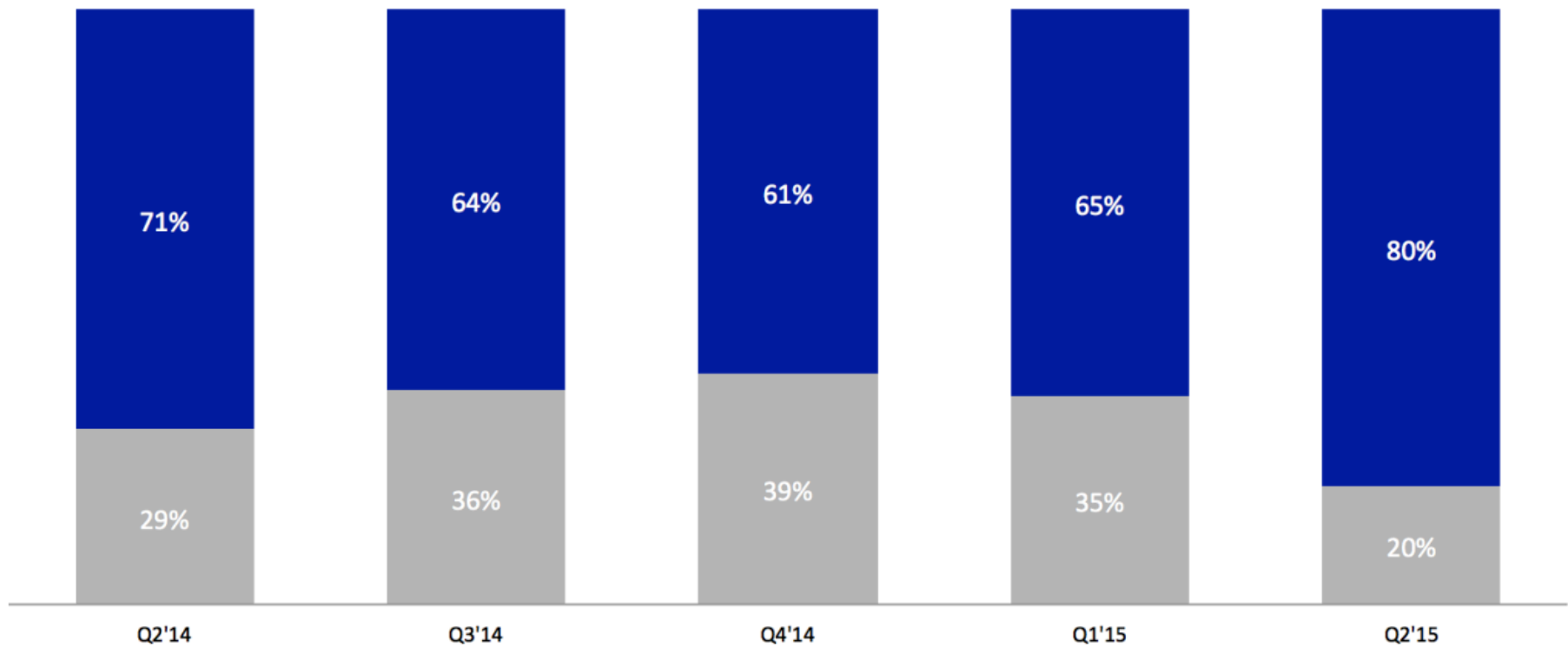


- Source: Japan Venture Research
- Another source (VEC, 9/2014) cites total of ¥181.8 billion (~US\$ 1.6 billion) in FY13

Corporate venture capital predominates in Japan

CVC Participation in Japan Deals to VC-Backed Companies

Q2'14 - Q2'15



Source: Data provided by CB Insights and compiled by James Riney, August 3, 2015

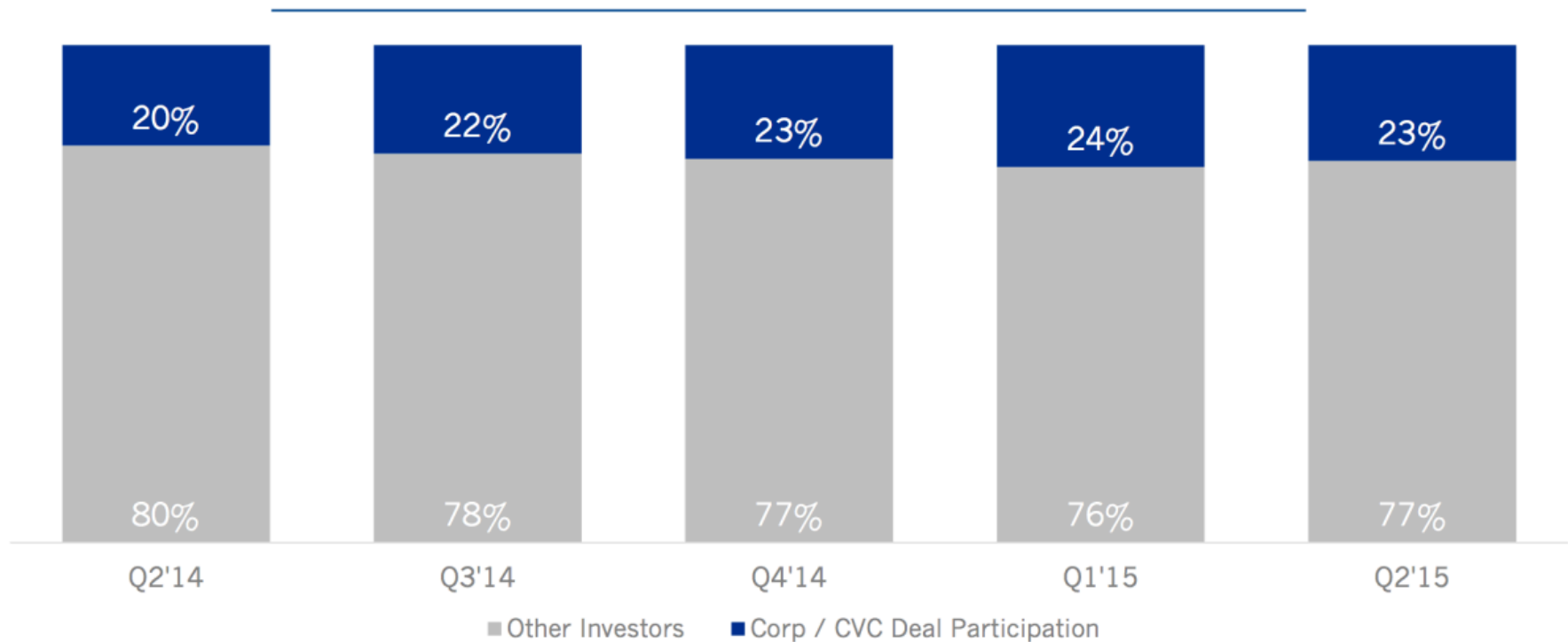
■ Other Investors ■ Corporate / CVC Deal Participation

From <http://techcrunch.com/2015/08/13/in-japan-corporate-venture-capital-is-king/>

For comparison: CVC participation in deals in U.S.

CVC Participation in North American Deals to VC-Backed Companies

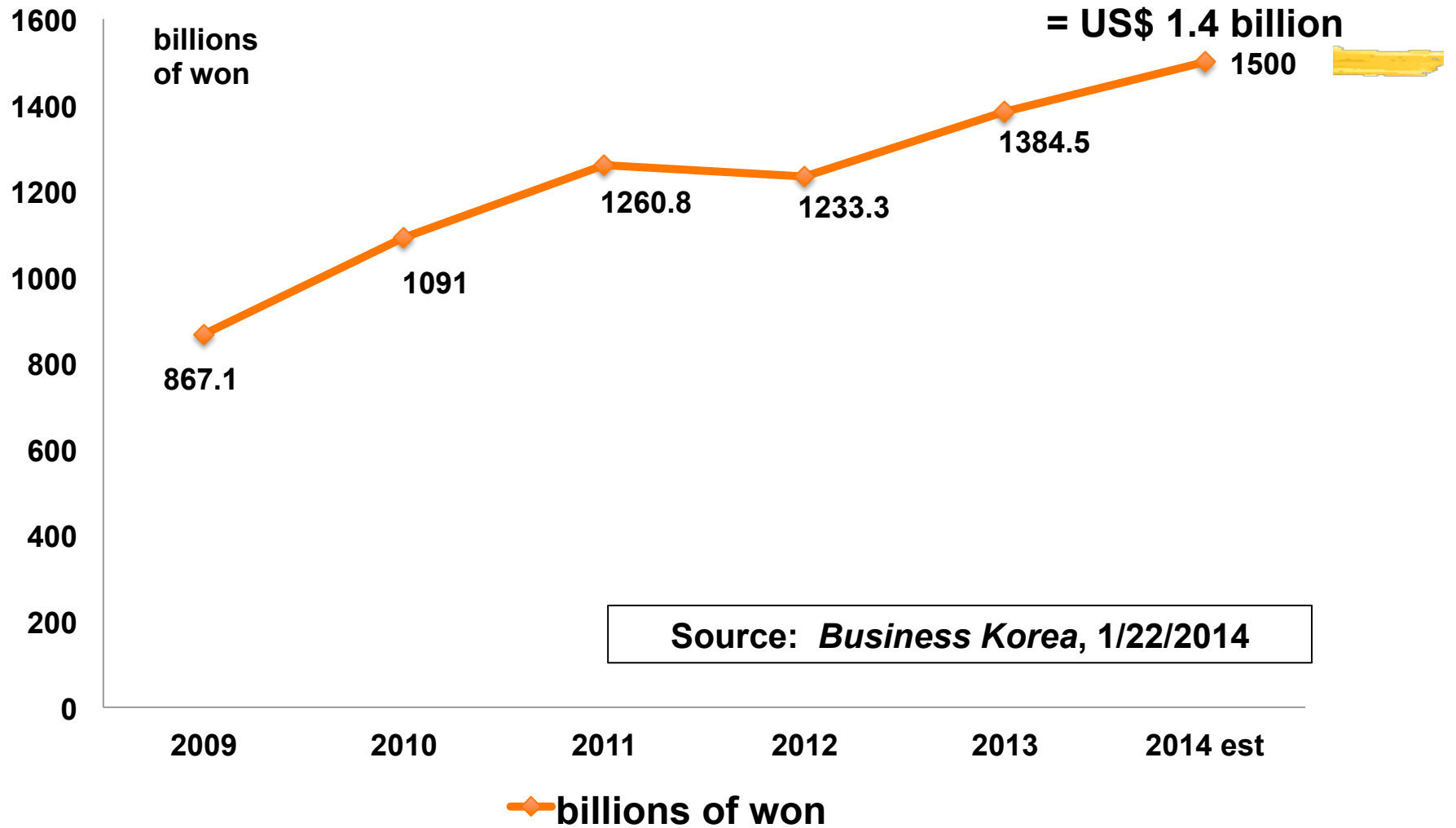
Q2'14 - Q2'15



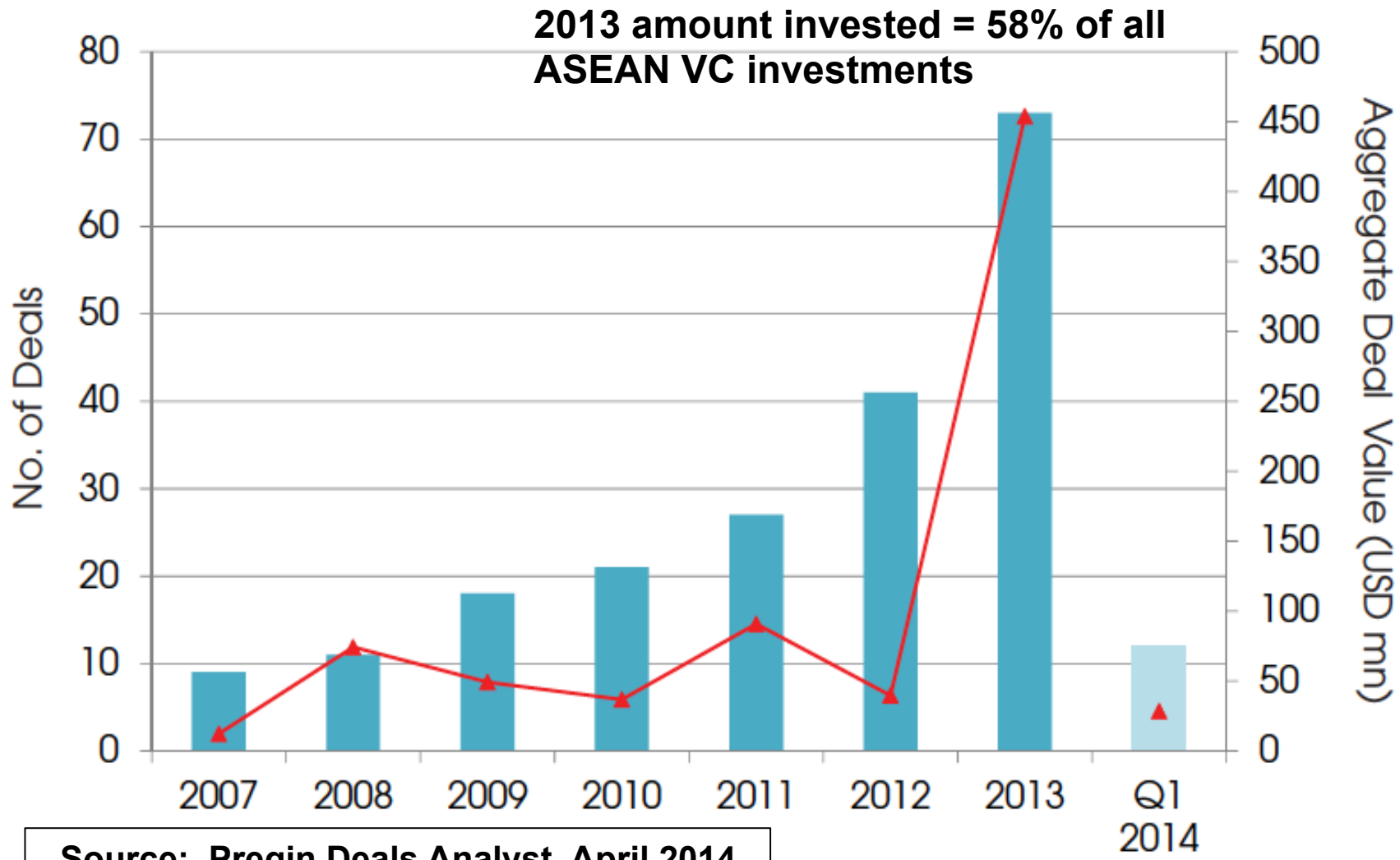
Source: Data provided by CB Insights, July 23, 2015

From <http://techcrunch.com/2015/08/13/in-japan-corporate-venture-capital-is-king/>

South Korean VC investments



Venture Capital Deals in Singapore



Source: Preqin Deals Analyst, April 2014

People flow patterns in Asia



- ◆ **Entrepreneurs do exist everywhere**
- ◆ **Growth stage is the bigger problem: Asia labor markets tend to lack good people who are willing to work for (other people's) startups**
 - ◆ **Incentivization by start-up companies is not sophisticated (startup wages cheap, little equity – creates less team cohesion)**
 - ◆ **“BAT” (Baidu, Alibaba, Tencent) draining off good workers in China**
- ◆ **Social stigma: not only fear of failure, but also reluctance to go to a nonprestige company – family pressure**
- ◆ **Relative lack of mobility – career cost of failure high**
 - ◆ **Entrepreneurs tend to stay with their company after exit – relative lack of clear expectations about exit: so far, few serial entrepreneurs in Asia**

Idea and knowledge flow in Asia

- ◆ **Most Asia countries have focused on increasing IP output from universities, research institutions; emphasis on tech transfer**
 - ◆ **Not enough attention to flow of business knowledge to founders**
- ◆ **Mentoring is not well-developed**
 - ◆ **Considerations of “face”**
 - ◆ **Less confrontational board – management relations**
 - ◆ **Confucian traditions of apprenticeship (imitate the master, don’t expect explanations or analysis)**
- ◆ **Start-up companies arguably have more difficulty getting to market in Asia (except China)**
- ◆ **Failure of open innovation systems – start-up companies lack recipients for ideas**
 - ◆ **Big companies may buy start-ups, but usually fail to realize the potential of the external idea**

Summary and final comments

- ◆ **Entrepreneurship is a major topic of interest all across Asia**
 - ◆ Although “innovation” may be a hotter word this year
 - ◆ Have examined attitudes toward entrepreneurship and also participation in entrepreneurial activities
 - ◆ Ecosystem shows rapid and large increases in VC funding to mid-2015; may be sudden slowdown since then (and this year)
 - ◆ Major government policy initiative to increase funds for entrepreneurial activities in China
- ◆ **Nevertheless, entrepreneurial attitudes and activities are somewhat more constrained this year (2016)**
 - ◆ Concern about overall economic conditions
 - ◆ How will the economic slowdown in China affect rest of world?
 - ◆ When does the bubble burst again? Public market crashes...?
- ◆ **History: the best startups often arise during downturns**