

Summary

Singapore is an advanced economy sometimes famous for its high GDP per capita and high living cost. These fames are usually news headlines which may be biased[ref TBA]. Existing economic indicators may help public to have a glimpse of Singapore's economic from certain aspects, but they are usually not comprehensive. Public need to digest multiple economic indicators in order to have a better understanding of Singaporean's living cost pressure. In this paper, I propose a new economy indicator: LCPC - Living Cost Pressure Curve, which provide holistic view of living cost pressure of a society in a single curve. My focus will be Singapore, but the methodology should be applicable to other economies, cross comparison of LCMC among different economies is also possible.

Issues of existing economic indicators

CPI

When considering living cost, Consumer Price Index (CPI) is a commonly used indicator. According to Singapore Statistic Department[ref TBA], the annual CPI using 2019 As Base Year increase from 74 in 2000 to 109 in 2022, but it doesn't imply that Singaporean's living cost pressure also increased by 47%. Singaporeans's income level may also increase during the same period. If income level increase at a faster rate than CPI, the actual economic pressure from living cost may drop.

GDP per capita measured in PPP

GDP per capita includes income factors, but it could be distorted. For example, an economy like Singapore which has significant portion of GDP contributed by international trade, its GDP may not fully reflects the income level of local people.

Worldwide Cost of Living by EIU

Another commonly cited indicator is the Economist Intelligence Unit's (EIU) Worldwide Cost of Living (WCOL) survey. In this yearly survery, it consistanly ranks Singapore as the city with highest live cost in the world and attracts media attentions.

"The survey has been designed to enable human resources and finance managers to calculate cost-of-living allowances and build compensation packages for expatriates and business travellers"[ref TBA] But when covered by media, public may have the misconception that this survey is reflecting living cost of local people.

Singapore government responsed[ref TBA] to this survey in Dec 2023, pointing out two reasons for "it may not reflect the cost of living for Singaporeans":

- The WCOL survey's consumption basket does not reflect what Singaporeans usually consume
- The rankings are sensitive to currency fluctuations

Beside these two reason, WCOL has same issue as CPI: It doesn't contains information about income level.

Common issue of Index indicator

Society is diversified, society has classes. Economic index indicators are usually an scalar. Scalar as an one dimensional number could never contains enough information for describe situation across different segments of an economy.

In order to create more holistic view of living cost of a economy, the proposed indicator is a curve: Living Cost Pressure Curve.

Living Cost Pressue Curve - LCPC

Basic Formula

Indicators like CPI and EIU's WCOL are essentially a weighted sum of living cost. In order to capture living cost pressure faced by consumer, it not enough to just consider living cost metrics. Living cost must be used to against values like income to represent pressure faced. The proposed formula for Living Cost Pressure - LCP is:

$$LCP = \frac{\sum \text{Expenditure}}{\sum \text{Income}}$$

Benefit of:

- No weightage conversion is needed, just using nominal numbers
 - If we want to evaluate an impact of certain price change, like fresh food price shock
 - We will need to look into composition of the "Overall expenditure". But again, no weightage conversion is needed, we just need to calculate the nominal dollar changes.
- Denoted in local currency, robust to currency fluctuations
- Is log transform needed? No?

It reflects an individual or a household's cash flow status, which reflects pressure of living cost.

Forming curve

In order to provide a holistic view of living cost pressure in a society, it's not enough to calculate the expenditure & income of a "Representative Consumer/household".

Singapore's data

Household Expenditure Survey

Singapore Statistics Department conducts Quinquennial Household Expenditure Survey [ref TBA] starting from 2007.

Segmentation

By income groups

It shows:

Issue: 30%+ of household in bottom 20% income segments are sole household of 65+

Retired elderly may have no income, but potentially high saving.

By dwelling

- HDB 1 & 2 Room
- HDB 3 Room
- HDB 4 Room
- HDB 5 Room & EC
- Condo
- Landed

Relief of lower income groups are more significant. Top 20% household are actually "worse off".

Waves in 12/13 data: HDB 4 ROOM & Condo

Possible explanation:

- Squeezed middle class
- Cut off

A more detailed analysis will need to have housing loan data.

Housing loan

HES's expenditure doesn't include Housing loan repayment.

The housing category expenditure only includes:

I did try to find statistic for Singaporean's mortgage, but it's very hard:

- HES did collect the data, but did not reveal

Housing loan is determined largely at the moment of purchase, and it varies a lot from household to household. It's hard to estimate which age group of household purchase their first house, nor to mention segmented it by income level or type of house.

The mortgage rate may change, but about 80% of Singapore household stays in HDB, and the HDB housing loans interest rate is pegged[ref TAB] to +0.1% of interest rate of CPF ordinary account, which is 2.5% since July 1999[ref TAB].

Market interest rate may change, but it will be capped to 2.6% - HDB rates. Condo & landed properties owners may need to take loans from commercial banks, and the rate would have much higher fluctuations. But that only impacts the top 20% high income household.

Furthermore, MAS has MRS limit, 30%.

If we do an extreme estimation of that all household takes the maximum housing loans, it just discounts LCM of all segment to 70%, and has no impact on the shape/distribution of the LCMC.

Finally, from an accounting point of view, property is considered as an asset of an household, when spending

Housing impact of LCMC would be future research topic, perhaps using another economy like Hong Kong as object.

Rental

It could be worthy to dive more into

Good reference to foreigner

- Student / foreign workers

Rental is an income of the local - already included in LCMC.

HDB & condo rental stats are available.

HDB Rental[ref TBA]

Condo District

3 Queenstown, Alexandra, Tiong Bahru In long-ago times, MSR was capped at 40% of a borrower's gross monthly income. Then in January 2013, it was lowered to 35%. At the same time, the Monetary Association of Singapore (MAS) set an MSR limit of 30% for bank-issued loans for HDB flats.

Normanton Park[ref TBA] 1 bedroom: 527 2 bedroom: 656 3 bedroom: 936

Possible to adapt LCMC for reference of foreigners.

Factors impacting LCMC

Income

Covid

high income

wait for 22/23 HES.

Progressive wage?

GST

Singapore Government increase GST from 7% to 9% in 2023 and 2024.

1% increasement to all expenditure of all segments.

Singapore govenemnt did provide tax relief to low income families[ref TBA], thus this policy will have an “bending effect” on LCMC.

How to apply LCMC?

Accounts for expenditure & income carefully Like weather to con

Segmentation

Segment carefully!

By income level? By dwelling? By race/ethnic group? By age? By education/level?

Segmentation could be an IV.

Limitations

- No Data for 07/08????
- Only considering SG, better to have another city
- Estimation of expenditure needs review
- Bais of ignore in dollar value: Dollar value of (I - E) could be another indicator: Live Cost Luxury Curve

Conclusion

The main purpose of LCMC is to propose a indicator/framework for living cost measurements

- Provision impacts of government policy
- Better reference for local & foreigners
- Comparison amony cities/economies

Reference

Table 14 Resident Households by Income Quintile 1/ and Type of Dwelling

Table 18A Average Monthly Household Expenditure Among Resident Households by Type of Goods and Services (Detailed) and Type of Dwelling

Chart 1.10: Average Monthly Household Expenditure¹ Per Household Member by Type of Dwelling, 2007/08 - 2017/18

Number of household

1068907

76961,240651,430965,320330,207282,69038

Income

1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 2022 6891,347 1, 8642,400 2, 9763,634 4, 4475,578 7, 493 14,354 2023 7061,421 1, 9872,563 3, 1693,857 4, 7295,892 7, 86214,803

<https://www.valuechampion.sg/home-loans/average-cost-housing-singapore>