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Agenda Item: 6a

Digital Nation: Policy Levers for Investment and Growth

Purpose: Information
Submitted by: APEC Secretariat (On behalf of AlphaBeta)

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Digital Nation: Policy levers for investment and growth

Presentation for the Asia Pacific Economic Cooperation Ministers' meeting






αlphaβeta
strategy x economics

Introduction - Our research in numbers:

- **11 economies** analyzed across the Asia Pacific: **Australia, India, Indonesia, Chinese Taipei, Japan, New Zealand, Singapore, Republic of Korea, Malaysia, Thailand, and Viet Nam**
- **~300 interviews and surveys** of people working in digital **Startups**, **Multi-National Enterprises**, and **Investors**
- **~4.9 million** **core app jobs** estimated through web crawling and big data aggregation
- **3,600** mobile applications examined in **18** of the **world's top digital markets**
- **20** **Digital Multi-National Enterprises** considered for deep-dives on their involvement in the region for the past **5 years**

Agenda

- **How do we define a Digital Nation?**
- Policy levers: how to drive investment and growth?
- Measures of success: How are Asia-Pacific economies faring?
- What are the lessons for policymakers?

How do we define a Digital Nation?

"A **Digital Nation is one that is an active driver of the digital economy** – as opposed to simply a passive recipient of digital products and services"

What is a Digital Nation?

*Whilst **passive recipients** of the digital economy only focus on levers such as…*	*…**Digital Nations** go further to focus on additional levers such as…*
▪ Promoting general **digital literacy** among population	▪ Developing **ad-hoc programs** for **workforce re/up-skilling** to account for innovation shifts (e.g., automation, e-commerce, etc.)
▪ **Passively waiting** for foreign direct investment	▪ **Attracting, retaining, and embedding** digital multinationals
▪ **Improving universal access** to broadband	▪ **Supporting innovative startups** through government grants and incentives
▪ **Adjusting regulations** only when the need arises and not considering their impact of regulatory change on investment	▪ **Experimenting approaches** (e.g., regulatory sandboxes) for firms to explore new products

Agenda

- How do we define a Digital Nation?
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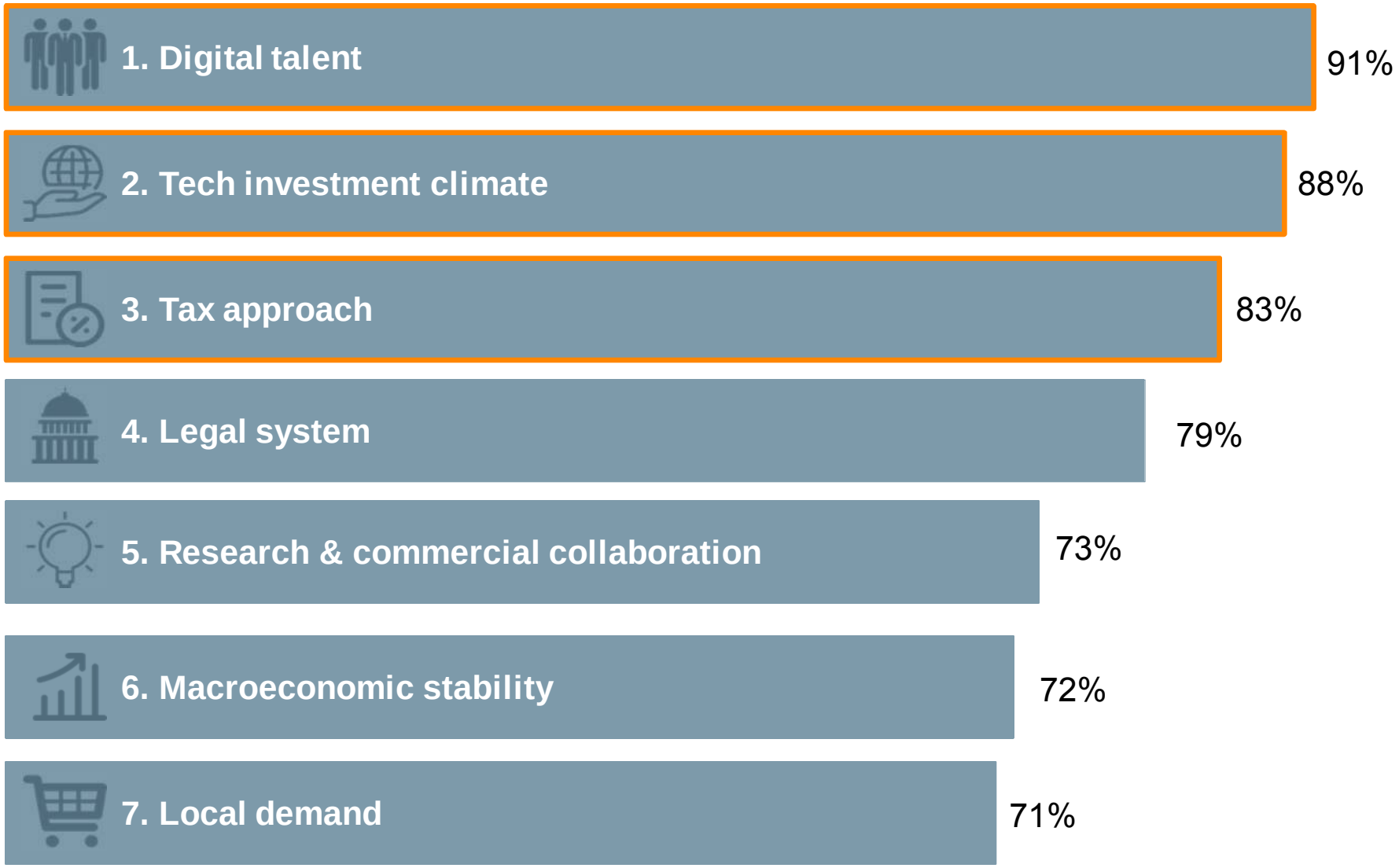
Seven policy levers that economies can pull to become Digital Nations

- Digital talent
- Legal system
- Tech investment climate
- Collaborative innovation ecosystem
- Tax approach
- Stable political and macro environment
- Local demand

Which levers matter the most?

% of respondents that agree that the policy lever is important to becoming a Digital Nation[1]

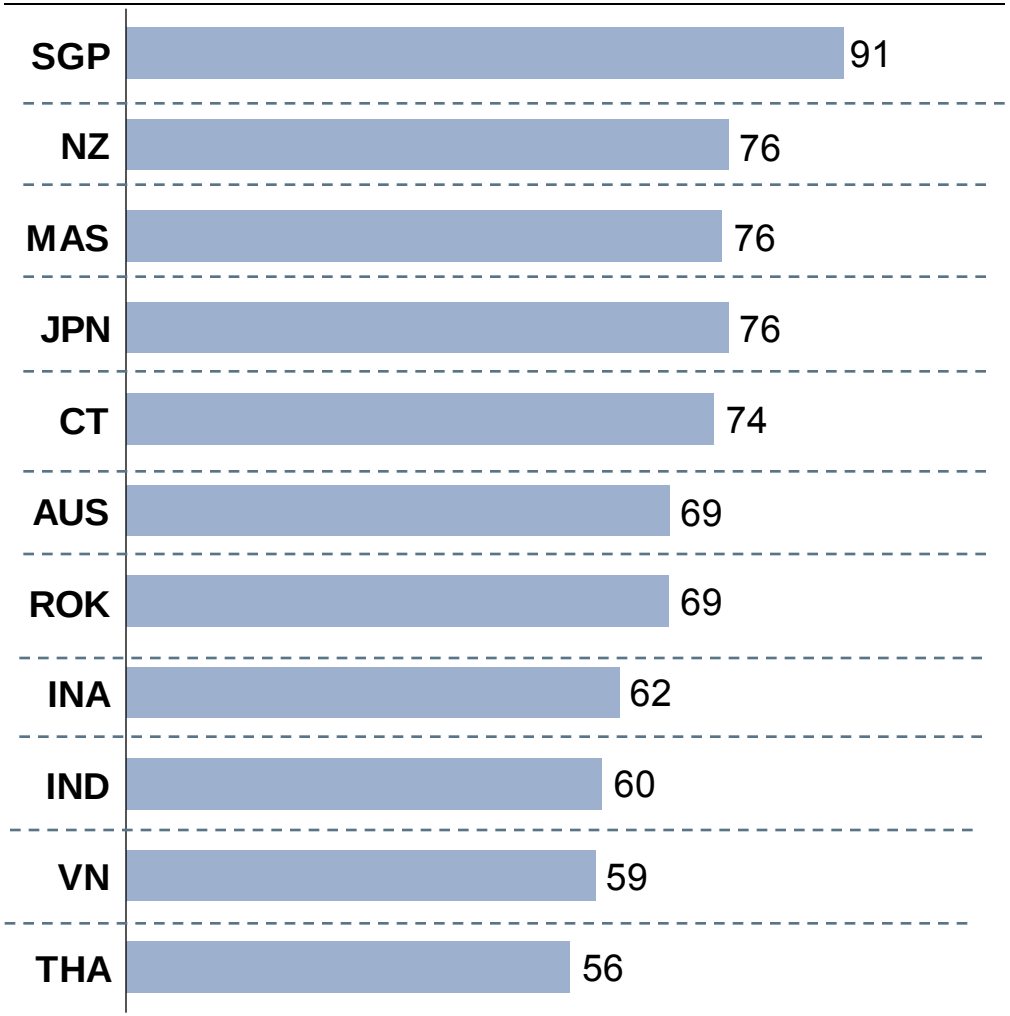


Perceptions on digital talent in Asia Pacific

Current performance ranking		% agreeing with good performance so far	Perceived future trajectory
1	India	74%	↑
2	Singapore	63%	↑
3	Viet Nam	61%	↑
4	Republic of Korea	59%	↑
5	Australia	58%	=
6	Japan	50%	=
7	Malaysia	50%	=
8	Chinese Taipei	50%	=
9	New Zealand	39%	=
10	Thailand	28%	=
11	Indonesia	0%	=

Digital talent goes beyond quality of traditional education

Quality of math and science education. *Max score =100*



Insights from AlphaBeta interviews

"Quality of education is important, but **mentality plays a very big role**"

"You need to teach people **how to take risks**…people in Japan are so afraid of failure that sometimes do not even try it"

"Vietnamese youngsters are so **entrepreneurial and flexible**… as soon as there is an opportunity, they are ready to go all the way for it"

Source: World Economic Forum, AlphaBeta interviews

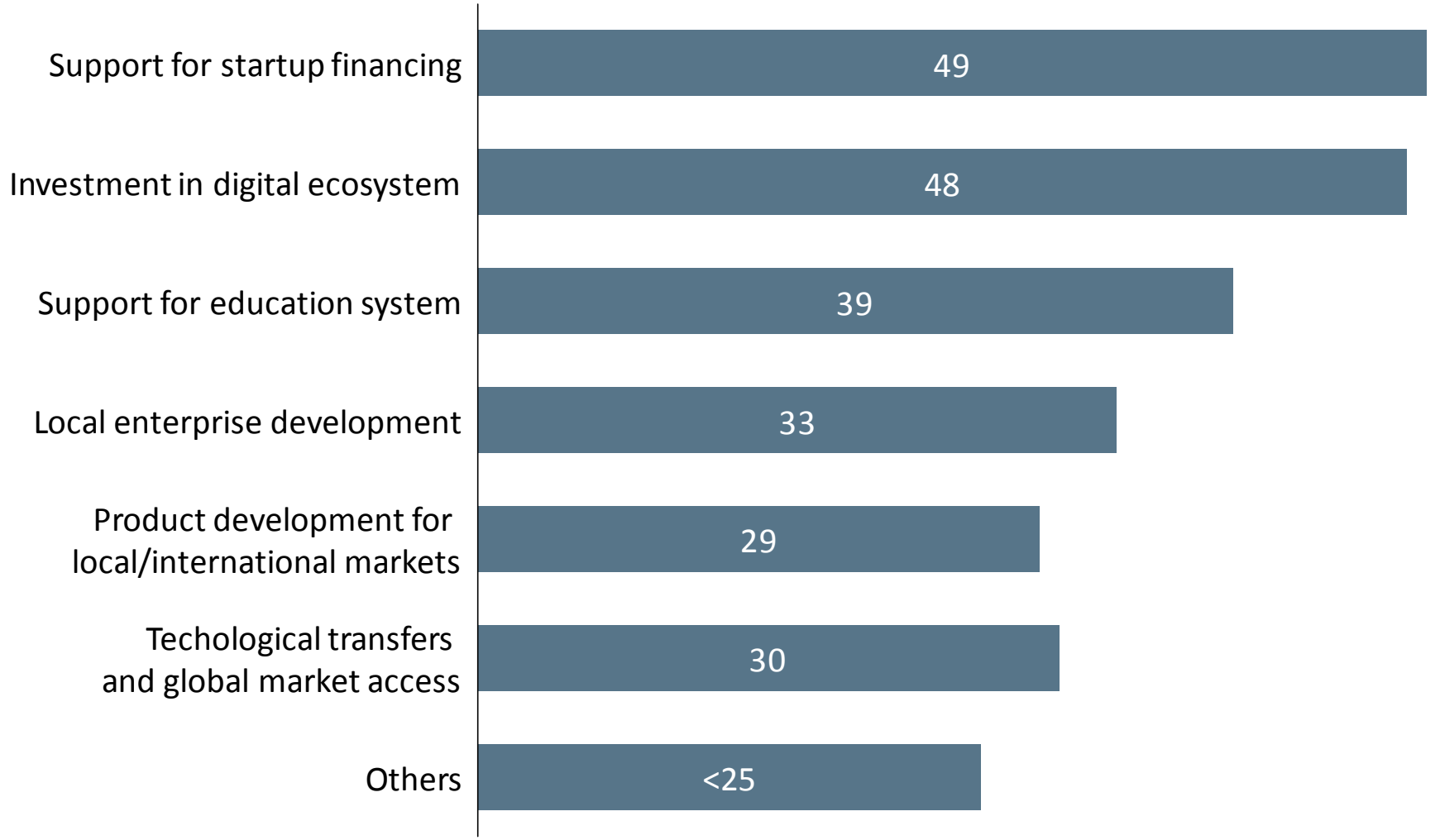
Perceptions on tech investment climate in Asia Pacific

Current performance ranking		% agreeing with good performance so far	Perceived future trajectory
1	Singapore	97%	↑
2	Viet Nam	83%	↑
3	New Zealand	78%	=
4	Malaysia	71%	↑
5	Australia	58%	↑
6	India	58%	↑
7	Republic of Korea	32%	↑
8	Thailand	35%	↓
9	Indonesia	35%	↓
10	Japan	25%	↓
11	Chinese Taipei	14%	↓

What do startups care about?

Contribution of MNEs on Digital Nation development

% of startups perceiving this channel among the top 3 MNE contributions



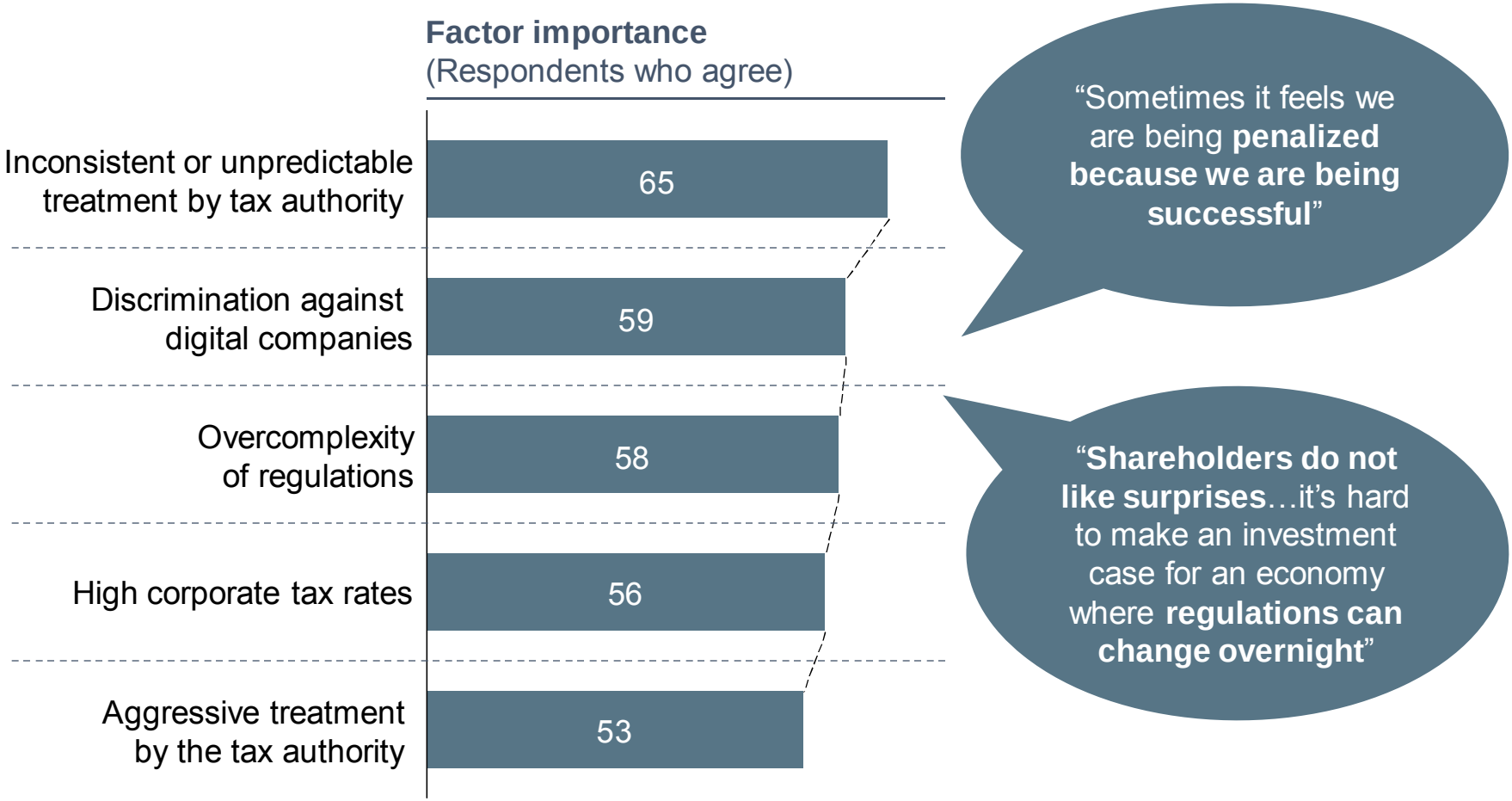
Perceptions on tax approach in Asia Pacific

Current performance ranking		% agreeing with good performance so far	Perceived future trajectory
1	Singapore	100%	=
2	New Zealand	77%	↘
3	Malaysia	72%	↗
4	Republic of Korea	61%	=
5	Australia	54%	↘
6	Viet Nam	45%	↘
7	India	43%	↘
8	Chinese Taipei	33%	↘
9	Japan	33%	↘
10	Indonesia	29%	↘
11	Thailand	20%	↘

What matters the most about the tax approach?

Tax-specific issues

% of APAC interviewees



Agenda

- How do we define a Digital Nation?
- Policy levers: how to drive investment and growth?
- **Measures of success: How are Asia-Pacific economies faring?**
- What are the lessons for policymakers?

There are four dimensions to measure Digital Nation success

Financial capital

Access to financing throughout the stages of firm growth

Digital products

Range of innovations in the digital space, including app and IP development

Human capital

High quality pipeline of local talent and access to top foreign talent

Digital community

Active group of local and foreign firms in the digital space

The race for digital leadership is still open: No single economy outperforms across all areas

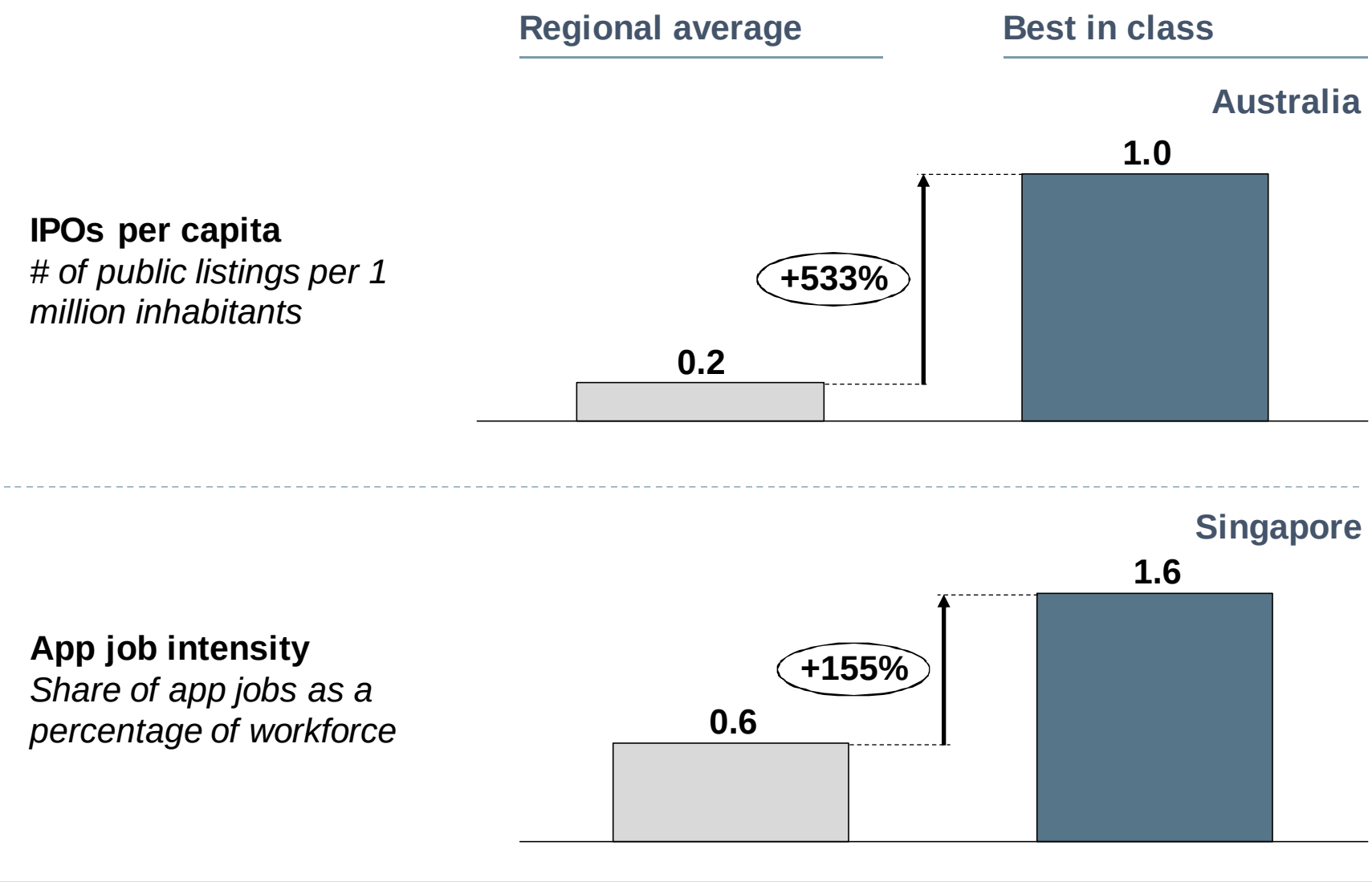
AlphaBeta Digital Nation Scorecard

Rank	Economy	Financial capital	Digital products	Human Capital	Digital Community
1	Singapore	Australia	Republic of Korea	Singapore	Japan
2	Australia	Singapore	Japan	Malaysia	Singapore
3	Republic of Korea	Japan	Chinese Taipei	New Zealand	Australia
4	Japan	Chinese Taipei	Australia	India	India
5	New Zealand	Malaysia	New Zealand	Chinese Taipei	Republic of Korea
6	Chinese Taipei	New Zealand	Singapore	Australia	New Zealand
7	Malaysia	India	Malaysia	Republic of Korea	Chinese Taipei
8	India	Indonesia	Viet Nam	Indonesia	Indonesia
9	Indonesia	Thailand	India	Japan	Malaysia
10	Thailand	Republic of Korea	Indonesia	Thailand	Thailand
11	Viet Nam	Viet Nam	Thailand	Viet Nam	Viet Nam

Some of the outcome results are surprising

	Excelling			Under-performing	
Venture Capital Availability *(score, max = 7)*	MAS	4.8	V.S	ROK	2.6
Digital Patents *(# of 2016 grants, per 1 mln inhabitants)*	ROK	214	V.S	NZ	27
Top free apps development *(Rank)*	ROK	1st	V.S	IND	7th
Top paid apps development *(Rank)*	NZ	1st	V.S	SGP	10th

Billions of dollars and millions of jobs at stake



IPOs per capita
# of public listings per 1 million inhabitants

App job intensity
Share of app jobs as a percentage of workforce

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Four key lessons emerge for policymakers to build a Digital Nation

Shift from thinking about occupations to skills

Embed multinationals as anchors

Rethink tax: approach more important than rate

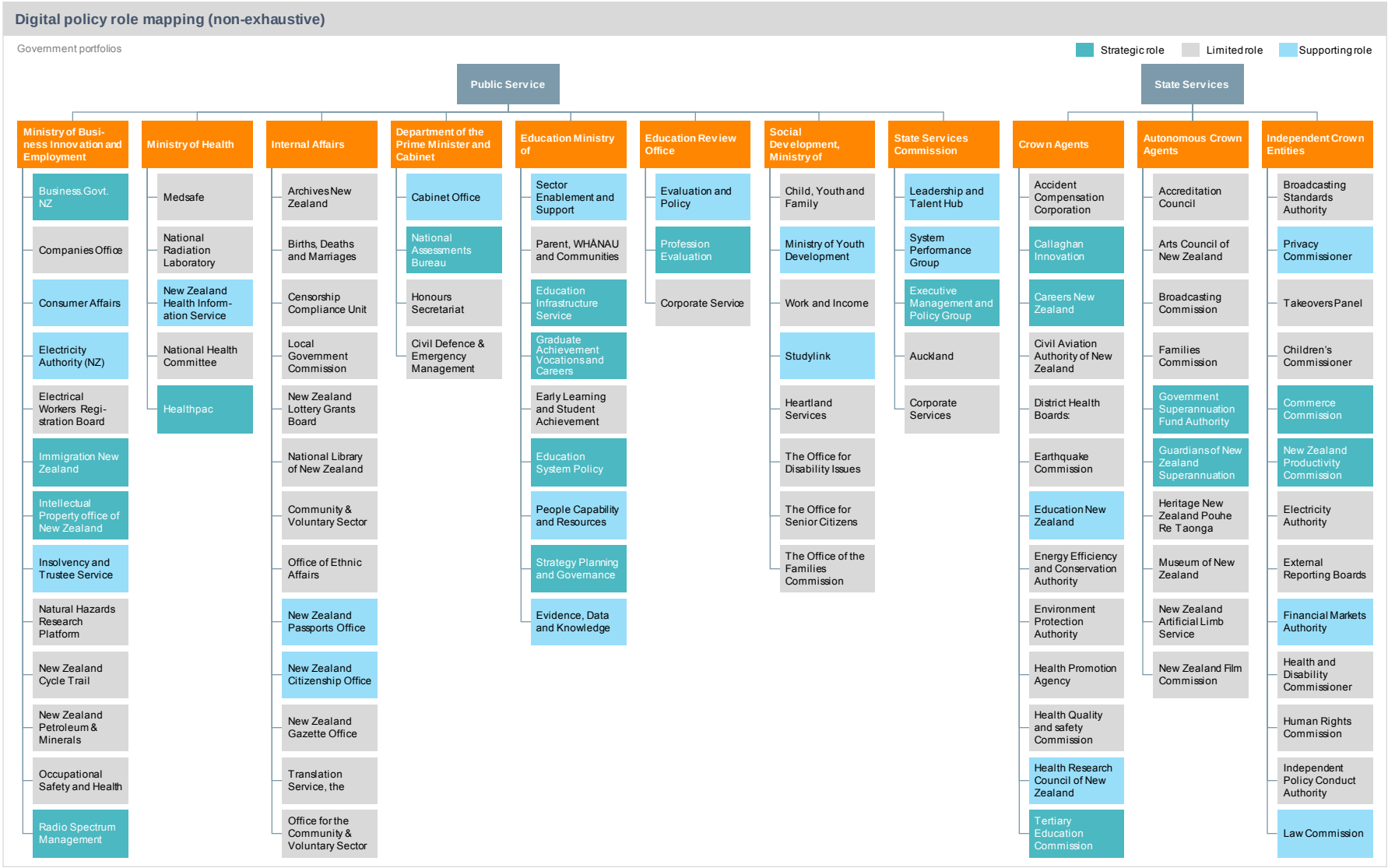
Drive coordination from the top

Thank you

BACK-UP

Over 38 government bodies in New Zealand play a role in implementing policies to develop the digital economy

PRELIMINARY



Outcome scorecard indicators: Definition and sources

Dimension	Indicators	Source
Financial Capital	▪ **Venture capital availability.** Perceived ease for companies to access equity funding for seeding, starting and expanding a business.	WEF Global Competitiveness Index 2016-2017
	▪ **Digital IPOs.** Number of digital firms, i.e., firms that produce goods or services that a related to the digital economy, which successfully raised public capital through listing on the economy's securities exchange – in 2015 and 2016. (Standardized to 1 million inhabitants)	Bloomberg database
Digital Community	▪ **Startups.** Number of local startups in an economy conducting business activities in the digital sector. (Standardized to 1 million inhabitants)	Tech in Asia; Angel list; Temasek and Google report
	▪ **National champions.** Market value of the three largest domestic digital companies (as of end 2016).	Desktop research
	▪ **MNE Contribution.** Index which measures the contribution of the top 20 digital MNEs across 10 impact channels (Investment in digital hub ecosystem; support for startup financing; signalling; product development for local/international market; technological transfers; local enterprise development; awareness and stakeholder education; supply chain development; support for education system; entrepreneurship training	Desktop research
Digital Products	▪ **Top free and paid apps**. Index which measures the relative number of downloaded apps from the 11 APAC economies across 18 markets (i.e. 11 APAC countries plus the largest ones for each other region). Standardized to population size	App Annie
	▪ **Digital patent grants.** Number of original products created by companies in a given economy - in 2015. Only patent grants filed under the category of "digital communication" or "computer technology" have been included (Standardized to population size)	World Intellectual Property Office (WIPO)
Human Capital	▪ **Talent attraction.** Perceived ability of an economy to interest top talent to reside within the economy.	WEF Global Competitiveness Index 2016-2017
	▪ **Talent retention.** Perceived ability of an economy to keep top talent.	WEF Global Competitiveness Index 2016-2017
	▪ **App job market.** Total number of mobile application-related jobs as a share of the economy's total workforce. Only includes core app-related jobs	Job vacancy data from Indeed.com. ICT sector employment from statistics bureaus
Calculation	▪ An economy's score for each indicator was calculated using the percentage difference from the best in class. i.e., the best in class scores 100%. This method provides a more accurate and scaled measurement to reflect the performance of the 11 economies between each other and within indicators. Overall rankings reflect the sum of these scores (across 11 indicators).	

Driver survey and methodology

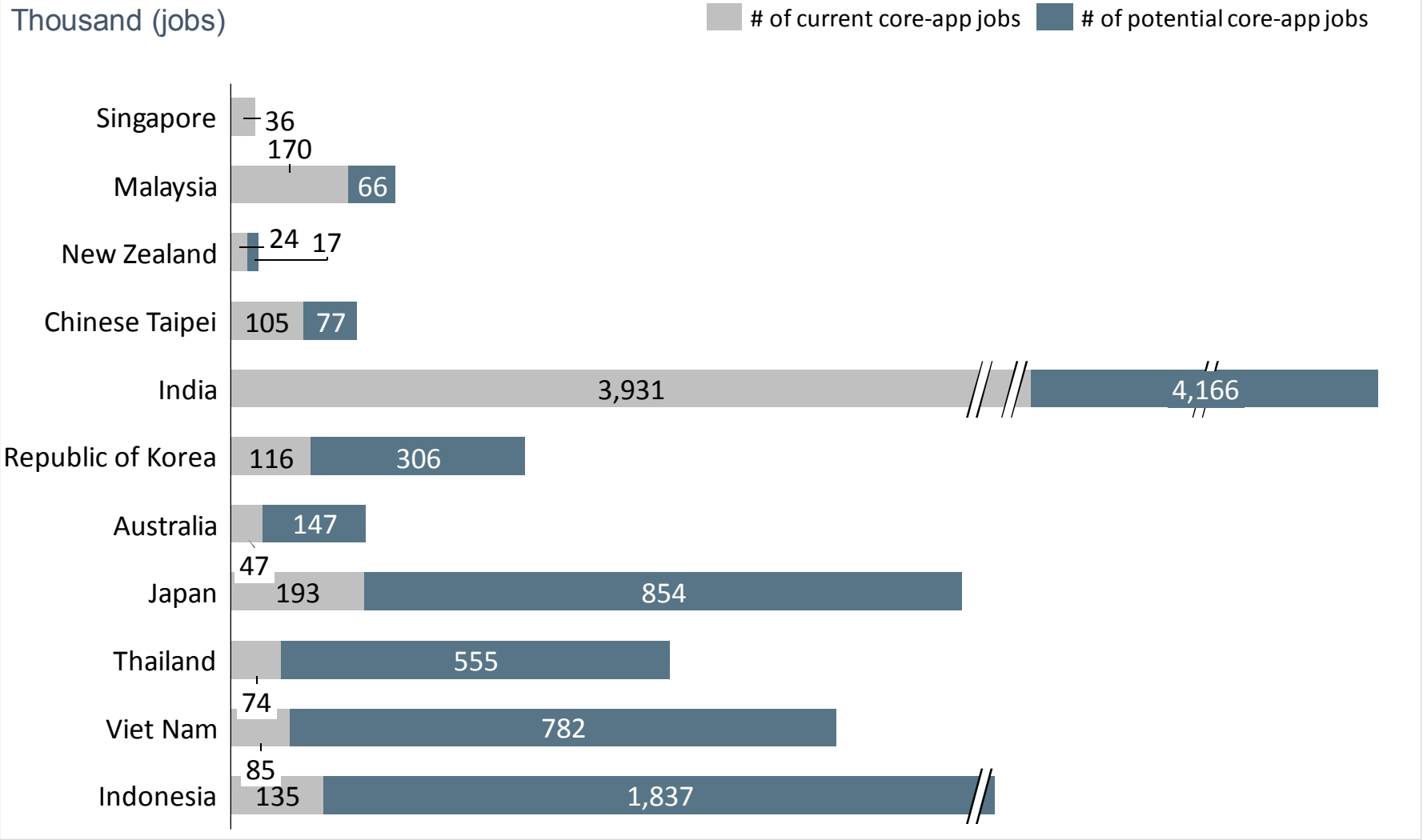
- AlphaBeta commissioned a survey across 11 Asia Pacific economies to develop an understanding of various stakeholders' perceptions on key issues linked to the development of Digital Nation
- Surveys were administered through an online survey provider, Survey Monkey, to 2 groups of stakeholders in the digital ecosystem:
  - Senior figures in leading digital **Multi-National Enterprises and investors (over 130)**
  - Entrepreneurs and employees from digital **startups (over 120)**
- In New Zealand, over **35 respondents** (equally split) completed the online survey.
- The survey consisted of 11-13 questions and covered the following areas:
  - **Role of digital Multi-National Enterprises (MNEs).** Respondents were asked 2 questions to evaluate the role of digital MNEs to support the growth the digital sector – Particularly the contribution of digital MNEs across 10 different channels.
  - **Factors important to create a "Digital Nations"**. This section contained 3 questions focused on understanding the importance of 7 drivers in relation to the development of a Digital Nation
  - **Key areas which require additional government support**. Respondents were given an open ended question which asked them to identify key areas which governments can play a larger role to improve the digital ecosystem.

MNEs contribute to the local digital economy through 10 distinct channels

Dimension	Channel	Description
Financial capital	**Investment in digital ecosystem**	Provide capital investments to develop and support digital hub ecosystem
	Support for start-up financing	Provide capital for local start-ups through corporate venturing
	Signaling	Signal commitment to the economy to stimulate investment by other MNEs
Digital products	**Product development for local/international market**	Conduct R&D which spurs innovation and creates new products for local markets and potentially overseas
	Technological transfer and global market access	Bring world-class technology and global markets access (e.g., via app stores) to enable local innovation and enterprise growth at close to zero cost
Human capital	**Support for education system**	Foster the development of education ecosystems which promote the development of talent to support the digital economy
	Entrepreneurship training	Act as a platform for local talent to gain experience of working at leading MNE, providing them the knowledge to found their own companies
Digital community	**Local enterprise development**	Enter into partnerships with local firms, tech hubs and incubators, to support their growth
	Awareness and stakeholder education	Interact with local stakeholders, especially political ones, to spread awareness on the benefits of digital, strengthening the (fact) base for (public) investment
	Supply chain development	Outsource parts of the value chain to local companies, enabling them to acquire scale and size to profitably expand abroad and other areas of the value chain

If the app job market across the 11 economies analyzed was as good as in Singapore, there would be an extra ~8 million app jobs

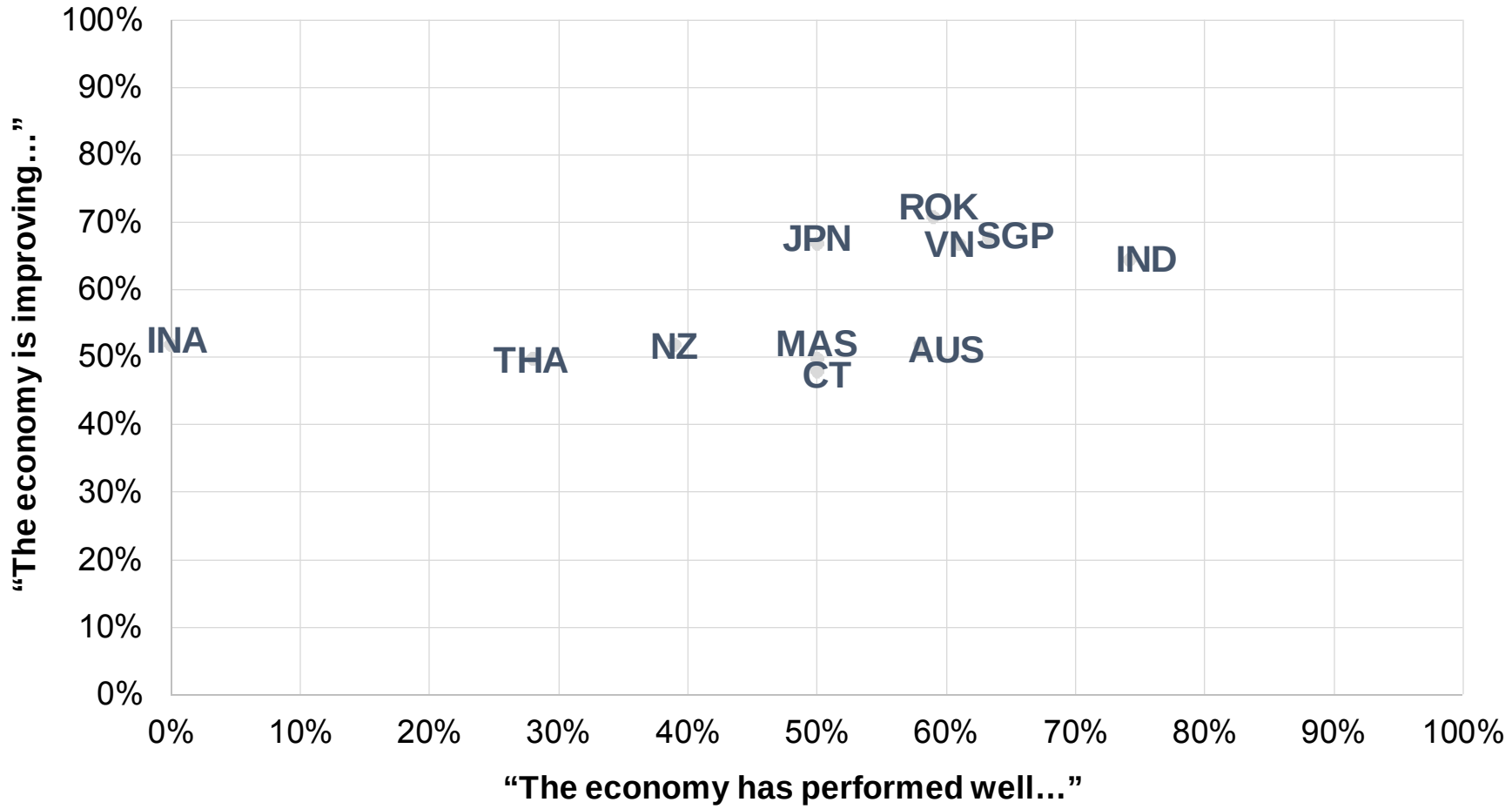
App job intensity and potential job creation[1]



Perceptions on digital talent in Asia Pacific

Digital Nation perception survey

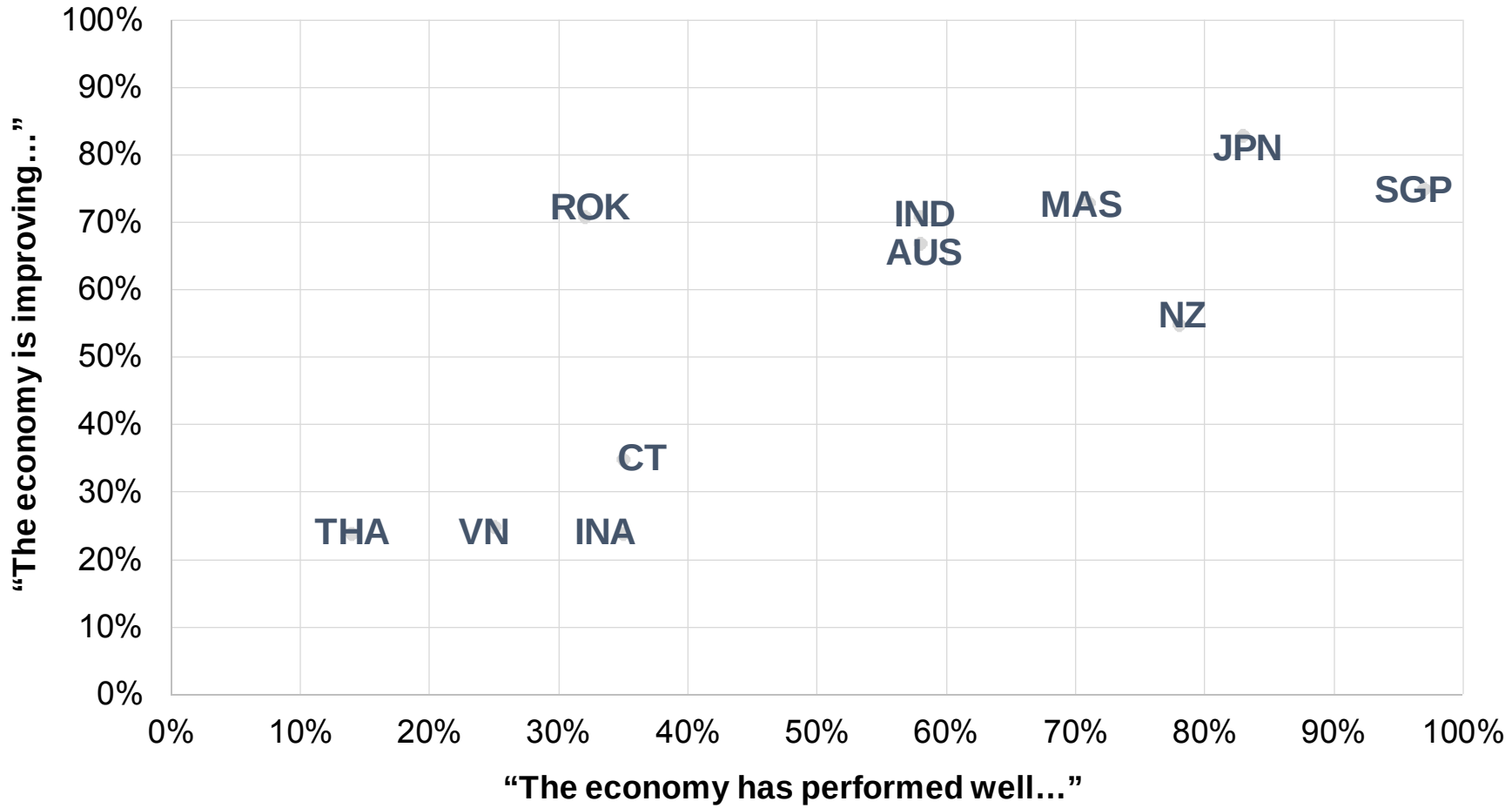
% of respondents who agree with the statement



Perceptions on tech investment climate in Asia Pacific

Digital Nation perception survey

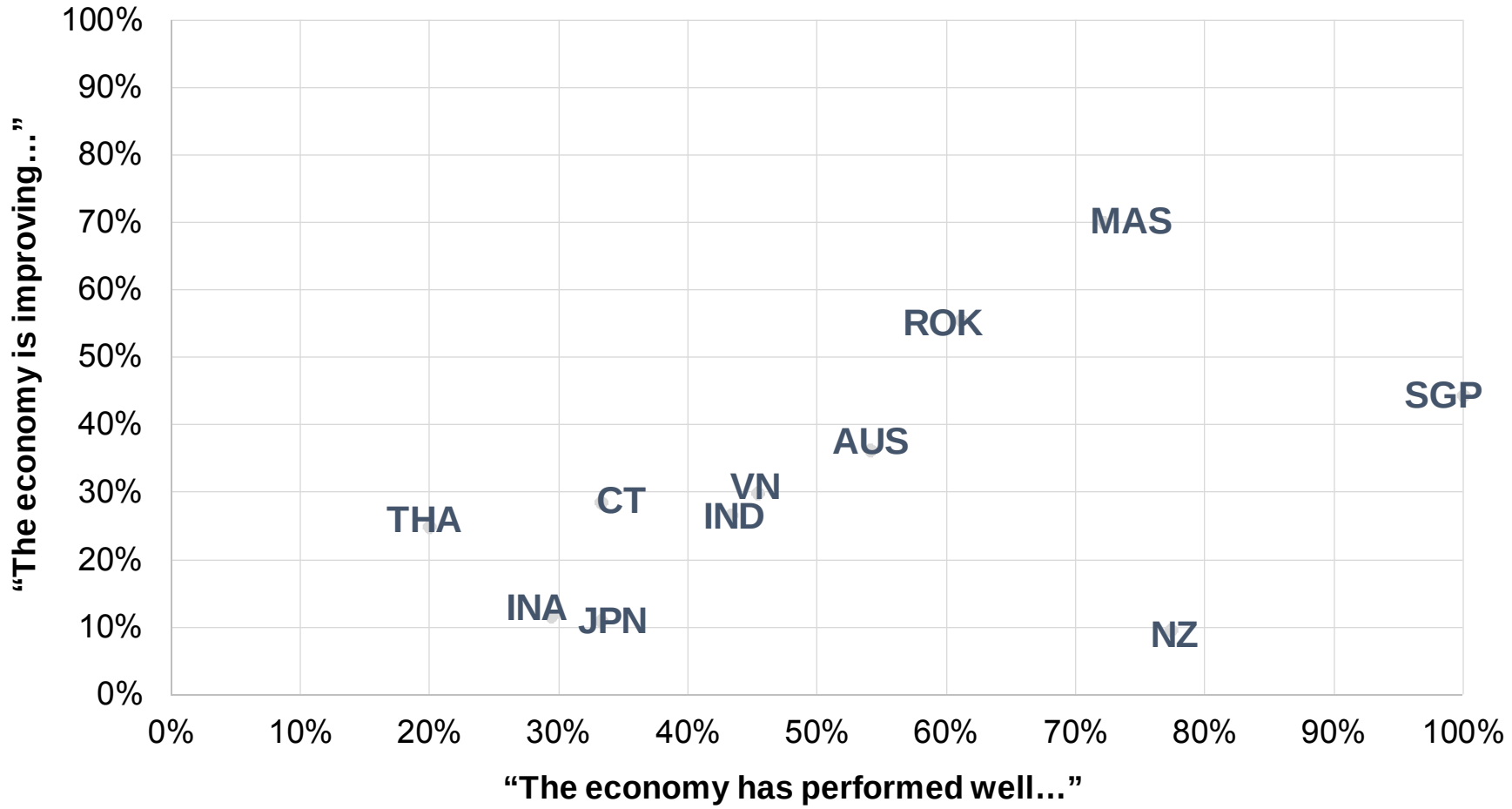
% of respondents who agree with the statement



Perceptions on tax approach in Asia Pacific

Digital Nation perception survey

% of respondents who agree with the statement



Detailed profiles – in alphabetical order

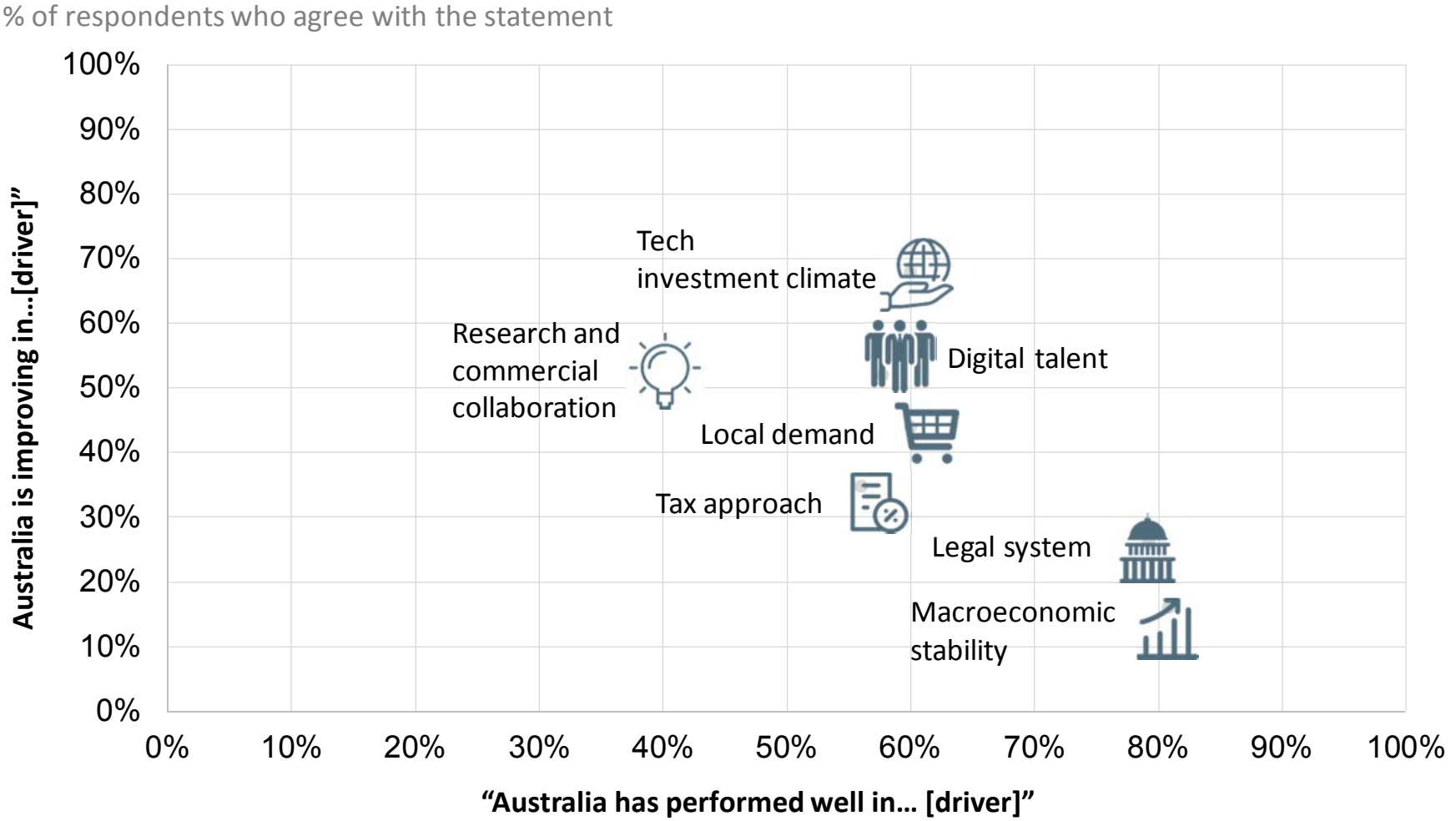
Australia ranks 2nd on the overall scorecard: 1st in financial capital and 3rd in digital community

Dimension	Sub-Dimension	Performance as % of best in class	Rank
Financial capital (1st)	**Venture capital availability** (WEF GCI 2016/17)	20% 40% 60% 80% MAS	9th
	Digital IPOs (2015-16) (Per million inhabitants)		1st
Digital products (4th)	**Top free apps download index** (weighted by population size)	ROK	3rd
	Top paid apps download index (Weighted by population size)	NZ	2nd
	Digital patent grants (standardized by population)	ROK	5th
Human capital (6th)	**Talent attraction** (WEF GCI 2016/17)	SGP	4th
	Talent retention (WEF GCI 2016/17)	SGP	3rd
	App job market (% of labor force)	SGP	7th
Digital community (3rd)	**Number of tech startups** (Per million inhabitants)	SGP	2nd
	Market value of the top 3 tech firms listed locally	JPN	4th
	Digital MNE Contribution index	IND	5th

SOURCE:Literature review, AlphaBeta analysis

Australia's tech investment climate is perceived as strong so far, but tax approach and macro stability are not expected to improve

Digital Nation perception survey



SOURCE: AlphaBeta Digital Nation survey

Chinese Taipei ranks 7th on the overall scorecard: 3rd in digital products and 4th in financial capital

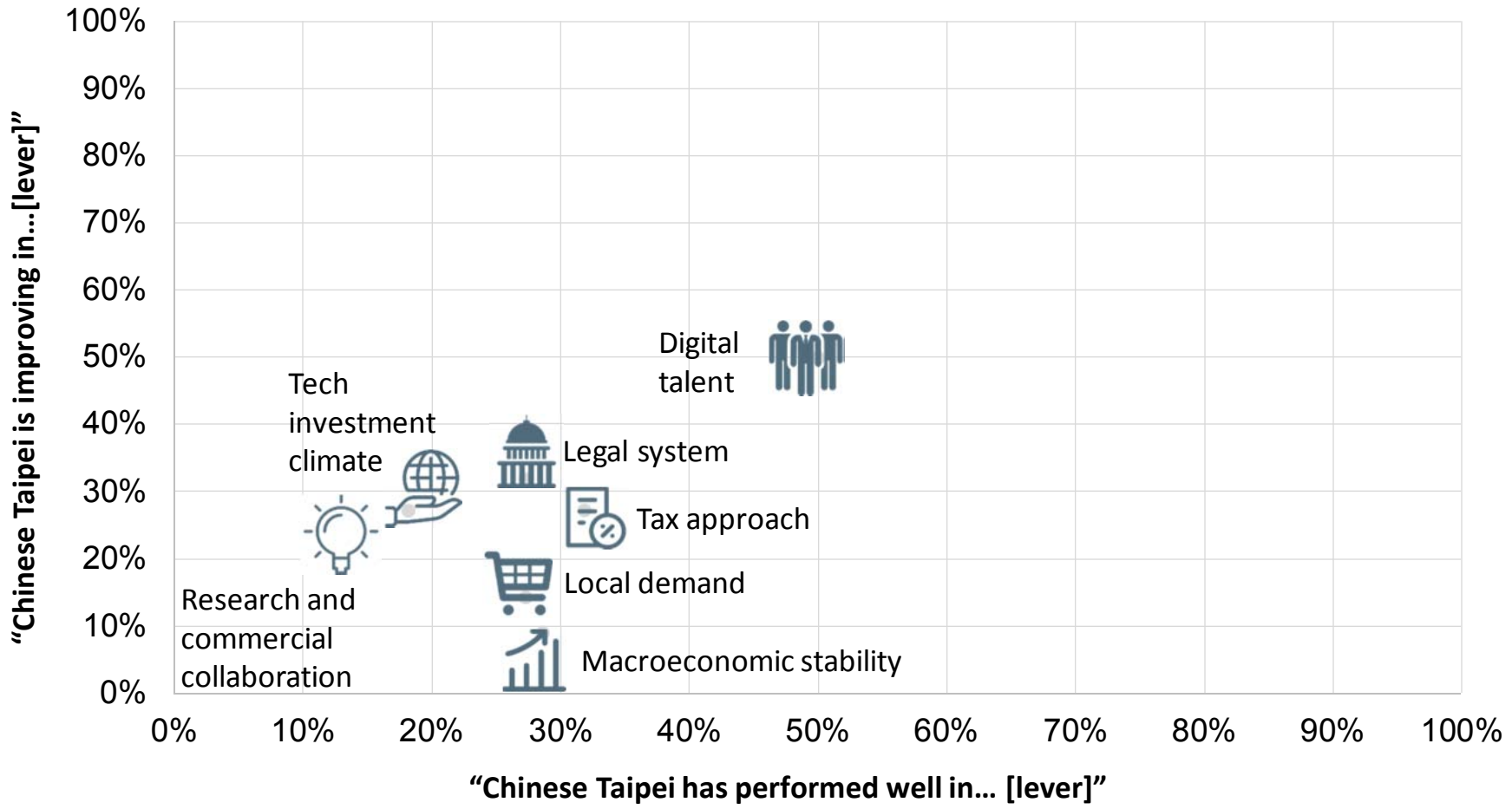
Dimension	Sub-Dimension	Performance as % of best in class	Rank
Financial capital (4th)	**Venture capital availability** (WEF GCI 2016/17)	MAS	3rd
	Digital IPOs (2015-16) (Per million inhabitants)	AUS	3rd
Digital products (3rd)	**Top free apps download index** (weighted by population size)	ROK	4th
	Top paid apps download index (Weighted by population size)	NZ	5th
	Digital patent grants (standardized by population)	ROK	2nd
Human capital (5th)	**Talent attraction** (WEF GCI 2016/17)	SGP	9th
	Talent retention (WEF GCI 2016/17)	SGP	9th
	App job market (% of labor force)	SGP	4th
Digital community (7th)	**Number of tech startups** (Per million inhabitants)	SGP	5th
	Market value of the top 3 tech firms listed locally	JPN	6th
	Digital MNE Contribution index	IND	7th

SOURCE:Literature review, AlphaBeta analysis

Apart from digital talent, few respondents believe that Chinese Taipei has strongly performed on the policy levers to grow investment

Digital Nation perception survey

% of respondents who agree with the statement



SOURCE: AlphaBeta Digital Nation survey

India ranks 8th on the overall scorecard: 4th in human capital and digital community

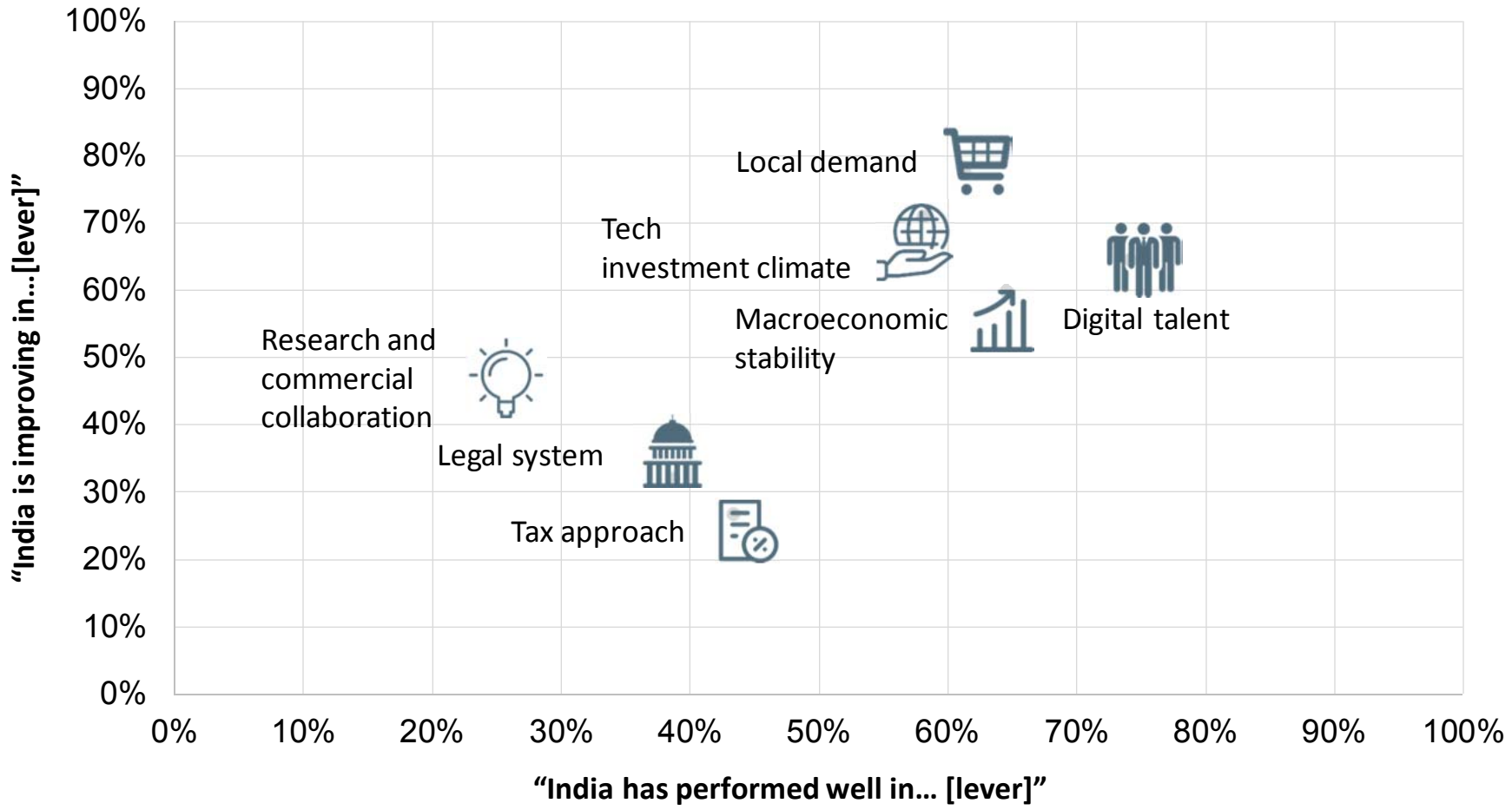
Dimension	Sub-Dimension	Performance as % of best in class	Rank
Financial capital (7th)	**Venture capital availability** (WEF GCI 2016/17)	20% 40% 60% 80% MAS	5th
	Digital IPOs (2015-16) (Per million inhabitants)	AUS	8th
Digital products (9th)	**Top free apps download index** (weighted by population size)	ROK	7th
	Top paid apps download index (Weighted by population size)	NZ	9th
	Digital patent grants (standardized by population)	ROK	9th
Human capital (4th)	**Talent attraction** (WEF GCI 2016/17)	SGP	5th
	Talent retention (WEF GCI 2016/17)	SGP	6th
	App job market (% of labor force)	SGP	5th
Digital community (4th)	**Number of tech startups** (Per million inhabitants)	SGP	7th
	Market value of the top 3 tech firms listed locally	JPN	2nd
	Digital MNE Contribution index		1st

SOURCE:Literature review, AlphaBeta analysis

India's local demand and digital talent are perceived as strong, but there are concerns about the trajectory of its tax approach

Digital Nation perception survey

% of respondents who agree with the statement



SOURCE: AlphaBeta Digital Nation survey

Indonesia ranks 9th on the overall scorecard: 8th in human capital, financial capital and digital community

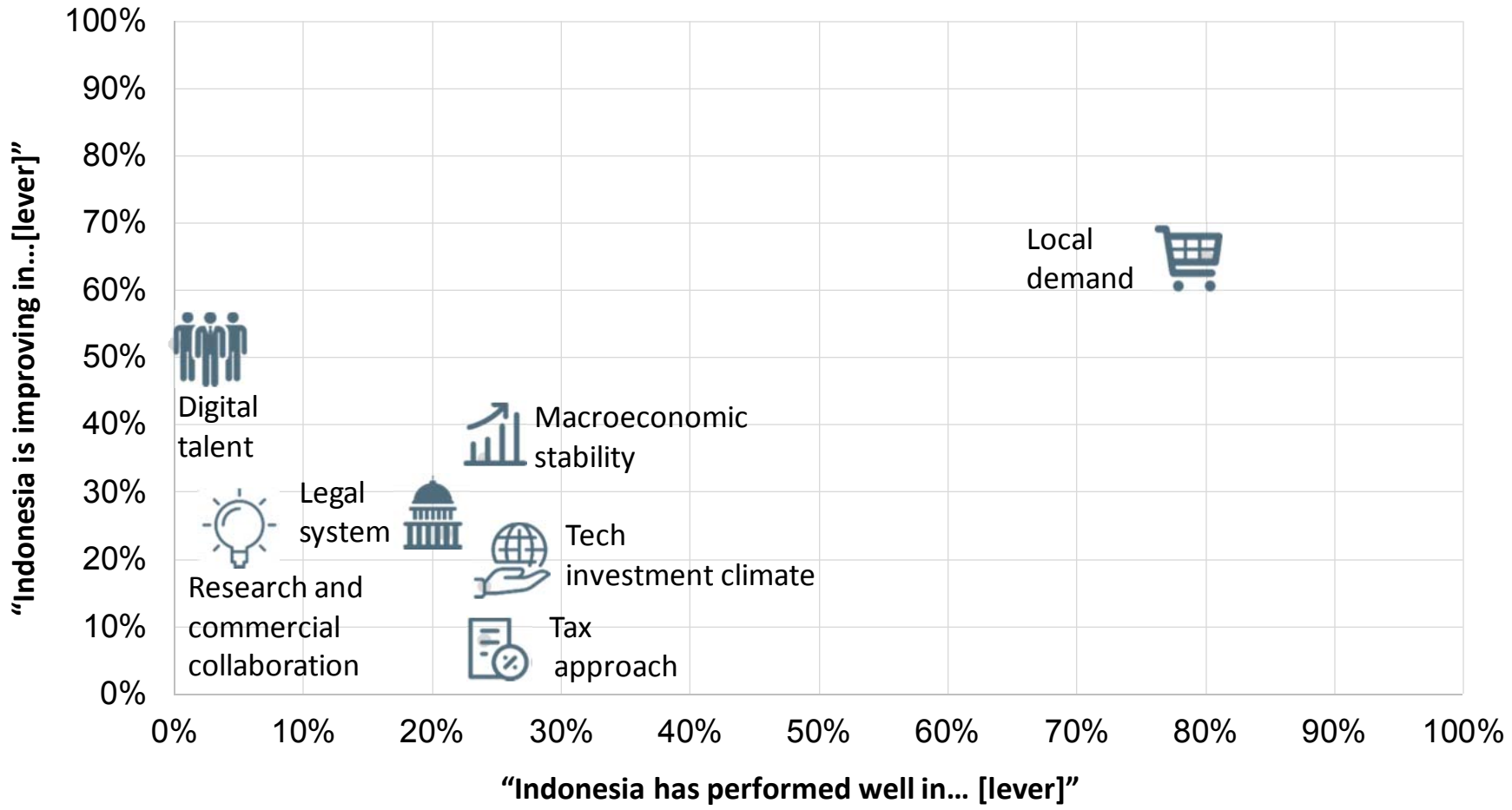
Dimension	Sub-Dimension	Performance as % of best in class	Rank
Financial capital (8th)	**Venture capital availability** (WEF GCI 2016/17)	MAS	6th
	Digital IPOs (2015-16) (Per million inhabitants)	AUS	9th
Digital products (10th)	**Top free apps download index** (weighted by population size)	ROK	11th
	Top paid apps download index (Weighted by population size)	NZ	7th
	Digital patent grants (standardized by population)	ROK	11th
Human capital (8th)	**Talent attraction** (WEF GCI 2016/17)	SGP	6th
	Talent retention (WEF GCI 2016/17)	SGP	7th
	App job market (% of labor force)	SGP	11th
Digital community (8th)	**Number of tech startups** (Per million inhabitants)	SGP	10th
	Market value of the top 3 tech firms listed locally	JPN	8th
	Digital MNE Contribution index	IND	6th

SOURCE:Literature review, AlphaBeta analysis

Aside from local demand, most survey respondents feel that Indonesia is not fully exploiting the policy levers at its disposal

Digital Nation perception survey

% of respondents who agree with the statement



SOURCE:AlphaBeta Digital Nation survey

Japan ranks 3rd on the overall scorecard: 1st in digital community and 2nd in digital products

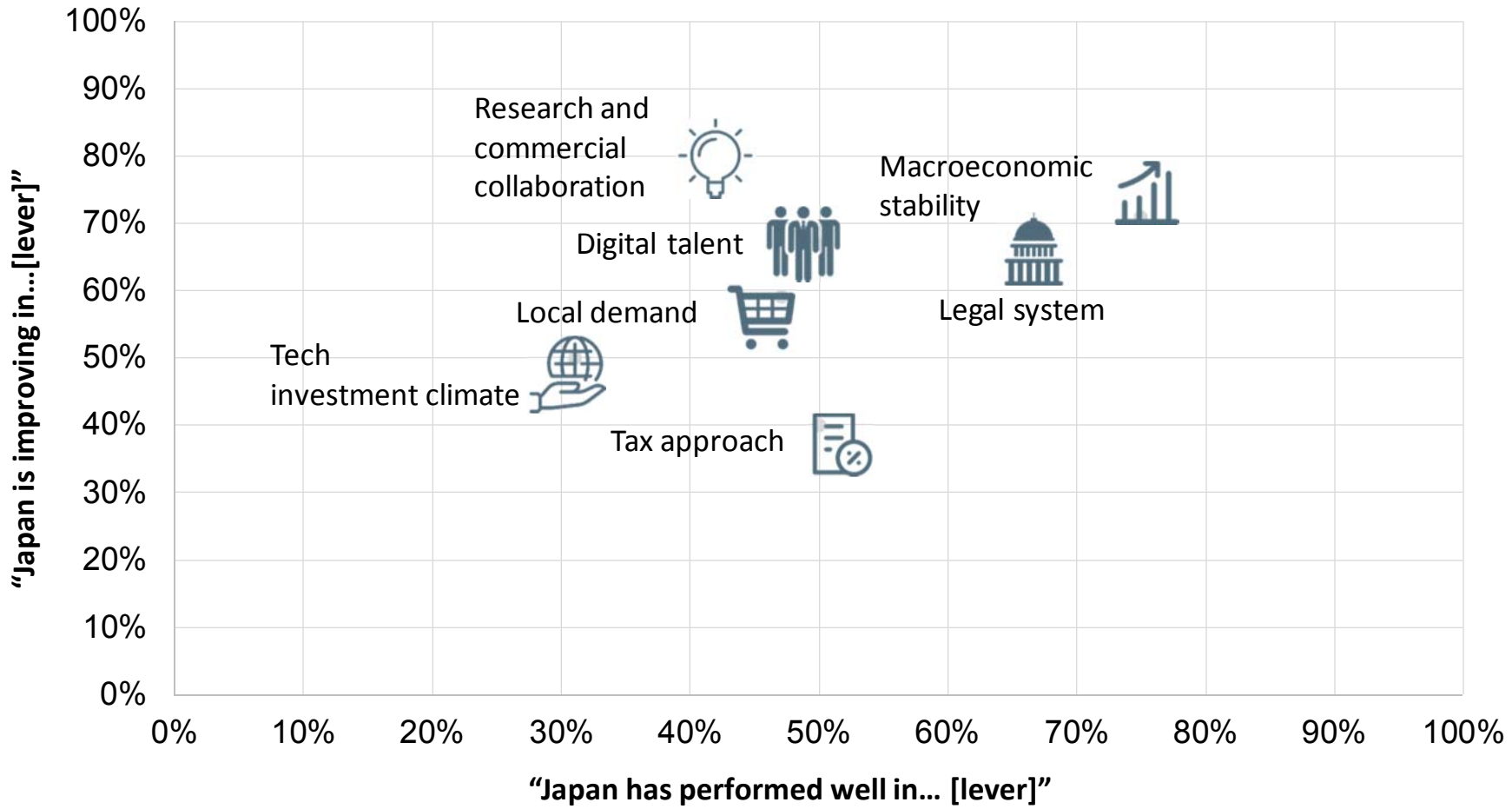
Dimension	Sub-Dimension	Performance as % of best in class	Rank
Financial capital (3rd)	**Venture capital availability** (WEF GCI 2016/17)	20% 40% 60% 80% MAS	7th
	Digital IPOs (2015-16) (Per million inhabitants)	AUS	2nd
Digital products (2nd)	**Top free apps download index** (weighted by population size)	ROK	2nd
	Top paid apps download index (Weighted by population size)	NZ	4th
	Digital patent grants (standardized by population)	ROK	3rd
Human capital (9th)	**Talent attraction** (WEF GCI 2016/17)	SGP	11th
	Talent retention (WEF GCI 2016/17)	SGP	8th
	App job market (% of labor force)	SGP	8th
Digital community (1st)	**Number of tech startups** (Per million inhabitants)	SGP	11th
	Market value of the top 3 tech firms listed locally		1st
	Digital MNE Contribution index	IND	2nd

SOURCE:Literature review, AlphaBeta analysis

Japan's macro stability and legal system are perceived as strong, but there are some concerns about tax approach

Digital Nation perception survey

% of respondents who agree with the statement



SOURCE:AlphaBeta Digital Nation survey

Malaysia ranks 6th on the overall scorecard: 2nd in human capital and 5th in financial capital

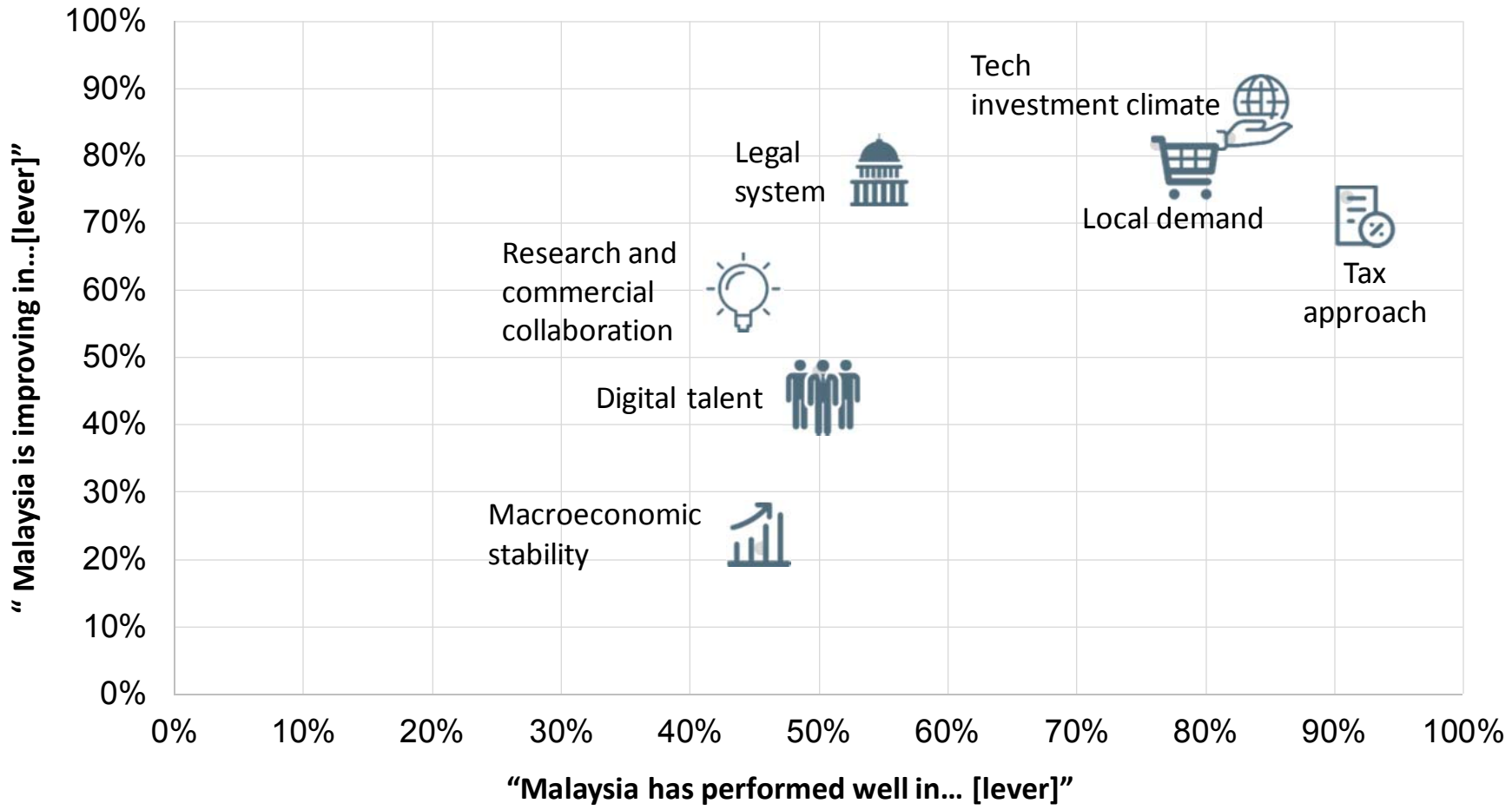
Dimension	Sub-Dimension	Performance as % of best in class	Rank
Financial capital (5th)	**Venture capital availability** (WEF GCI 2016/17)	20% 40% 60% 80%	1st
	Digital IPOs (2015-16) (Per million inhabitants)	AUS	9th
Digital products (7th)	**Top free apps download index** (weighted by population size)	ROK	8th
	Top paid apps download index (Weighted by population size)	NZ	11th
	Digital patent grants (standardized by population)	ROK	7th
Human capital (2nd)	**Talent attraction** (WEF GCI 2016/17)	SGP	2nd
	Talent retention (WEF GCI 2016/17)	SGP	2nd
	App job market (% of labor force)	SGP	2nd
Digital community (9th)	**Number of tech startups** (Per million inhabitants)	SGP	4th
	Market value of the top 3 tech firms listed locally	JPN	10th
	Digital MNE Contribution index	IND	8th

SOURCE:Literature review, AlphaBeta analysis

Malaysia's tech investment climate, tax approach and local demand are perceived as strong and improving

Digital Nation perception survey

% of respondents who agree with the statement



SOURCE: AlphaBeta Digital Nation survey

New Zealand ranks 5th on the overall scorecard: 3rd in human capital and 5th in digital products

Dimension	Sub-Dimension	Performance as % of best in class	Rank
Financial capital (6th)	**Venture capital availability** (WEF GCI 2016/17)	MAS	4th
	Digital IPOs (2015-16) (Per million inhabitants)	AUS	9th
Digital products (5th)	**Top free apps download index** (weighted by population size)	ROK	6th
	Top paid apps download index (Weighted by population size)		1st
	Digital patent grants (standardized by population)	ROK	6th
Human capital (3rd)	**Talent attraction** (WEF GCI 2016/17)	SGP	3rd
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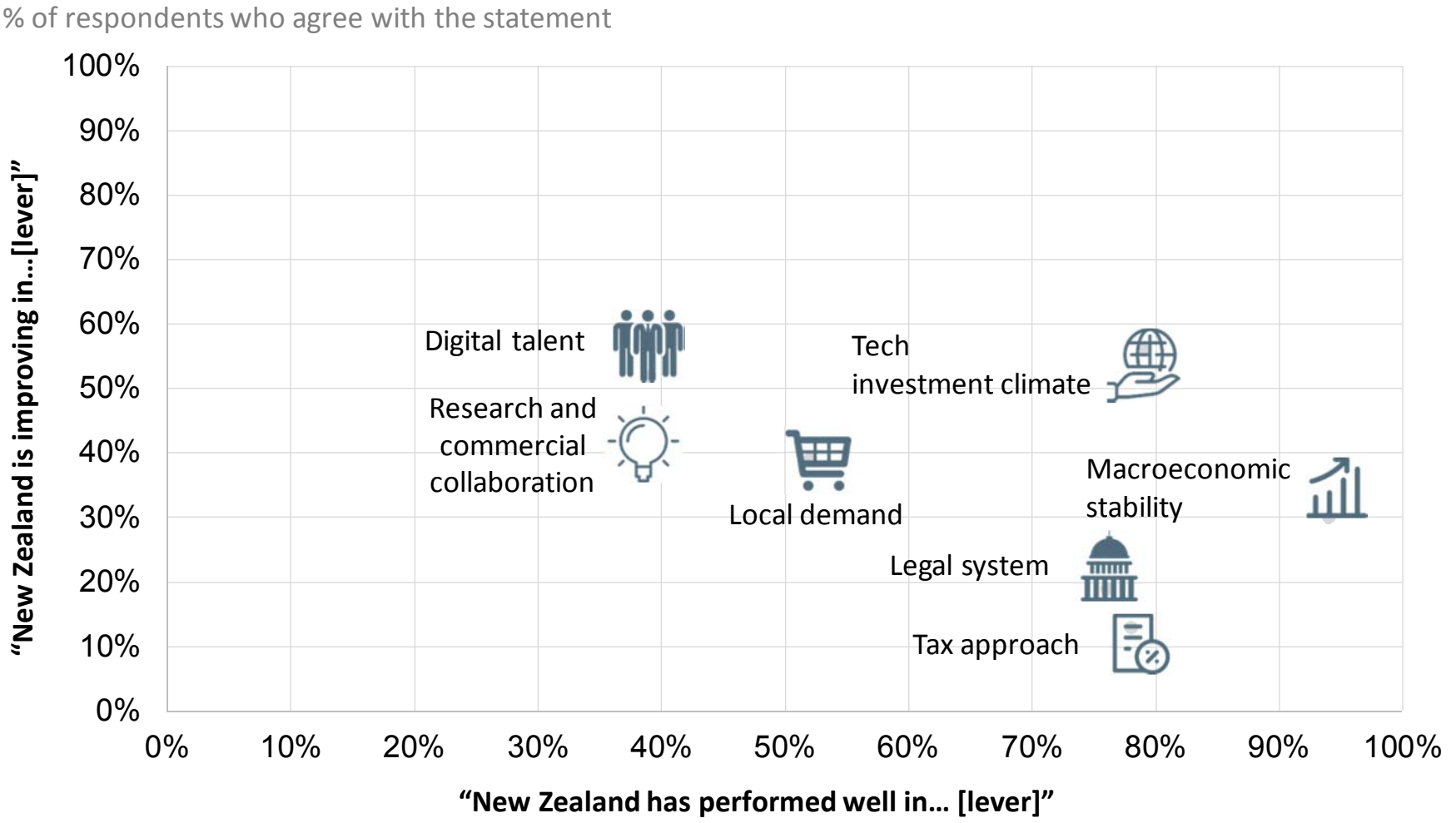
	App job market (% of labor force)	SGP	3rd
Digital community (6th)	**Number of tech startups** (Per million inhabitants)	SGP	3rd
	Market value of the top 3 tech firms listed locally	JPN	5th
	Digital MNE Contribution index	IND	10th

SOURCE:Literature review, AlphaBeta analysis

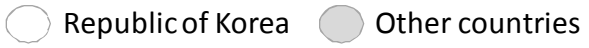
The perception of New Zealand is positive, but the story is mixed: clearly advancing in some areas, while not improving in others

Digital Nation perception survey



SOURCE: AlphaBeta Digital Nation survey

Republic of Korea ranks 4th on the overall scorecard: 1st in digital products and 10th in financial capital



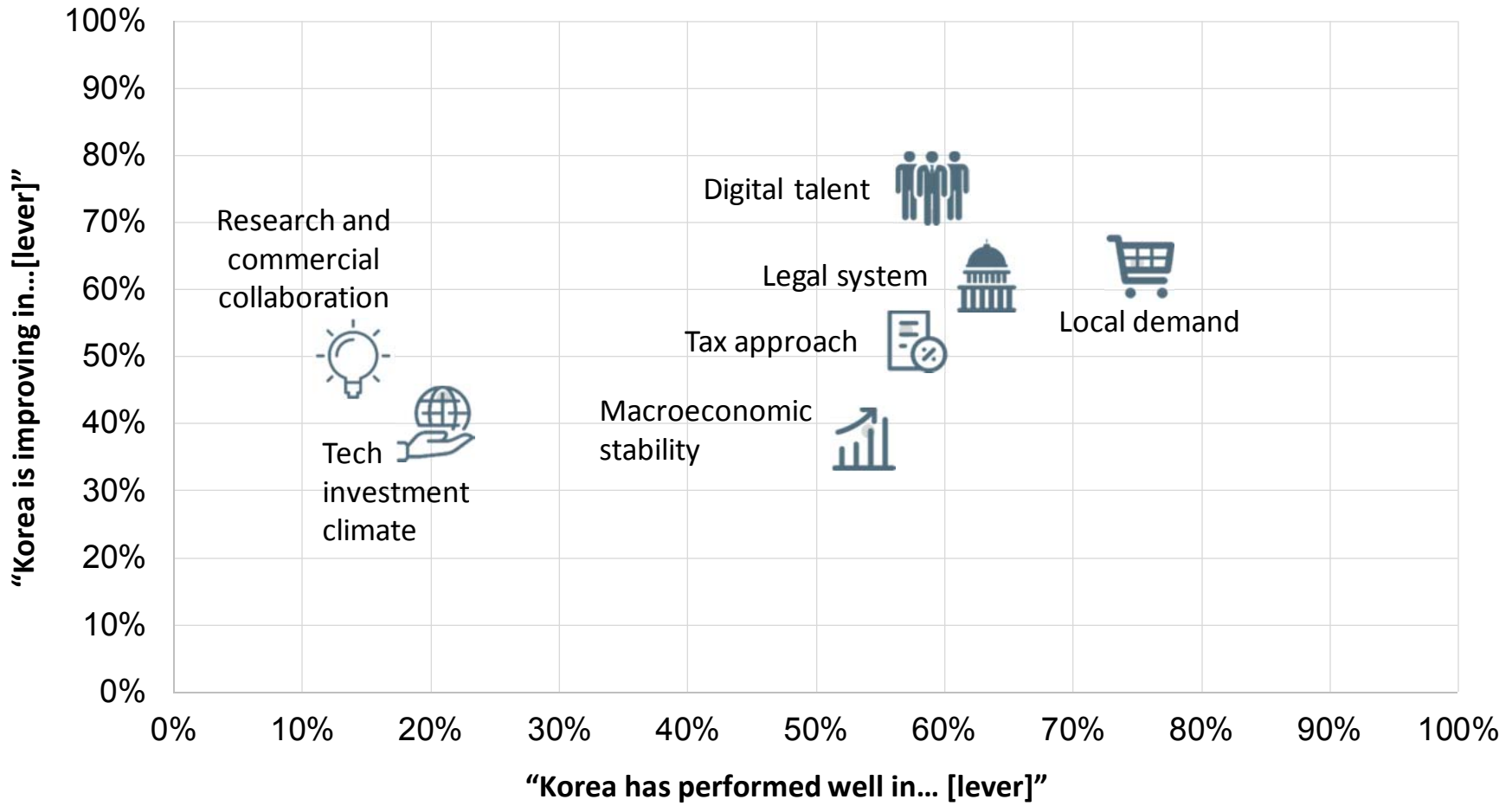
Dimension	Sub-Dimension	Performance as % of best in class	Rank
Financial capital (10th)	**Venture capital availability** (WEF GCI 2016/17)	MAS	11th
	Digital IPOs (2015-16) (Per million inhabitants)	AUS	4th
Digital products (1st)	**Top free apps download index** (weighted by population size)		1st
	Top paid apps download index (Weighted by population size)	NZ	3rd
	Digital patent grants (standardized by population)		1st
Human capital (7th)	**Talent attraction** (WEF GCI 2016/17)	SGP	8th
	Talent retention (WEF GCI 2016/17)	SGP	4th
	App job market (% of labor force)	SGP	6th
Digital community (5th)	**Number of tech startups** (Per million inhabitants)	SGP	9th
	Market value of the top 3 tech firms listed locally	JPN	3rd
	Digital MNE Contribution index	IND	4th

SOURCE:Literature review, AlphaBeta analysis

Digital talent and local demand are perceived as key strengths in the Republic of Korea, but concerns exist over tech investment climate

Digital Nation perception survey

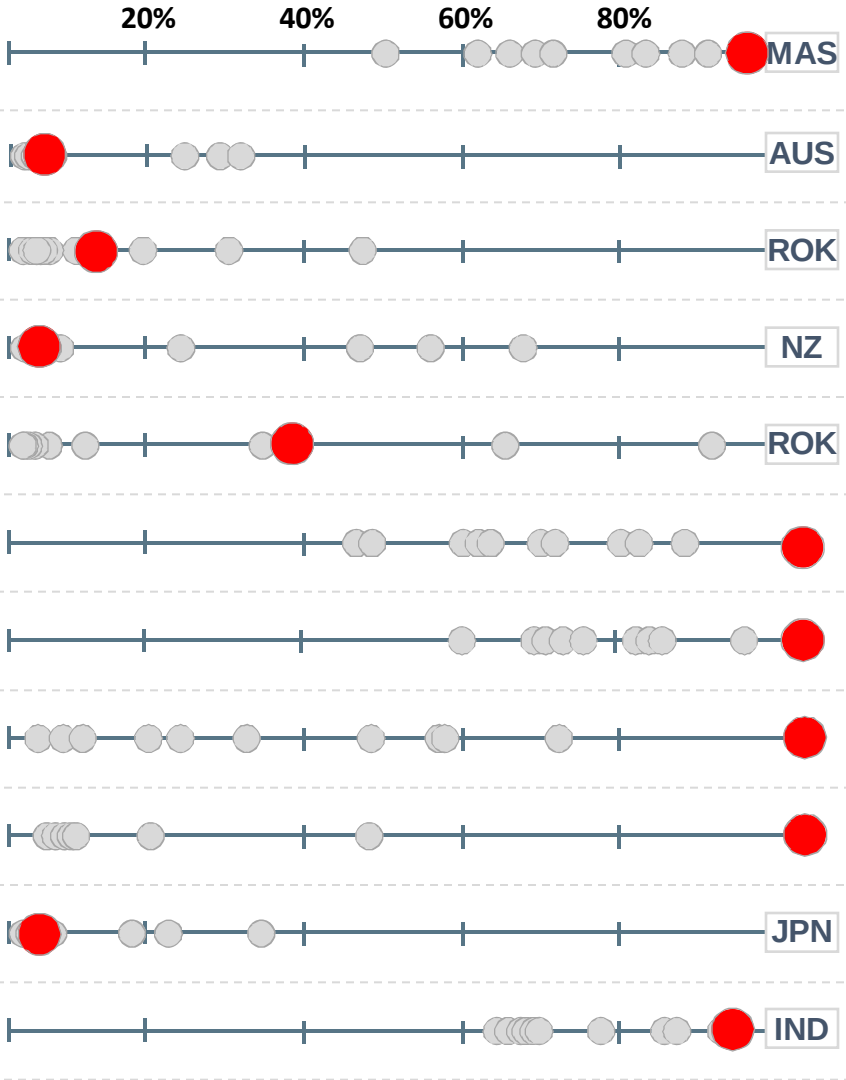
% of respondents who agree with the statement



SOURCE: AlphaBeta Digital Nation survey

Singapore ranks 1st on the overall scorecard: 1st in human capital and 2nd in financial capital

Dimension	Sub-Dimension	Performance as % of best in class	Rank
Financial capital (2nd)	**Venture capital availability** (WEF GCI 2016/17)		2nd
	Digital IPOs (2015-16) (Per million inhabitants)		5th
Digital products (6th)	**Top free apps download index** (weighted by population size)		5th
	Top paid apps download index (Weighted by population size)		10th
	Digital patent grants (standardized by population)		4th
Human capital (1st)	**Talent attraction** (WEF GCI 2016/17)		1st
	Talent retention (WEF GCI 2016/17)		1st
	App job market (% of labor force)		1st
Digital community (2nd)	**Number of tech startups** (Per million inhabitants)		1st
	Market value of the top 3 tech firms listed locally		7th
	Digital MNE Contribution index		3rd

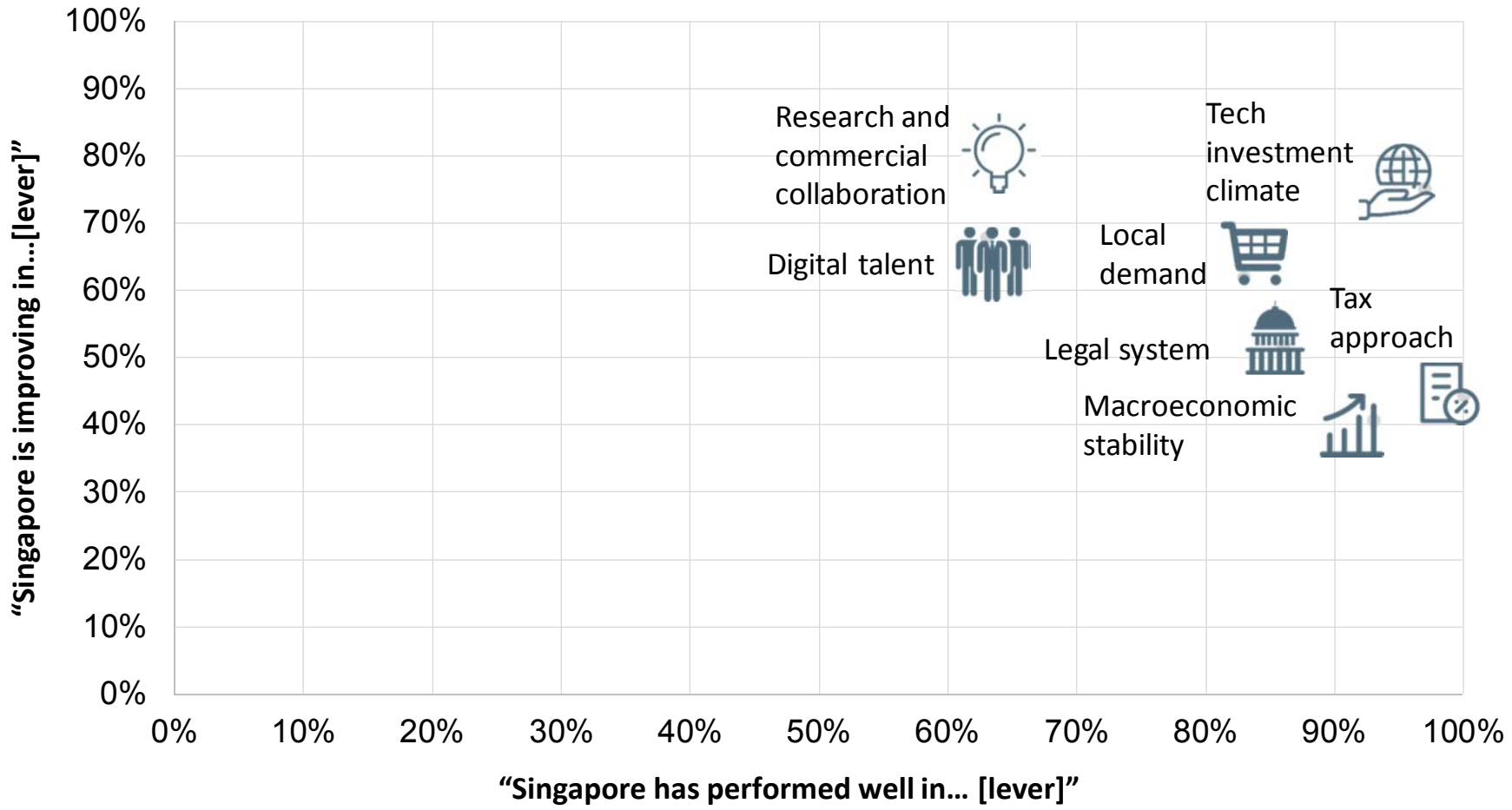


SOURCE:Literature review, AlphaBeta analysis

Perceptions around Singapore's policy levers are largely positive, particularly in terms of tech investment climate

Digital Nation perception survey

% of respondents who agree with the statement



SOURCE:AlphaBeta Digital Nation survey

Thailand ranks 10th on the overall scorecard: 9th in financial capital and 11th in digital products

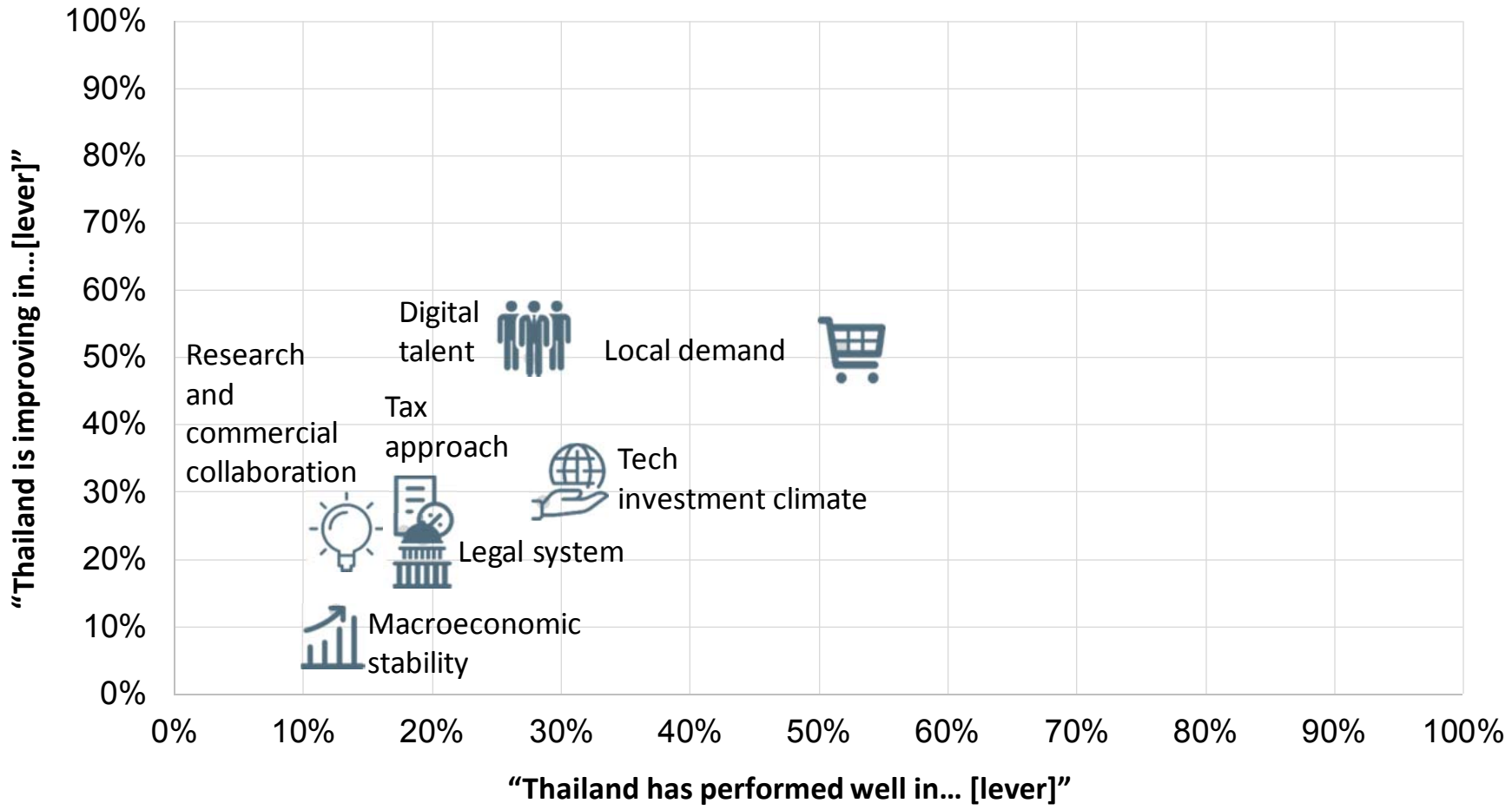
Dimension	Sub-Dimension	Performance as % of best in class	Rank
Financial capital (9th)	**Venture capital availability** (WEF GCI 2016/17)	MAS	8th
	Digital IPOs (2015-16) (Per million inhabitants)	AUS	6th
Digital products (11th)	**Top free apps download index** (weighted by population size)	ROK	10th
	Top paid apps download index (Weighted by population size)	NZ	8th
	Digital patent grants (standardized by population)	ROK	8th
Human capital (10th)	**Talent attraction** (WEF GCI 2016/17)	SGP	7th
	Talent retention (WEF GCI 2016/17)	SGP	10th
	App job market (% of labor force)	SGP	9th
Digital community (10th)	**Number of tech startups** (Per million inhabitants)	SGP	6th
	Market value of the top 3 tech firms listed locally	JPN	9th
	Digital MNE Contribution index	IND	9th

SOURCE:Literature review, AlphaBeta analysis

Aside from local demand, most survey respondents feel that Thailand is not fully exploiting the policy levers at its disposal

Digital Nation perception survey

% of respondents who agree with the statement



SOURCE: AlphaBeta Digital Nation survey

Viet Nam ranks 11th on the overall scorecard: 8th in digital products and 11th in the other dimensions

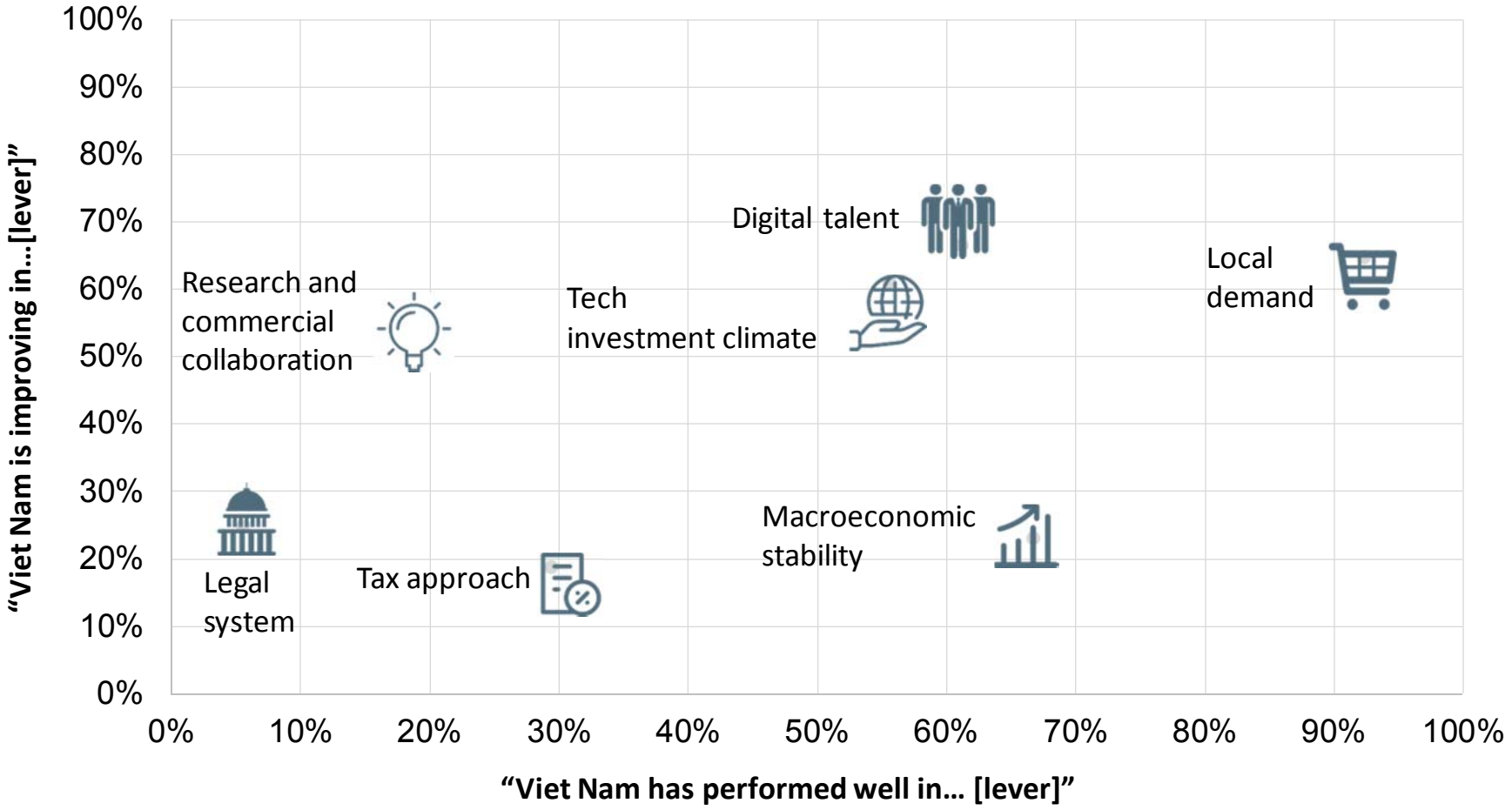
Dimension	Sub-Dimension	Performance as % of best in class	Rank
Financial capital (11th)	**Venture capital availability** (WEF GCI 2016/17)	20% 40% 60% 80% MAS	10th
	Digital IPOs (2015-16) (Per million inhabitants)	AUS	7th
Digital products (8th)	**Top free apps download index** (weighted by population size)	ROK	9th
	Top paid apps download index (Weighted by population size)	NZ	6th
	Digital patent grants (standardized by population)	ROK	10th
Human capital (11th)	**Talent attraction** (WEF GCI 2016/17)	SGP	10th
	Talent retention (WEF GCI 2016/17)	SGP	11th
	App job market (% of labor force)	SGP	10th
Digital community (11th)	**Number of tech startups** (Per million inhabitants)	SGP	8th
	Market value of the top 3 tech firms listed locally	JPN	11th
	Digital MNE Contribution index	IND	11th

SOURCE:Literature review, AlphaBeta analysis

Perceptions in Viet Nam vary significantly: local demand and digital talent are key strengths, tax approach raises concerns

Digital Nation perception survey

% of respondents who agree with the statement



SOURCE: AlphaBeta Digital Nation survey