EASTASN 402T Entrepreneurship in Asian High-Tech Industries Stanford University, 3 April 2018



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#### Outline

About this seminar series

Introduction: some current economic / business trends in Asia

• Participation and attitudes toward entrepreneurship in Asia

• Ecosystems for entrepreneurial innovation in Asia economies

#### Discussion

#### Welcome to everyone!

Weekly <u>public</u> lecture / panel discussion series presented by the US-Asia Technology Management Center

• Every Tuesday, through May 29, 2018

See <<u>http://asia.stanford.edu</u>> for upcoming schedule

- Mission: <u>new information and insights</u> into entrepreneurship and supporting ecosystems in Asia high-tech industries
- Available for credit to Stanford students
  - EASTASN-402T "Entrepreneurship in Asian High-Tech Industries"
    - Cross-listed as EALC-402T, EE-402T
    - No pre-requisites, open to undergrads and graduate students
    - May be repeated in future years for credit

### **Seminars 402T – Requirements for Credit**

#### Obtain <u>Syllabus</u> 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 Requirement (A) is waived for students registered through SCPD
  - Evidence of attendance is required: today fill out survey, from next week sign weekly pass-around 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 course assistant
    Pearl Yip < yipearl 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)
  - Comments for today are due by April 17, 2018

#### Some upcoming sessions

- 4/10 Ms. Robin Li, Vice President, GGV Capital "Venture capital and entrepreneurship in China: Women in a rapidly growing ecosystem"
- 4/17 Dr. Rick Wan (Co-Founder & VP, Zmodo Technology Shenzhen Corp.) – "Globalization in Shenzhen: a perspective on business practices in China"
- 4/24 Mr. Allen Miner (Founder & CEO, SunBridge Group) Topic will be about recent trends in Japanese entrepreneurship
- 5/01 Mr. Bobby Lee (Former CEO, BTCC) "What's next for blockchain in China?" (tentative title)
- Subsequent sessions will feature social entrepreneurs, startups and investor perspectives in other regions – SE Asia, S. Korea, etc.



# Some current economic / business trends in major Asia economies

# **GDP of selected economies (2016)**

- calculated at PPP in current international dollars

Size	Economy	GDP (trillions of US\$)	14.	South Korea	1.87 📩
rank			15.	Saudi Arabia	1.76
	World	\$120.70	17.	Canada	1.62
1.	China	21.41	19.	Thailand	1.16
2.	USA	18.62	20.	Australia	1.11
3.	India	8.70	22.	Taiwan	1.13
4.	Japan	5.36	25.	Pakistan	1.01
5.	Germany	4.03	<b>26</b> .	Malaysia	0.86
6.	Russia	3.64	29.	Philippines	0.81
7.	Brazil	3.14	33.	Vietnam	0.60
8.	Indonesia	3.03	35.	Bangladesh	0.58
9.	UK	2.79	40.	Singapore	0.49
10.	France	2.77	43.	Hong Kong	0.43

-- As calc. by World Bank, https://data.worldbank.org/indicator/NY.GDP.MKTP.PP.CD, accessed 2018.03.30

# GDP history @ PPP (current dollars): The Big Five



### GDP history at PPP (current dollars): The "Tigers"



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# GDP history at PPP (current dollars): SE Asia



# Big picture: current economic trends in Asia

**1.** Asia is developing its own ecosystem for growth

One factor: Shift from regional supply chains for EU, US, Japan end-user markets to value chains with end users in Asia

#### Fueled by rise of middle class --

- Retail spending in Asia (excl. Japan):
  10% / year growth over last 5 years
  - Even though general GDP growth in China is slowing toward 6.5%
- Increasing consumer debt (has good and bad consequences)
  - Much Asia consumer debt is shortterm and not fixed-interest
  - But, mortgage debt has increased to 4.5% of household income (2017) up from 3.6% (2015)



"Asian households binge on debt." *The Economist*, 11/02/2017. https://www.economist.com/news/finance-and-economics/21730932-what-should-be-good-news-global-economy-has-itsdownsides-asian-households?zid=306&ah=1b164dbd43b0cb27ba0d4c3b12a5e227> accessed 3/30/2018

1. Asia developing its own ecosystem for growth, continued – self-awareness (DIY) by Asia

#### • TPP-minus-one

- U.S. pulled out of 12-country Trans-Pacific Partnership (regional free trade agreement) early 2017
- Led by Japan & Australia, 11-countries negotiated "Comprehensive and Progressive TPP" agreement
  - Includes almost all of TPP agreement language -- signed 3/2018
- Participants: Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, Vietnam
- Especially innovative in regard to digital economy challenges: data policy, ecommerce, etc.

#### Intra-Asia investment thriving

- Now seeing more major VC investments inside Asia (led by Asian investors) – including many cross-border
- Beginning to see unicorns, more M&A, & impressive IPO exits
- Co-occurs with rise of high net worth individuals (next slide)
- Softbank & China's GCL System Integ Tech: \$930M India solar power

#### High-net-worth individuals

"High-net-worth individuals," *The Economist*, 2017.09.30. https://www.economist.com/news/economic-and-financial-indicators/ 21729761-high-net-worth-individuals accessed 2018.03.30

Global wealth\*, \$trn



Economist.com

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1. Asia developing its own ecosystem for growth, continued

Social and environmental problems are being transformed into opportunities in Asia – drivers include:

- Demographic change aging society
- Social inequality e.g. servicing the "unbanked" (mobile payment systems are a driver of growth at present)
- Awareness of social and environmental needs
  - Business & Sustainable Development Commission report (2017.06.05) estimates \$5 trillion of new Asia business by 2030 from addressing the 17 U.N. Social Development Goals (SDGs) = ~40% of world total
  - BSDC commissioners include Jack Ma (Alibaba), Ho Ching (Temasek CEO), Sunny Verghese (Olam Group CEO)
  - SDG-related new business: China \$2.3 trillion, India \$1.1 trillion, developing/emerging Asia \$1.1 trillion, more developed Asia \$0.7 trillion

Also a driver: Shift to digital economy – leapfrog opportunities (led by mobile payments, electric vehicles, crypto-currencies)

# Big picture: current economic trends in Asia

2. SE Asia is the battleground for global influence

#### **Competition by governments for influence**

- China leads Regional Comprehensive Economic Partnership (RCEP) – a bigger "alternative" to TPP, but less innovative
  - Ten members of ASEAN plus six countries that already have free trade agreements with ASEAN members (Australia, China, India, Japan, South Korea and New Zealand)

#### • One Belt One Road (now officially "Belt and Road Initiative")

- Infrastructure investment and development projects led by China that focus on regional integration, economic & social development
- Expanded from historical Silk Road countries to over 68 countries
- Started along with creation of Asia Infrastructure Investment Bank (AIIB), in which China has 26% stake
- Currently China has put in over \$150 billion; total investment (by all parties) could eventually reach over \$4 trillion dollars
- Other governments may end up owing China a lot of money ...

# SE Asia as a battleground for influence, continued

**Competition via private sector investment**: big deals in SE Asia (as well as rest of world) by Asian corporate investors – examples:

#### Alibaba

- \$1.1 billion investment in Tokopedia (Indonesian ecommerce co.) (8/2017)
- Increased total investment in Singapore-based Lazada (SE Asia wide competitor based in Singapore) to \$4 billion (3/2018)
- In talks to acquire 11Street (ecommerce firm in Malaysia) that previously received backing from (Korean) SK Planet and Malaysian telco Celcom Axiata (10/2017)

#### Tencent

- Along with Chinese ecommerce firm JD.com led \$1.2 billion round in Go-Jek (Indonesia-based Uber competitor, 8/2017)
- Had backed Singapore-based Sea Ltd. (online games), which raised \$884M in U.S. IPO (10/2017)
- Has outspent Alibaba & Baidu on (worldwide) acquisitions (\$62.5 bn since 2012)

# SE Asia as battleground for influence, continued

Battleground for global expansion by digital economy companies

- Amazon starts Prime Now delivery in Singapore (7/2017) & then full Prime membership there (12/2017)
  - Competes against Lazada, Shopee, Tokopedia, ...
  - Lazada had launched own LiveUp membership service in collaboration with Redmart (online grocery), Netflix, Uber (4/2017)
- Expedia: \$350M investment in Traveloka (Indonesia) along with Sequioa, JD.com (Chinese ecommerce)
- Uber selling SE Asia business to Grab (ride hailing company
  - Grab operates in 36 SE Asian cities with over 1.1M drivers; has recently started providing online payment services
  - Grab had obtained \$2 billion funding round by Didi Chuxing (follow-on of earlier investment in Grab) and Softbank (7/2017)
  - Didi Chuxing is said to have "defeated" Uber in China
  - Currently under investigation: anti-competitive? (SG, 4/2018)

# **Big picture – current economic trends in Asia**

#### 3. Changing role of entrepreneurial innovation in growth

	Factor-driven	Efficiency-driven	Innovation-driven
	Economies*	Economies*	Economies*
Typical per-capita	Below approx.	Approx. \$15,000 -	Approx. over
GDP (at PPP)	\$15,000 / year	\$35,000 / year	\$35,000 / year
Societal developments	Industrialization, urbanization	Labor and capital shortages, needs for higher skills	Wealth spreads throughout pop, higher educ. levels
Business opportunities	"Gold rush" to supply basic demands	Develop new markets - domestic or international	Creative, fresh new ideas, "out of the box" thinking
Key competitive strengths	Get there first!	Operational efficiency, rapid scaling, high quality	Manage (allow) risk, early ID of great new ideas, sustain high growth
Distinctive	Basic laws,	IPR, select & promote key industries	Encourage
government	establish		entrepreneurs, bridge
policies	industry base		over "valley of death"

\* Terms from World Economic Forum, chart & analysis original to RD

# Economic development and entrepreneurial innovation in Asia

- Japan, S. Korea slowly moving into "innovation-driven" stage
  - Existing big firms still control B2B markets and are weak at true "open innovation"
  - But, much growth in entrepreneurial activity & supporting ecosystems over last three or four years
- China: entrepreneurial culture, but concerns about a similar "middle income trap" for entrepreneurial innovation
  - Large global Internet companies and also much-improved SOEs: prestigious stable employers – may provide better working conditions & siphon talent away from startups
  - Lots of government research funding to universities and national research institutes, but questionable results in commercialization
  - Setting of national priorities may turn into "picking winners"
  - What will be impact of huge expansion of venture capital?



# Participation and attitudes in Asia toward entrepreneurship

### Introduction: Global Entrepreneurship Monitor

- Two yearly surveys of 54+ economies (countries) around the world – led by Babson College + three partners (in Chile, Malaysia, Korea)
- <u>Adult Population Survey</u> of at least 2,000 adults in each economy described – often many more people
  - Conducted by national teams (e.g. China survey done by Tsinghua University)
  - Four lead partners ensure compliance with standards
     data not reported if, for example, insufficient number of respondents
  - (Not using data from <u>National Expert Survey</u> in this presentation)
    - Survey of opinions of experts in each economy: they provide (subjective) assessments of ecosystem factors (government programs, physical infrastructure, cultural norms, etc.)
- Now 19 years of survey results most recent is 2017-18 GEM Report
- Website includes online database of country-specific data

# **GEM "TEA" (Total Early-Stage Entrepreneurial Activity)**



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# General trend: TEA rate decreases as per cap GDP increases



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# **TEA Rate History - USA**



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#### TEA rate history – Asia economies in world's biggest ten



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#### **TEA rate history – The Tigers**



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# General comments on participation in entrepreneurship in Asia economies

- Given the amazing rise in GDP in many Asia countries, surprising that there are not more noticeable declines in TEA rates
  - China decline \*may\* be related to slowdown of economy
    - But as we will see, offset by remarkable increase in available funding
  - Some structural changes in China
    - Appearance of global MNC size domestic firms (Baidu, Alibaba, Tencent, Huawei, etc.)
      - Their hiring may have negative effect on TEA rate: siphoning off potential entrepreneurs from startup activities

What do attitudes toward entrepreneurship in Asia reveal?

# GEM Survey: Attitudes toward entrepreneurship (among non-entrepreneurs)



### **USA: Attitudes and TEA - History**



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#### China: Attitudes and TEA -- History



#### S. Korea: Attitudes and TEA -- History



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#### Japan: Attitudes and TEA -- History





# **Entrepreneurship ecosystems in Asia**

Basic elements of an innovation <u>system</u> -- 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 (who receive stock)	Labor force (a) willing to work in startup (b) Capable of growing company	Flexible labor market: post-exit opportunities for founders, employees
ldeas/ 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
Infrastruc- ture	Physical: incubators Legal and accounting infrastructure, consultants (paid)	Physical location, access to markets, Legal & accounting infra., etc.	Business infra: bankruptcy law, transparent accounting, etc.

# **Capital flow patterns in Asia**

- Begin with friends and family money: feature of 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)
  - Flood of VC funds in China
  - Domestic VCs tend to reflect traditional financial institution investing
  - More Silicon Valley influence: initiatives by SV investors, local investors with SV background
  - Exit patterns differ greatly
    - U.S.: 90% via acquisition, much larger IPOs, smaller % held by founders (in comparison to Asia patterns)
    - In S. Korea, Japan: 85 90% of exits are by IPO, entrepreneur may keep over 50% of stock

#### Venture Capital – Worldwide 2012 – 2017



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# VC in China: Driven by government money, large investment firms into tech, strategic CVC, and ...



Source: Venture Pulse, Q4'17, Global Analysis of Venture Funding, KPMG Enterprise. Data provided by PitchBook, January 16, 2018.

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### VC Trends: World's largest mega-deals in Q4 2017

Company	Location	Industry	Amount Raised (\$M)	Investors (selected)
Didi Chuxing	Beijing	Mobile commerce	\$4,000	Mubadala Investment Co., Softbank Group
China Internet Plus (Meituan Dianping)	Beijing	Ecommerce	4,000	Coatue Mgmt, IDG Capital, Sequoia China
Lyft	San Francisco	Mobile commerce	1,500	(Oct., Dec. PE rounds) capitalG (Google)
Grail	Menlo Park	Biotech	1,212	(Raised from March); Arch Ventures, Dentsu
NIO	Shanghai	Auto mfr	1,000	Bailie Gifford & Co, China Asset Mgt Co
Faraday Future	Los Angeles	Auto mfr	1,000	Undisclosed

Exits by venture-backed companies in U.S.



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Exits by venture backed companies in Asia

Source: Venture Pulse, Q4'17, Global Analysis of Venture Funding, KPMG Enterprise. \*As of 12/31/2017. Data provided by PitchBook, January 16, 2018.

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### Exits in China still predominantly via IPO



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

#### VC in India: number of deals down, but a few megadeals



Source: Venture Pulse, Q4'17, Global Analysis of Venture Funding, KPMG Enterprise. Data provided by PitchBook, January 16, 2018.

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#### VC in other Asia countries

#### Japan

- Startups in Japan raised Yen 271.7 billion (= US\$2.5 bn) in 2017
- Compare to Yen 63.6 billion in 2012
- Strategic CVC by Japanese companies accounted for about \$671M (obviously not including Softbank Vision etc.)
- Over half of Japanese CVC went to outside Japan
- S. Korea
  - Startups raised about US\$574M in 2017
  - 37% decline from 2016
  - 54 startups raised at least \$1M each
  - Naver and Kakao active in M&A and CVC
- Singapore
  - \$1.2 billion invested in 2017 (112 deals)

#### SE Asia funding is happening mostly in Singapore



#### Interesting summation of VC investing



Growth in both deal value and volume, 2009-14

48

#### **People flow patterns in Asia**

- Entrepreneurs exist everywhere
- Growth stage is the bigger problem in Asia: labor markets tend to lack good people who are willing to work for (other people's) startups
  - Incentivization by start-up companies is still not sophisticated (startup wages are cheap, little equity – creates less team cohesion)
  - "BAT" (Baidu, Alibaba, Tencent) draining off good workers in China
- Social stigma: not only fear of failure often cited, but GEM data suggests that perceived lack of opportunities is bigger problem
- Relative lack of mobility in some countries 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 – 1

- Asia developing its own (independent) ecosystem for entrepreneurial growth
  - New drivers of growth: continuing economic structural change in China, growth of middle class in SE Asia, new solutions to societal needs
  - Growth of Asia investment community: China moves into world prominence
- SE Asia is hot spot for competition among global influencers success in Asia markets will provide global platforms for winners
  - Dangers for U.S. digital economy companies if we cannot access
- Entrepreneurship and ecosystems: robust and growing in Asia
  - Attitudes toward opportunities for entrepreneurs reveals ecosystem development (although fear of failure is evident)
  - Still some ecosystem weaknesses in Asia: mentoring, open innovation, (not discussed much) university-industry relations

# Summary and final comments

2. Factors to watch in 2018

Overall economic and political conditions: trade war?

• Emerging VC industry, especially in China & SE Asia

- Will it be too influenced by government strategic objectives and general hype?
- Is AI the next dot-com bubble?
- Development of capacity for open innovation by big companies
  - M&A, CVC, and business partnerships with startups are beginning to happen, but big companies are not obtaining the potential value
  - It will take longer than one year to develop this capacity