2017 SINGAPORE ASSET MANAGEMENT SURVEY

ASIAN HUB FOR FUND MANAGEMENT AND DOMICILIATION

Monetary Authority of Singapore

Contents

Foreword

2017 marked a strong year for the global asset management industry. Global assets under management (AUM) grew by 12% to US$79.2 trillion[1], compared to 7% in 2016[2], supported by higher net asset flows and valuation gains. Passive funds gained traction with the share of global AUM increasing from 18% in 2016 to 20% in 2017. The share of global AUM managed by traditional active funds declined from 68% to 66%, while that of alternatives remained stable at 15%.

Singapore's asset management industry grew strongly in 2017. AUM expanded by 19% to S$3.3 trillion, or US$2.4 trillion. Growth was broad-based across traditional and alternative assets, on the back of higher valuations and inflows to Asian markets. Traditional sector AUM gained 20%, as we continue to anchor the operations of global asset managers in Singapore, including AIA which set up its first group-wide regional investment hub here. Alternative sector AUM increased by 17%, led by private equity (PE) and hedge fund managers.

Singapore serves as a Global-Asia gateway for asset managers and investors to tap the region's growth opportunities. In 2017, 78% of AUM was sourced from outside of Singapore. 67% of total AUM was invested in Asia Pacific, with investments into ASEAN countries accounting for 39% of AUM.

[1] Source: BCG Global Asset Management 2018 "The Digital Metamorphosis"
[2] Source: BCG Global Asset Management 2017 " The Innovator's Advantage"

MAS launched the Financial Services Industry Transformation Map (ITM) last year, setting out strategies to grow the financial sector, harness innovation and create good jobs. The ITM, which was developed in partnership with the industry, articulated the vision for Singapore to be an Asian hub for fund management and domiciliation and an Asian centre for capital raising and enterprise financing.

We have undertaken the following initiatives:

Enterprise Financing

In October 2017, MAS introduced a simplified regulatory regime for Venture Capital (VC) managers. MAS also launched a deal making platform – Meet ASEAN's Talents & Champions (MATCH) – to raise awareness of investible opportunities and promote higher deal flows in the region. The MATCH platform attracted US$12 billion of capital for ASEAN enterprises across all sectors. Over 17,000 matches were generated between the 380 participating investors and 840 enterprises.

Fund Domiciliation

Parliament has passed the Variable Capital Companies (VCC) Bill on 1 October 2018, following MAS' consultation on the VCC framework last year. The VCC framework will facilitate the domiciliation of investment funds in Singapore across traditional and alternative fund vehicles, for both open-ended and close-ended funds. MAS expects to launch the VCC framework in the second half of 2019.

Institutional Investor Base

We continue to build up the broader asset management ecosystem. In 2018, the Canadian-based Ontario Municipal Employees Retirement System (OMERS) selected Singapore as its Asia Pacific hub to expand its international presence. This adds to the growing community of public asset owners and global institutional investors using Singapore as a base to make investments into ASEAN.

Technology & Innovation

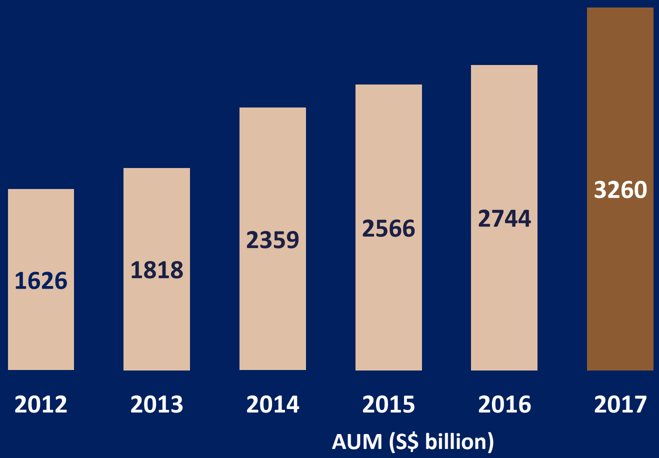
We continue to strengthen Singapore's FinTech ecosystem in various ways. In October 2018, MAS issued a set of guidelines to facilitate the provision of digital advisory services. MAS also introduced an Artificial Intelligence and Data Analytics Grant (AIDA) to promote the adoption and integration of artificial intelligence and data analytics.

The prospects for Singapore's asset management industry continue to be bright, underpinned by strong long-term fundamentals. The region has favourable demographics, with the proportion of the working age population rising in most Asian economies. The emergence of a sizeable middle class and on-going urbanisation will continue to fuel expansion in domestic consumption and investment opportunities. These trends will combine to support growth in asset pools that can be sourced by asset managers. Asset managers play an important role to support the sustainable growth of Singapore's asset management industry, and serve as catalysts for the broader region's economic dynamism.

2017 Key Highlights

S$3.3 trillion
ASSETS UNDER MANAGEMENT

19% TOTAL
20% TRADITIONAL
17% ALTERNATIVE



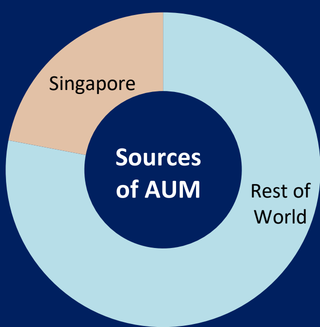
715
REGISTERED & LICENSED FUND MANAGERS

55

ALTERNATIVE ASSETS UNDER MANAGEMENT (S$ billion)

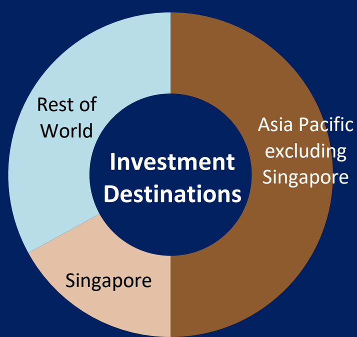
Private Equity	186	23%
Hedge Fund	162	18%
Real Estate Investment Trust	106	13%
Real Estate	101	13%
Venture Capital	4	9%

SERVING GLOBAL INVESTORS



78%
OF FUNDS SOURCED OUTSIDE SINGAPORE

PAN-ASIAN ASSET MANAGEMENT CENTRE



67%
OF FUNDS INVESTED IN ASIA PACIFIC, WITH 17% INVESTED IN SINGAPORE

About the Survey

The Monetary Authority of Singapore conducted its annual survey of the Singapore asset management industry, for the year ending 31 December 2017.

Financial institutions surveyed include Banks, Finance and Treasury Centres, Capital Markets Services licensees (including REIT managers), Financial Advisers, Insurance Companies, Operational Headquarters and Exempt Entities, but excludes direct investments by government-related entities. 800 respondents participated in the 2017 MAS Asset Management Survey.

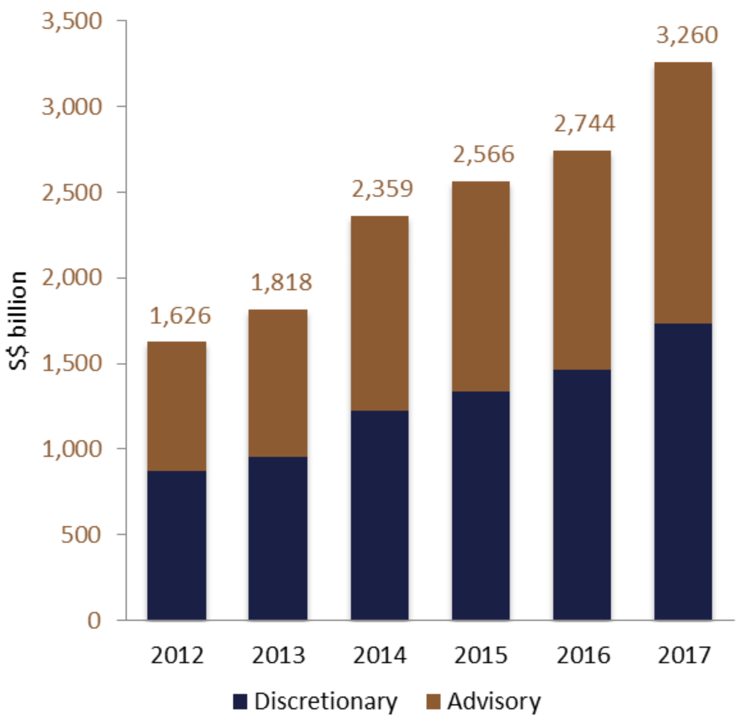
Survey Findings

Assets Under Management

At the end of 2017, total assets managed by Singapore-based asset managers grew strongly by 19% year-on-year to reach S$3.3 trillion, up from S$2.7 trillion in 2016. This has outpaced the past five years' average growth rate of 15%.

S$3.3
trillion AUM

Chart 1: Assets Under Management



▲19%
2017 AUM growth

▲15%
5-year AUM CAGR

Singapore has maintained a high level of discretionary[3] AUM at 53% in 2017, in line with the past five years' average.

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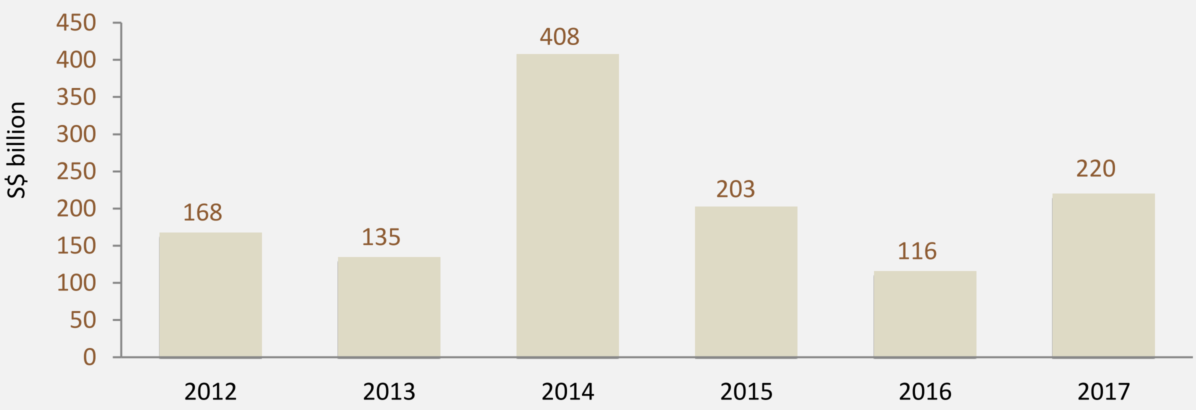
[3] Discretionary AUM refers to funds managed in-house by the Singapore Office where the Singapore Office has substantial input in the investment management process, and where it has the authority to make investment decisions.

Asset managers continue to view Singapore as a conducive place to conduct portfolio management activity. In 2017, there was a net increase of 55 registered and licensed fund managers. This brings the total number of registered and licensed fund managers to 715.

AUM growth supported by net fund inflows

In 2017, Singapore asset managers received net inflow of funds[4] of S$220 billion, higher than net inflows in 2016, due to favourable demand for Asian investment strategies in both fixed income and equities which are predominantly managed out of Singapore. Both traditional and alternative asset managers attracted net fund inflows from investors, with PE and hedge fund managers the main contributors among alternative managers.

Chart 2: Net Inflow of Funds



[4] Net inflow of funds is equal to incoming funds less outgoing funds.

Traditional AUM growth picked up from 3% in 2016 to 20% in 2017, while growth in alternative AUM was steady at 17%. Within the alternative sector, PE[5] AUM growth was robust at 23%, driven by deployment of capital by leading global managers for their flagship Asia-focused funds. On the other hand, VC[5] AUM growth declined as managers returned capital to investors after realising gains in their investments that more than offset the pace of capital deployment into new investments. Prospects of future deployments remain healthy with VC and PE managers reporting S$2 billion and S$25 billion of dry powder, respectively[6]. This is equivalent to 37% and 13% of drawn-down AUM respectively and is in line with 2016.

▲20%
Traditional AUM growth

▲17%
Alternative AUM growth

Chart 3: Alternative AUM

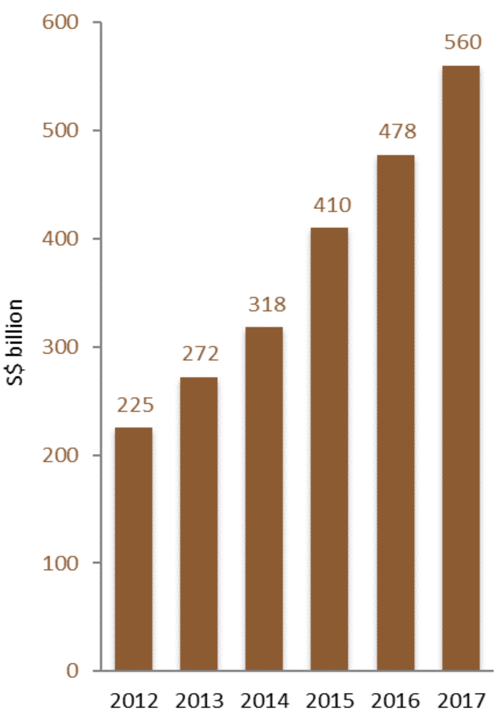
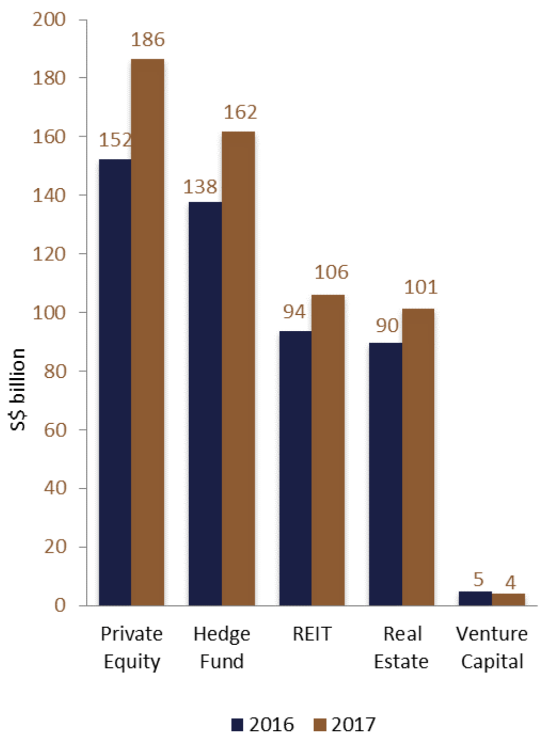


Chart 4: Alternative Sectors



[5] AUM of PE and VC include only drawn-down capital.
[6] Dry powder refers to capital that is contractually committed but undrawn.

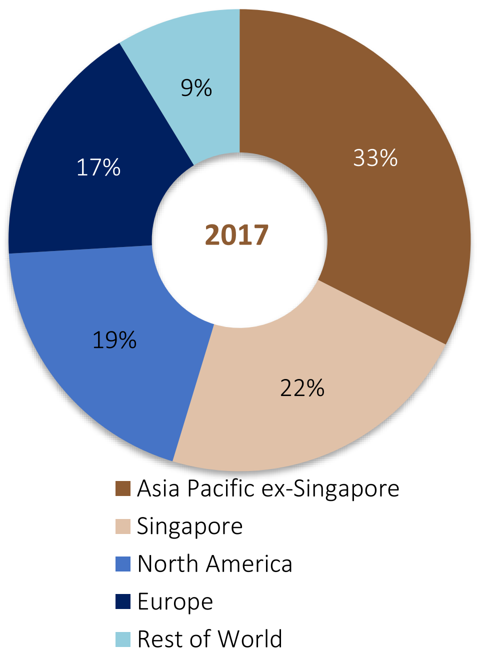
Sources of Funds

In 2017, 78% of total AUM was sourced from outside Singapore, in line with 2016. 33% of total AUM was sourced from the Asia Pacific excluding Singapore, 19% from North America and 17% from Europe, demonstrating Singapore's role in serving regional and international investors.

78%

AUM sourced from outside Singapore

Chart 5: Singapore's AUM – Source of Funds



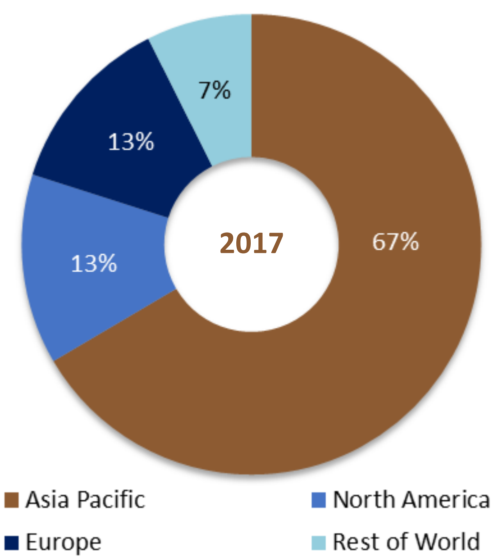
Investment of Funds

The Asia Pacific region continues to be a key investment destination for Singapore-based asset managers, accounting for approximately 67% of total AUM in 2017 compared to 66% in 2016. Within the Asia Pacific region, 39% of AUM was invested in ASEAN.

67%

AUM Invested in the Asia Pacific region

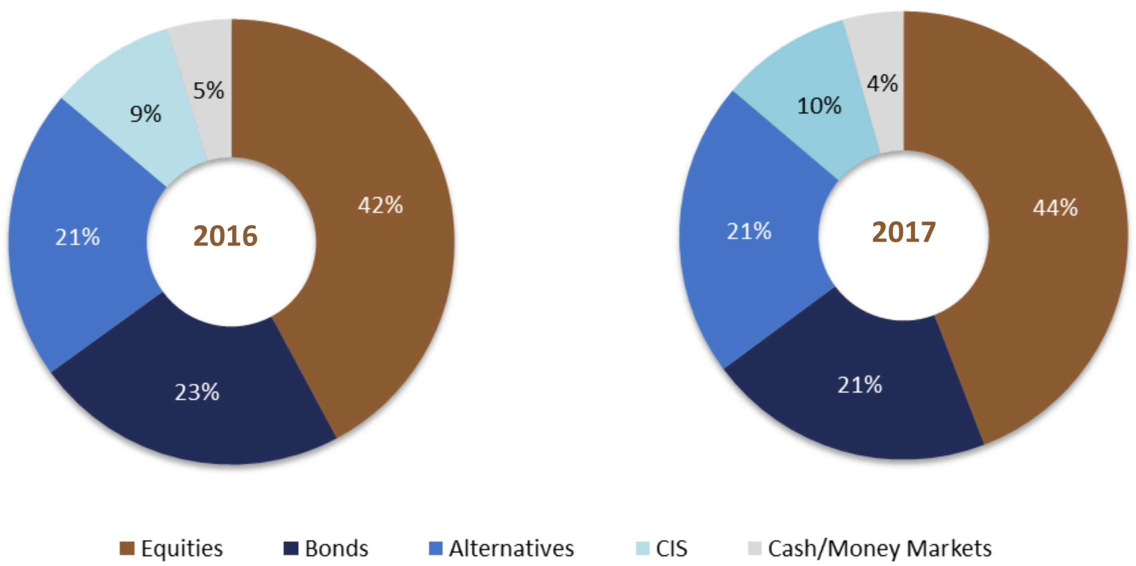
Chart 6: Singapore's AUM – Investment of Funds



In 2017, allocations to the various asset classes remained largely in line with the year before. Allocation to equities rose from 42% to 44% on improved economic fundamentals, led by increased investments into Asia Pacific (32% of AUM) and North America (6%). Allocation to equities in Europe and Rest of the World were stable at 5% and 1% respectively. On the other hand, fixed income investments pared by 2% to 21%, with outflows seen broadly across all regions.

Allocation to alternatives[7] were stable at 21% of AUM, as alternative investment strategies remained a core holding in investors' investment portfolios for diversification of risk and excess returns from illiquidity and credit risk premia in private markets.

Chart 7: Investment by Asset Class



[7] Investments in alternatives include unlisted, private equity, venture capital, real estate and other investments.

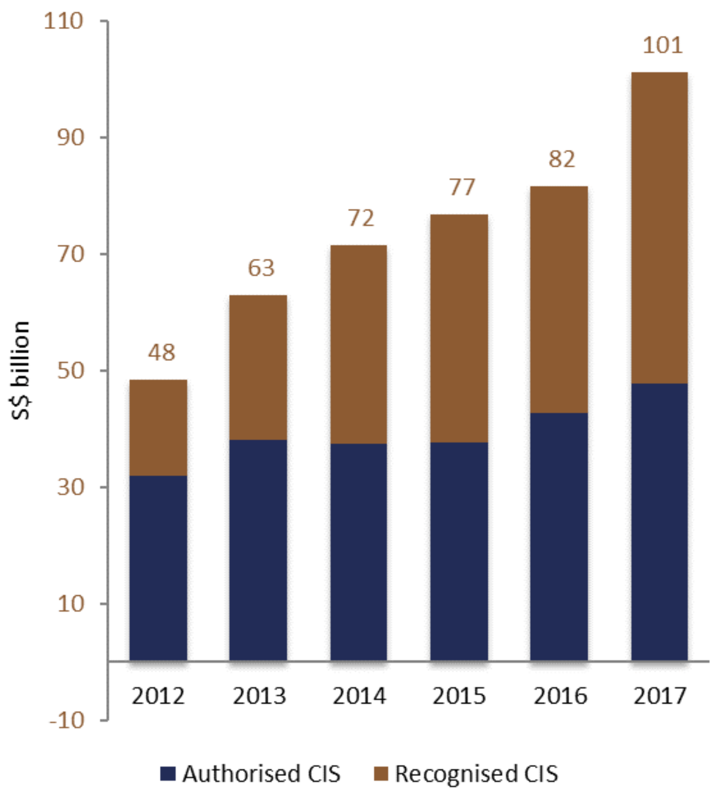
Retail Investment Funds

In 2017, the fund size of Authorised Collective Investment Schemes[8] (CIS) and Recognised CIS[9] offered in Singapore rose 24% to S$101 billion. This translated to a 16% average growth rate in the past five years. The increase in CIS funds size was led by Recognised CIS which rose by 37% to S$53 billion. Authorised CIS growth was also healthy at 12%, reaching S$48 billion.

▲16%

5-year Total CIS AUM CAGR

Chart 8: CIS Funds Size



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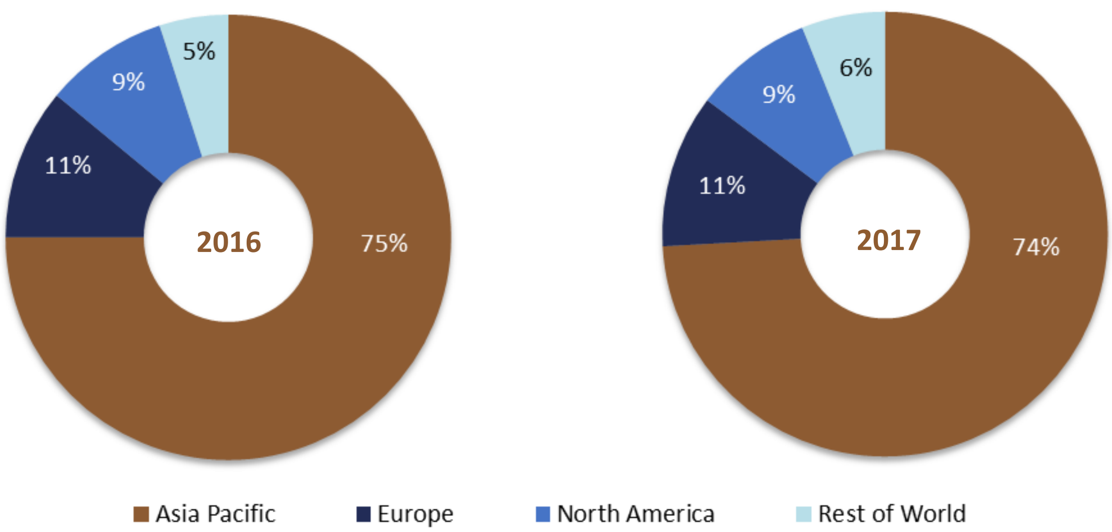
[8] Authorised CIS are schemes constituted in Singapore and offered to retail investors in Singapore.
[9] Recognised CIS are schemes constituted outside Singapore and offered to retail investors in Singapore.

For Authorised CIS, investment to Asia Pacific continues to dominate at 74% of AUM, while allocations to Europe and North America were stable at 11% and 9% respectively.

Chart 9: Investment of Authorised CIS by region



Areas of Development

Developing the Venture Capital and Private Equity Ecosystem

Asia Pacific remains a top investment destination for VC and PE managers in Singapore. As of end 2017, Singapore based VC and PE managers invested 83% of AUM in Asia Pacific, with ASEAN (26% of AUM), India (20% of AUM) and China (14% of AUM) as the top destinations.

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VC and PE managers

In 2017, Asia Pacific deal momentum set a new record, increasing from US$112 billion in 2016 to US$158 billion[10]. Within Asia Pacific, deal activity in Southeast Asia more than doubled from US$8 billion in 2016 to US$20 billion, propelled by mega deals such as Grab and Global Logistic Properties. As a dynamic region with burgeoning opportunities driven by consumption, urbanisation and policy-led reforms, demand for financing from start-ups, growth and large private enterprises will continue to increase. VC and PE managers play an important role. Beyond providing financing, they can also support next-generation Asian companies with advice and expertise on business strategy and execution.

▲28%

5-year VC and PE AUM CAGR

Singapore is committed to establish itself as a vibrant enterprise financing hub. In Oct 2017, MAS introduced a simplified regulatory regime for VC managers. 38 Venture Capital Fund Manager (VCFM) licenses have since been issued. MAS also launched a deal making platform – Meet ASEAN's Talents & Champions (MATCH) – to raise awareness of investible opportunities and to promote higher deal flows in the region.

[10] Source: Bain & Company "SEA VC and PE Deal Trends" (May 2018).

The MATCH platform attracted 380 participating investors, who indicated intentions to invest up to a total of US$6.2 billion in ASEAN enterprises next year, and an additional US$6 billion earmarked over the subsequent two years. Participating investors showed the most interest in start-ups and growth stage enterprises, and predominantly in FinTech, healthcare and medical technology, as well as information and communications technology sectors. The Global Investor Summit, under the Singapore Fintech Festival 2018, will bring together the investment and enterprise communities and showcase the best of next generation ASEAN start-up and growth enterprises across all sectors.

Private market funding platforms are also establishing operations in Singapore. These will enable growth companies to gain better access to a wider network of investors. To encourage the development of these platforms, MAS consulted the industry in 2018 on a calibration of the market operator regime to lower the cost of entry for players that do not pose systemic or system-wide risks.

Establishing a Fund Domiciliation Hub

To achieve the vision of Singapore as an Asian hub for both fund management and domiciliation, one of MAS' initiatives is to introduce a new corporate structure for investment funds, known as the VCC, to encourage fund domiciliation activities in Singapore. The VCC structure complements and expands the suite of structures available for investment funds in Singapore. The VCC Bill, which was passed in Parliament on 1 October 2018, will:

- **Provide greater flexibility**
  A VCC can be used by both open-ended and closed end investment funds, and for traditional and alternative strategies. It will have a variable capital structure which allows the issuance and redemption of shares without having to seek shareholders' approval.

- **Achieve cost efficiencies**
  A VCC may be established as an umbrella fund structure with multiple sub-funds, to enjoy economies of scale. Sub-funds can share the same board of directors and common service providers and may also consolidate certain administrative functions.

- **Cater to the needs of global investment funds**
  A VCC will be permitted to use Singapore and international accounting standards (the International Financial Reporting Standards and US Generally Accepted Accounting Principles) in preparing financial statements, so that it can serve the needs of global investors.

- **Enhance safeguards**
  The VCC framework requires the assets and liabilities of each sub-fund to be segregated, to safeguard against the commingling of assets and liabilities. The assets of one sub-fund may not be used to discharge the liabilities of another sub-fund, or of the umbrella fund, in the event of insolvency.

- **Allow inward re-domiciliation**
  Fund managers with foreign-domiciled investment funds may take advantage of the statutory regime for inward re-domiciliation under the VCC framework, to transfer the domicile of their foreign investment funds to Singapore.

The response to feedback received on the proposed framework for the VCC and Second Reading Speech on VCC Bill are found on MAS website:

- Response to feedback
  http://www.mas.gov.sg/News-and-Publications/Consultation-Paper/2017/Consultation-Paper-on-the-Proposed-Framework-for-Singapore-Variable-Capital-Companies.aspx

- Second Reading Speech
  http://www.mas.gov.sg/News-and-Publications/Speeches-and-Monetary-Policy-Statements/Speeches/2018/Variable-Capital-Companies-Bill-2018.aspx

The implementation of the VCC framework is targeted for the second half of 2019.

Deepening Institutional Base of Global Public Investors

Asia is well positioned for sustained long-term development. It offers an attractive value proposition, as global public investors increasingly seek geographical and asset diversification, as well as higher yield to meet return needs.

Situated in the heart of the fastest growing region in the world, Singapore serves as a gateway into Asia and ASEAN. Public asset owners and global institutional investors leverage Singapore as their base to access public and private market opportunities across the whole of Asia, including ASEAN, China and India.

Singapore's geographical advantage is complemented by initiatives to facilitate private investments in the region. Besides the development of the VC and PE ecosystem, Singapore is strengthening its role as the Asian infrastructure financing hub with the establishment of Infrastructure Asia in April 2018 to support Asia's economic growth through infrastructure development.

Today, there are 7 global public investors which maintain investment offices in Singapore. Their total AUM grew significantly by 23% to S$212 billion in 2017. These global public investors are Investment Company of People's Republic of China, Korea Investment Corporation, Korea National Pension Service, La Caisse de dépôt et placement du Québec, Norges Bank Investment Management, Swiss National Bank, and most recently, Ontario Municipal Employees Retirement System, which set up its office in January 2018 and designated Singapore as its Asia Pacific hub.

Together with GIC and Temasek, the presence of leading thought institutions such as Milken Institute, OMFIF and collaborative platforms such as the Sovereign Investor Institute's Global East Roundtable, will contribute to the diversity of the Singapore asset management ecosystem and will facilitate further co-investment partnerships and opportunities.

Harnessing Technology & Innovation

The asset management industry is undergoing transformation, driven by the use of technology and innovation to enhance competitiveness. Asset managers are investing in robo-advisors and setting up digital fund platforms to increase fund penetration. Data analytics and machine learning are being deployed to glean investment insights and capture investment alpha, while asset managers are automating their operations and processes to drive efficiency through robotic process automation (RPA). MAS is also seeing some asset managers, such as Schroders, using Singapore as a regional or global hub for their digitalization, analytics and innovation initiatives.

MAS encourages the development of a vibrant FinTech ecosystem in various ways. In June 2016, MAS introduced the FinTech regulatory sandbox to facilitate live experimentation of innovative financial services and business models within pre-defined boundaries. More than 40 sandbox applications were received, covering a wide range of financial services and technologies, with 5 applicants conducting live experiments through the sandbox. Kristal Advisors, an asset manager, was one of the 5 applicants. It utilises machine learning to determine and recommend suitable investment portfolios for its customers, and graduated from the sandbox in August 2018.

In October 2018, MAS issued a set of guidelines on the licensing and business conduct requirements to facilitate the provision of digital advisory services in Singapore. The guidelines will improve clarity on how existing rules apply in the context of digital advisory services.

In November 2017, MAS introduced a S$27 million Artificial Intelligence and Data Analytics Grant (AIDA) under the Financial Sector Technology & Innovation (FSTI) scheme, to promote the adoption and integration of artificial intelligence (AI), and data analytics (DA) in financial institutions. AIDA also seeks to support research institutes generating applied research in DA and AI for Singapore and the Singapore financial sector. So far, MAS has received a healthy stream of applications from various financial institutions, including asset managers, and research institutes. Through the AIDA scheme, asset managers are keen to use AI and DA to enhance their investment research and portfolio management.

As job roles in the financial industry transform, MAS is working with the Institute of Banking & Finance (IBF) and the Info-communications Media Development Authority (IMDA) to help individuals transit into areas of growing demand, such as AI, cybersecurity and data analytics. In August 2018, IBF and its tripartite partners launched a career centre, IBF Careers Connect, to provide integrated support across career planning, skills development and job placement. Through its TechSkills Accelerator (TeSA) programme, IMDA provides AI apprenticeship opportunities and is also working with MAS to help align university curricula to the needs of key hirers in the financial sector in the area of emerging infocomm technology (ICT) skills. Asset managers can tap on these schemes to access and develop the available talent pool in Singapore to enhance their capabilities in portfolio management, investment advisory, product development and client servicing.

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