# The determinants of rental value of retail properties

This assignment is to analyze the determinants of rental values of retail properties based on Singapore market. It starts with explaining concept of rent theoretically, and then analyzes the major economic determinants in rental value and interactions with other industries and other property sectors. Lastly highlight the investment decision making of property as a financial asset with other financial assets.

Literature Review

In order to identify the determinants of rental of retail properties, we need to understand what causes rental to be paid, what determines the amount of rental and what causes rental to change over time. Fraser (1993) introduced the concept of the rental as a surplus by giving the answers to these 3 questions. He supposed a farmland to be rented out in on open market with competition of 2 farmers, farmer needs to pay the rent by excluding other competitors, and the rent comes from the profit which revenue minus costs, by setting aside the normal profit of survival, the remaining is called a surplus that eventually used to bid for the tenancy. Therefore only the most efficient farmer with the skill of making best use of the farmland is able to bid high enough to win the tenancy. He also pointed out the changes of the rent are due to the change of expected surplus of using the land.

As we can from Fraser's concept, the changes of rent are due to changes of expected surplus which ultimately replies on the changes of productivities and the cost of productions. In retail property context, rental value is determined by the expected abnormal profit of potential retailers. However the one of the limitations of this model is based on a perfect market where

people have full access to information, secondly it is also assumed there is free of interventions or planning constraints and also this model is only based on demand-side of land use.

Access-space model was contributed by Alonso (1963) to indentify the declining relationship between the price of the land and the distance from the city centre. There are 2 strands of implications were pointed out: household will locate at the centre of a city to minimize the transport cost and household will locate at a point where saving on land costs higher than the transport cost.

In retail context, this model implies a trade-off between the location and land use which introduces a negative rent gradient. In other words, the city centre is regarded as more valuable as the high level of accessibility. The correlation between the rent per m2 to the locations of different forms of retailing also has been suggested diagrammatically by Balchin, Kieve and Bull (1995)

C: UsersQingpingDesktopNegative Rent Gradient. jpg

(Source: Balchin, Kieve and Bull (1995), Hypothetical turnover or rent gradient within a major shopping centre, P59)

Dipasquale and Weaton (1992) examine the determination of property rent in a boarder prospective by incorporating the assets market. This model suggested the interest rate, inflation rate and foreign exchange rate also influence the level of rent and I will cover these factors in details in later of assignment.

(Source: to be confirmed)C: UsersQingpingDesktopDiPasquale-Wheaton's Model_å‰¯æœ¬. png

Barras (1994) graphically illustrated how property rent is related to the property market, economy and credit market. The graphic shows the existing supply not enough to address the increased demand when economic upturn arrives, hence rents rise, yields falls and it triggers more and more new developments because of high profitability. If credit expansion also occurs, banks will drop the interest rate to reinforce economic growth and also start to fund speculative activities. Property boom starts to form but with limited supply due to time lags. Inflation would have risen at this stage of cycle, the delayed excessive supply flood into the market and subsequently press down the rents as well as the capital value. Interest rate is elevated to curb the inflation, this will further reduce the demand and the rents drop further until the stages property developers going bankruptcy.

Shops are occupied for running business by shop users. In the viewpoint of tenant, land and business property are factors of production, demand depends on productivity level when incorporating with other factors of production. Therefore the demand of a factor is derived demand (Fraser 1993). From Fraser's concept we can understand shop space is considered as a factor of retailing activities, the demand of the shop space depends on the sale's volume within the shop. In the event of demand increases, it causes the price and the rent increases when limited supply pumped into the market.

Fraser also pointed out the concept of income elasticity of demand and price elasticity of the demand which are relevant to the determinants of rent. When consumers' income rises, they intend to spend more on the normal goods and spend less on the inferior goods, so that the demand for the normal goods increases and demand for inferior goods drops. E. g. when income increases, people will buy more branded products which are sold in premium locations and will buy less low-class products which are sold in lousy locations, hence the rent of shop space in premium locations will increase and the rent of shop space in lousy locations will drop generally. On the other hand, rent is also relevant to the price elasticity of the demand. Land is considered price inelastic as land has no substitute, hence property which attaches on the land also inherit its inelasticity. However it is still possible to substitute property in one location for similar property in another location despite the heterogeneous of property, it depends on the importance of locations to the tenants. E. g. industrial tenant maybe easily find a substitute location for production as it doesn't require the location in very precise extent, office and retail requires more specific or more price inelastic in location as the synergy effect for office spaces and catchment effect for retail spaces. In particular, shop space is most price inelastic generally, prime shop area such as Orchard Road in Singapore is irreplaceable hence the rent is higher than other area.

Rental value of retail properties is determined by some macroeconomic factors and also influenced by broader influence from other property sectors and industries.

## Household Income

Rental value of retail properties is primarily driven by the purchasing power of households, and the purchasing power of household depends on household income from work which comes from firms, so household income determines rental value of retail properties. Below chat clearly exhibits the positive correlations between the rental index for shop space and average monthly household income from work since 2001. Both of household income remains a stable level from 2001 to 2006, then they experience the increase at the same time since 2006 and reach each of their peaks in 2008, subsequently they both encounter setback during the " Financial Crisis" in 2009, finally they start to rebound from 2010 to present time.

Source: Urban Redevelopment Authority of Singapore and Department of Statistics Singapore

## General Economy Condition

Since rental value of retail properties determined by household income, and household income from work depends on the performances of companies, and general economy condition expresses the aggregated performances of companies. So rental value ultimately will be influenced by general economy condition which indicated by Gross Domestic Product (GDP). Another chart shows the relationship between shop rental index and Real GDP at 2005 market prices since 2001.

Source: Urban Redevelopment Authority of Singapore and Department of Statistics Singapore

## Demographic Changes

Another strand of derivation of purchasing power is the demographic change which indirectly influences the shop rental level in a long run. For instances, the higher education level the higher income hence higher purchasing power. Sometimes higher household income does not directly translate to higher purchasing power of household, because the more dependants in a household the lower propensity to spend of that household. In Singapore context, Old-Age Support Ratio is to measure the ratio per elderly aged 65 & above. Demographic changes influence the purchasing power then influence shop rents. Below charts show the trends of education level and Old-Age Support Ratio since 1980. We can see that the general education level has improved since 2001 and Old-Age Support Ratio declining over the years which means both of the changes release more and more purchasing power.

## Tourist Arrival Volume

Tourism industry influences retail market substantially, Singapore is the case especially. Tourism industry is one of the major contributors to its national economy as country itself is tiny and lack of natural resources. Below graph shows how shop rental index in central area interacts with tourist arrival volume since 2001. Notably, Severe Acute Respiratory Syndrome (SARS) period (2002 to 2003), the tourist arrival volume drops drastically and followed by rental index; during the period of " Financial Crisis" (2008-2009), volume drops again as well as rental index. On the other hand, when Singapore's 2 Integrated Resorts (IRs) opened and the world first F1 night race launched in 2010, the volume goes historically high of about 11. 6

million which is about 20% increase compared to the year of 2009, subsequently we see the increasing trend in rental index after 2010.

Source: Urban Redevelopment Authority of Singapore and Singapore Tourism Board

## Inflation

One of the expressions of Inflation can be seen as increase in rental value, inflation is a rise in general price level of goods and services. Property owners including commercial property owners increase the rental to hedge against the erosion of their real rental income. Singapore shop rental index in central area generally shows the similar increasing track with consumer Price Index.

Source: Urban Redevelopment Authority of Singapore and Department of Statistics Singapore

## Foreign Exchange

Foreign exchange rate can be also related to rental value of commercial property in a macro-economic level, especially for small economy like Singapore, Singapore has little local retailing brands and most of the retailing brands come from aboard. When money cross boarders, Foreign Direct Investment (FDI) occurs and foreign exchange rate would become a major consideration of a multi-national retailing corporations (MNCs), e. g. hypermarket giant Carrefour, Wal-Mart, to do business in Singapore. These MNCs likely have greater impact on the rental market as their demand of

shop space is substantial, the rental value will be affected drastically with a limited supply environment.

## Supply

Supply of commercial properties is also a determinant of rental value but seen not significant as demand effect. Development of property takes a relatively long time, normally about 3 to 5 years. Because of the inelasticity of supply, the rental value won't be able to meet market equilibrium instantly, therefore the rental value is determined mainly by demand factors in short run, but supply will take effects in medium and long run when projects flow into rental market. Below chart shows the relationship between supply private & public sectors shop space and the rental index since 1998. In the period of 2000- 2001, the low level of supply accompanying with high level of rental index, and in the period of 2006Q2 to 2008Q2, higher rental level induces higher supply of shop spaces. Subsequently 2008Q3 " Financial Crisis" takes place which forces developer to shrink the supply drastically until 2001Q1, this reducing of supply maintained the rental index relatively stable over this period. These evidences explain the reverse relationship between supply and rental. The supply of commercial properties normally is affected by the general economy, new investments, government planning and intervention. Unlike supply of other goods, real estate supply is always chunky. When supply comes in or drawn out from the market in bulk, it will affect the market equilibrium drastically. For example, VivoCiy (Net Lettable Area of 96, 600 sm), Shoppes @ Marina Bay Sands (Net Lettable Area of 74, 322 sm), 313 @ Orchard (Net Lettable Area of 26, 891 sm), Orchard Central (Net Lettable Area of 36, 045 sm), sub-urban mall Nex @ Serangoon (Net

Lettable Area of 56, 000 sm). Notably, it shows drastic increase in supply of shop space in 2nd Quarter 2006 and 2nd Quarter 2010 when VivoCity launches and Shoppes @ Marina Bay Sands launched. D: Heriot Watt CoursesReal Estate EconomicsAssignmentReference MaterialVivoCity. jpgD: Heriot Watt CoursesReal Estate EconomicsAssignmentReference MaterialShoppes @ MBS. jpg

VivoCity

Shoppes @ Marina Bay Sands

Source: Images from Internet

Source: Urban Redevelopment Authority of Singapore

# Random Shocks

Rental value of retail properties is also subject to random shocks, such as war, Asia Financial Crisis (1997), Severe Acute Respiratory Syndrome (SARS) (2002), Credit Crunch (2008). All these random shocks have significant impact on overall performance of economy, subsequently impact on the retail market.

## Across other property sectors

Compared the shop rental index to the indexes of other property sectors, we can see they generally exhibit similar trend since 1998 Q4 to 2012 Q2. They all experience stable movements prior to 2006, then summiting with different amplitudes until 2008 Q2 when market plunges and finally recover

to present time. It shows that the all property sectors are influenced by similar economic externalities.

Source: Urban Redevelopment Authority of Singapore

## Across other industries

Spillover effect from other industries also impacts on rental value of shop spaces. In 2005, Singapore Prime Minister Lee Hsien Loong announced that government to approve to build two Integrated Resorts (IRs) (Resort World Sentosa and Marina Bay Sands) in order to provide a fresh, interesting and lucrative alternative. In addition, constructing the two IRs meant that there would be a " spillover effect" on other sectors of Singapore's economy, especially on businesses within close proximity to the IRs. When two IRs opens in 2010, annual tourist arrivals hit a historical high of 11. 6 million (Channel NewsAsia, 2010). By February 2012, 60, 000 jobs had been created in the IRs and across the broader economy, contributing 1 to 1. 5 per cent to Singapore's gross domestic product (Government reviewing IR rules – Straits Times, 27 February 2012). High tourist arrival volume and GDP growth will contribute to a higher rental value of shop which I have mentioned in early part of this article. Another local example is Singapore hosting the world's fist Formula 1 night race which again attracts higher tourist arrival volume and total tourist expenditures and ultimately boost the retail business in close proximity. In the long run, these 2 iconic projects will continue to enhance Singapore's prospective particularly the investment prospective in retailing business which in turns will positively impact on shop rental value.

# Property as a financial asset

Property also can be a financial asset (Michael Ball, et al., 1998) which generates future cash flows. Yield is used to measure the rate of return of an investment for rent collectable, yield equals to Net Operating Income (NOI) divided by Capital Value. In other words, rental yield is affected by price, but not fully. An investor can choose an investment from assets market according to his/her risk preference. Jack Harvey (2000) listed down a series of investment in assets market including Money (M), Treasury Bills (T), Debenture or Bonds (D), Irredeemable Bonds (B), Ordinary Shares(S), Mortgage Loans (Mo), Leasehold Investments (L), Freehold (FH) and Freehold Ground Rents (FGR). Each asset has its own degree of risk, Property investment seen to be less risky than stock market but more risky than say bond market. People use alternative assets to benchmark the yield of property assets and also use the movement of most liquid assets such as money, treasure bills to forecast the movement of property market. Hence rental yield is affected by other type of assets in financial assets as well.

Conclusion

The influences of the rental value of retail property are complex. It primarily depends on the purchasing power of the population, and some influences derived from purchasing power come into the picture such as the household income, national economic condition and demographic changes in a long run. In a short run, the tourist arrival volume, inflation and exchange rate also have their impacts on determining the rental value of retail properties. On the other hand, supply of shop space is induced by high rental value in investor's viewpoint but is negatively related to rental value if it is too much.

In a broader view, the spillover effects from other industries and other property sectors also play roles to move the rental value of shop space up and down, random shock has its devastating power on property sectors including retail.

As the world evolves and integrates, retail rental value is determined by broader and deeper factors which traditionally have little influence. For example, retail business has more and more to do with financial market. In recent year Real Estate Investment Trusts (REITs) become popular, retail properties can be securitized and traded in financial market, this connection with financial market increases its determining power in rental value of retail properties.