

SMU REAL ESTATE TRACK

LKC School of Business

School of Economics



SMU

SINGAPORE MANAGEMENT
UNIVERSITY

28 Oct 2021



SONG Changcheng

**Associate Professor of
Finance, LKCSB**

Instructor for:

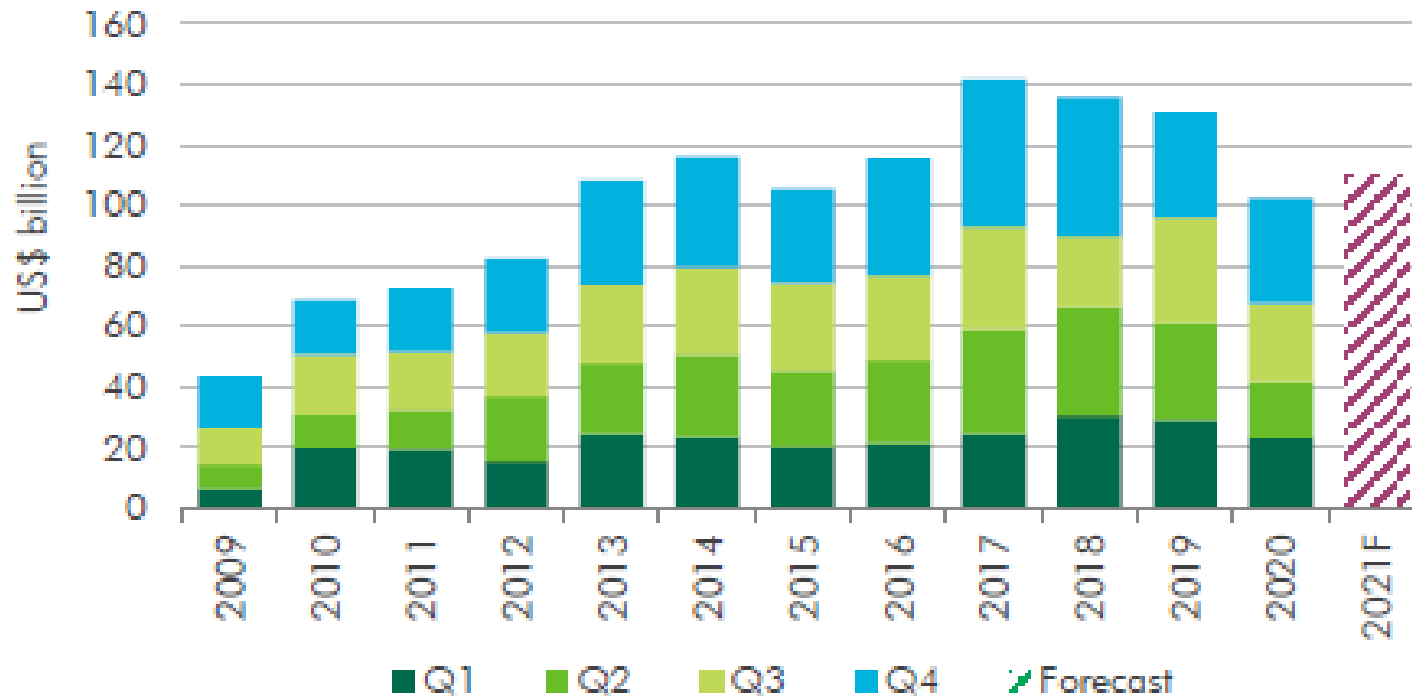
- **Real Estate Investments
& Finance (FNCE231);**
- **Analytics in Finance &
Real Estate (FNCE315)**



Why Real Estate?

Real estate investments in APAC have been growing well over the years

FIGURE 20: FORECASTED ASIA PACIFIC INVESTMENT VOLUME



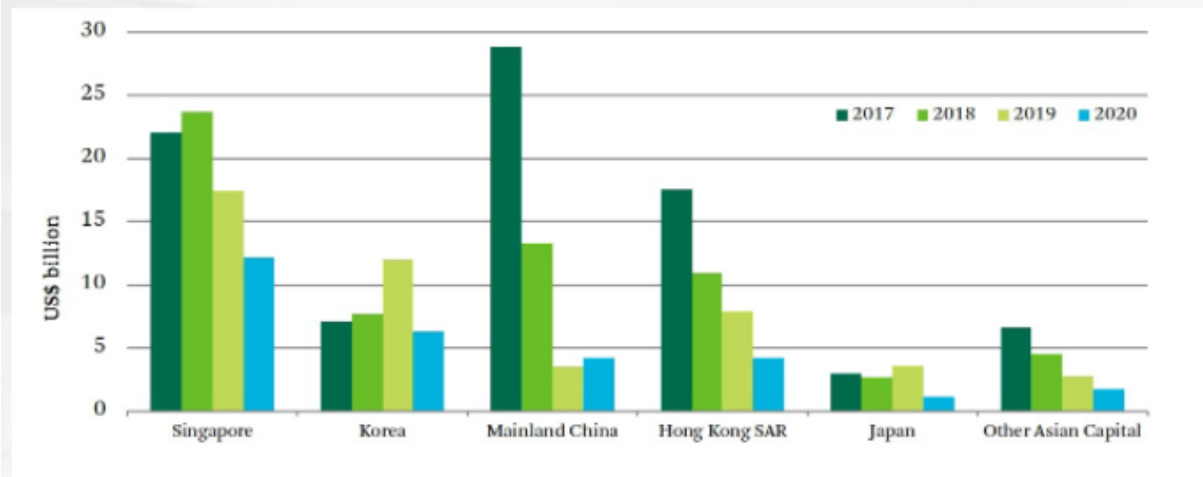
Remarks: Transaction volume includes office, retail, industrial, hotel, mixed-use and other commercial properties. Residential and development site are excluded.
 Source: CBRE Research, January 2021.

SINGAPORE NEEDS MORE REAL ESTATE PROFESSIONALS FOR INVESTMENTS AND FINANCE

Singapore Retains Top Position as the Most Active Source of Asian Outbound Capital for Real Estate in 2020

Singapore, 25 February 2021 – According to new data published by CBRE, Singapore topped Asian outbound real estate investment for the third consecutive year, accounting for US\$12.1 billion worth of deals in 2020 – albeit reflecting an approximate 31% y-o-y decline from US\$17 billion registered in 2019.

Figure 1: Asian Outbound Investment by Source of Capital



Note: Transactions include deals in the Office, Retail, Mixed, Industrial, Hotel, Residential and Other commercial sectors. Development sites are excluded.

Source: RCA, CBRE Research, February 2021.

Singapore is one of Asia's largest REIT & Property Trusts markets



No. of trusts	Market Cap	Avg. Div Yield	Avg. P/B	1 yr SDAV
42	S\$114B	5.8%	1.04x	S\$261m

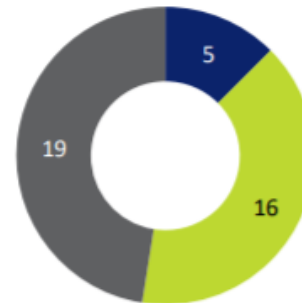
- Singapore has **42 REITs & Property Trusts** with a combined market capitalisation of **S\$114B**, representing **c.13%** of Singapore's overall listed stocks
- SREITs have a regulated **gearing ratio limit of 50%**
- The REITs & Property Trusts **offer wide diversity** across property sub-segments (*chart on the right*)
- REIT Indices:
 - **FTSE ST REIT Index:** 35 out of the 42 trusts represented
 - **iEdge S-REIT Index:** 37 out of the 42 trusts represented

Key Statistics At a Glance

- Average dividend yield of 5.8%
- Average 10-year total return of 132.5%
- Average gearing ratio of 37.5%*
- 10 year market cap CAGR of 11%

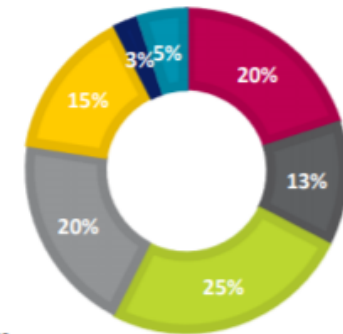
*Based on latest quarter filings
 Source: Bloomberg, SGX, data as of 30 July 2021.
 For more about REITs, [read more](#).

OVER 80% (35) OF SINGAPORE REITS & PROPERTY TRUSTS HOLD OVERSEAS ASSETS



■ Singapore ■ Overseas ■ Singapore & Overseas

TRUSTS HAVE DIVERSIFIED PROPERTY SUB-SEGMENTS (% BY TRUST COUNT)



- Industrial REITs
- Hospitality REITs
- Diversified REITs
- Retail REITs
- Office REITs
- Specialized REITs
- Health Care REITs

Trusts that have Pan Asian Exposure (based on asset portfolio)

Refer to page 24, for trusts with exposure to non-Asian markets.

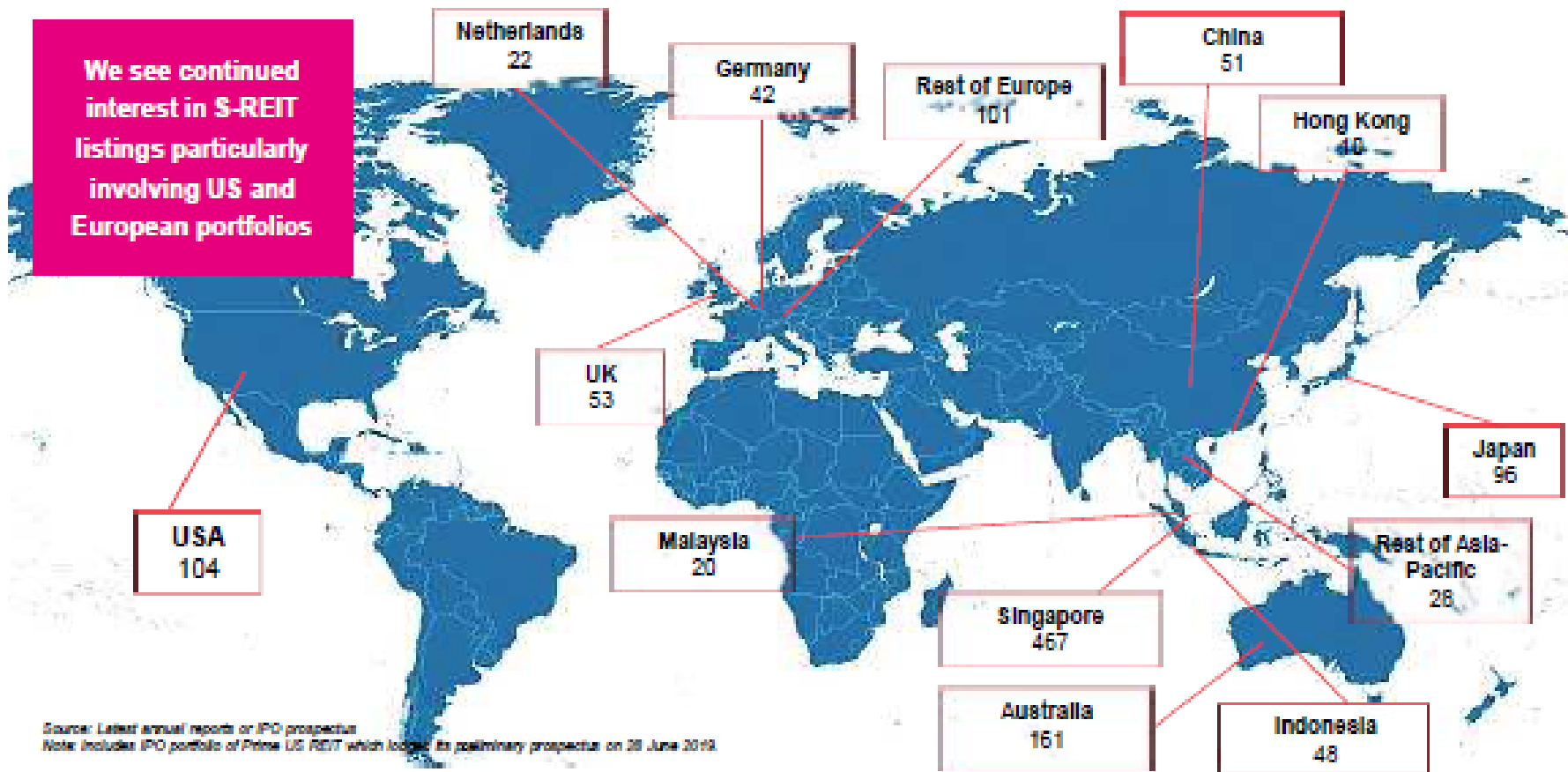


Note: There may be trusts with property exposure to more than 1 market.

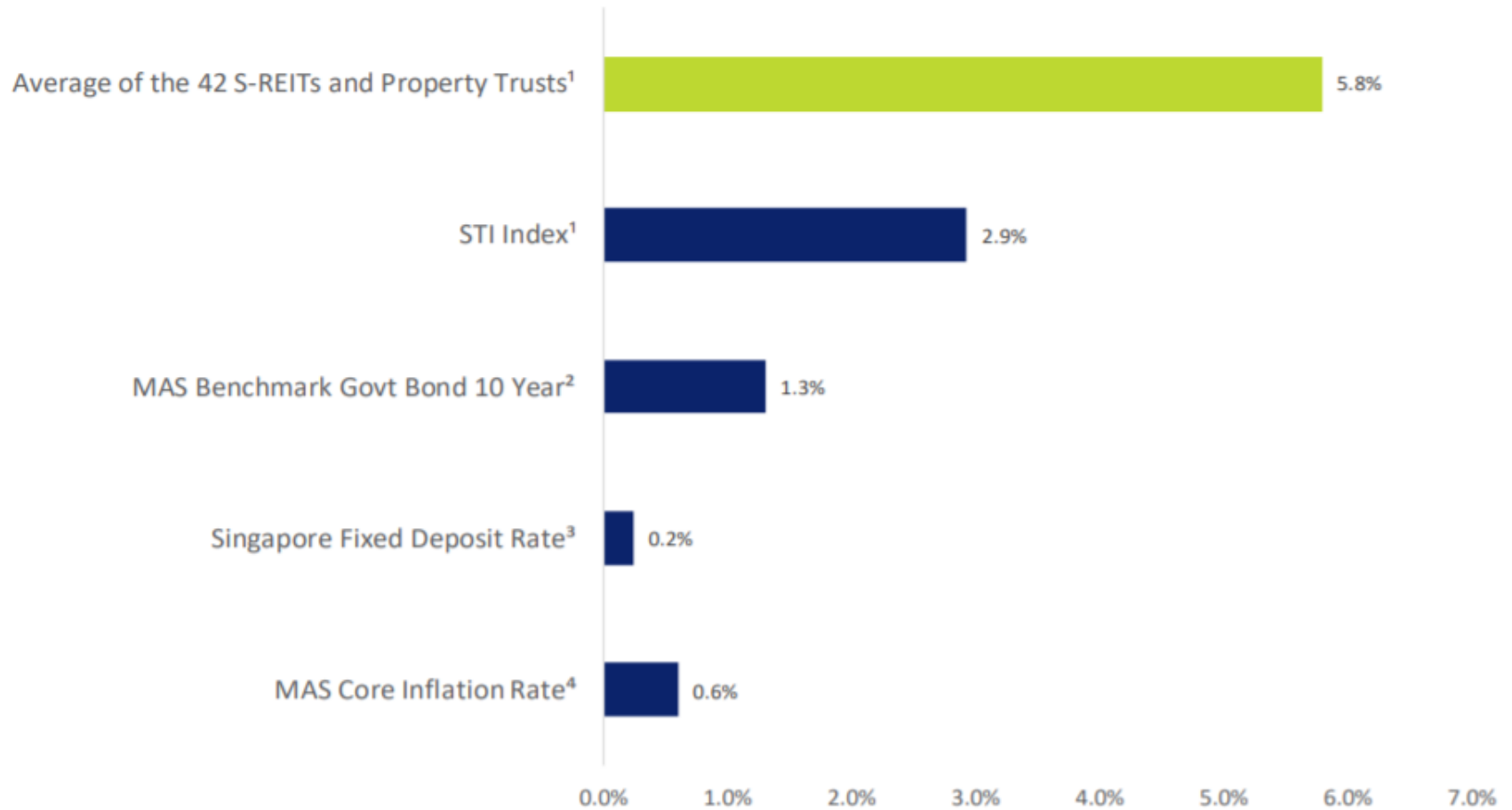
S-REITS have invested globally...

A Global REITs Hub

Geographic spread showing total number of assets owned by S-REITs in each relevant jurisdiction



SREITS & Property Trusts have Highest Yields vs other Asset Classes



¹Based on 12M Average Dividend Yield

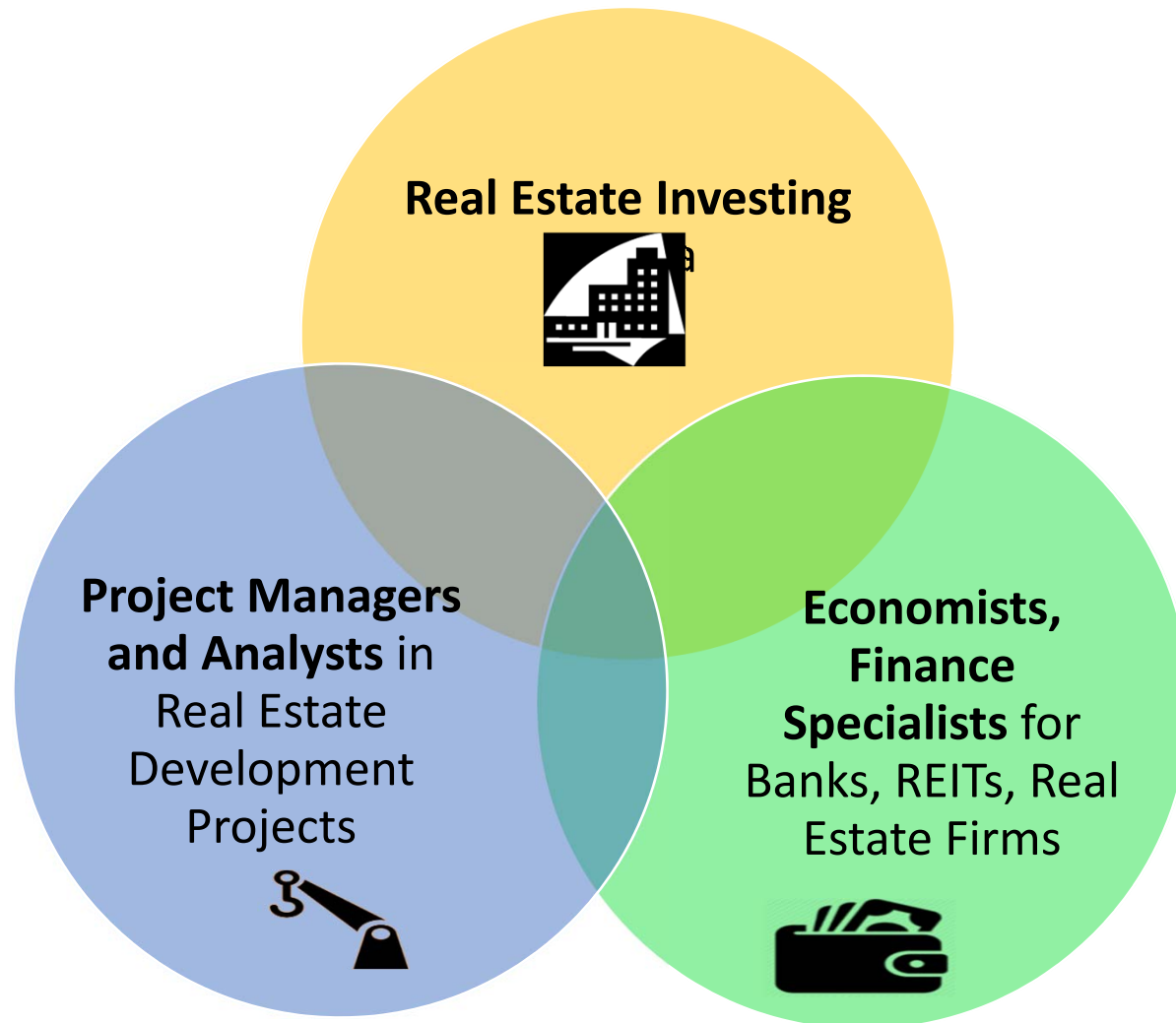
²Based on 10 Year Yield

³12M Bank fixed deposit rates from MAS as of 30 July 2021

⁴MAS Core Inflation based on 30 July 2021 figures

Source: Bloomberg, SGX, data as of 30 July 2021

Possible Career Paths



An Example of a Singapore Diversified Real Estate Company: Mapletree Investments Pte Ltd

Across Nine Real Estate Sectors in 13 Markets



Logistics



Industrial



Data Centre



Retail



Residential



Office



Mixed-use



Student
Accommodation



Serviced Apartment

REAL ESTATE CAREER OPPORTUNITIES ARE AVAILABLE IN SINGAPORE AND BEYOND...

Past & Potential Employers of SMU Students And Interns

- Ascendas-Singbridge
- Capitaland Ltd, Capitaland Mall (Asia)
- Allen & Gledhill
- CB Richard Ellis
- City Development
- Citibank (Investment Banking)
- Colliers International
- Cushman and Wakefield
- DBS
- Far East Organization
- Frasers Property
- Homestead Properties Pte Ltd
- IRAS
- Jones Lang LaSalle
- Keppel Capital
- Knight Frank
- Logos South East Asia
- Mapletree Investments, Mapletree Commercial Trust, Mapletree Industrial Trusts, Mapletree North China Trusts, Mapletree Logistics Trust
- New World Development Company Ltd (Hong Kong)
- Pontiac Land
- PT Metro Realty (Indonesia)
- Roxy-Pacific
- SLA
- Sing Haiyi Group
- World Class Global
- YTL Starhill Global REIT Management Ltd.
- ZACD Group
- Etc., etc., etc.

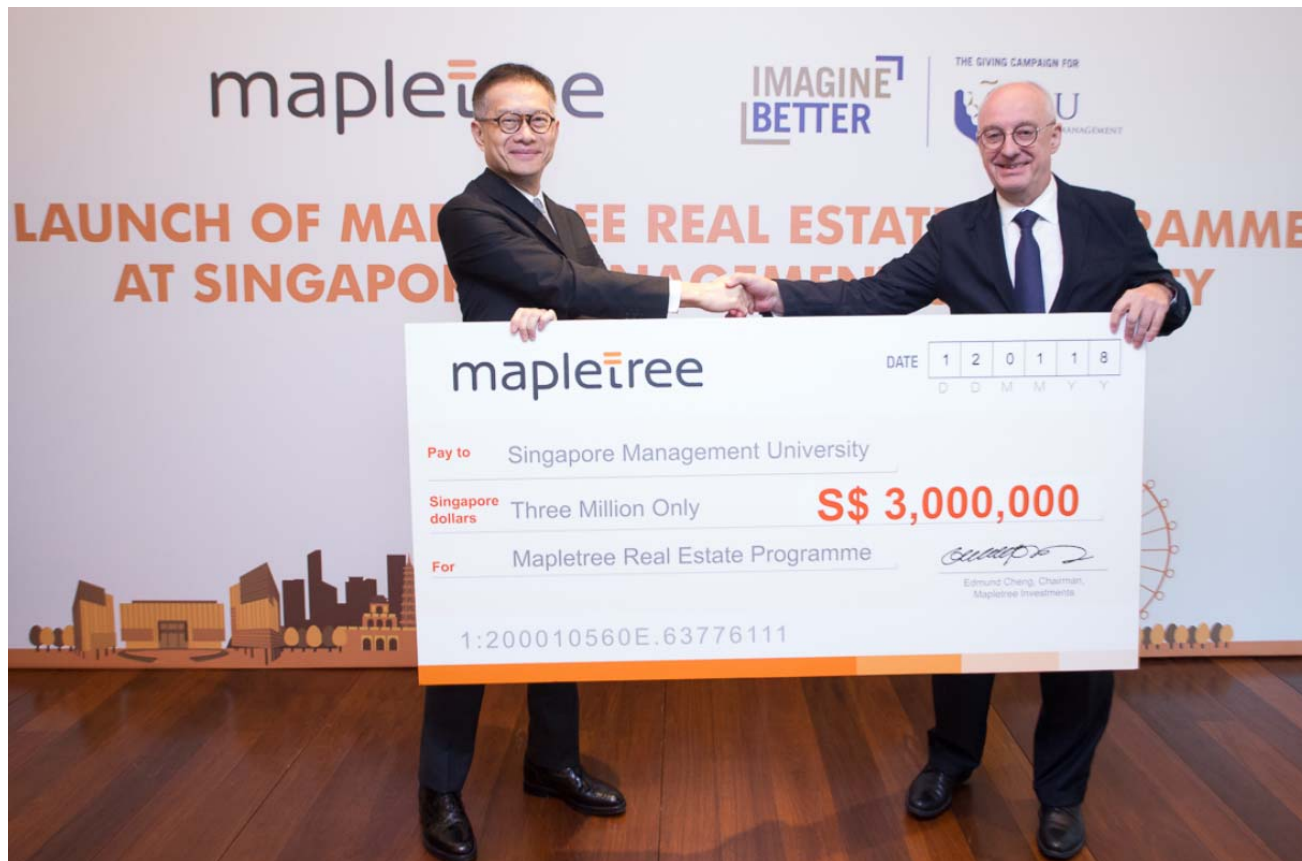


Far East Organization
INSPIRING BETTER LIVES



Contact: Ms See Wai Yen (Office of Career Services in SMU)

Launch of Mapletree Real Estate Programme



In 2017, Mapletree Real Estate Programme was established at SMU through S\$3 million endowed gift; SMU to offer specialization in Real Estate Investment & Finance from August 2018

- **Mapletree Professorship**
- **Mapletree Awards**
- **Business Study Trips**
- **Mapletree Speaker Events**

Members of Advisory Board

01. Ms Wendy Koh (Chairman)	<ul style="list-style-type: none"> • Group Chief Financial Officer, Mapletree Investments • Former Co-head, Asia-Pacific Property Research, Citi Investment Research
02. Prof Gerard George (Vice Chairman)	<ul style="list-style-type: none"> • Dean, Lee Kong Chian School of Business, SMU • Lee Kong Chian Chair Professor of Innovation and Entrepreneurship, SMU
03. Mr Pok Soy Yoong (Member)	<ul style="list-style-type: none"> • Retired Ernst & Young Tax Partner • Former Board Member of IRAS
04. Mr Ng Lang (Member)	<ul style="list-style-type: none"> • CEO, Land Transport Authority • Former CEO of Jurong Town Corporation, Urban Redevelopment Authority and of National Parks Board
05. Mr Wen Khai Meng (Member)	<ul style="list-style-type: none"> • Senior Adviser of Group Strategy, Capitaland Group • Former CEO of Capitaland Singapore
06. Ms Lock Yin Mei (Member)	<ul style="list-style-type: none"> • Partner, Allen & Overy Singapore • Former Board Member, Singapore Land Authority
07. Mrs Penny Goh (Member)	<ul style="list-style-type: none"> • Senior Adviser of Allen & Gledhill Singapore • Independent Director of Keppel Corporation Ltd
08. Prof Francis Koh (Member)	<ul style="list-style-type: none"> • Emeritus Professor of Finance (Practice), SMU • Independent Non-Executive Director of Manulife US REIT
09. Mr Michael Ngu (Member)	<ul style="list-style-type: none"> • CEO, Architects 61
10. Ms Priya Kini (Member)	<ul style="list-style-type: none"> • Managing Director and Head of Global Banking, Singapore, HSBC
11. Mr Wan Kwong Weng (Member & Secretary)	<ul style="list-style-type: none"> • Group Chief Corporate Office, Mapletree Investments

The SMU Real Estate Track

Students will leverage on the fundamentals of Finance, Business and/or Economics and acquire the quantitative and qualitative tools necessary for variety of job roles in the sector.

The track prepares SMU undergraduates to be well-equipped with foundational skills needed for real estate companies and pursue opportunities in the exciting and fast-growing sector in the region.



FOCUS OF THE REAL ESTATE TRACK IN SMU IS ON INVESTMENTS AND FINANCE

What's Special about the Track?

- **Mapletree Awards**
 - ❖ S\$40,000 annually to fund up to 5 non-bonded awards of S\$8,000 each
- **Mapletree Scholarships (WEF AY2021)**
 - ❖ S\$40,000 annually to fund up to 2 non-bonded scholarships of \$10,000 each for the recipients' third and fourth years of study
- **Business Study Trips**
 - ❖ Funds available to plan and support study trips (local and overseas) to visit real estate developments, industrial estates and commercial properties
- **Internships**
 - ❖ Internships available for students to be interned in real estate companies, including Mapletree companies, REITs etc.
- **Mapletree Speaker Events**
 - ❖ Annual Real Estate Lecture
 - ❖ Occasional Real Estate Talks

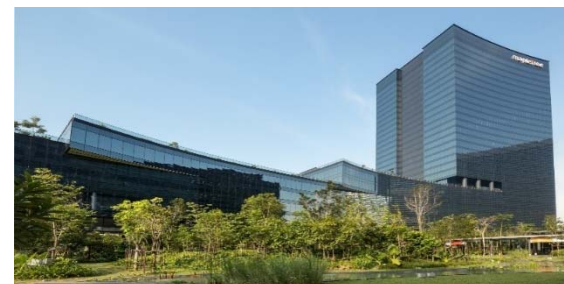


SMU Real Estate Track: Distinguishing Features

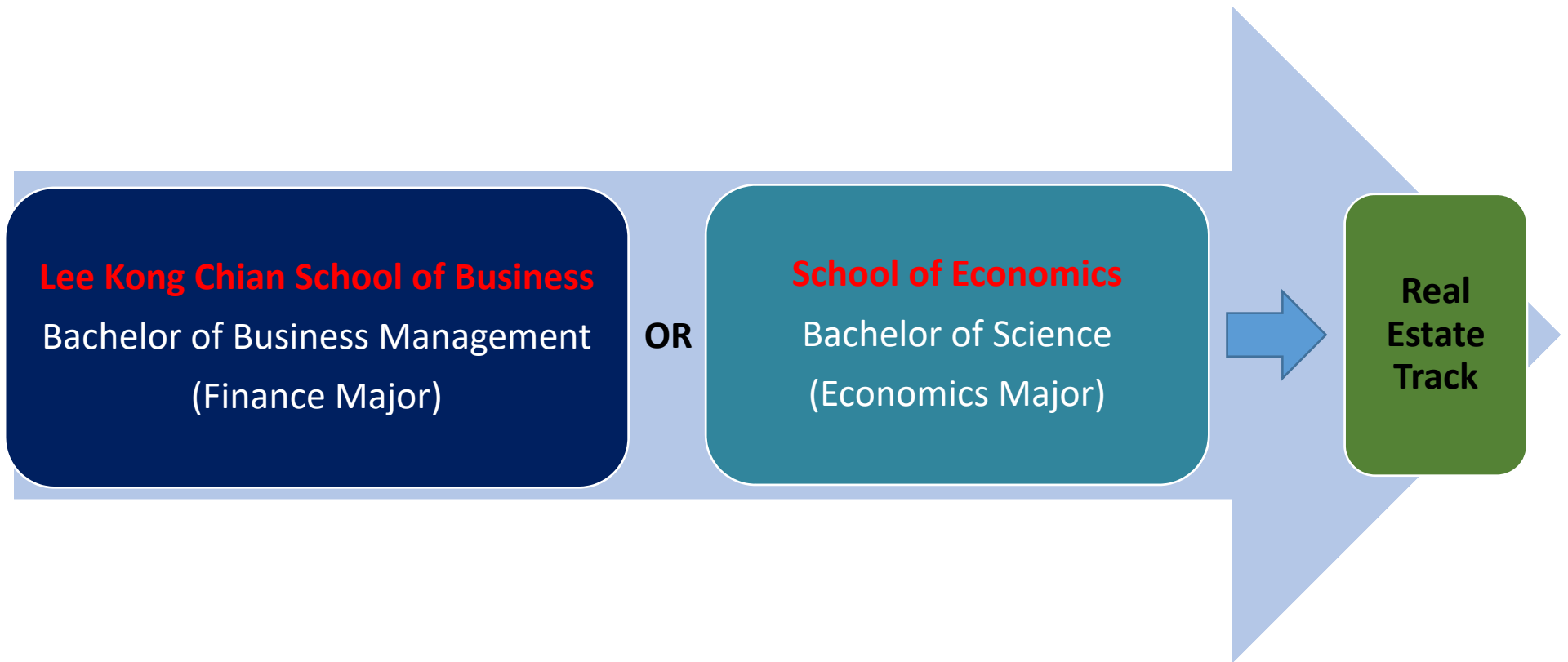
- Focus on “Real Estate Investments and Finance”:

Public Equities	Private Equities
Public Debt	Private Debt

- Develop an appreciation of the macro factors that influence real estate market risks and returns
- Expose students to the opportunities and risks of international real estate investing e.g., Shanghai, Ho Chi Minh City, Seoul, Hong Kong, etc.
- Visit major players in the real estate industry and related government bodies in Singapore e.g., Funan Centre (LYF), URA, JTC, Mapletree Business Centre, Ascendas, Fairmont Hotel etc.
- Internship opportunities offered by Mapletree, major real estate industry players, legal firms, banks and others
- Join the Student Club, “SMUREAL”
- Attend talks and forums, as well as other student activities



Real Estate Track Overview



Real Estate Track Curriculum Structure

Track Requirements 5 CUs

Compulsory (3 courses)

1. Real Estate Economics – Li Jing
2. Real Estate Investments & Finance – Song Changcheng
3. Law of Real Estate – Edward Ti

Electives (Choose 2 courses)

- Real Estate Valuation and Taxation – Ang Sock Tiang
- Urban Economics and Policy – Hsu Wen-Tai
- Real Estate Development – Josh Ng
- Project Financing – Davin Wang
- Analytics for Finance & Real Estate – Song Changcheng

More electives may be offered based on demand and availability of instructors. Other new electives may be developed under SMU-X

Course Descriptions

See Appendices

Key Events



Study Trip to Shanghai & Hangzhou (7 to 13 Oct 2018)



Mapletree & VivoCity Shanghai

Fu Heng Warehouse 
EC World 
通 通 通 通 REIT



 HEMA (Shanghai)

Savills Shanghai



OCBC Wing Hang



Yanlord On The Park



Xin Tian Di (新天地), Shanghai

Study Trip to Ho Chi Minh City (5 to 10 May 2019)



Mapletree Vietnam



SC VivoCity



Dragon Capital



JLL Vietnam



Oakwood Residence Saigon



LNT & Partners



SembCorp VSIP



PWC Vietnam



Savills Vietnam



HCMC Metro



Mapletree Logistics



National Housing Organisation

Study Trips to Seoul (6 to 11 Oct 2019)



Standard Chartered Bank Korea



Keppel Investment Management



JLL Korea



Mapletree Logistics



Yoon & Yang LLC



GS Engineering & Construction Co., Ltd.



Cushman & Wakefield Korea

Fireside Chat with Group CEO of Mapletree Investments, Mr Hiew Yoon Khong (22 Nov 2018)



Inaugural Mapletree Annual Lecture (26 Nov 2018)



2nd Mapletree Annual Lecture (31 Oct 2019)



Inaugural Mapletree-SMU Real Estate Forum (21 Feb 2019)



2nd Mapletree Real Estate Forum (31 Oct 2020)

Mapletree Real Estate Forum (Webinar)

mapletree



Professor Melvyn Teo
Deputy Dean (Faculty and Research)
Singapore Management University



Professor Gerard George
Dean
SMU Lee Kong Chian School of Business



Ms Wendy Koh Mui Ai
Group Chief Financial Officer
Mapletree Investments Pte Ltd



Mr Stephen Bramley-Jackson
Head of Real Estate Equity Research
Hong Kong and Shanghai Banking Corporation



Assistant Professor Song Changcheng
Assistant Professor of Finance
Singapore Management University

3rd Mapletree Annual Lecture (31 Mar 2021)

Mapletree Annual Lecture (Webinar)

maple*tree*



Professor Melvyn Teo
Deputy Dean (Faculty and Research)
Singapore Management University



Ms Wendy Koh
Group Chief Financial Officer, Mapletree Investments Pte Ltd and
Chairman, SMU Advisory Board for Real Estate Programme



Professor Stijn Van Nieuwerburgh
E. Kazis & B. Schore Professor of Real Estate
Graduate School of Business, Columbia University



Mr Wong Mun Hoong
Regional Chief Executive Officer, Australia & North Asia
Mapletree Investments Pte Ltd



Ms Priya Kini
Managing Director and Head of Global Banking Singapore
The Hongkong and Shanghai Banking Corporation Limited

Other Events

- ❖ **Real Estate Track Virtual Tour (Q1 of 2022)**
- ❖ **Mapletree Annual Lecture (March/April 2022)**

Contact Us

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Undergraduate Programmes
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School of Economics : undergrad_econs@smu.edu.sg

Q & A

Thank you



SMU Real Estate Track

: CORE UNITS – Course Outline

Real Estate Investments & Finance

- ❖ Real estate investments: public and private equity; public and private debt
- ❖ Valuation of real estate properties
- ❖ Evaluation of real estate projects and developments
- ❖ Financing of real estate: public and private equity; public and private debt
- ❖ Cost of capital

Real Estate Economics

- ❖ Demand and supply of housing
- ❖ House prices and real estate cycles
- ❖ Mortgage instruments, interest rates and default risks
- ❖ Global Financial Crisis and U.S Subprime Loans
- ❖ Local housing policy

Law of Real Estate

- ❖ Contract law, agency law and Tort
- ❖ Property law and titles
- ❖ Contract for sale and conveyancing process
- ❖ Property taxes
- ❖ Real estate financing, property loans and mortgage process
- ❖ Personal rights and proprietary rights
- ❖ Administration of Law and Equity
- ❖ Real Estate Investment Trust

SMU Real Estate Track

: ELECTIVES – Course Outline

Real Estate Valuation & Taxation

- ❖ Various types & nature of real estate, legal Interest & characteristics of real estate market
- ❖ Needs and purpose of property valuation
- ❖ Concept of Value, Cost, Price and Market Value
- ❖ Factors that influence property values
- ❖ Rationale in the use of valuation approaches and methodologies
- ❖ Key concepts in the Property Tax, Stamp Duty, Development Charge & Compulsory Acquisition
- ❖ Property tax payable, stamp duties payable & Development Charge calculations

Urban Economics & Policy

- ❖ Formation of Cities - the economics of agglomeration
- ❖ The urban system, big & small cities, their functions & roles
- ❖ Internal spatial structure of a city & urban housing issues, including location & tenure choice
- ❖ Urban transportation – the economics of traffic congestion
- ❖ Local public goods (Tiebout Model)
- ❖ Land use optimization, public finance & housing markets (Henry George Theorem)
- ❖ The economics of urban planning

SMU Real Estate Track

: ELECTIVES – Course Outline

Real Estate Development

- ❖ Property development cycle
- ❖ Conception of the development project
- ❖ Feasibility study
- ❖ Project financing
- ❖ Project construction
- ❖ Real estate marketing
- ❖ Project completion
- ❖ Post-project management
- ❖ Exit strategies

Project Financing

- ❖ Financing of large scale projects
- ❖ Project cash flow
- ❖ Project risks
- ❖ Project structuring and term sheets
- ❖ One Belt One Road and potential for project financing

Analytics in Finance and Real Estate

- ❖ How big data can be applied in finance and real estate
- ❖ Randomized control trial, differences-in-differences, and regression discontinuity design
- ❖ Analyse cross sectional and panel data
- ❖ Machine learning methods and its application

Course Descriptions

Course Descriptions (1)

REAL ESTATE INVESTMENTS AND FINANCE

This course focuses on real estate investments and financing from a commercial perspective. It discusses the four quadrants for investments and financing – public debt, private debt, public equity and private equity employed by institutional investors. The course will evaluate real estate investments and financing in each of the four quadrants using a variety of techniques including discounted cash flows and capitalization rates. The course will also cover real estate investment trusts (REITs) and private equity real estate funds.

REAL ESTATE ECONOMICS

This course is designed as an introductory course to study housing finance systems and housing market outcomes. It provides an overview of real estate markets as well as public policies that affect these markets. The beginning of the course will focus on what determines house price movements (captured by house price indices) and the role of real estate cycles (including bubbles) in mortgage default. The course will then be devoted to analyzing mortgage instruments used to finance investments in real estate. This includes calculations of payment streams for different types of mortgages, consideration of different types of mortgage contracts that shift interest rate and default risk between lenders and borrowers, and the role of the secondary market for mortgage securities. Equipped with aforementioned skills, students taking this course should be able to develop an eye towards the role of housing and mortgage markets in the recent financial crisis as highlighted in the United States and its potential policy implications for the local market.

Course Descriptions (2)

LAW OF REAL ESTATE

This course focuses on the legal fundamentals of real estate practice and development in Singapore. While space and the built environment is ubiquitous, real estate remains a unique asset class. The rules relating to its current and future value, how it may be securely transferred from one party to another and its very definition all depend on law. The course is vital for students with an interest in real estate transactions, its development, investment and financing.

REAL ESTATE VALUATION & TAXATION

This course teaches students the use of valuation methodologies and approaches in appraising real estate for sale, acquisition, and leasing; and provides them with a good understanding of real property taxation which can have significant impact on many real estate decisions. The extensive use of examples and case studies will enhance learning and help the students to readily apply their knowledge to address the many real estate issues and challenges commonly encountered in real estate transactions, property development and property ownership.

Course Descriptions (3)

URBAN ECONOMICS & POLICY

This course is designed as an introductory course of urban economics. It covers fundamental principles developed in economics to understand the functioning/ workings of an urban economy and the various aspects of urban life. Firstly, the course begins with the definition of a city, and why cities form by introducing the economics of agglomeration, and how cities interact to form the urban system of the entire economy. These factors affect all urban phenomena. Secondly, the course analyses the internal spatial structure of a city by developing a theory of commuting, housing demand and housing production. It then analyses transportation and land/housing issues in more detail. On transportation, we focus on the economics of traffic congestions, the rationale for congestion pricing (ERP), and the so-called fundamental law of highway congestion. The discussion on land and housing, will address various housing phenomena such as tenure choice and location. The courses will discuss the optimality

Course Descriptions (4)

REAL ESTATE DEVELOPMENT

This course focuses on the real estate development cycle. The main stages of real estate development are (a) predevelopment planning, (b) project inception and roll-out, and (c) post-project management. The first stage consists of activities centred on a feasibility study and due diligence, which will include site planning and development parameters. The next stage is to commence the development, which will include site selection, investigation and evaluation, market study, project management, procurement and regulatory issues. The last stage involves implementing post-project activities including leasing or selling the property, post-construction management and yield enhancement. Each stage has business, financial and operational risks. The course will discuss the embedded activities in the value chain of real estate development for the various sectors, namely, residential, offices, industrial and commercial properties.

PROJECT FINANCING

The course focuses primarily on large projects - those costing at least USD200 million. Through this course, students will learn the mechanics of project finance and the critical success factors for such transactions, including creating value and managing risks. Students will learn how to structure a robust Project Finance Term Sheet to facilitate investment and financing decisions.

The course will include discussions on China's "One Belt One Road" Initiative ("OBOR"), and strategies to capture the opportunities arising from OBOR through Project Finance pathways. Students will also appreciate how finance, economic and political forces are interwoven into project financing especially in the Asia Pacific region.

Course Descriptions (5)

ANALYTICS IN FINANCE AND REAL ESTATE

This course is to help students to apply the econometrics theory with data in finance and real estate in the real world. It will be empirically oriented, with an emphasis on causal identification using various methods such as randomized control trial, differences-in-differences, and regression discontinuity design. This course will focus on applied econometric issues with cross section and panel data. This course will also introduce machine learning methods and its application in finance and real estate.