

The Treasury

Venture Capital Fund Information Release

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Deepening Early Stage Capital Markets

Research Pack



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The problem statement

So what's the big picture problem?

- To be more **resilient, sustainable, and productive** we need **new points of comparative advantage**; adding value to volume in our areas of strength, leveraging opportunities in adjacent sectors, and backing the industries of the future
- If we want to develop new sectors and encourage them to grow, we **need to invest in them** . We need to **shift investment** to longer-term investments that lift productivity and create positive spill-overs.
- We need to **technological diffusion** from global frontier firms, and better resource allocation and market selection effects. **Investing in new technology and knowledge** increases productivity, optimises natural resource use and lowers emissions

Why do we need early stage capital markets?

- The development and commercialisation of **disruptive innovation** and **technology** requires particular skills and a business environment that large established corporates typically do not have. We need **young fast growing firms** operating in a healthy, well-capitalised start-up ecosystem.
- Start-ups struggle to develop due to the **shallowness** of domestic **early stage capital markets** (and **venture capital**). This leads to excessive reliance upon foreign investment, and the earlier than necessary selling of New Zealand innovation.

What have other countries done?

- **Most countries** have **recognised** the critical **role** of the young innovative firms, and the **inherent market failures** in the sector, and adopted a **variety of policies** to facilitate the creation and growth of the VC markets. Support often includes a combo of both capital co-investment and tax incentives.

What has New Zealand done in the past?

- The **New Zealand Venture Investment Fund** (NZVIF) was established in 2002 to support venture capital funds through a fund of funds model. It has previously used concessionary financing models (like buy-backs) to attract investors. The **Seed Co-Investment Fund** (SCIF) was established in 2006 to fill in the investment gap for entrepreneurs needing seed/start-up capital.
- Early returns for NZVIF were low mostly due to immature market with an insufficient pipeline of opportunities. The SCIF (and others - Callaghan, Incubators, Accelerators etc) have begun improving the ecosystem; investment in the angel / seed space has grown five times since 2002.
- A significant gap still exists in the venture series A / B space, and the gap is estimated in excess of \$150m per year.

The problem statement

So what's the big picture problem?

- We need to **shift investment** from our excessive focus on property towards longer-term investments that lift productivity and create positive spillovers.
- The development and commercialisation of **disruptive innovation** and **technology** requires particular skills and a business environment that large established corporates typically do not have. We need **young fast growing firms** operating in a healthy, well-capitalised start-up ecosystem.
- In New Zealand many start-ups struggle to fully develop because of the **shallowness** of specialised domestic **early stage capital markets**, and in particular, a lack of **venture capital** (VC). This leads to excessive reliance upon foreign investment to overcome this gap, and the earlier than necessary selling of a greater proportion of New Zealand innovation to overseas interests, who then capture a greater share of the enterprise value.

For Key slides, see:

[This slide summarises the criteria of success](#) and how this links with a broader investment philosophy

Why do we need start-ups?

- Young, innovative and fast growing companies have a disproportionately positive impact on the economy by creating the bulk of new jobs and contributing to many positive spill-over effects. But many of these firms struggle to obtain finance from traditional sources. For these firms, the early stage capital markets are a key means of obtaining growth finance.
- Well-functioning early stage capital markets are able to, among other things, identify opportunities for growth, support firms to realise the potential for growth, and invest to realise that growth. But there are well-documented 'market failures' (information asymmetries and agency problems) in the seed and early stage capital market between entrepreneurs and investors, and addressing these "failures" usually requires a specialised set of investor capabilities and expertise and a particular type of financing model.
- Angel investors and venture capitalists provide not just funding but also "smart money" in the form of experience, expertise and connections – critical actors for small, isolated countries like New Zealand.
- Most OECD countries recognise the critical role of young innovative firms for job creation, raising economic complexity, and positive spill-over effects on productivity. Interventions to build deep capital pools can range from grants, loans and guarantee schemes to tax incentives and equity instruments.

For Key slides, see:

[This slide](#) highlights a small fraction of firms are scalable start-ups but they have disproportional impact

[This slide](#) summarises the market failures and the need for smart money

The problem statement - continued

What are other countries doing?

- Many countries have recognised the critical role of the young innovative firms, and adopted a variety of policies to facilitate the creation and growth of the VC markets. For example –
 - Australia: Government matched funds raised by private sector with a ratio 2:1 and subsidised management fees (Innovation Investment Fund Program); Tax incentives; Requiring investor migrants to invest in a VC or private equity fund; Innovation Investment Programme.
 - Singapore: Government co-invests with private VC funds to invest in Singapore-based early-stage high-tech companies (Early Stage Venture Investment Fund); Flexible legal structures and liberal tax policies to encourage onshoring of funds.
 - US: a regulatory change in 1979 that allowed pension funds to invest in VC; Tax incentives to support entrepreneurship and encourage investment in innovation.

For Key slides, see:

[This slide](#) show VC as % of GDP/other charts

[This slide](#) summarises different VC programmes & approaches across selected countries

[This slide](#) summarises different SWF and how much they are involved with VC

What have we done before, and why hasn't it worked?

- At the time of New Zealand Venture Investment Fund (NZVIF) being established, it was difficult to raise capital for innovative projects and firms at the seed stage, there was a shortfall in VC at the high-risk end of the market, and a shortage of firms equipped to manage seed capital.
- NZVIF was established in 2002 to support venture capital funds through a fund of funds model, by way of addressing this problem. The Seed Co-Investment Fund (SCIF) was then established in 2006 to fill in the investment gap for entrepreneurs needing seed and start-up capital.
- The SCIF has been successful in delivering on its investment objectives. Investments in the angel / seed space has grown five times since 2002. However, a significant gap still exists in the venture series A / B space, and the gap is estimated in excess of \$150m per year.

For Key slides, see:

[This slide](#) shows a timeline of different interventions in NZ early stage capital markets

[This slide](#) summarises the history behind NZSF

The problem statement - continued

What have we learned?

- **Pipeline development:** There has been a weak pipeline of start-ups from seed through to VC, linked to a lack of demonstrated investment capability, including by metrics like having too few exits, and there is evidence that the access to follow-on capital is a growth constraint for our start-ups.
- **Market timing:** Some timing factors in the market, like the sequencing of funding approach in our early stage capital markets (i.e. starting with VIF before implementing SCIF), could have been approached differently to better support the early stages of a pipeline of start-ups in an immature New Zealand market.
- **Investment attractiveness:** Similar to some of the lessons about pipeline development, there has been a lot of feedback that VIF and SCIF should focus on the quality rather than the quantity of investments – this behaviour was partly driven by the \$8m funding cap for co-investment through SCIF. A lack of quality investments affects future exits and therefore investment attractiveness, as has the VIF buy-out option, which has affected (the perception of) its available pool of capital.

For Key slides, see:

[This slide](#) summarises the lessons learned from previous programmes or changes to VIF and SCIF

[This slide](#) summarises the feedback from stakeholders in the NZ early stage capital markets who we consulted

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The criteria of success

4 The socio-economic outcomes are the ultimate measure of success

Socio-economic vision

- Productive, sustainable and inclusive growth
- Transformation of the economy
- Support Start-up ecosystem and young disruptive firms
- Get returns from R&D
- Keep young dynamic firms in NZ – create a pathway for those that can stay in NZ for longer
- Promote particular sectors with nascent potential
- Growing the knowledge economy, and improving tech absorption from frontier firms
- Internationalisation of firms; Jobs; Exports

Governance structure & mandate

- Sound Governance structure and framework:
- Choice on independence, either:
 - Independence to pursue mandate
 - Receive Govt. influence/instruction
- Choice about returns
 - The highest financial returns
 - The double bottom line
 - Optimal terms between agencies
- Sustainability/Durability
 - Depends in part on the returns question
- Adaptability
 - Do we design the fund to have a flexible mandate to react
- Not crowding out private investment – rather partnering
 - Stimulating innovation
- Avoiding mission impairment
- Synergies between funds



3

In order to achieve these outcomes we need strong capital markets that invest in the right places and firms

Developing early stage Capital Markets

A market that identifies opportunities, deploys capital and 'smart money' or capability and connections, and is able to exit a firm quickly if needed, and recycle capital. Includes

1. **deep pool of capital and capabilities**, including:
 - Lots of private capital (& investors wanting to be in VC)
 - Support from key domestic (cornerstone) investors
 - Specialist investment capabilities and expertise
2. **good competitive market structure**, including:
 - multiple funds operating at an appropriate fund size
 - mixed vintages of funds
3. **strong international connections**
4. **a broader more developed market/system**
 - Market ordering : pathway for firms from seed to exit (sale/listing) and no gap in a particular section (eg Series A)
 - Good info shared about capital raised, invested and realised
 - Broader system – other key stakeholders – lawyers, mentors
5. **Better returns and reputation**
 - High Performing (Measured in returns and # of Unicorns)

2

Catalyse the markets by co-investing public funds needs these funds to be managed correctly



1

But first we need to get the Governance and mandate right



Management of the funds

- Sound management of public funds which considers the following:
 - The opportunity cost , and alternative uses of funds
 - The most **efficient** use of the funds
 - **Transparency** in how returns are earned or costs incurred
 - **Administrative simplicity**
 - **Strong (investment) management capability**
 - **Reputation of fund**
 - The public and political **perception** of the use of funds

Why early capital stage capital markets?

Key government priorities

One of the key priorities of this government is to grow more resilient, sustainable, and productive economy through:

- Developing new points of comparative advantage
- Adding value to volume in our areas of strength
- Leveraging opportunities in adjacent sectors with established comparative advantages
- Backing the industries of the future.

The role of start-ups

The role of start-ups in achieving those key government priorities is crucial.

- Start-ups are critical for facilitating the commercialisation and adoption of newer technologies, as well as developing new sectors
- In the New Zealand context, new technologies can contribute to productivity improvements in agriculture, horticulture, and aquaculture, while also bringing improvements to water quality and emissions reductions.
- Overall, start-ups bring significant benefits to the country's economic growth and prosperity. The US evidence shows that of all firms that have publically listed in the US since 1974, 42 per cent are VC backed and they provide 85 per cent of all R&D spend, and pay 59 per cent of total taxes

Start-ups and government priorities

To develop new sectors and encourage them to grow, we need to invest in them. The investment is required in both capital and people.

- The introduction of disruptive innovation and technology and the commercialisation of science and research requires particular skills and a business environment that large established corporates typically do not have. Young fast growing firms operating in a healthy, well-capitalised start-up ecosystem are required.
- Early stage ventures are specialised. They require commercialisation and market testing skills. Globally the best (and often only) route to achieve this is through the early stage finance (seed and venture finance)

Start-ups are important...

Disproportionate impact on the economy

High-growth start-ups (that raise money via VC route) are unique in their business model (specialist skills and non-standard business model required as the firm grows exponentially), the way they get finance and the returns and socio-economic outcomes they bring to New Zealand.

Typical VC Characteristics

Typical deal size in the series A is between \$2 m and \$15 m and series B fundraising ranges between \$7 and \$10 million. In New Zealand, domestic investment levels in the VC space for the past three years have been about \$20 million per year (in comparison Australia raised over \$1 billion last year).

- The average VC conversion rate is 25 per cent (ie for every 100 start-ups that get Seed funding, 25 firms will successfully go on to raise a Series A round). In New Zealand the conversion rate is only 10 per cent.
- Size of the fund matters, the bigger the fund the higher the management fees (which are typically 2-3%) – the higher the likelihood of attracting capable and experienced fund managers.
- The carry (the profit share that the General Partner of a fund receives when portfolio companies are sold) for a fund is typically 20%.
- Exits are critical. However, only a handful of the New Zealand VC-funded companies go through IPO route and stay in New Zealand. Domestic exits are limited – both listing and trades (sales)

Typical VC characteristics

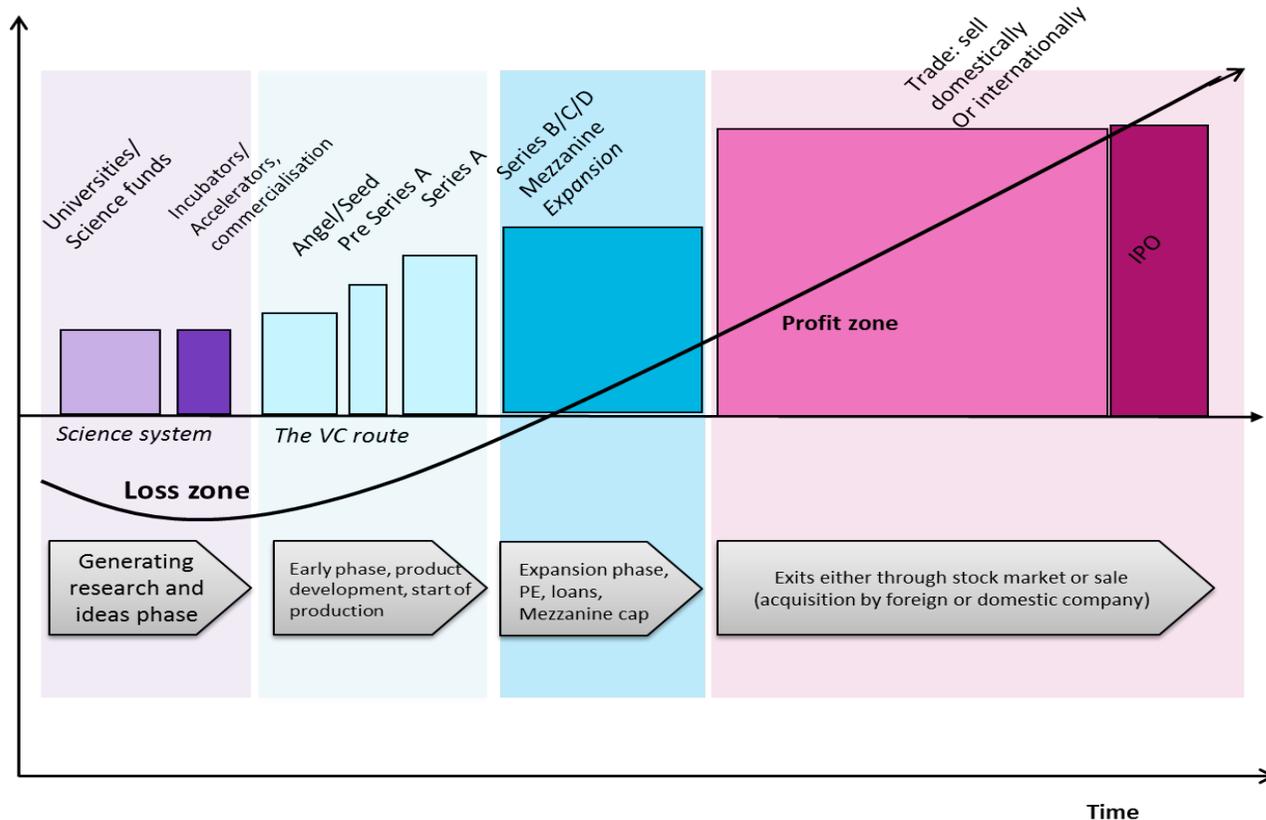
- Only about 1% of all firms in New Zealand raise money via the VC routebut these firms that disrupt markets have disproportional impacts on the economy – hence the global focus.
- VC only applies to certain types of firms where returns are likely to be 40x to 80x



VC funding route

There are two broad routes of funding

- The most common funding route (applicable to 99% of firms) for small businesses is initially through own funding or bank debt. This usually applies to businesses which don't require huge amounts of funding from the beginning and grow much slower than VC firms (2x to 10x year). Some examples include – opening a new restaurant or bar, new hotel, new apparel line, establishing a franchise etc.
- VC only applies to certain types of firms where returns are likely to be 40x to 80x. Only 1% of firms that go through this funding route as illustrated below.



VC route

The typical VC route starts with generating research and ideas (concept) phase. Some start-ups form organically, but most come out of universities research (often funded by government and universities themselves), or through incubators/accelerators. The stages that follow are:

- seed stage (own finance, angels – under \$2m investment),
- pre-series A/series A (early stage between \$2m and \$15m – product development, infrastructure – typically pre-positive cashflow),
- series B/C/D is the expansion or growth stage with capital raise between \$7m and \$10m on average (during this stage the company endeavours to grow sales).
- Finally the profit zone indicates either an exit through the stock market or sale (acquisition by foreign or domestic company).

But there are market failures

Getting funding via VC route is not a smooth ride.

There are some well-known market failures in the seed and early stage capital markets among entrepreneurial investors, which are particularly pronounced for young technology-based firms. These “failures” arise mostly due to information asymmetries (unproven business models, unknown market size and/or channels to market), but also include adverse selection and agency problems (for example where each entrepreneur overstates the benefits of their product/innovation and/or their chance of success).

The need for smart money

- Angel investors and venture capitalists provide not just funding but also “smart money” in the form of experience, expertise and connections. This differentiates them from other forms of financing, including crowdfunding.
- Connectivity and ‘smart money’ is particularly critical for small, isolated countries where scale or breadth of knowledge and expertise is often limited. The ventures themselves offering cutting edge and disruptive also require highly specialised and complementary skill sets to work with them to fully develop their offerings. These can range from niche scientists and engineers, to country-specific regulatory specialists. To earn the returns that investors expect or to justify the risk, a disruptive start-up’s will usually need growth larger than a small domestic market alone can provide. This is particularly true for highly advanced, niche or sector-specific technologies.

Early stage markets are subject to a broad range of market failures

- Addressing these “failures” usually requires a specialised set of investor capabilities and expertise and a particular type of financing model. Venture Capital typically lies outside the realm of “normal” private equity financing, which usually prefers more traditional business models, and avoids what it sees as unquantifiable risks.
- Small poorly connected countries have many ‘market failures’ which can limit the flow of funds and investment capabilities
- Early stage capital markets are also subject to broader country-wide market failures in investment due to a market size, lack of connectivity and asymmetric information. International investors often have limited information on the domestic eco-system, and the maturity of opportunities, entrepreneurs and investment managers.

Appendix

- Background and context
- Theoretical context
- International context

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Most countries are intervening in the VC space.

Government interventions

Interventions can be targeted across the broader start-up ecosystem, including at capital markets and investors but also at supporting the knowledge development stage, entrepreneurs, the firm development stage, and at framework conditions:

- Supporting knowledge development includes: education and science system, commercialisation and R&D incentives, international information sharing, knowledge flow and platforms, and influencing culture.
- Supporting entrepreneurs and firm development includes: incubators and accelerator programmes, matchmaking and networks (angel business network), assisting management capability, developing international connections, facilitating firm expansion or exporting initiatives.
- Framework conditions include: a well-functioning financial system with strong institutions and regulation, and removing legal and regulatory barriers to starting and running a business. In the USA, but also in Sweden, relaxing regulatory requirements for pension funds and allowing more risky investments has led to increasing investments into the VC industry.

Other interventions: tax, equity instruments, and policies to support investor migrants

Interventions to build deep capital pools can range from grants, loans and guarantee schemes to tax incentives and equity instruments.

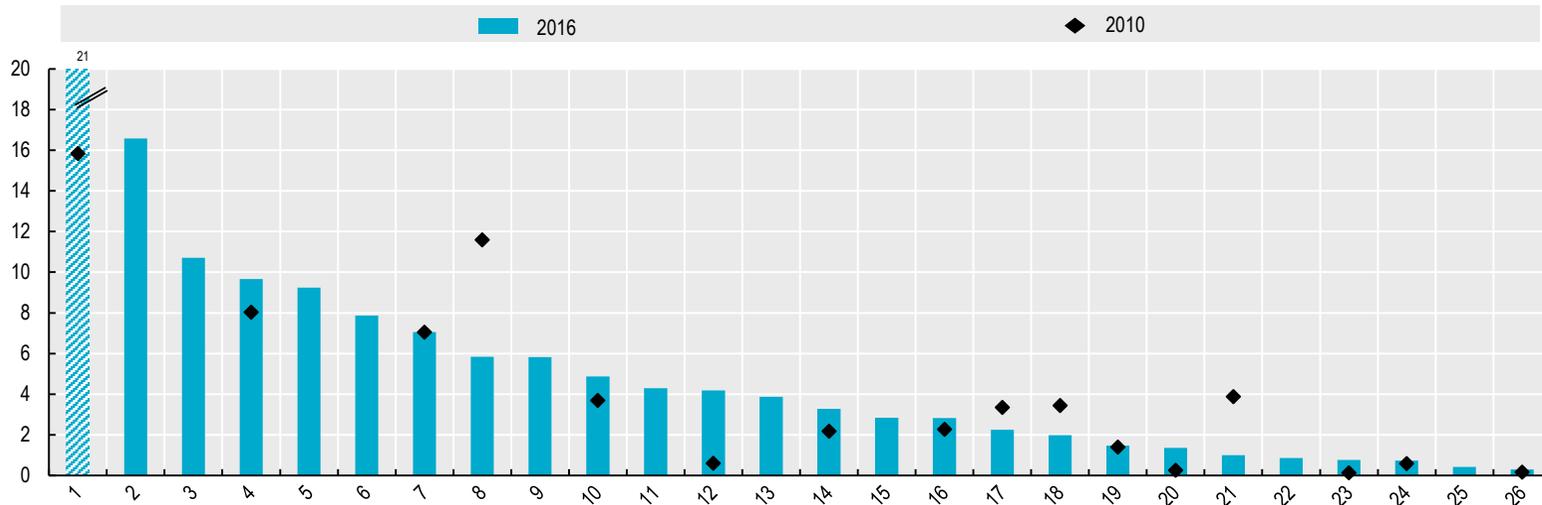
A significant number of OECD member countries have tax incentives, including exemptions from capital gains tax, income tax allowances, and rollover and carry-forward of gains or losses. Many countries also have young innovative company schemes (YIC), which often allow for a reduction in the tax and social security contributions for highly skilled employees, such as engineers and researchers.

There has also been an increase in the use of equity instruments in OECD countries but the focus has shifted from direct government equity funds to indirect models such as co-investment funds and fund-of-funds that leverage private investment. The mix of public and private investment matters greatly, and while too much public money can crowd out private investment, too little may result in sub-scale funds.

More recently some developed countries have introduced a set of investor migrant visas aimed specifically at attracting high net worth individuals and their capital into the domestic venture capital markets, in exchange for residency.

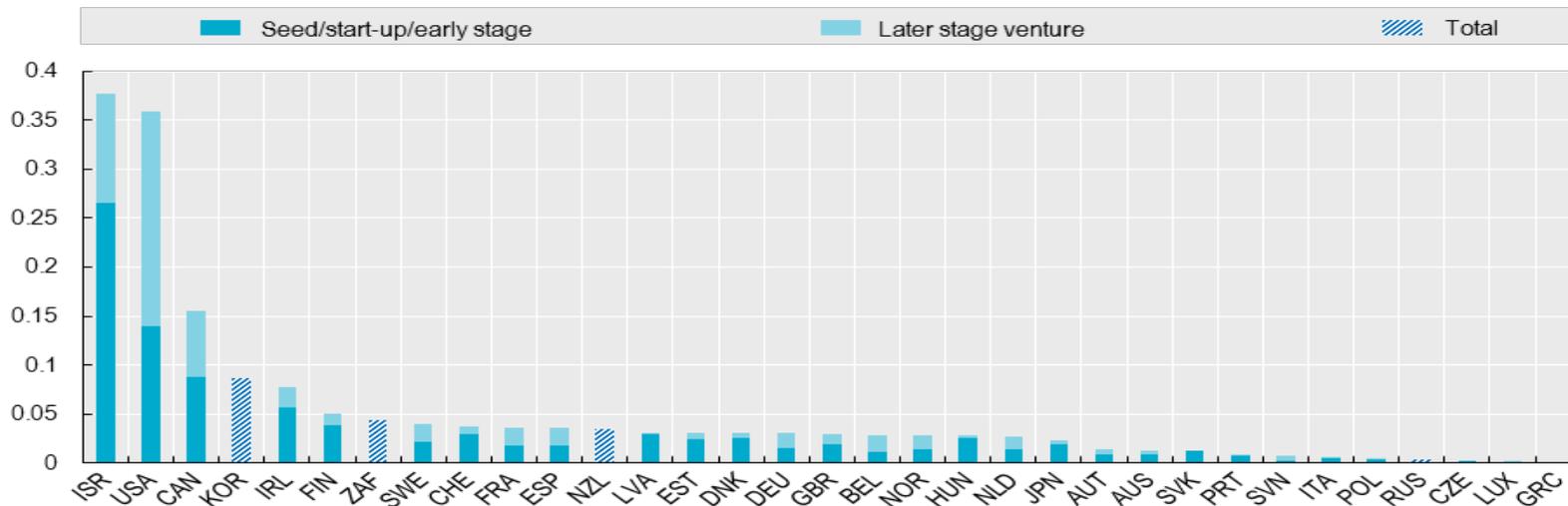
Investment in VC across countries

Venture capital backed companies rate (Per 1000 employer enterprise births)



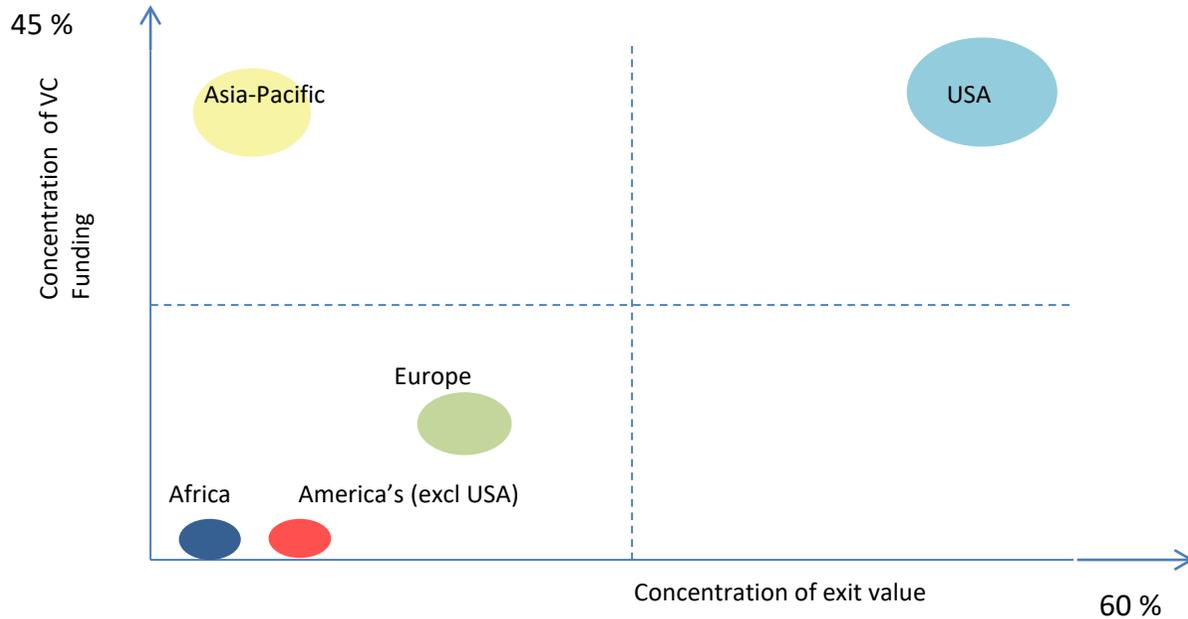
- Only a small number of companies are backed by venture capital, and typically represent tiny percentages of total enterprise births in a given year. In most OECD countries,
- venture capital-backed companies represented less than 1% of enterprise births in 2016.

Venture capital investment as a percentage of GDP

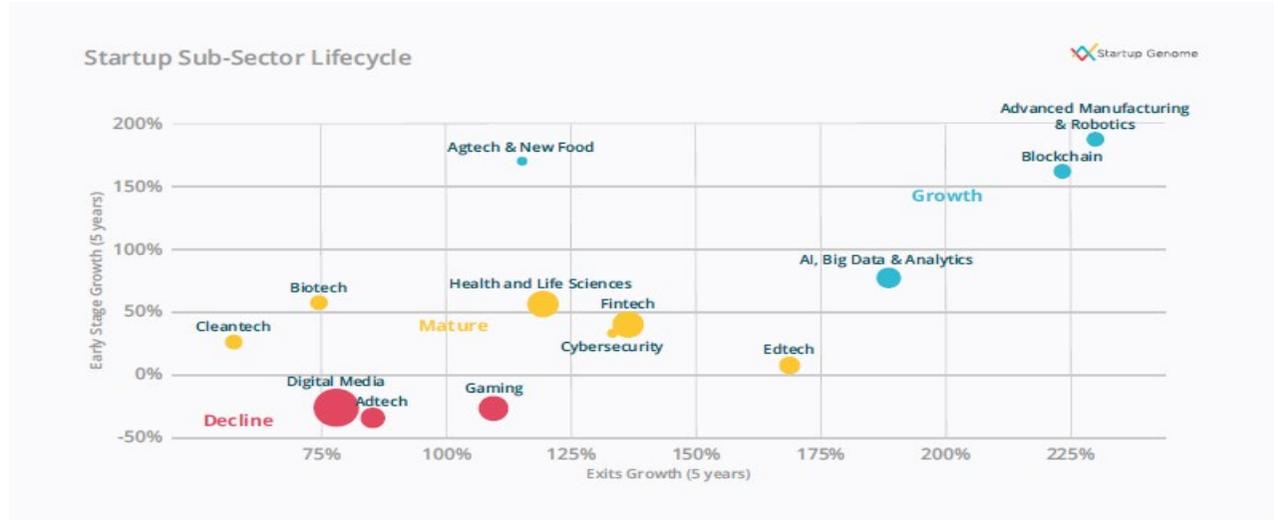
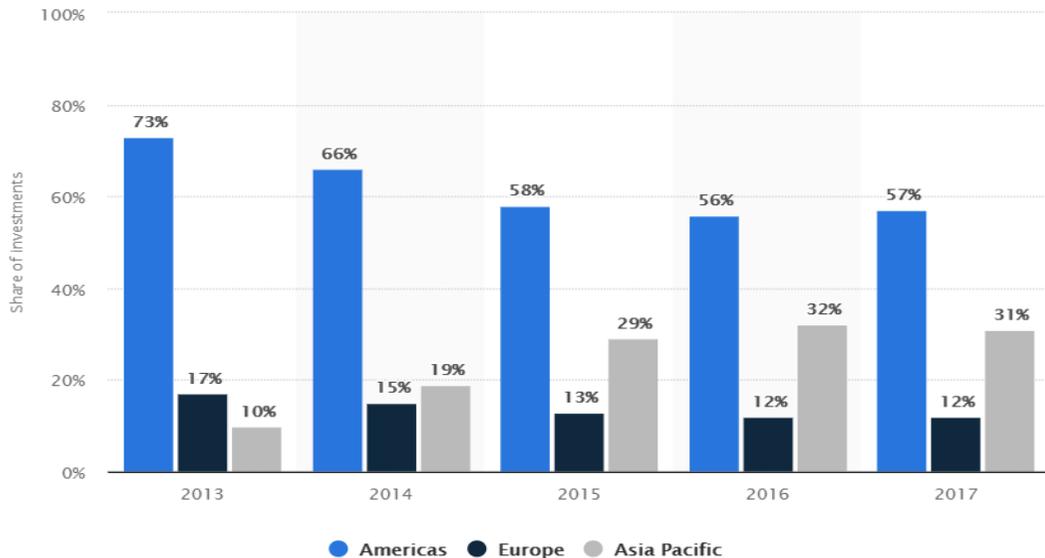


- In 2016, venture capital investments in the US amounted to USD 66.6 billion and accounted for 86% of total venture capital investments in the OECD. Venture capital investments in Europe amounted to USD 4.7 billion.
- In the majority of OECD countries, venture capital constitutes a very small percentage of GDP, often less than 0.05%. The two major exceptions are Israel and the United States, where the venture capital industry is more mature, representing more than 0.35% of GDP.

VC investment across countries



- According to Startup Genome report, the share going to Asia-Pacific countries grew, while the US share declined.
- In 2017, the share of VC funding for startups in the US was similar to that of Asia-Pacific region. The US, however, still dominates the VC exits. Asia-pacific is definitely an emerging market with a lot of funding going in the startup sector but only relatively few exits compared to the US.



- Global growth subsectors include advance manufacturing and robotics, agtech and new food, blockchain, AI big data and analytics. The more mature subsectors include biotech, health and life sciences, fintech, cybersecurity, cleantech, and edtech.

Early stage capital markets cross country comparison

	Australia	Israel	United States	European Investment Fund	Singapore
First VC fund created	1970 (International Venture Corporation)	1985 (Athena Venture Partners)	1946 (American Research and Development Corporation)	1994 (European Investment Fund was founded)	1983 (South East Asia Venture Investment)
Recent performance of the VC market	Upward trend. VC investment reached US \$130 .5 million across 16 transactions Q1 2018	Upward. Raised \$5.24 billion across 620 deals in 2017.	Upward. \$US 28.2 billion across 1,693 deals	Upward. \$5.6 billion invested on 631 deals Q1 2018	Upward. US\$2.68 billion of VC investment in Q1 2018
Government support in VC market	Strong. Focus on commercialisation of medical technology.	Strong. Focus on Science and technology company incubators.	Minimal and indirectly through research credits	Strong. Recently EIF approved 6 funds-of-funds that will make up the Pan-European Venture Capital Fund of Funds programme to bring more investment into the European VC market (address VC gap, fragmentation and bring in private funding from institutional investors).	Strong – most recent intervention -AI.SG, a new national programme to catalyse Singapore’s AI capabilities
Broader tax incentives	CGT exemption (VCLP and EVCLP partnerships; Managed Investment funds, super fund assets) R&D tax incentives	There is a preferred enterprise regime, and special preferred enterprise regime (eligible companies, companies investing in productive assets and those in technology sectors). Non-residents are exempt from the capital gains tax.	There is no generally available tax incentive or other scheme to encourage investment in unlisted companies.	SME financing assisted by government (European Fund for Strategic Investments), the tax subsidy rates and other R&D tax incentives, tax incentives for VC and Business Angels.	CGT exemption, tax incentives applicable to different players in the VC industry, subsidization of management fees, training etc.
Public fund of fund model	IIF program. But discontinued in 2014.	Israel’s Yozma scheme (est in 1993) is commonly identified as a very successful government intervention to catalyse a local VC market.	No such model in the US.	EIF is fund of funds investor. EIF invests in venture capital and growth funds, mezzanine funds that support SMEs. Investment activities also cover tech transfer and business incubators.	Technopreneurship Investment Fund (\$US 1 billion) - venture capital and fund of funds investments in Asian technology companies.
Key Sectors	Advanced manufacturing, agri business and food, resource and energy, tourism infrastructure, and deep tech (developing AI capabilities).	Life Sciences, Software, Communications and the Internet sector	Internet, healthcare, biotech, mobile and telecoms: information tech subsectors, blockchain technology	Life Sciences, Cleantech and ICT sectors	High-tech, deep tech, and emerging technology such as AI, Robotics, Internet of Things, ICT and healthcare.

Australia



Basic info

- Australia is a sovereign country and is the largest country in Oceania, it's also the world's sixth-largest country by total area with six states and ten territories which are partially self-governing. Australia has a population of 23.4 million and \$52,000 GDP per capita. It's the world's 13th largest economy. Australia generates its income from various sources including mining-related exports, telecoms, banking and manufacturing.

Key Government Policies

- To encourage VC investment, the Australian Government offers a range of investment programs. Investors can also take advantage of a number of tax benefits, depending on the program they choose. The programs are designed to attract both domestic and foreign investment.
- Venture capital investment programs include: Early Stage Venture Capital Limited Partnerships (ESVCLP), Venture Capital Limited Partnerships (VCLP), and Australian Fund of Funds Programme (AFOF). VC funds (international +domestic) register under those schemes to benefit from tax incentives and flow-through taxation. Early stage investors are eligible for tax incentives (early stage investor tax offset – generally 20 % of total amount paid for the qualifying shares, and moderate capital gains tax incentive)

Early stage market vitals

- There are multiple drivers for Australian growth in the VC market including a growing number of institutional investors, impact investors, private equity and corporate venture funds, R&D and other tax credits.
- But most importantly the Australian VC industry is driven by favourable government policy.
- Today, the Australian Venture Capital (VC) industry appears relatively strong, but that has not always been the case. Its history is a chequered one with a number of false starts.
- Over the history of VC market in Australia, Australian government has intervened a number of times. It first intervened in 1983 to encourage investors in VC during the economic downturn. Subsequent interventions were improved programs modelled on similar schemes in the UK and USA.
- In 1997 IIF program was introduced to help develop the institutional venture capital market in Australia. Those helped catalyse the market, and were subsequently replaced with the wider Entrepreneur programme and co-investment funds such as CSIRO Innovation Fund and Biomedical Translation fund.

Government stakeholders

- Innovation and Science Australia - Department of Innovation and Science; Austrade;
- Australian federal and state governments created dedicated venture capital funds which invest for both commercial and public interest objectives e.g. CSIRO innovation fund invests \$200m in "startup and spinoff companies...". At the State-level, co-investment funds such as the
- \$50m South Australian Venture Capital Fund are aimed at
- accelerating the growth of innovative local startups.

Australia: VC Funding policy story



Public Funding (eg Fund- of funds)

- Australian government currently does not invest in the VC market via the funds of funds model. But it did so in the past through the Investment Innovation Programmes launched in 1997, which was designed to promote the development of an Australian VC market for early-stage, tech-based companies. The government matched funds raised by private sector with a ratio 2:1; and since raised \$500m.
- The government subsidised management fees and structured their capital contribution to favour the private investors. Profits after the return of capital plus interest were distributed as follows: 10% to the Commonwealth; 72 % to private investors; 18 % to the fund managers.
- **IIF is considered to be a backbone of Australian VC industry.** IIF had a total of three rounds before it discontinued in 2014/15.
- IIF helped create many new funds over the different rounds including Allen & Buckeridge, Start-up Australia , Starfish Ventures etc. IIF (in the third round) has AUD\$40 million also invested in the Medical Research Commercialisation Fund as a limited partner.
- Australian government has put a lot of effort to create the pipeline of opportunities in the medical research space. Most recently the government has established a \$500 million Biomedical Translation Fund, with \$250 million of Commonwealth funding that has been matched by private sector investors.

Examples of funds (through public funding)

BRANDON CAPITAL
PARTNERS



FOCUS

- Under the Innovation and Science Agenda (ISA), the focus continues to be on venture capital and industry development. Particularly related to R&D tax Incentive reforms (**focussed on mining, manufacturing, science and research**) and **building AI capabilities and digital economy.**

Australia: Other key policy story



Tax

- Australian government has introduced various schemes to encourage investment in R&D, industry and start-ups.
- There are both R&D tax incentives and capital gains tax (CGT) exemptions for both foreign and Australian residents that meet certain requirements.
- CGT exemption applies to assets held (for at least 12 months) by the super fund or self-managed super fund, managed investment funds, shares of certain profits, gains or losses arising from disposal of investments by certain venture capital entities.
- Under the VCLP and EVCLP structures, eligible domestic and foreign investors can get both exemption from income tax and CGT.
- The Research and development (R&D) tax incentive is the government's key mechanism to stimulate Australian industry's investment in R&D. R&D tax incentive provides a tax offset for some of a company's cost of doing eligible research and development (R&D) activities by reducing a company's income tax liability. Tax offsets of 43.5% or 38.5% are available for costs incurred on eligible activities depending on a company's annual aggregated turnover.

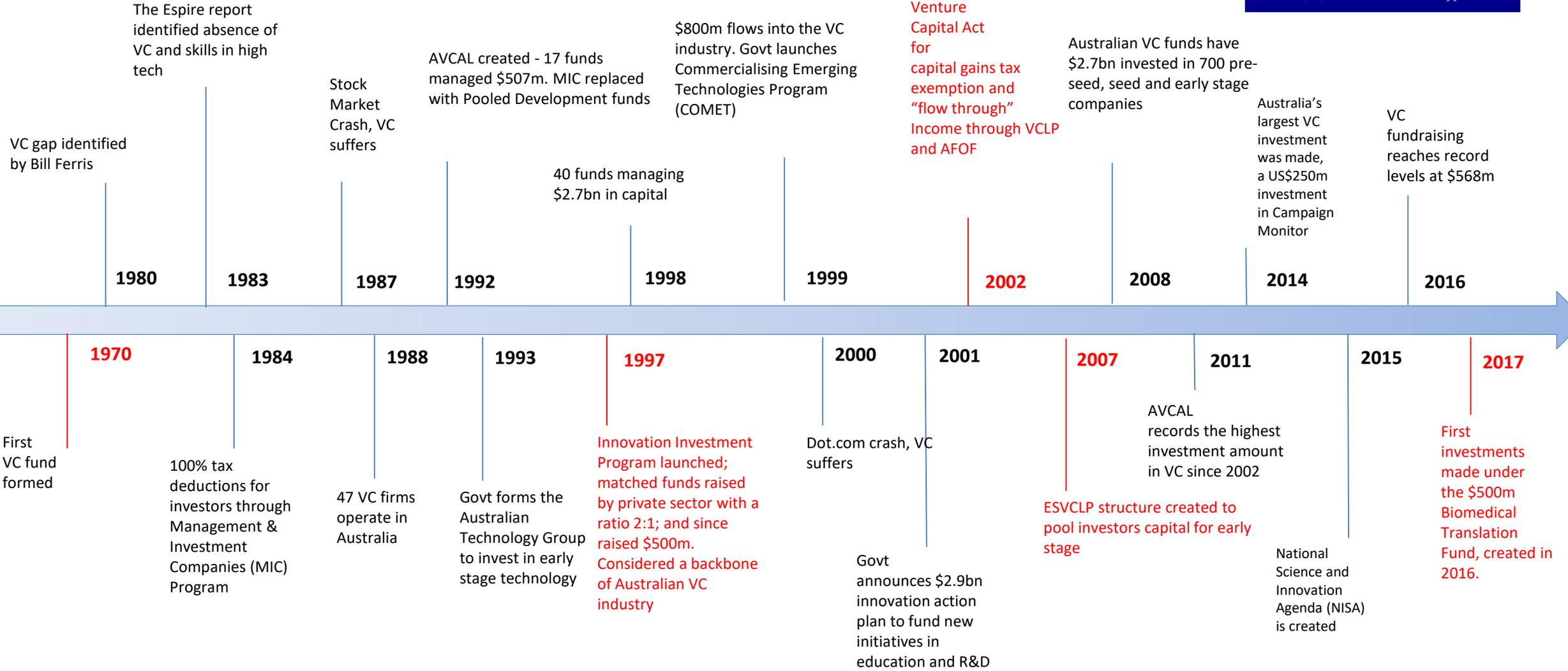
Migrant

- To increase investment in productive assets, in 2016 Australia has made changes to the Significant Investor Visa (SIV) category, requiring them to invest AUD\$500,000 into a venture capital (VC) or private equity fund.
- In 2016/17 Australian Trade and Investment Commission (Austrade) reported AUD\$900m in complying investment, including AUD\$90m committed (raised) to VC and \$270m invested in small and emerging Australian companies. The overall impact of these changes are yet to be established.

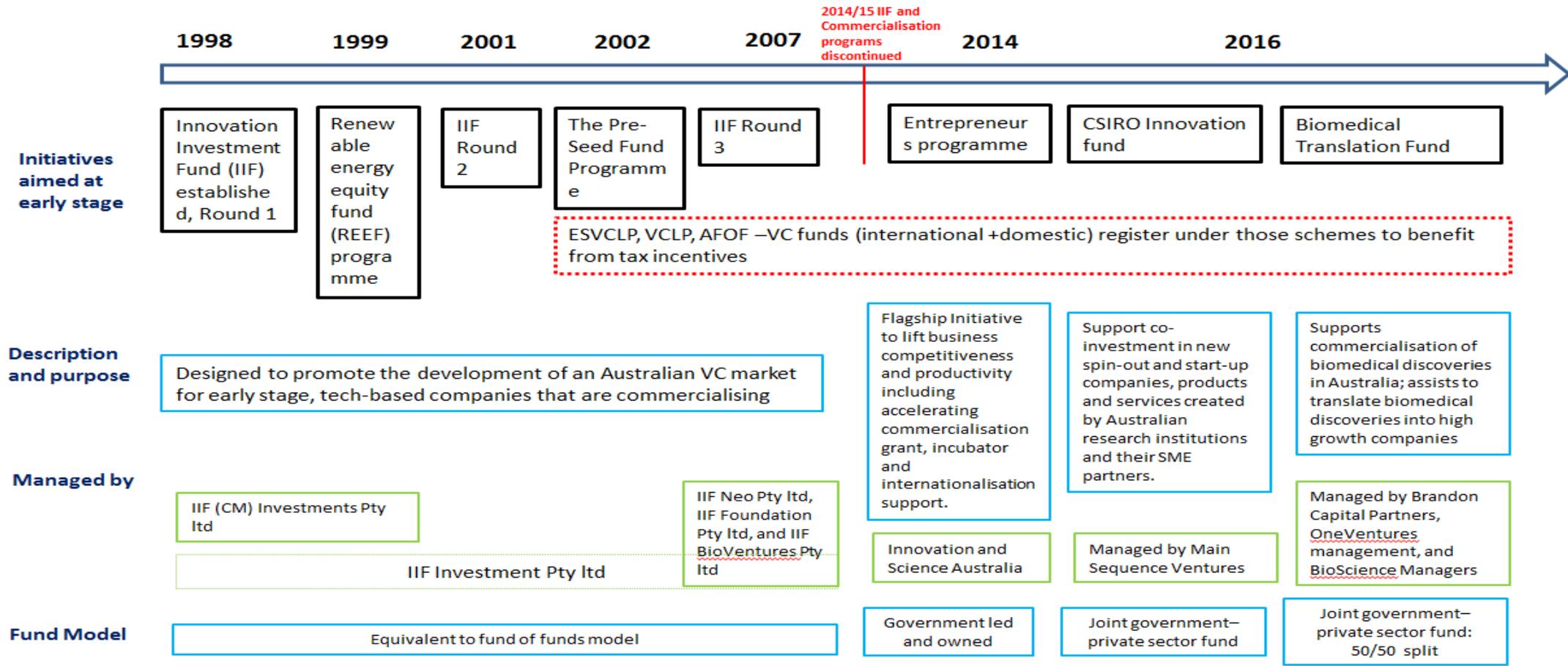
Other

- Apart from R&D tax incentives, there are other incentives for Australian businesses and industries, including:
 - The Entrepreneurs program (provides a network of business advisers that can help small and medium enterprises to be more competitive and productive),
 - Cooperative Research Centres program (a competitive, merit-based grants program that supports industry-driven multi-year research collaborations),
 - Business Research Innovation Initiative (grant program),
 - International research collaborations and various industry specific programs including industry 4.0 and transitioning Australia's automotive manufacturing industry.

The History of VC in Australia



Zooming in on Innovation Investment Programme



Singapore



Basic info

- Singapore is a sovereign city state in Southeast Asia, with a population of 5.6 million – 39 % of them foreign nationals. Singapore is a global hub for education, entertainment, finance, healthcare, human capital, innovation, logistics, manufacturing, technology, tourism, trade, and transport. Singapore VC industry in 2017 (Q4) was US\$46 billion.

Key Government Policies

- Singapore is well-known as a leading financial centre, hub for new high value added jobs, and popular tax haven for the wealthy. It has a low tax rate on personal income and tax exemptions on foreign-based income and capital gains.
- There are also government policies directly targeted at developing the local VC market. Various government programmes were established to provide public funding or co-funding opportunities to entrepreneurs. For instance, the Early Stage Venture Investment Fund co-invests with private VC funds to invest in Singapore-based early-stage high-tech companies. Likewise, SEEDS Capital works with
- Incubators, accelerators and VC firms to invest in deep tech start-ups. Singapore government has also adopted flexible legal structures and liberal tax policies to encourage onshoring of funds.

Early stage market vitals

- Singapore is experiencing a surge in venture capital fundraising, reflecting growing interest in Southeast Asia's start-ups. Singapore is the 6th largest VC market in Asia (with US\$ 46 billion as at Dec 2017), lagging behind traditional rivals like China, Hong Kong, South Korea, India and Japan.
- One of the first venture capital fund set up in Singapore was South East Asia Venture Investment ("SEAVI") in 1983, with participation from the U.S venture capital firm Advent International. The first public investment in venture capital fund was in 1986 by the Economic Development Board of Singapore (EDB). In 1993, the Singapore Venture Capital Association (SVCA) was established. Number of VC funds in Singapore grew exponentially in the 1990s and 2000s.

Government stakeholders

- Singapore's enterprise promotion agency (SPRING); Monetary Authority of Singapore;
- Singapore Economic Development Board;
- Temasek Holdings.

Singapore: VC Funding policy story



Public Funding (eg Fund- of funds)

- Early-stage companies typically obtain funding from dedicated venture capital funds, corporate venture capital provided by in-house venture capital divisions of companies and Govt. funding programmes
- The National Framework for Innovation and Enterprise administers various schemes including:
 - The Early Stage Venture Fund, where the National Research Foundation (NRF) invests with venture capitalists on a 1:1 matching basis, with a focus on Singapore-based early-stage tech companies.
 - The Technology Incubation Scheme, where the NRF co-invests in start-ups incubated by selected tech incubators.
 - The Innovation Cluster Programme, which encourages the formation of innovation clusters for quick commercialisation, job creation and sector growth by deepening ties between companies and research and development institutions such as universities and government agencies.
- SPRING Singapore (Singapore's enterprise promotion agency) also offers dollar-for-dollar co-investment programmes with independent third party investors (SPRING SEEDS) and pre-approved business angels (the Business Angel Scheme), and the Monetary Authority of Singapore (MAS) provides support for "proof of concept" trials, where it funds 50% of the costs (up to S\$200,000 per project) for Singapore-based trials of promising FinTech ideas.

Examples of funds (through public funding)



Focus

- Singapore focuses heavily on the high-tech, deep tech, and emerging technology such as AI, Robotics, Internet of Things, ICT and healthcare.

Singapore: Other key policy story



Tax

In Singapore there are variety of tax incentive schemes which are quite generous and apply both to funds and management fees:

- approved venture funds (tax exemption on specified income from approved by Minister for Finance investment schemes)
- fund management companies (a concessionary tax rate of 5% on management fees and bonuses from managing an approved fund)
- angel investors (tax deduction to encourage individuals to invest in start-ups based on the amount of qualifying investment up to S\$500,000 of investment costs – offset against individual’s total taxable income)
- gains from the sale of company shares which meet specified conditions (under this scheme, upfront certainty of non-taxation will be given on gains derived by a company from disposal of ordinary shares that meet the specified conditions)
- one-tier corporate tax system that applies to tax residents (tax exemption of dividends paid)
- fund management tax incentive schemes (include Resident Fund Scheme, Enhanced Tier Fund Scheme, Offshore Fund Scheme all benefit from tax exemptions - all funds whether predominantly domestic or overseas have to be managed by a Singapore fund manager).

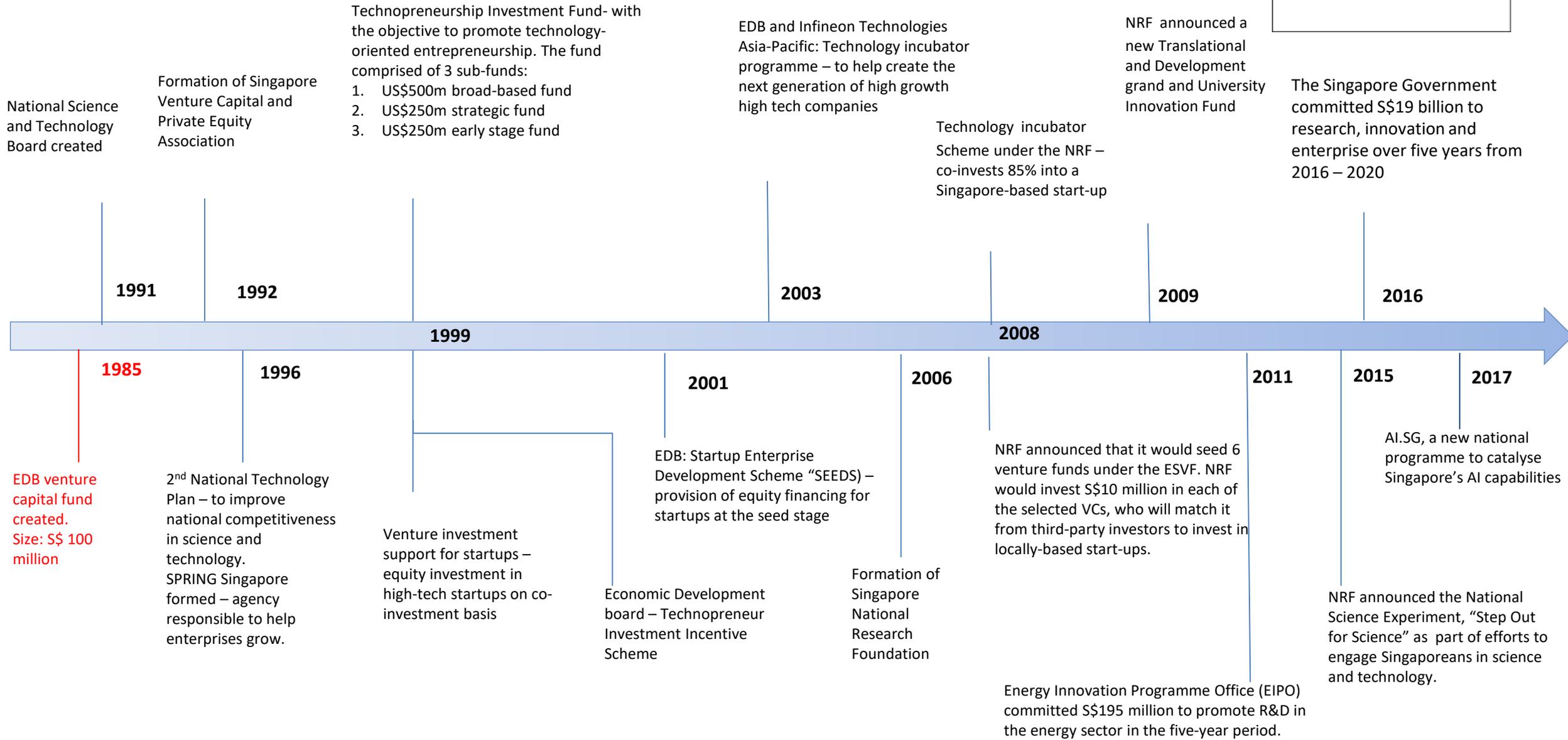
Migrant

- Singapore has Global Investor Program, which allows investors interested in starting up a business or investing in Singapore, get a PR status. An investor or business owner can either invest at least S\$2.5 million in a new business entity or in the expansion of an existing business operation; or invest at least S\$2.5 million in a GIP fund (PE funds approved by the Government) that invests in Singapore based companies in particular industries. In addition to that, there are other entrepreneurial experience and other requirements.
- This category of migrant visa is very interesting as it does not even have an option of investing the funds in non-productive assets.

Other

- In addition to tax incentives that relate to the VC climate, there are other tax credits and incentives available to taxpayers involved in specified activities or industries, including:
 - Pioneer tax incentive (manufacturing approved products with high tech content – get a tax exemption),
 - development and expansion incentive (corporates engaging in new high-value-added projects – can get a tax rate deduction),
 - productivity and innovation credit (400% deduction for qualifying expenditure incurred in respect to 6 qualifying activities: acquisition or leasing of IT or automation equipment, staff training, acquisition of IP, rego of IP, R&D, design).
 - PIC only available on the first S\$400,000 of qualifying expenditure.
 - There are many other incentives including financial services incentives.

The History of VC in Singapore



United States



Basic Country Info

The US is the third largest country by area, and has a population of 327 million people. The country is comprised of 50 states, a federal district, and 5 major self-governing territories.

Key Policies

The VC industry came into its own only after a regulatory change in 1979 that allowed pension funds to invest in VC.

- Several tax incentives are designed to support entrepreneurship by encouraging investment in innovation. The federal R&D tax credit was first introduced in 1981 and has remained part of the tax code ever since. Its purpose is to reward U.S. companies for increasing their investment in R&D in the current tax year.
- Other tax credits are more targeted, such as the investment and production tax credits that encourage renewable energy. VC general partners also benefit from Internal Revenue Service rules that regard carried interest as a long-term capital gain, which is taxed at 15 percent, significantly less than the top ordinary income tax rate.
- There have been recent changes to the corporate tax system that favour corporations.

Early stage market vitals

The US VC market is the pioneer of VC markets in the world. The origins of the -modern private equity industry date back to 1946 in Boston.

- The 1960s-70s were the decades of developing the early venture capital market in the US and beginning of the Silicone Valley. Initial developments in the venture capital industry were mostly in technology finance.
- The US VC market dominated the world in the 90s (95% of global VC was in the US) to just over 50 percent today.

Government stakeholders

In-Q-Tel (not for profit venture capital corporation that invests in high-tech to equip central government agencies with the latest information technology);
Small business investment companies program;
National Venture Capital Association

United States: VC Funding and other Policy story



Public Funding in VC -SBIC

- US government does not really intervene in the VC market but they did so in the past.
- Congress established the Small Business Investment Company (SIBC) program in 1958 in order to create another pathway for long-term capital to be made accessible to small businesses.
- This is basically government-sponsored venture capital. The SBA does not directly provide cash to the SBICs. Instead, the SBA guarantees loans that the SBICs take out in order to boost the amount of capital they are able to provide to businesses. There are presently more than 300 SBICs licensed across the United States, with around a billion dollars invested annually in hundreds of companies. The program's success stories include major players like Apple, Costco, Intel, FedEx and Jenny Craig, to name a few.

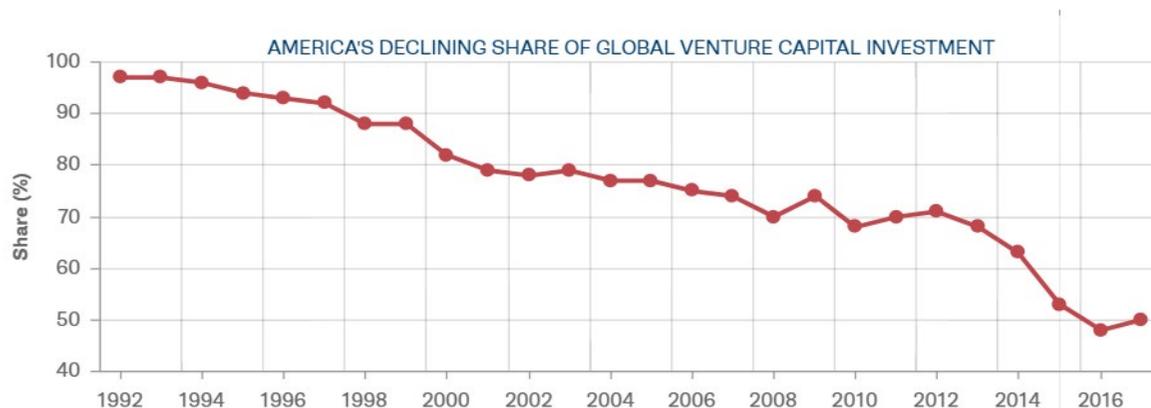
Tax policies

The US has recently introduced some changes to the tax system which can benefit startups:

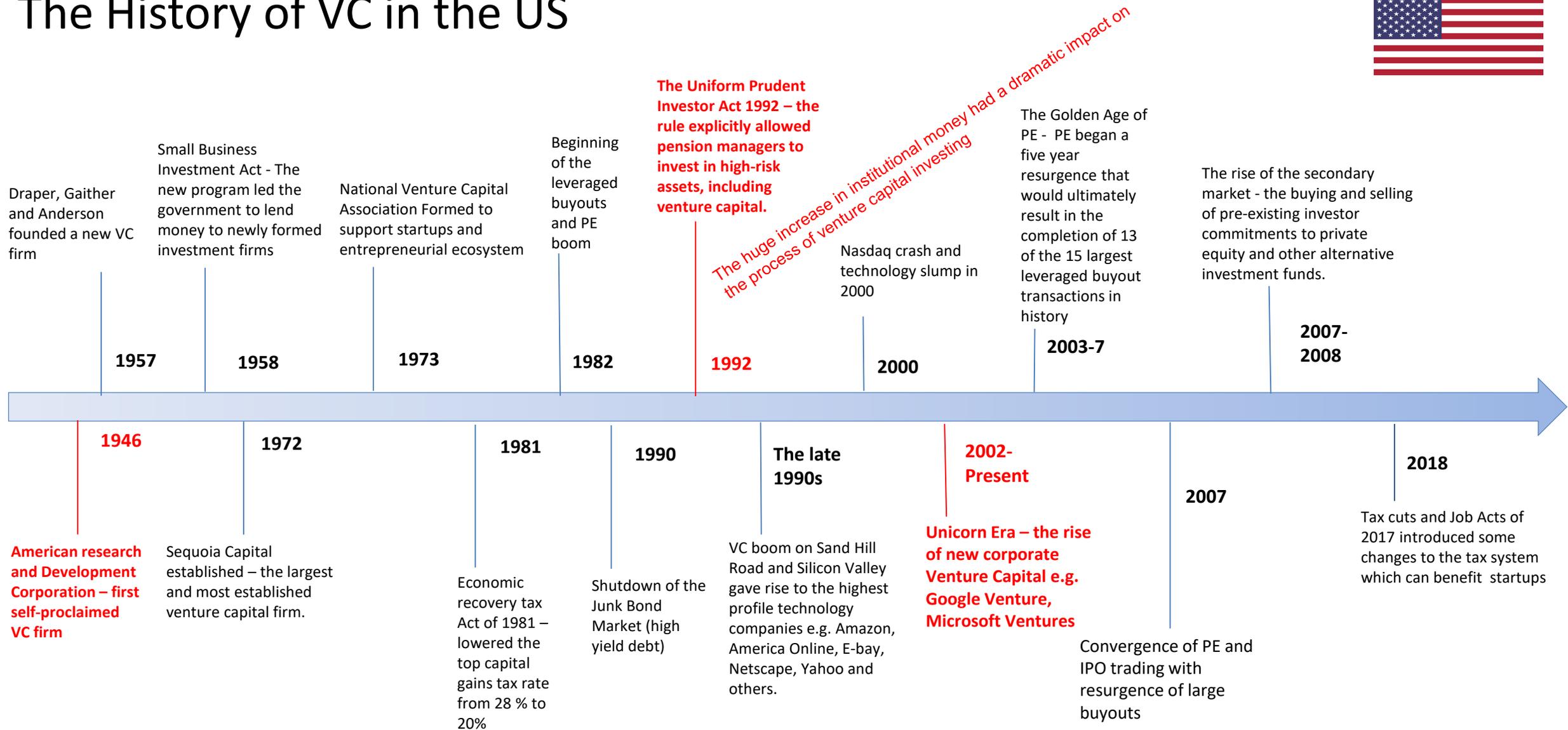
- the corporate tax rate (applies to C-Corporations) has dropped from 35% to 21 %.
- The US is moving from a global taxation regime (taxing profits on US companies regardless of where in the world they are earned) to what is called a territorial tax system. This means that a US company that earns income in, for example, the United Kingdom now only has to pay taxes in the UK without having an additional US corporate tax being levied on the UK-sourced income. This should arguable lead to higher investment in the US.
- certain assets can now be immediately depreciated rather than capitalized
- The Alternative Minimum Tax (AMT) was completely removed from corporate taxation

Other policies (migrant etc)

It has been proposed to introduce the US startup visa program, but has been delayed by Trump administration. The US does not really support the VC sector directly but rather through R&D funding and R&D tax incentives.



The History of VC in the US



Israel



Basic info

- Israel, officially the State of Israel, is a country in Western Asia with an estimated population of around 8.9m. Israel's economic and technological centre is Tel Aviv. Israel defines itself as a Jewish democratic state. Israel is considered to be a developed country and a member of the OECD.
- The country benefits from a highly skilled workforce. Israel is in midst of on-going political conflicts (Arab-Israeli and Israeli-Palestinian conflicts). Conscription exists in Israel for all Israeli citizens over the age of 18 apart from Arab citizens of Israel. Israel has its own air force and navy. The defence budget is at least 6% of GDP (defence spending totalled \$19.6 billion in 2017)

Government supports the VC sector

Israel has a well-developed innovation system, which receives public support in various ways. The government makes significant investment in human capital infrastructure, contributes substantial funds for research, offer tax incentives to encourage multinational corporations to establish R&D activities in Israel, has supported the establishment of a major VC industry targeting high-tech start-ups and runs a range of government programmes in support of technological innovation

Early stage market vitals

- Israel has the highest number of startups per capita in the world. Startup success in this young is driven by the government's innovation policy, technology innovation coming from the national military forces, and the city's culture of diversity and collaboration.
- The Israeli VC industry experienced substantial growth in the 1990s, when Israel's annual VC outlay rose nearly 60-fold from \$58 million to \$3.3 billion. Israel ranks first in the world for VC investments as a percentage of GDP (OECD 2015).
- Israel attracts about 15% of the world's venture-capital investment in cyber-security.

Government stakeholders

- Public institutions:
- Ministry of Trade and Industry – Office of the Chief Scientist, Bi-National Industrial Research and Development Foundation, Israel Armament Development Authority (RAFAEL).
- Start-up support:
- Startup Nation Central, Geektime, SOSA, Microsoft Ventures, Microsoft for Startups, BioJerusalem, Jumpspeed, Siftech, Masschallenge Jerusalem, Made in JLM, Bizmax, Ourcrowd, HUstart, AtoBe, JVP, VLX.



Key Government Policies - Yozma

- The Israeli has strongly supported the development of the VC market. The most important and influential governmental move took place in 1993 when it established the Yozma programme, a direct initiative to create a domestic VC market.
- Another factor that fostered VC growth was the Israeli government's indirect support via legislation that allowed for (i) tax-free investment in Israel by foreign VC firms that had tax-free status in their home countries, and (ii) a favourable taxation of individual investors making investments in equity securities.
- Another successful government initiative was OCS development of a programme encouraging US VC firms to come to Israel.

Key Government Policies – post Yozma

- The government phased out both the YOZMA equity programmes and the equity guarantees in the late 1990s when the success of the pump-priming efforts was evident.
- Since the cessation of Government's involvement in Yozma, the Israeli government identified a remaining gap in the VC market and, in 2011, established a Bio-technology Fund to provide early-stage venture capital into a particular market segment.
- From 2004 onwards the industry expanded to include other types of actors beyond the traditional VC firms, such as business angels, corporate VC and technology-oriented investment companies.



Public Funding (e.g. Fund of Funds)

- Israel's **Yozma** scheme is identified as a successful government intervention to catalyse a local VC market. The Yozma programme was in effect from 1993-1998 and triggered the emergence of the VC industry in Israel.
- The Yozma programme created a total of 10 private VC funds. Each fund had to engage a foreign financial institution together with a well-established Israeli financial institution. In an approved fund, the government invested \$8m of the capital raised. The total capital raised by Yozma was \$250m and they invested in over 200 start-ups.
- NZVIF was based on Yozma Fund of Funds Model.

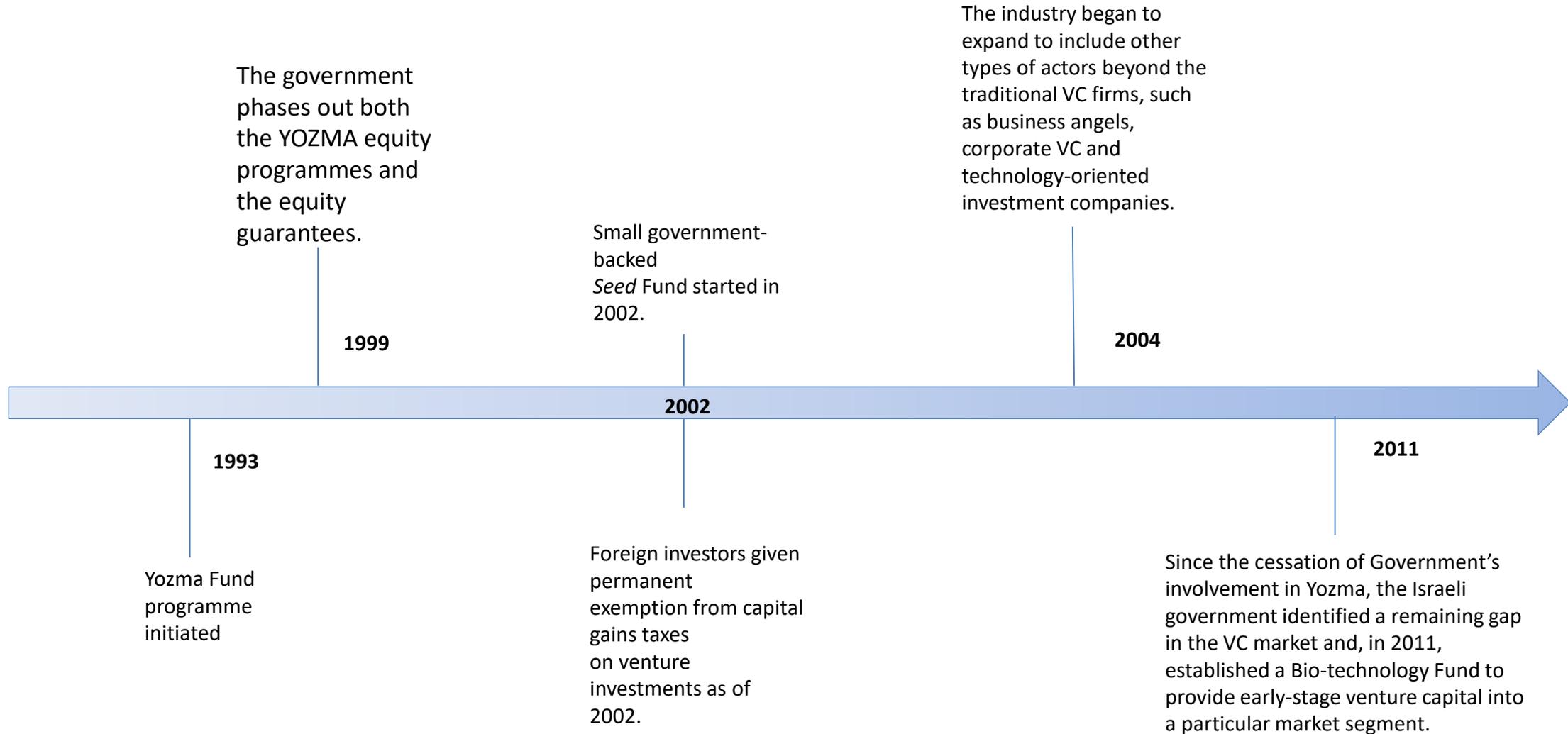
Migrants' policy

Additional contributing factors to the well-developed innovation system has been the government's liberal immigration policy able to integrate thousands of Jewish immigrants into the economy and capitalise on their scientific and technical expertise, as well as the military support for R&D investment which has stimulated private sector company spin-offs in cyber security, electronics, computers, software, communications, imaging and process control.

Other policy

Many VC firms in Israel have ties to actors in the US startup ecosystems, particularly in Silicon Valley. The presence of global actors in the VC network may substantially improve a new venture's opportunity to capitalize on international opportunities and growth prospects.

The History of VC in Israel



Appendix

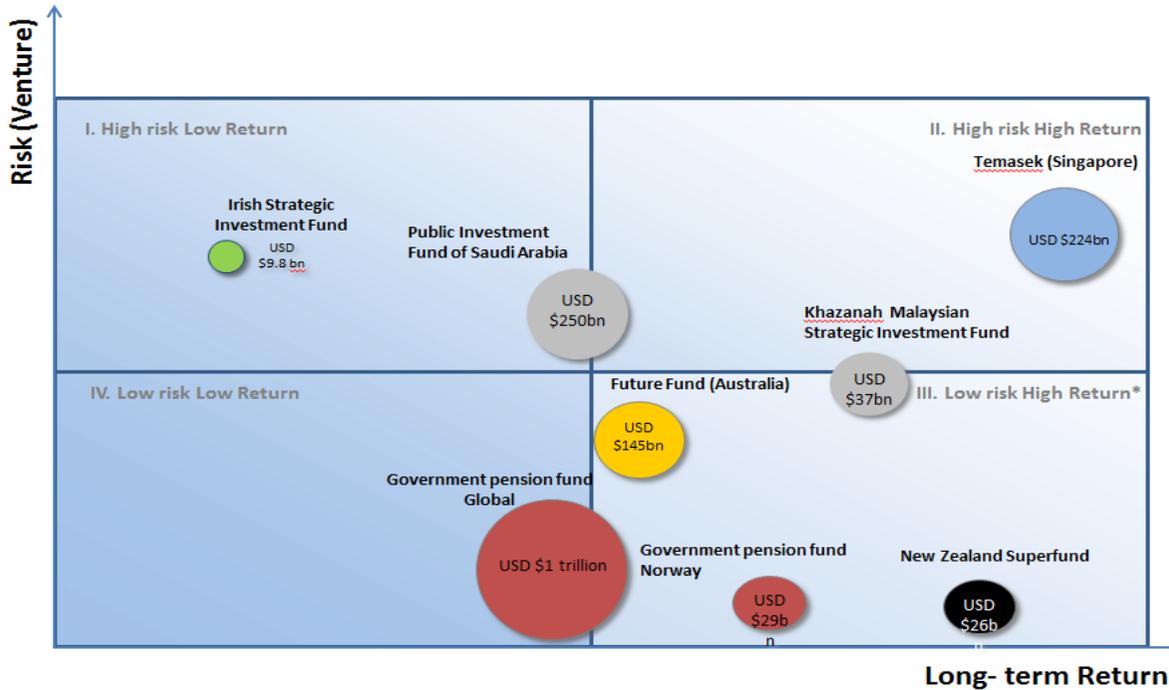
- Summary
- Theoretical context
- International context
 - Benchmarking other countries approach to early stage capital markets
 - Benchmarking other countries Sovereign wealth funds

- History of the NZVIF
- History of the NZSF
- The VC market in NZ
 - Current state of the VC market
 - Lessons and stakeholder feedback
- Other

Overall comparison table of different countries SWFs

	Australian Future Fund	Irish Strategic Investment Fund	The Government Pension Fund Norway (GPFN)	Temasek (Singapore)	New Zealand Superfund
When set up	2006	2015	1967	1974	2001
How it was set up	AUD \$60.5 bn from budget surplus + proceeds from privatisation of Telstra	The National Pensions Reserve Fund was converted into the ISIF, a sovereign development fund focussed exclusively on Ireland	The capital base of the GPFN comes from surpluses in the national insurance scheme.	Temasek was established as an investment company to hold and manage assets previously held by Singapore govt.	NZSuper was established and sponsored by government from the pool of assets on Crown's balance sheet
Purpose	Address future liabilities associated with ageing population	To invest on commercial basis to support economic activity and employment – a double “bottom line” objective	To generate a good return in the long run dependent upon sustainable development in economic, environmental and social terms, as well as well-functioning, legitimate and effective markets.	Manage the investment on commercial basis and contribute to economic development	To smooth the cost of superannuation between today's taxpayers and future generations
Other funds	The board manages 5 funds with Future Fund being the biggest	Connectivity Fund as a sub-fund of ISIF (established in 2015) Directed portfolio is also managed within the ISIF	Government Pension fund has two funds : Government Pension Fund Global (GPF-G only invests globally) and Government Pension Fund Norway (GPFN)	Separate funds: Government of Singapore Investment corp, Monetary Authority of Singapore	Separate funds: KiwiSaver Funds
Government involvement	Managed by the Board under the investment mandate. Government may impose further restrictions under certain circumstances.	Managed and controlled by the National Treasury Management Agency (NTMA). Government manages the directed portfolio (investment in AIB and Bank of Ireland).	Managed by Folketrygdfondet, investment manager, on behalf of the Ministry of Finance. Investment decisions and ownership rights are independent of the Ministry.	Operates under Singapore Companies Act, government has no involvement in investment apart from “past reserves.”	The Guardians of NZSuper, a Crown entity charged with managing the Fund. The fund investments are independent from Government of the day.
Size	AUD \$175.5 bn	EUR 8.7 bn (excluding directed portfolio and connectivity fund)	USD 29 billion - GPFN USD 1 trillion – GPF-G	S\$308 bn	NZD \$39 bn
Return pa	Future fund - 9.3% 7.9 % since inception	4.3% in 2017 2.8 % since inception (7.7 % Irish and 2.2 % global)	GPFN: 11.4 % 2017, 10.6 % last 10 years GPF-G: 13.6% in 2017, 6 % since inception	12.19% in 2018 15% since inception	12.4% (17/18) 10.37% since inception
How much invested in VC	AUD \$2 bn (1.4 %) in VC and 6 % in VC and growth capital	EUR 539 million or 6% of discretionary portfolio	No investment in private equity	S \$120 billion in unlisted assets (39 % of total) ; seeded 5 VC funds	No VC, NZD \$1.1b or 3% in expansion capital
How much invested domestically	AUD \$9.3 billion is invested in domestic listed equity and AUD \$32 billion (22 %) across the portfolio	EUR 3.3 bn (+ EUR 5.7bn generated co-investment from private sector partners)	USD 24.8 billion (85.0%) - GPFN GPF-G does not really invest domestically	S\$83 billion (or 27 %)	NZD \$1.9 billion or 5 % invested in NZ

SWFs across countries

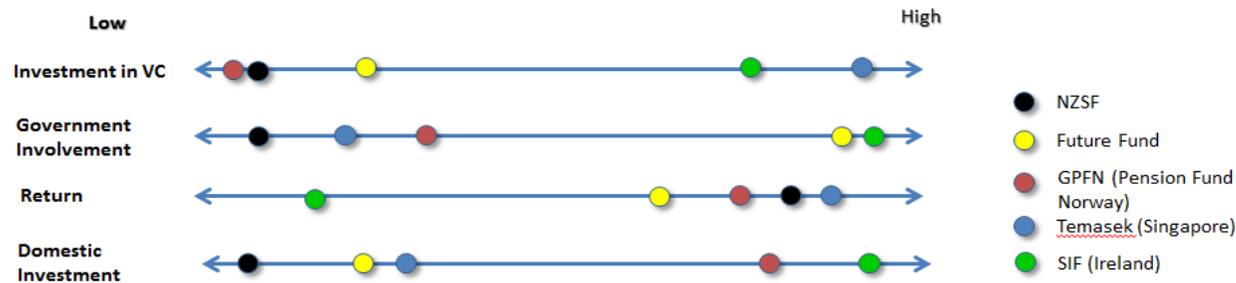


SWFs vary significantly across countries

- A typical SWF comes from a nation's budgetary surplus. SWFs vary significantly across countries in terms of size, objectives, outlook and the level of risk they are allowed or willing to take.

Venture investment vs higher more stable returns

- The chart on the left shows the relative position and size of different funds on the basis of trade-off between risk (investment in riskier assets) and financial returns.
- The funds located at the bottom right have low risks (don't invest a lot in VC) but have relatively high returns. Looking at the distribution of selected funds, the relationship seems to be rather negative meaning that the higher the returns the less the fund invests in the riskier assets.



Trade-offs between returns and strategic objectives

- Governments are generally looking at the trade-offs between the returns and strategic investments (investments in domestic economy including VC and PE markets).
- An example would be an Irish Strategic Investment Fund (ISIF). Temasek Holdings is a clear outlier which has both high financial returns and high level of investment in the venture space.

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NZVIF's establishment

Globally, venture capital markets experienced significant growth in countries where the shift from traditional sectors to high-technology manufacturing and services accelerated in the 1990s. **New Zealand's early stage capital markets have developed and grown** since then:

Value of new venture capital deals as % total private capital investment spending

	US	Australia	New Zealand
1988	0.8%		
1999	2.4%	0.8%	0.8%

But it was clear there was a **gap in the seed capital** end of the VC market at that time. There was:

- difficulty raising capital for innovative projects and firms at the seed stage
- a shortfall in venture capital at the high-risk end of the market, and
- a shortage of firms equipped to manage seed capital, in addition to a shortage of seed capital itself.

The solution: NZVIF

The government committed \$100m for investment into private venture capital funds through a fund of funds model in 2002.

Its aim was to:

- accelerate development of the venture capital industry by increasing the level of seed and start-up investment activity in the NZ market
- develop a larger pool of people in NZs venture capital market with skills and expertise in seed and start-up investment
- facilitate the commercialisation of innovations from CRIs, universities and the private sector
- get more NZ businesses on paths to global success by increasing their access to international experts, networks and market knowledge.

Further addressing the investment gap: SCIF

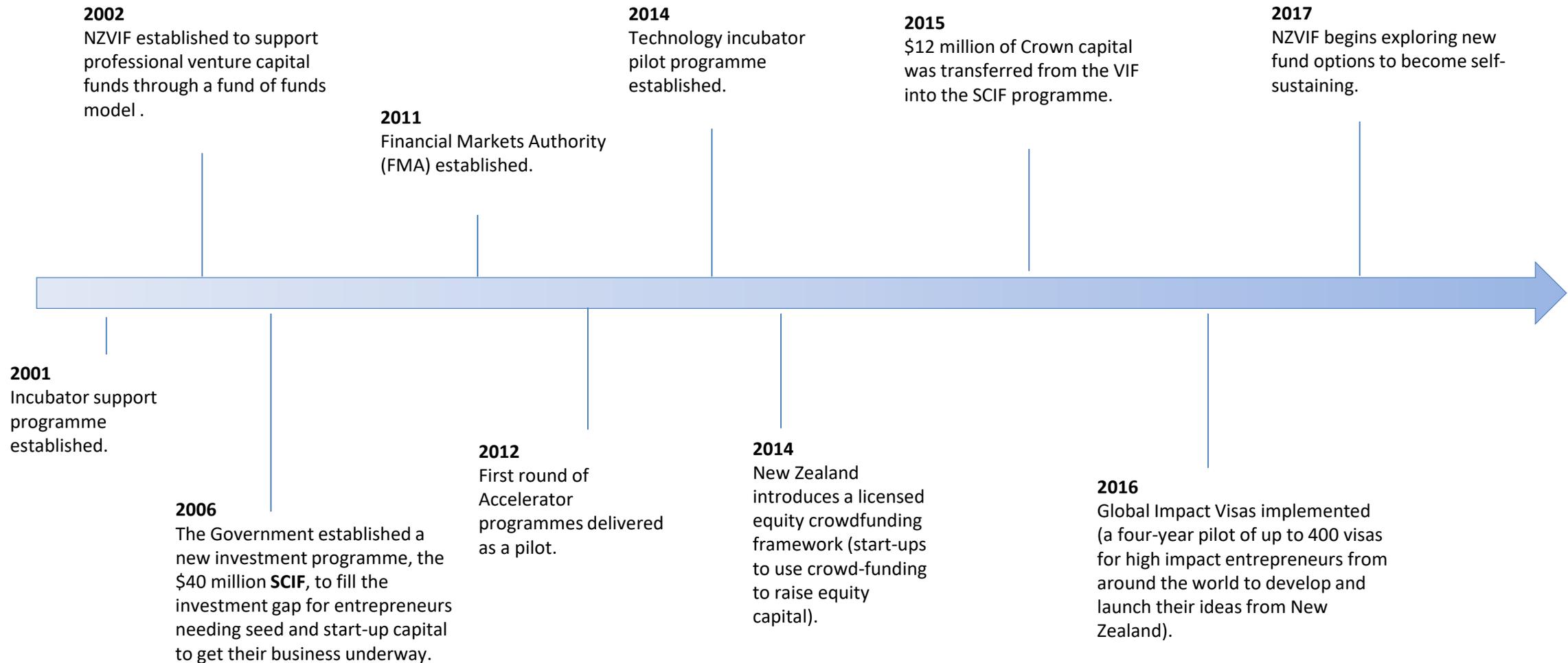
After NZVIF was established, it became clear that there was **still an investment gap** for entrepreneurs needing seed and start-up capital to get their business underway.

In 2006, the Government established a new investment programme, the \$40 million **SCIF**, to fill this gap. The SCIF supports formal 'angel' investment networks through a co-investment partnership model. \$12 million of Crown capital was transferred from the VIF into the SCIF programme in 2015, meaning a total of \$52 million of Crown capital is allocated to the SCIF programme.

Its aim of SCIF was to:

- develop greater professional capacity in the market for intermediating funds between investors and newer technology-based firms
- develop greater scale and better networks for early-stage investment in NZ
- develop greater depth in the specialist skills needed to assess and manage early-stage, technology-based investment
- target the types of investment most likely to face acute problems in accessing finance because of a less well-developed market for early-stage finance
- provide financing that is additional and catalyses investment that would not have occurred without the programme
- target market development in areas not already targeted by existing instruments, such as the Venture Investment Fund
- minimise the fiscal risk and costs.

New Zealand timeline: NZVIF and other initiatives



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NZSF in the venture capital market

What role does the Fund currently play in VC markets...

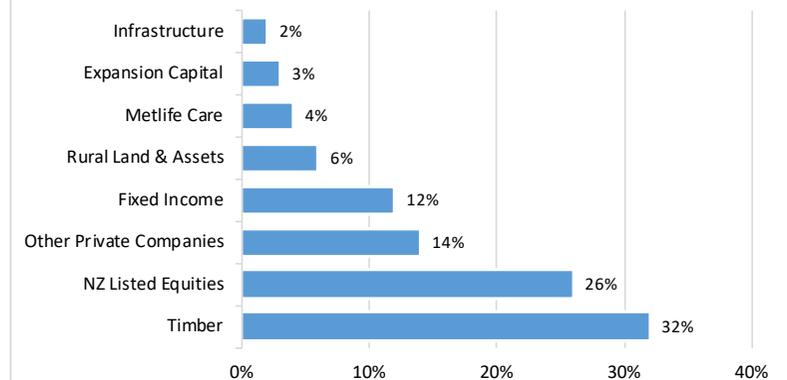
- The Fund had assets of \$39.4 billion as at 30 June 2018, of which \$6.0 billion (15.5%) was invested in New Zealand assets.
- The New Zealand exposure primarily targets five specific investment opportunities to add value to the Fund: listed securities; direct investment; expansion capital; rural land and infrastructure.
- The Fund, via external investment managers, currently invests 3% of its New Zealand exposure in a number of small, high-growth New Zealand companies that are at the 'expansion capital' stage.
- The Guardians define expansion capital as the provision of capital to small, fast-growing private companies that have proven products and established business models. This distinguishes them from venture capital portfolio companies, which have a higher survivor risk.
- The Guardians declined to invest in NZVIF's proposed 'fund of scale' (VIF 2.0). This was on the basis that it did not believe that the risk/return payoff from venture capital in New Zealand is compelling enough. Although it acknowledges there is potential for growth in size of the venture capital market within New Zealand, it believes that for the Fund it will remain a relatively small opportunity set for the foreseeable future.

What role could it play...

We have yet to engage with the Guardians to ascertain what role they believe could play in supporting New Zealand's VC market. We anticipate they could partner with NZVIF to help design and structure a VC fund which the Guardians would choose to invest in.

The Chair has previously indicated a willingness for the Guardians to work with NZVIF to support future fundraising efforts (eg, representation at NZVIF investor roadshows).

NZSF NZ Investments as at 30 June 2018



Reference Material

As part of the review of the role of the New Zealand Superannuation Fund (the Fund), we aimed to understand the objectives of the current policy settings.

- A summary of policy settings was provided in a Treasury paper relatively soon after the establishment of the New Zealand Superannuation and Retirement Income Act 2001: '*Governance of Public Pension Funds: New Zealand Superannuation Fund (McCulloch & Frances 2003)*'.

(<http://mcculloch.org.nz/wp-content/uploads/2014/12/gppf-nzsf-wb.pdf>)

- Additional Treasury reports and Cabinet papers provide further details on the establishment of the Fund.

(<https://treasury.govt.nz/publications/information-release/pre-funding-nzs-information-releases>)

Summary of Governance Settings

- The governance arrangements of the Fund can be described by the following statement:

“A clearly defined portfolio of Crown financial resources, ... managed by an independent governing body ... with explicit commercial objectives ... and clear accountability.”
- These four elements are a complete and integrated package, removing one element would compromise the governance arrangements of the Fund.
- A key element of the policy was that the Fund would not be available to the government of the day to use for any other purpose.
- Legislation sets out the intent for consultation on any changes to take place. Amendments to the Act require the Minister to bring to the attention of the House the consultation process followed, including whether the other political parties and the Guardians were consulted.

The Investment Strategy

- The investment strategy must be value maximising, and deliberately excluded other potential objectives, such as:
 - broader social outcomes,
 - performance of the domestic economy, and
 - financial and fiscal management of the Crown as a whole.
- If it is good public policy to devote Crown resources to these areas, there is no reason for it to be done through the Fund. Poor performance of public pension funds internationally was largely attributable to investments being directed into these areas.¹
- However, the Crown has choices. Contributions to the Fund have been suspended in the past. This requires a transparent process, with explanations on the reasons for adjusting contributions and the approach to ensuring sufficient assets to meet future NZS entitlements.

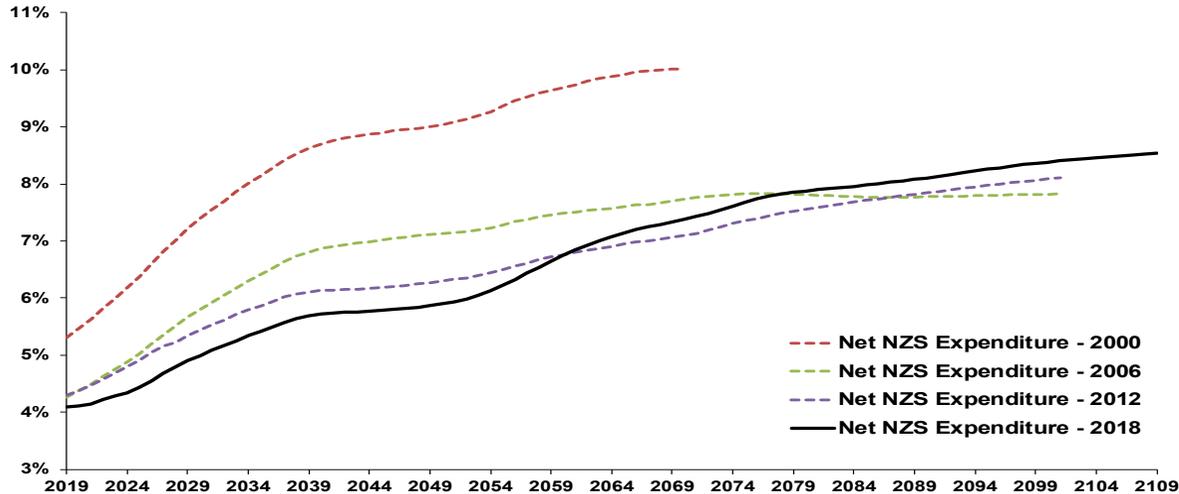
1. Iglesias and Palacios 2000 (<http://documents.worldbank.org/curated/en/637011468767052864/pdf/multi-page.pdf>)

What changes since 2001...

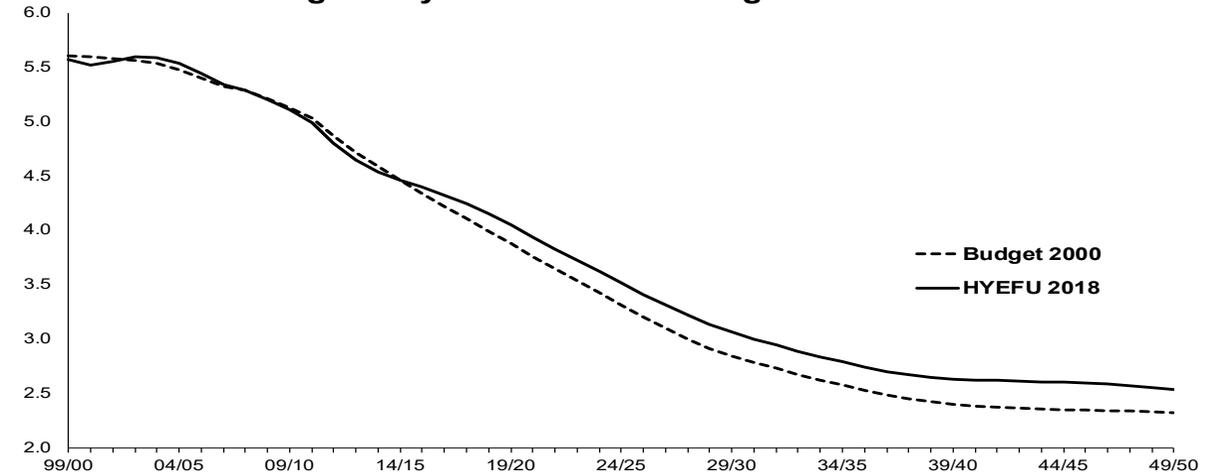
The proportion of net NZS expenditure to nominal GDP has declined since inception, driven by GDP outperformance.

However, the population's average age continues to increase, meaning contributions to NZS will continue to smooth intergenerational equity for a declining proportion of workers to support NZS expenditure.

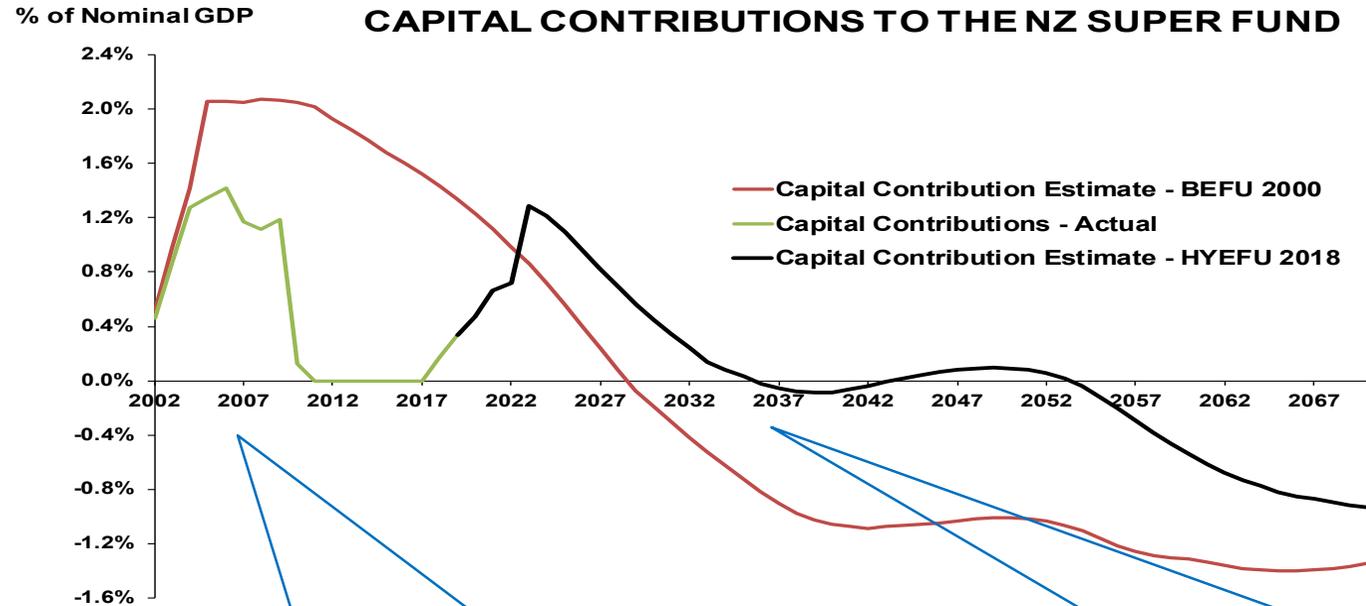
Net NZ Superannuation Expenditure (% of Nominal GDP)



Ratio of people aged between 15 & 64 years inclusive to those aged 65 years & above - Budget 2000 vs HYEFU 2018



...and what impact on the contribution and withdrawal profile?



Required contributions have adjusted to a lower % of GDP as actual and expected GDP has increased...

..but diverting contributions to other initiatives isn't fiscally neutral, the contribution formula requires these to be paid into the Fund in the future.

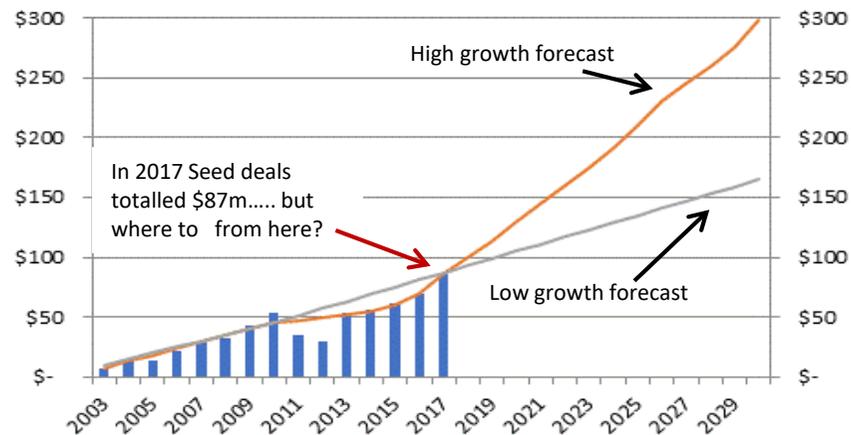
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Current state of the markets

Total seed deals and projections



- The angel & seed market in New Zealand appears to be steady, with growth expected to continue.
- New Zealand's level of angel investment equates to \$18 per capita invested into the early stage eco-system (Australia, the UK and the US at \$13, \$45 and \$107 per capita respectively).

~ NZ\$600m p.a.
(Inc R&D funding)



Research institutes,
R&D Grants

GAP

~ NZ\$70m



Angel &
Seed

~NZ\$20m
p.a.



Venture
Capital
A/B Round

~ NZ\$350m+
p.a.



Expansion
Capital

Total cap +/-



Listed Market &
Large Cap Buyout

USD\$39bn
USD\$75bn
USD\$34bn
USD\$30bn
USD\$400+bn
USD\$3.5bn
AUD\$8.1bn
\$36bn
\$38bn
\$132bn

- The bottle neck is VC Series A/B Rounds.
- Globally, it is typical to see increased levels of investment and fundraising, and fewer deals, as one moves up the capital pathway from angel/seed to VC to private equity to public markets.
- In New Zealand, we observe the opposite trend, in that we see investment levels and capital availability decrease from angel and seed investment to VC Series A/B Round.

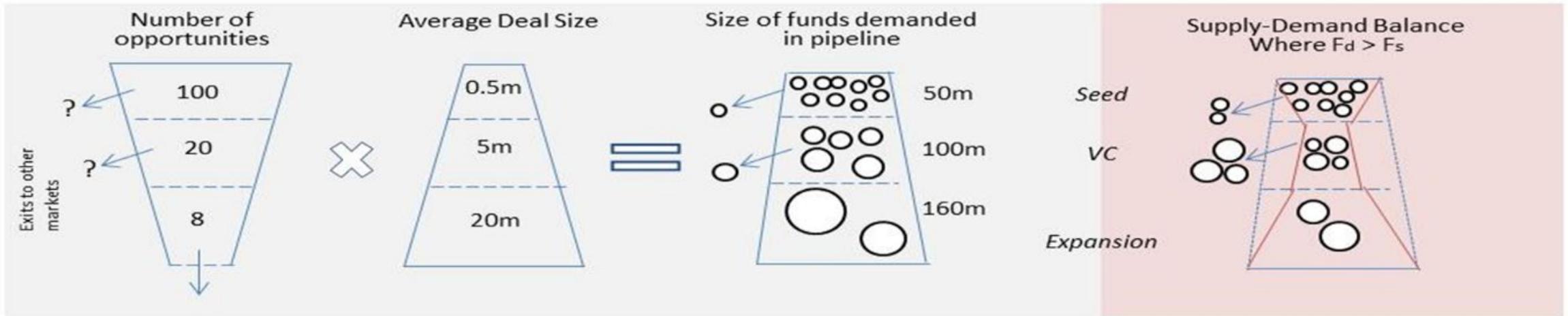
The Series A/B Capital Gap – supply and demand

To understand the VC Series A /B capital gap we need to look at how supply matches up with demand

Supply	Demand
<ul style="list-style-type: none">• Actual investment into series A – C firms• VC fundraising amounts• Capital market structure	<ul style="list-style-type: none">• Business demography data• Pipeline - NZVIF has a good view of the seed/angel stage pipeline and angel activity through the SCIF portfolio• Start-up ecosystem growth over time?

- We can measure with reasonable accuracy the supply side by measuring recent VC investment and fundraising activity.
- The demand side is more difficult to quantify because it is not just the amount of capital being sought by firms, but qualifying whether those seeking it represent opportunities 'worth investing in'.

The Series A/B Capital Gap – conceptual framework



A theoretical formula for demand side

$$O \times D = F_d$$

Where:

O = The number of opportunities in pipeline, (from science and start up eco-system)

But some opportunities may exit prematurely – either starved of funds or forced abroad

D = The average size of deal-flow; affected by estimated size of market opportunities (small in NZ), **but also by** limited capital markets/size of funds – spread over too many opportunities (small bets)

F_d = Demand for Funds in local market

A formula for supply-demand balance

$$F_d - E_{\text{exits}} = F_s + F_i$$

Where:

F_s = Domestic Supply of Funds = local VC capital markets and funds

F_i = International Capital - a balancing item, but not a perfect one – tends to pick bigger, more successful opportunities but ignore riskier ones

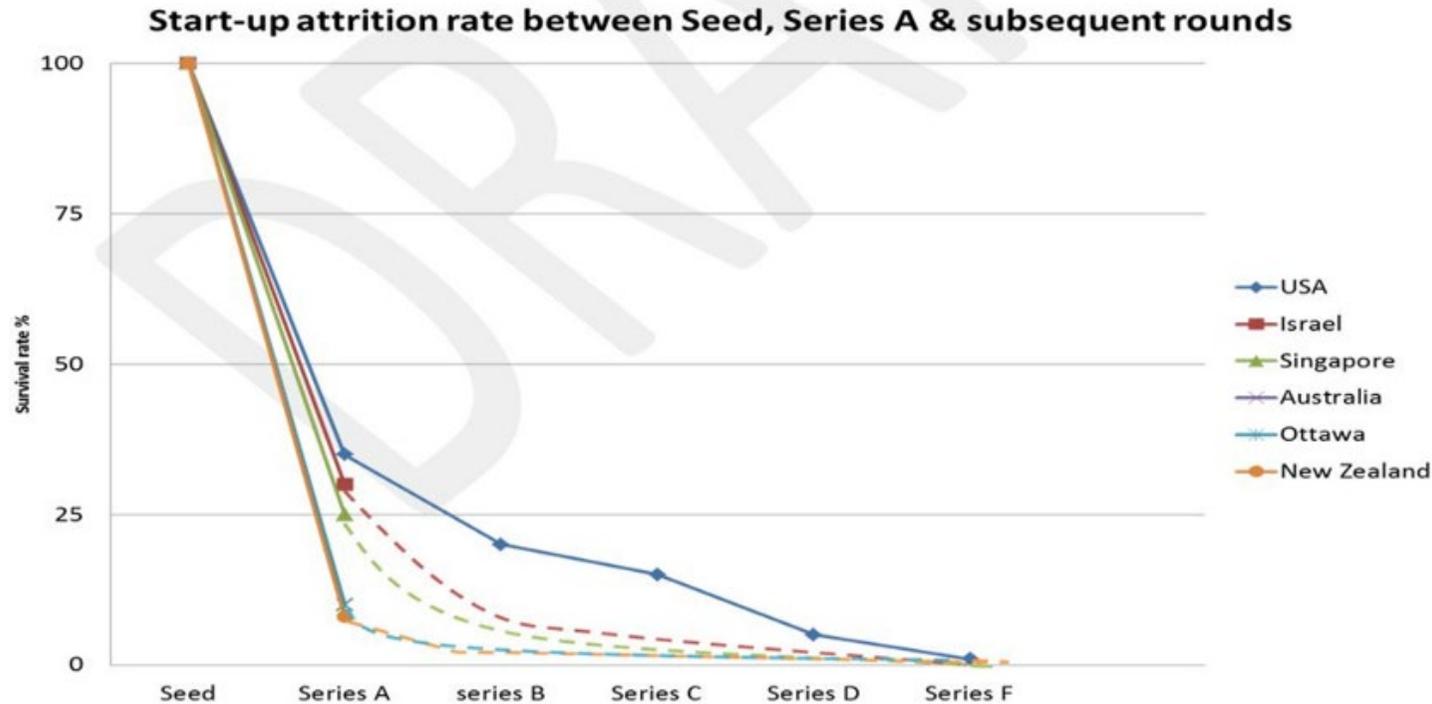
Exits = In a balanced market – this represents natural exits – those firms that go abroad because it is the best thing for business

What our analysis appears to be showing:

- There is **sufficient evidence** of a significant capital gap at Series A level.
- This either **reduces** the number of firms progressing or **forces** them to seek **foreign funding** (where these appear to be the best/biggest firms - cherry picked)
- **Conversion rate is low** @10% versus 25% global average or 40% in the US
- **Deal sizes are also smaller** reducing ability of start up's to compete globally
- Having fewer follow on investments **reduces returns/track record** for VC funds/investors, reducing further the ability to raise successive rounds.

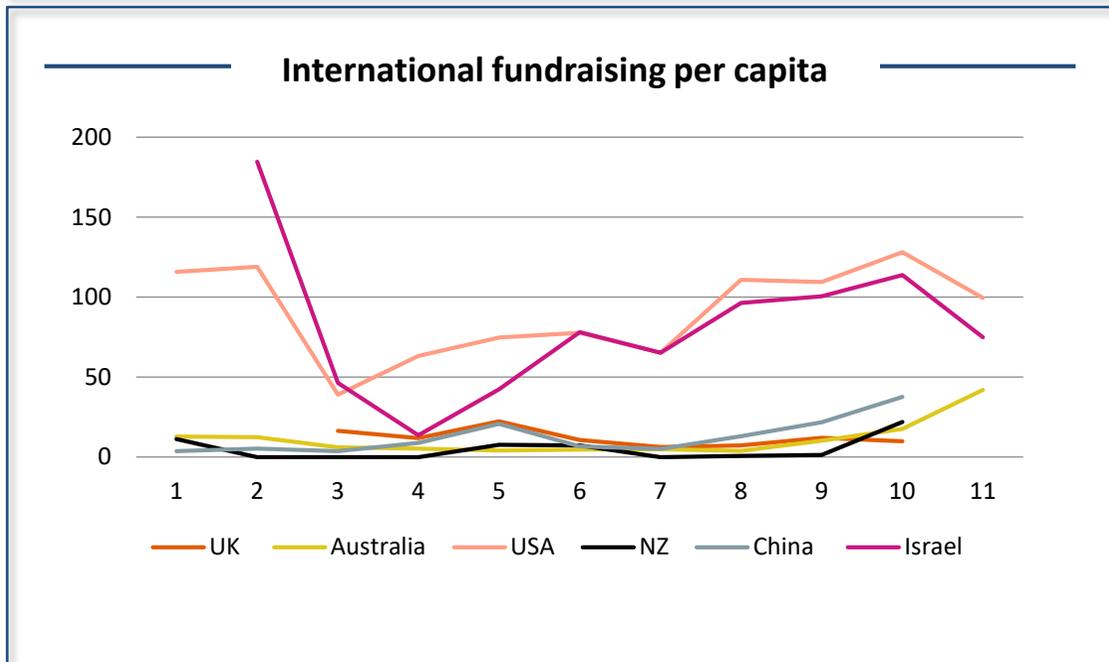
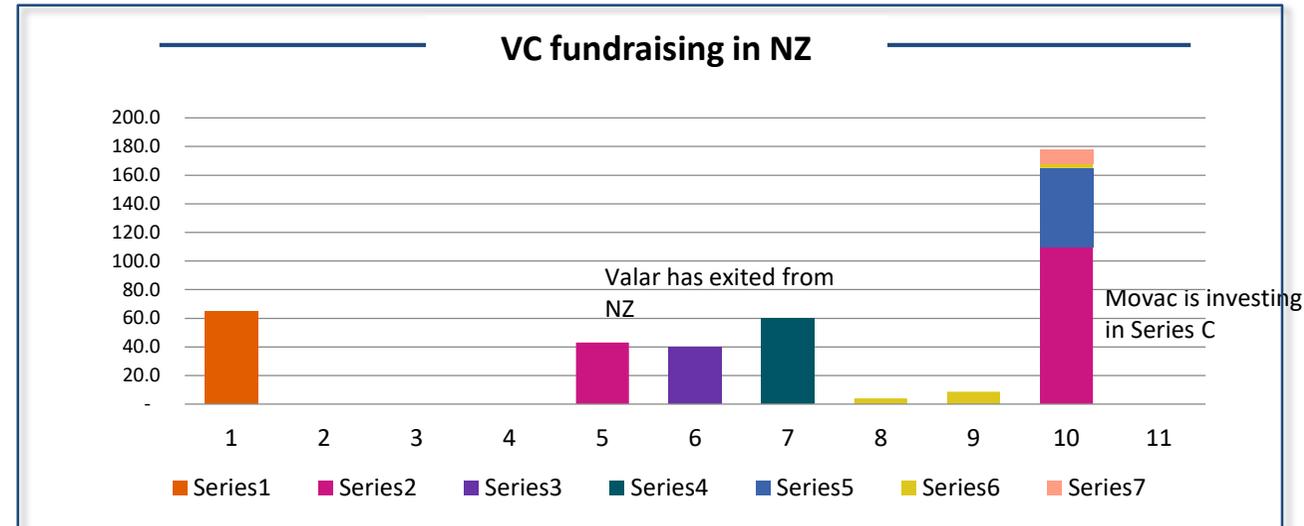
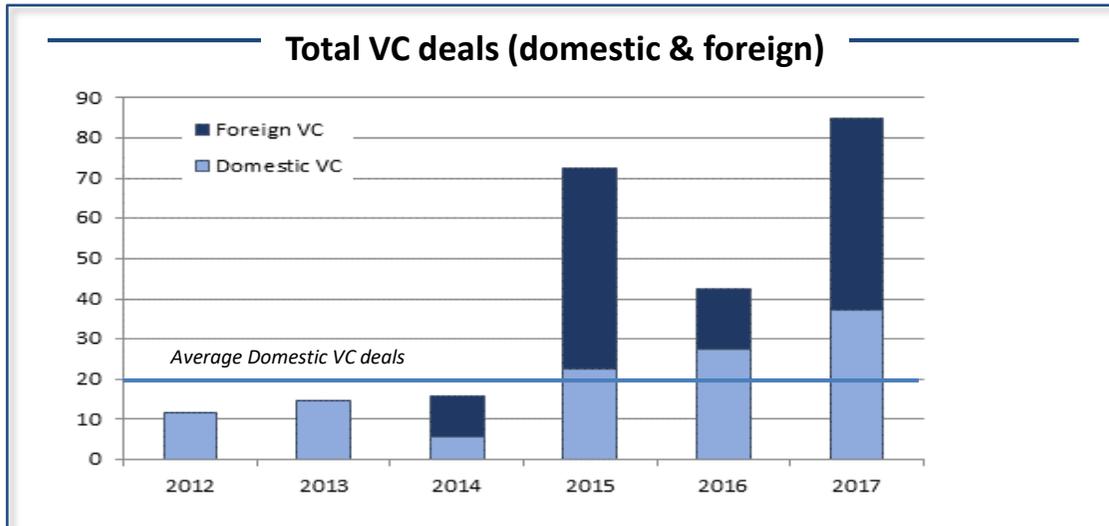
So Where: $F_d > F_s$ So... Exits \uparrow and $F_i \uparrow$ and $D \downarrow$

The Series A/B Capital Gap



- In New Zealand, the current conversion rate is significantly lower, with only 10 per cent of firms that have raised a Seed round being successful in raising a Series-A round.
- As the table illustrates, this conversion rate is much lower than mature ecosystems such as the U.S. and Israel, but it is also lower than more comparable ecosystems like Australia and Singapore.
- US based research shows that there is a conversion rate between Seed and Series-A rounds of over 40 per cent.
- The global median conversion rate as measured by the Startup Genome Project is approximately 25 per cent (i.e. 25 firms will successfully raise a Series A round).

The Series A/B Capital Gap



- Domestic VC investment levels are low (just above \$20m per year for the past three years).
- Foreign venture capital investment into New Zealand firms is inconsistent.
- Global Day One, Punakaiki, and Tuhua are the only domestic VC funds at the moment.
- VC investment and fundraising levels are low in NZ compared to other jurisdictions.
- The undercapitalised nature of our VC market also results in smaller amounts being invested per deal.
- The average VC investment deals sizes in New Zealand is USD\$2 million, in Australia it is USD\$2.7 million on average (and >US\$4 million in 2017), and in the United States it is USD\$10.8 million.

The Series A/B Capital Gap

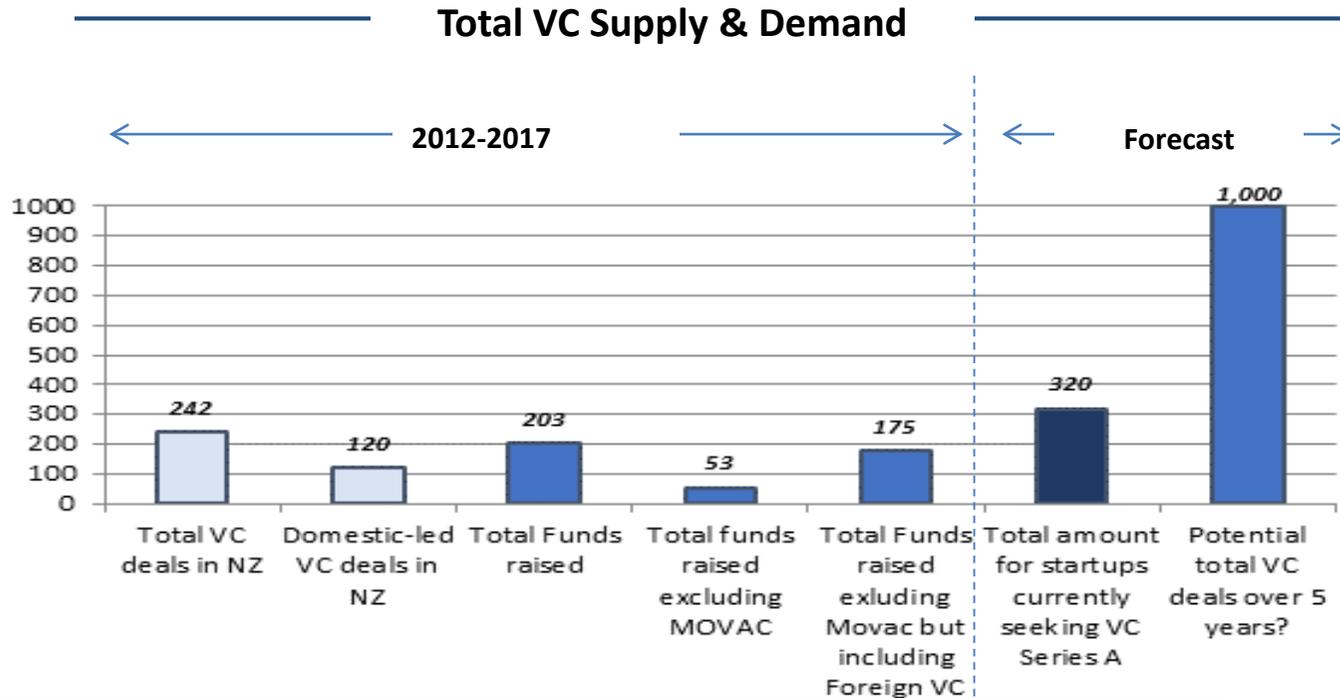
Start-ups pipeline

- In NZ, there are 1,000-1,200 start-ups across all sectors (based on information from New Zealand Business Demography Statistics, the Start-up Genome report and the TIN100 report).
- Approximately 250 to 300 new start-ups enter this pipeline each year and a similar number exit (Based on Business Demography information on firm births and deaths).
- With the estimates of current pipeline size, natural firm birth rates, attrition rates and natural firm death rates we would expect to see around 30 to 40 firms closing Series A investment annually.
- In reality, there were only 11 successful Series A deals and a further 7 Series B or later deals in the last 18 months (as of June 2018).

Upcoming pipeline

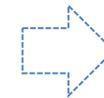
- MBIE constructed a pipeline of New Zealand start-ups that are likely to try and raise Series A and B VC rounds over the next 18 months (as of June 2018).
- There are 52 firms seeking nearly \$400 million in VC investment over the next 18 months (or \$266 million on an annualised basis). The detailed pipeline is on the next slide.
- At the current conversion rates, only about 5 per cent of these firms will be able to successfully raise capital for growth from domestic investors.
- The remaining firms will need to seek international VC investment by attracting international investors to New Zealand, or re-domicile overseas.

The Series A/B Capital Gap – how big is it?



Assumptions may vary

- The Gap could be as high as \$ 250m a year depending on the assumptions
- The foreign funded portion could be higher
- The Series B round funded by domestic sources could be up to \$10-\$15m per firm (the full amount)
- The Seed to Series A conversion could be as low as 25%



Estimating the size of the Gap

- Approximately \$320m (Series A) will be sought by startups in the next 18 months in New Zealand (\$213m p.a).
- Extrapolating over 5 years, a total \$1,065m will be needed.
- Between 2012-2017, only \$53m domestic VC was raised but \$122m was funded from abroad.
- If similar levels of funds were raised domestically and funded from abroad - \$890m additional fund would need to be raised over the next 5 years to meet the forecast demand.
- If we apply a 40% conversion rate (like the US) from seed to VC, the gap of \$890m reduces to \$356m (not all firms seeking Series A warrant investment)
- If half of the firms getting Series A, then get follow on (Series B) investment at roughly twice the amount (ie. Instead of \$2 million Series A funding round, we assume a domestic portion of Series B funding = \$4m) – this results in a further \$350m being required by the successful start-ups for Series B funding, and the gap increasing to \$706m.
- If we build in a \$50m buffer to allow for potential growth of Series A requirements (14% growth on the \$356m), the gap becomes \$756m.
- **The gap is therefore approximately \$750m over 5 years, or \$150m p.a.**

The Series A/B Capital Gap – implications

The under-funding of our early stage capital markets has *negative consequences...*

- Many of our **best firms and ideas** will **go overseas**.
- **Some innovative firms** that might have succeeded, with IP that might have been commercialised, **will now not make it**.
- Our VC market will not mature and develop as much as it should – low returns will be generated for our investors because deals and companies will go overseas before the companies achieve full potential.
- This in turn, will mean they will not be able to attract further investment capital for new funds.
- Without new funds, **the eco-system cannot grow capacity and capability** – something that has been observed since 2002.

...for a more sustainable, productive, inclusive and diversified economy.

Appendix

- Summary
 - Theoretical context
 - International context
 - History of the NZVIF
 - History of the NZSF
 - The VC market in NZ
 - Current state of the VC market
 - Lessons and stakeholder feedback
-
- Other

Key lessons learned during the market development history

Start-ups pipeline development

A weak pipeline of start-ups is linked to:

1. Lack of demonstrated investment capability/ track record:
 - i. There has been a limited track record of success in the VC space since NZVIF started. Without a track record, funds tend to be subscale and subscale funds struggle to pay management fees and attract talent.
 - ii. Limited specialised investment capability.
 - iii. Limited pool of experienced fund managers
 - iv. Too few exits.
2. Access to follow-on capital as a growth constraint:
 - i. The limited access to capital in New Zealand has contributed to the lack of ability to develop and train start-ups locally.
 - ii. The lack of international connections, both for investment and the mentoring that comes with it (New Zealand needs this in an amplified way due to size and distance) has at times limited the opportunity the potential for growth, or driven entrepreneurs overseas in search of those necessary connections.

Market timing

1. Re pipeline issues, fund of funds could have worked at a different time e.g. were affected by factors like the GFC
2. Market feedback has included that NZVIF should refrain from putting any restrictions on the amount or the timing of investing with a partner. Similar to the expectation that NZVIF should become self-sustaining over time after catalysing the market, these expectations on timing are not always realistic.
3. There is a need for sequencing of funding, where the size of funds progressively increase as the pipeline develops. In New Zealand, we started with NZVIF and then followed with SCIF, but this could have happened in reverse to better support the early stages of the pipeline development in the New Zealand market at the time.

Investment attractiveness

Lessons on the impact of NZVIF and SCIF's :

1. The buy-out option for co-investors hasn't been effective and reduces their returns . Stopping it would allow NZVIF to maintain a larger pool of capital.
2. Quality vs quantity of investments
 - i. Stakeholder say that the \$8m caps on the total portion of a SCIF portfolio that can be co-invested with each SCIF partner should be removed. The focus should be on whether each SCIF partner is bringing high-quality investment opportunities to SCIF and not whether the SCIF partner has breached an artificial cap.
 - ii. This also flows into ensuring that SCIF focuses on promoting good quality investments rather than the quantity of them.
 - iii. VIF and SCIF should be more selective about the quality of the portfolio companies it invests in rather than risk leaving good companies undercapitalised.
3. There has been ongoing feedback that there is a lack of institutional investors in the New Zealand market.

Depending on who you talk to there is a range of problems

Summary of feedback from stakeholders

Returns

- Risk-adjusted returns historically low, and certainly not sufficient to attract investors
- VIF's returns = -3% - (but mostly due to buy-out clauses the state of the market). Limited knowledge of buy-out adjusted more recent returns (+-12%)
- Not many incentives to channel private LP capital – tax regime, other (to offset perceived risk/low returns)

Timing

- Previously the start-up ecosystem, pipeline of opportunities and angel/seed activity would've been a market failure – but this is in a surprisingly healthy position right now.
- Buy-backs
- GFC etc
- Other countries time to success (in decades)

Scale & Scope

- Sub-scale funds cannot do follow on investment, cannot pay sufficient management fees, and international investors cannot be bothered to open their chequebook (will only write a minimum cheque of \$50-100m)
- The inability to do follow on investments limit the ability of the fund to achieve good returns prove track record
- Scale can also affect the average size of funding given to each firm (eg \$2m vs \$5m in the US).
- No specialist funds. Generalists suffer from no 'economies of scope' in technical expertise.

- Institutional investors do not play in the space (they need proof first). Do not send signal.
- International investors (VC funds) do not have NZ on radar – still not that many exits, little knowledge. And many want a domestic fund to lead a round (and there aren't many of those with dry powder and spare capacity).
- International institutional investors want a domestic cornerstone investor (eg NZSF), take signal, do due diligence.
- Limited international connection means limited knowledge of latest tech (threats), connections into global firms (MNCs), navigate complex regulations (eg medicine), fewer experts (due diligence), ability to leverage international skills etc

- Few experienced managers, and limited ability to attract managers. Past sub scale funds and expectations about future small size of funds reduce the likelihood of large returns (even at a 2% management fee and 20% carry).
- Lack of domestic exit opportunities (local firms to sell to that use or can grow cutting edge tech) and limited opportunities to list on NZX/NXT – but this needn't be a critical failure and firms can always list or sell abroad.
- Few or no domestic products to enable domestic 'savings' to be channelled into VC funds (eg kiwisaver, HNW).

Institutional & International

Market structure