Living Cost Pressure Curve

in Singapore and beyond

Weng Wei

Mar 12, 2024

Motivation

"Singapore kept its position as the world's most expensive city this year, for the ninth time in 11 years." - Economist Intelligence Unit(EIU) Worldwide Cost of Living 2023
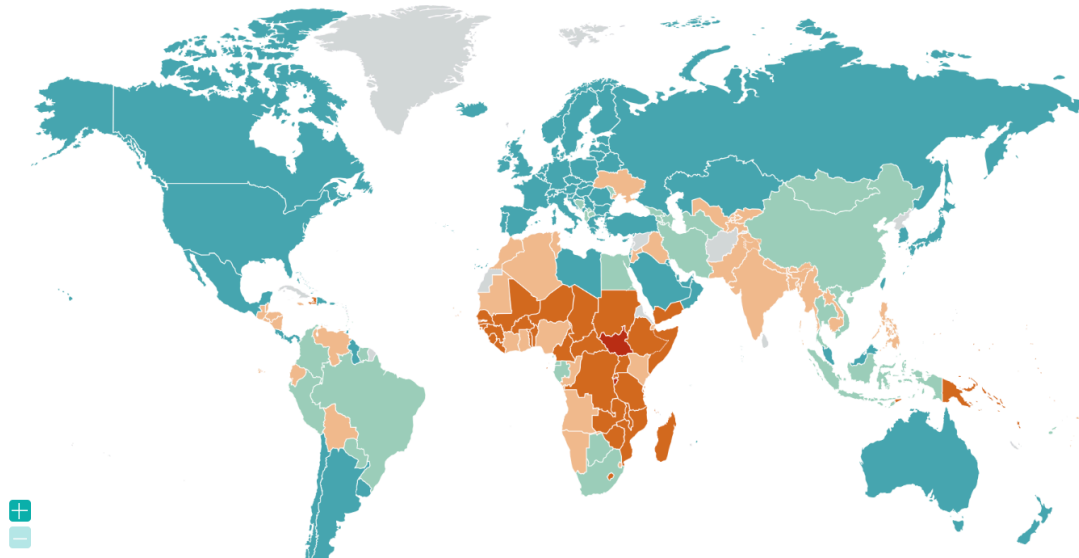
SG is the most expensive ???

IMF DATAMAPPER ⓘ | DATASETS | WORLD ECONOMIC OUTLOOK (OCTOBER 2023) | **GDP PER CAPITA, CURRENT PRICES** | 🔍

GDP per capita, current prices ⁱ

Purchasing power parity; international dollars per capita

MAP (2024) ⚙   **LIST (2024)**

● 25,000 or more ● 15,000 – 25,000 ● 5,000 – 15,000 ● 1,000 – 5,000 ● under 1,000 ● no data

	Country		Region		Analytical group

Country	Value ∧
Luxembourg	145.83 thousand
Ireland	143.18 thousand
Singapore	138.54 thousand
Macao SAR	125.51 thousand
Qatar	118.15 thousand
United Arab Emirates	92.95 thousand
Switzerland	92.52 thousand
San Marino	86.89 thousand
Norway	84.85 thousand
United States	83.06 thousand
Guyana	78.84 thousand
Denmark	77.48 thousand
Brunei Darussalam	76.86 thousand
Taiwan Province of China	76.33 thousand
Hong Kong SAR	76.15 thousand

SG is the richest ???

Resource Question

- How to have quick understanding of living cost pressure in a economy?
- Existing economic indicator doesn't fit well
  - CPI
  - GDP per capita
  - World Cost Of Living by EIU
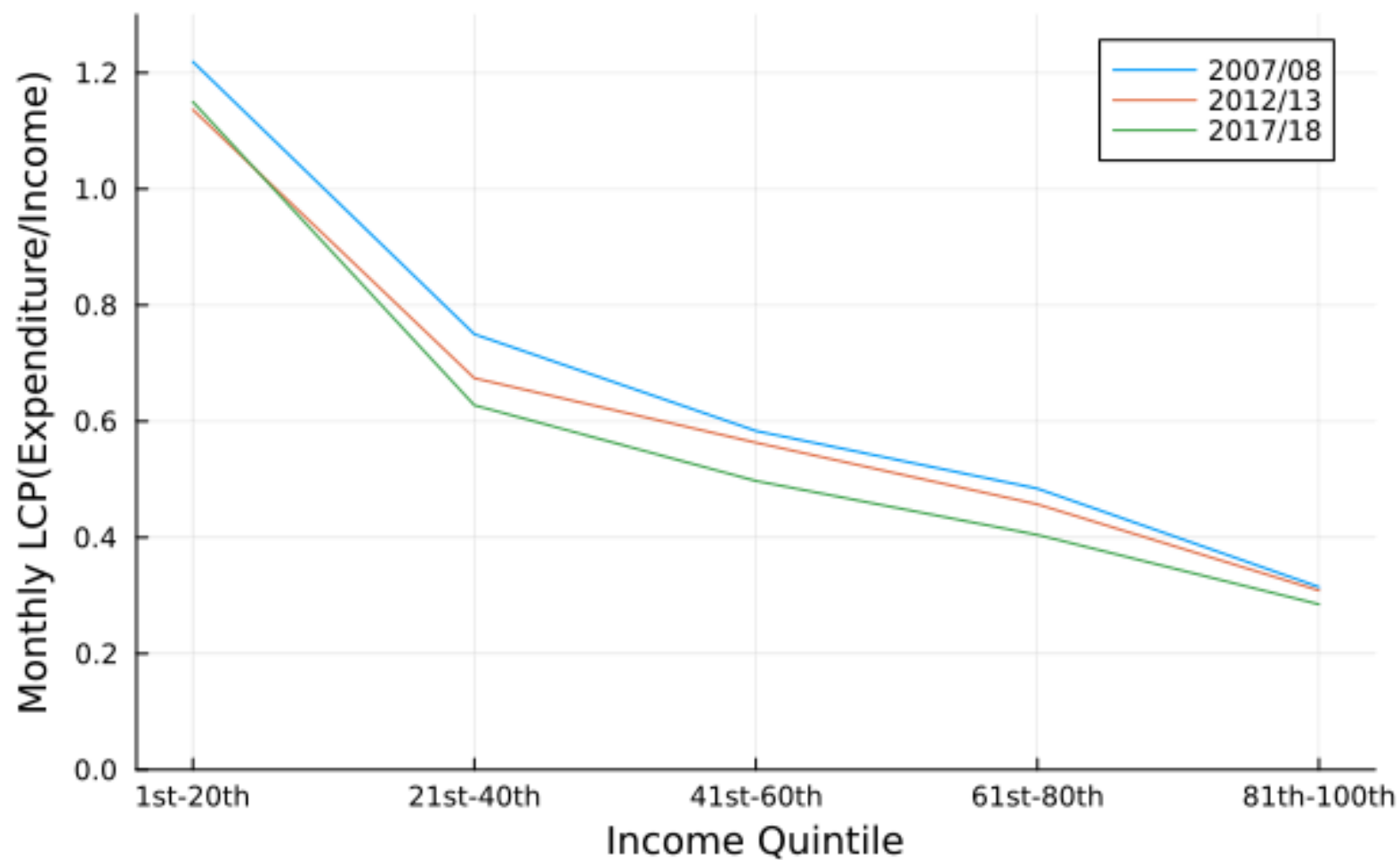- Let me come out with a suitable one

Living Cost Pressure

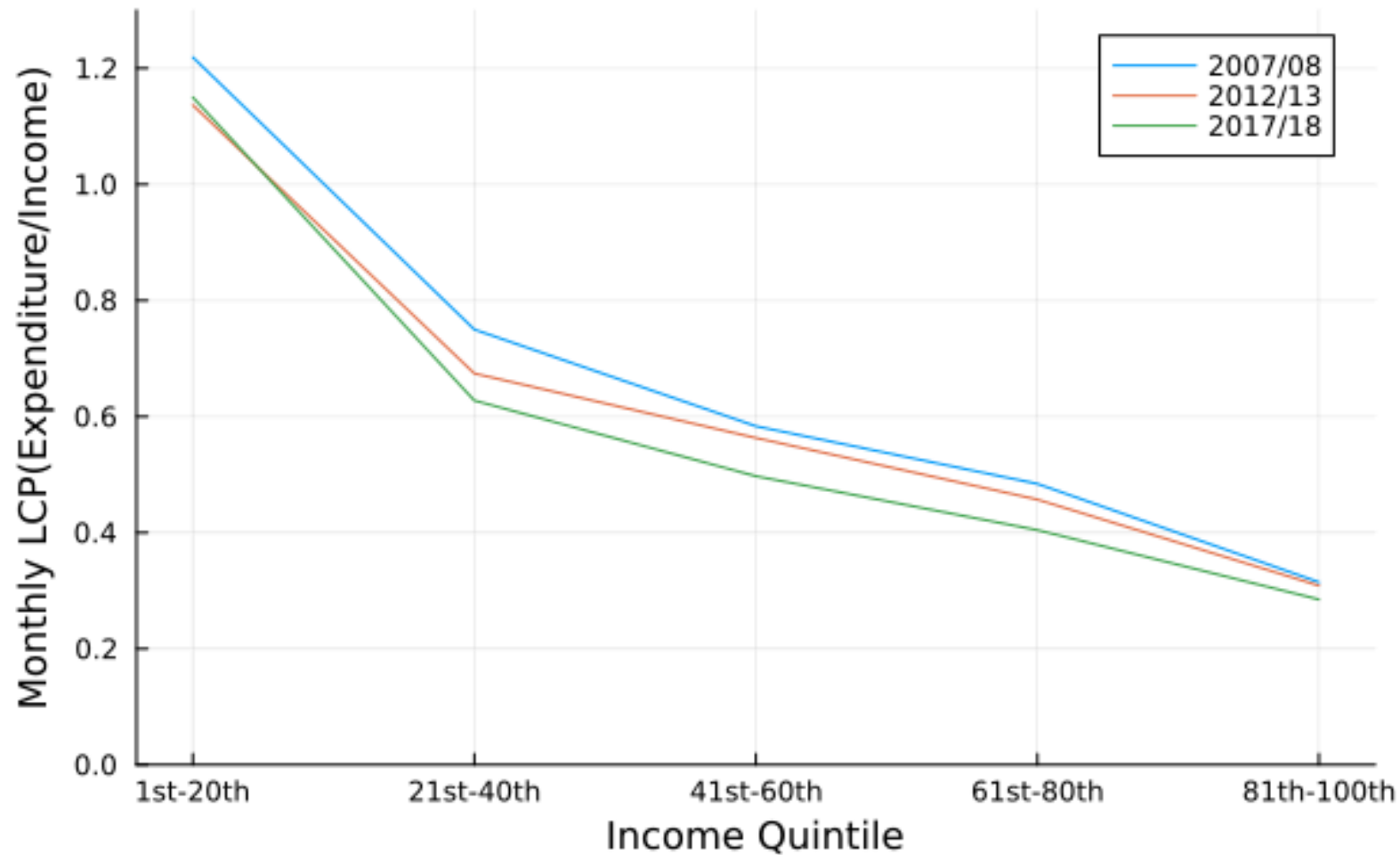$$LCP = \frac{\sum \text{Expenditure}}{\sum \text{Income}}$$

LCPC - Living Cost Pressure Curve

- Calculate LCP for different group in the economy
  - For example: by income
- construct a curve to show how living cost pressure distributed in the economy

SG LCPC by Income Quintile

SG LCPC by Income Quintile

LCP for `1st-20th` group exceed 1 ???

Dive into the data

- Data from Household Expenditure Survey(HES) by SingStat
  - Conducted every 5 years
  - Each Survey about 14,000 dwellings in Singapore

Dive into the data

- Data from Household Expenditure Survey(HES) by SingStat
  - Conducted every 5 years
  - Each Survey about 14,000 dwellings in Singapore

"It is notable, for example, that some resident households in the lowest 20% owned a car (13.6 per cent), employed a maid (13.9 per cent), lived in private property (7.1 per cent) or were headed by persons aged 65 years and over (36.7 per cent) in 2017/18." - HES 2017/18
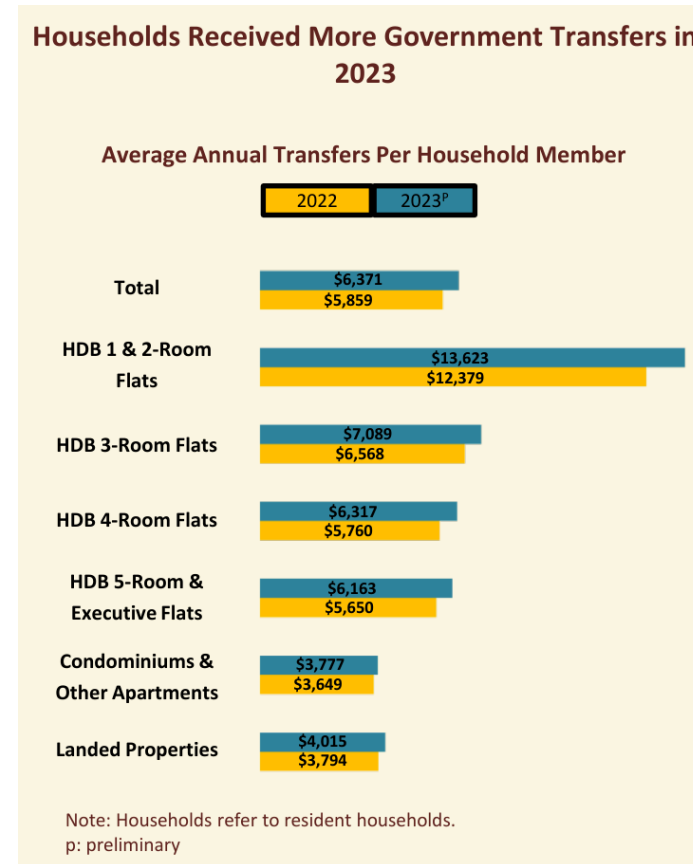
Dive into the data

- Data from Household Expenditure Survey(HES) by SingStat
  - Conducted every 5 years
  - Each Survey about 14,000 dwellings in Singapore

"It is notable, for example, that some resident households in the lowest 20% owned a car (13.6 per cent), employed a maid (13.9 per cent), lived in private property (7.1 per cent) or were headed by persons aged 65 years and over (36.7 per cent) in 2017/18." - HES 2017/18

- Low income may not imply poor
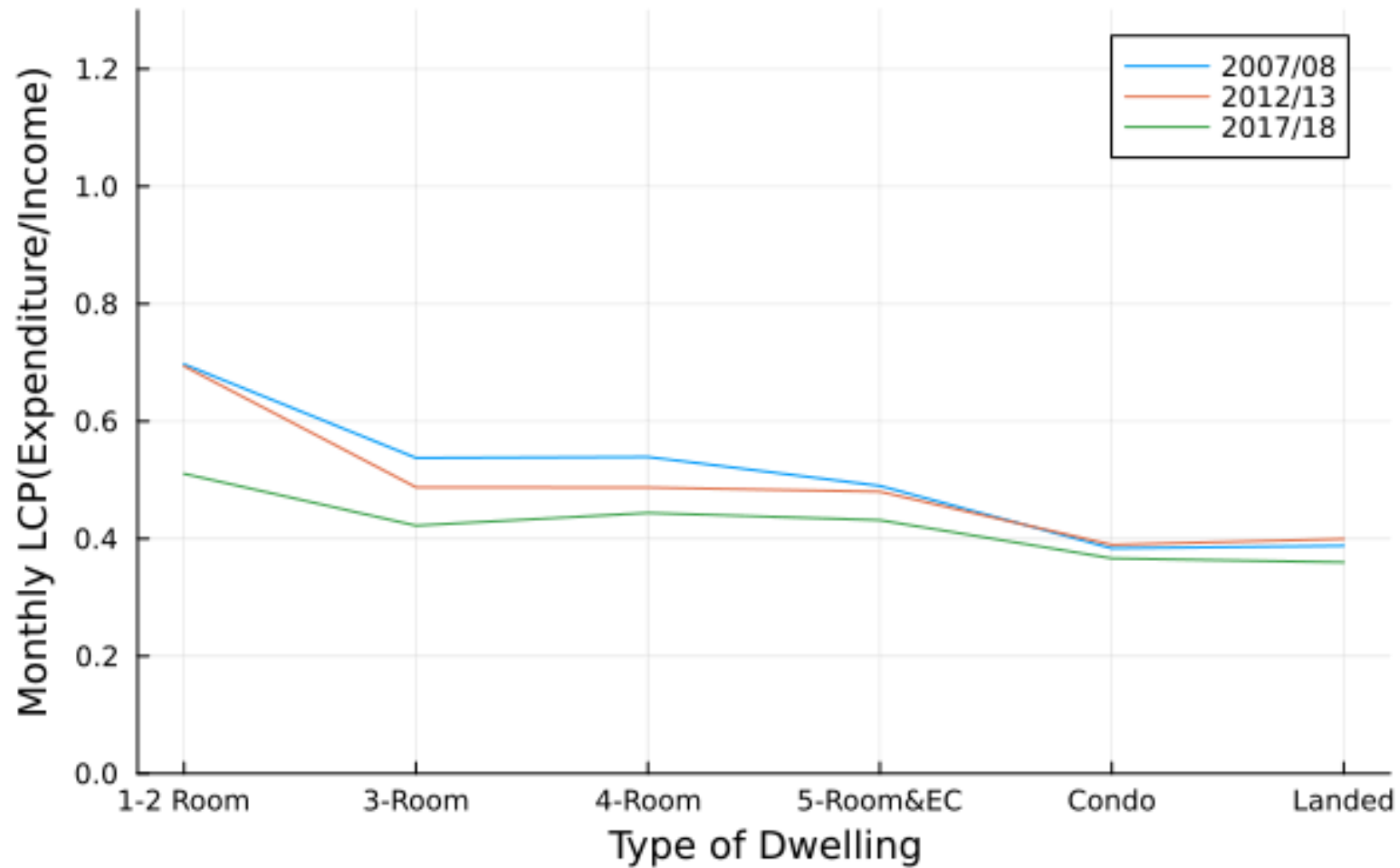- Elderly aged 65 years and over should be handled separately

SG government assume

- Household in bigger dwelling are richer

Households Received More Government Transfers in 2023

Average Annual Transfers Per Household Member

| | 2022 | 2023P |

Category	2022	2023P
Total	$5,859	$6,371
HDB 1 & 2-Room Flats	$12,379	$13,623
HDB 3-Room Flats	$6,568	$7,089
HDB 4-Room Flats	$5,760	$6,317
HDB 5-Room & Executive Flats	$5,650	$6,163
Condominiums & Other Apartments	$3,649	$3,777
Landed Properties	$3,794	$4,015

Note: Households refer to resident households.
p: preliminary

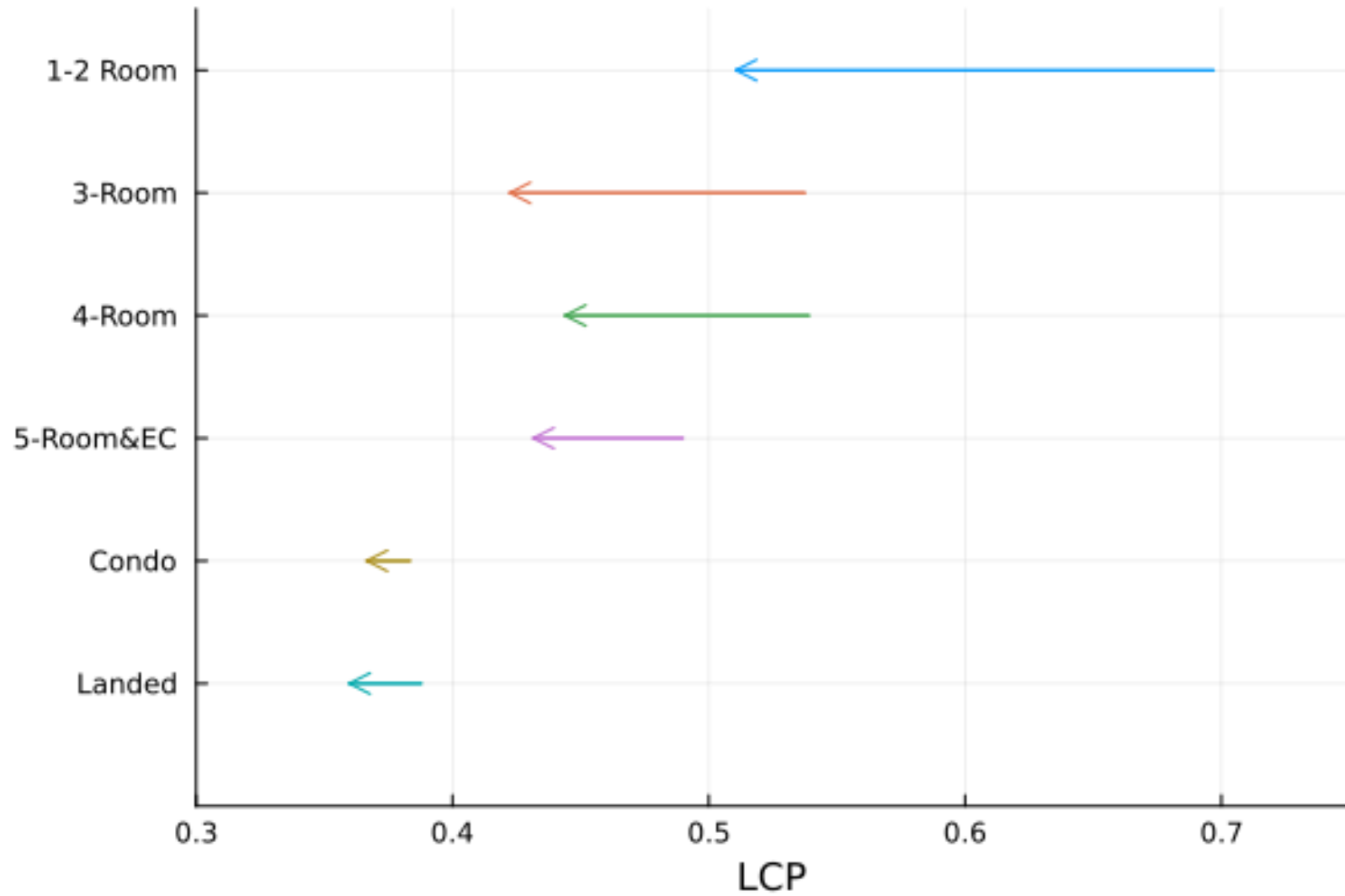|	HDB				Condo	Landed	All
	1-2 Room	**3-Room**	**4-Room**	**5-Room&EC**			
Percentage	7.0%	17.0%	31.3%	22.4%	17.2%	4.8%	100%

Table 1: Resident Households by Type of Dwelling 2023

SG LCPC by Type of Dwelling

- Households comprising Solely Non-Working Persons Aged 65 Years and Over are ignored

Change of LCP by type of dwelling from 2007/08 to 2017/18

- All LCP below 1: no household face deficit.
- LCP of all groups drop from 2007/08 to 2017/18, the lower type of dwelling tends to have higher drop in LCP.
- LCPC thus become much more "flat" in 2017/18 than in 2012/13, implies social equality has improved.
- HDB 1-2 Room group has the most improvement from 2012/13 to 2017/18, as a result of larger increment in income than expenditure.
  - This could be a result of large transfer payment by the government.
- LCPC of 2017/18 is in a slight "W" shape, "middle class squeezed"?
- Dive deeper into the data...

Should expenditure include Mortgage Repayment?

- Mortgage repayment data is hard to find
  - SingStat has it from HES, but never reveal

- Mortgage repayment is harder to estimate

- What's buying a house?
  - Turn cash asset into fixed asset
  - It's investment, not expenditure

- So, NO

Should expenditure include rental?

- YES! It's real expenditure.

- But, not be relevant to Singaporean
  - About 90% house ownership rate
  - Rental is income for Singaporean

- Crucial for foreigner in SG
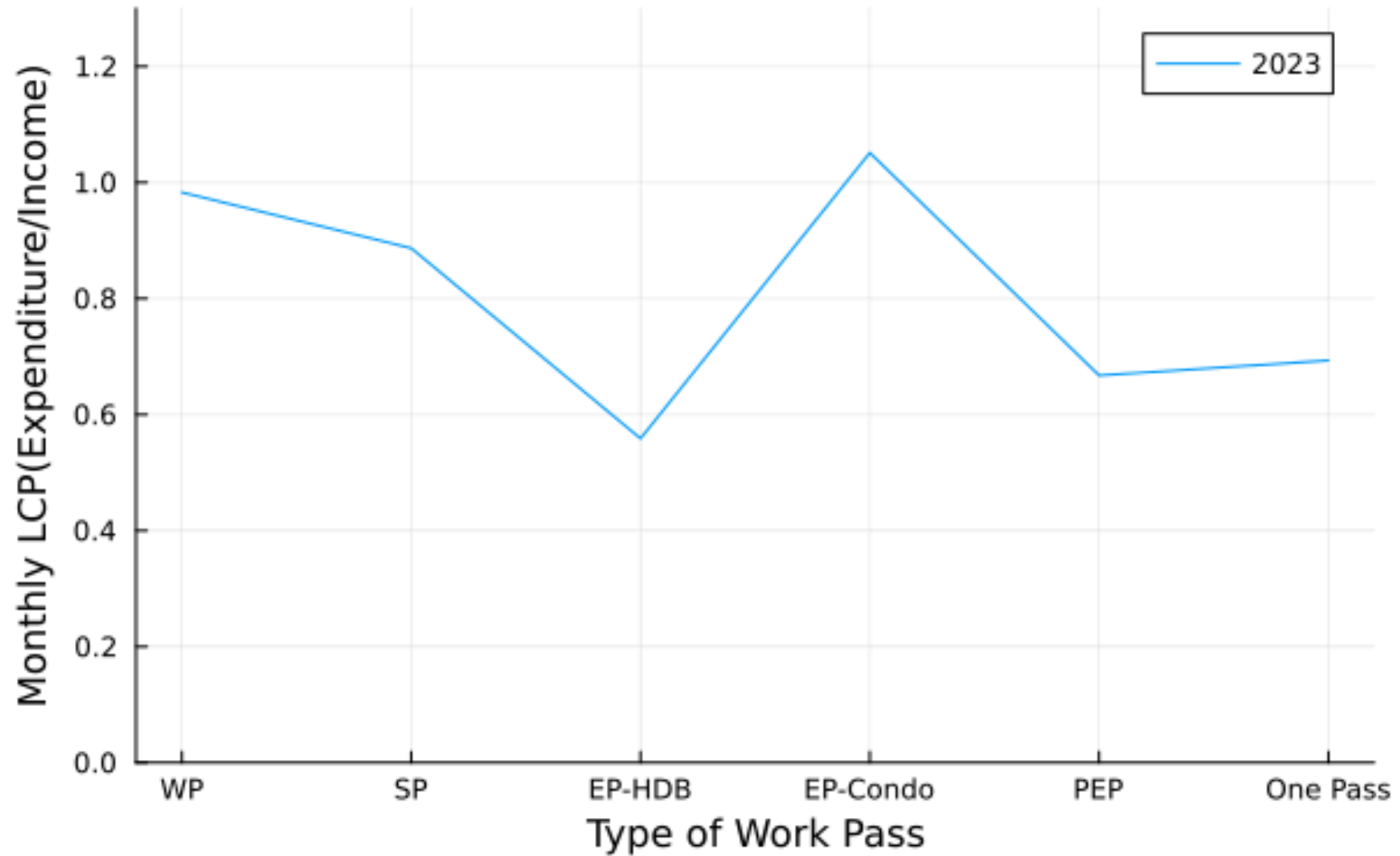 - 2023: 30% or 1.77M non-residents

LCPC for foreign worker in SG

- Regress/Forecast/Estimate with CPI & expenditure
- Estimate income
- Estimate rental for both HDB & condo

	WP	SP	EP Rent HDB	EP Rent Condo	PEP	ONE Pass
Estimated Expenditure	1,010	1,667	1,667	3,454	10,362	13,816
Estimated Rental	562	1,126	1,126	2,328	4,656	6,983
Estimated Income	1,600	3,150	5,000	5,500	22,500	30,000
LCP	0.98	0.89	0.56	1.05	0.67	0.69

Table 2: ESTIMATED SG foreign worker's income & expenditure by type of work pass

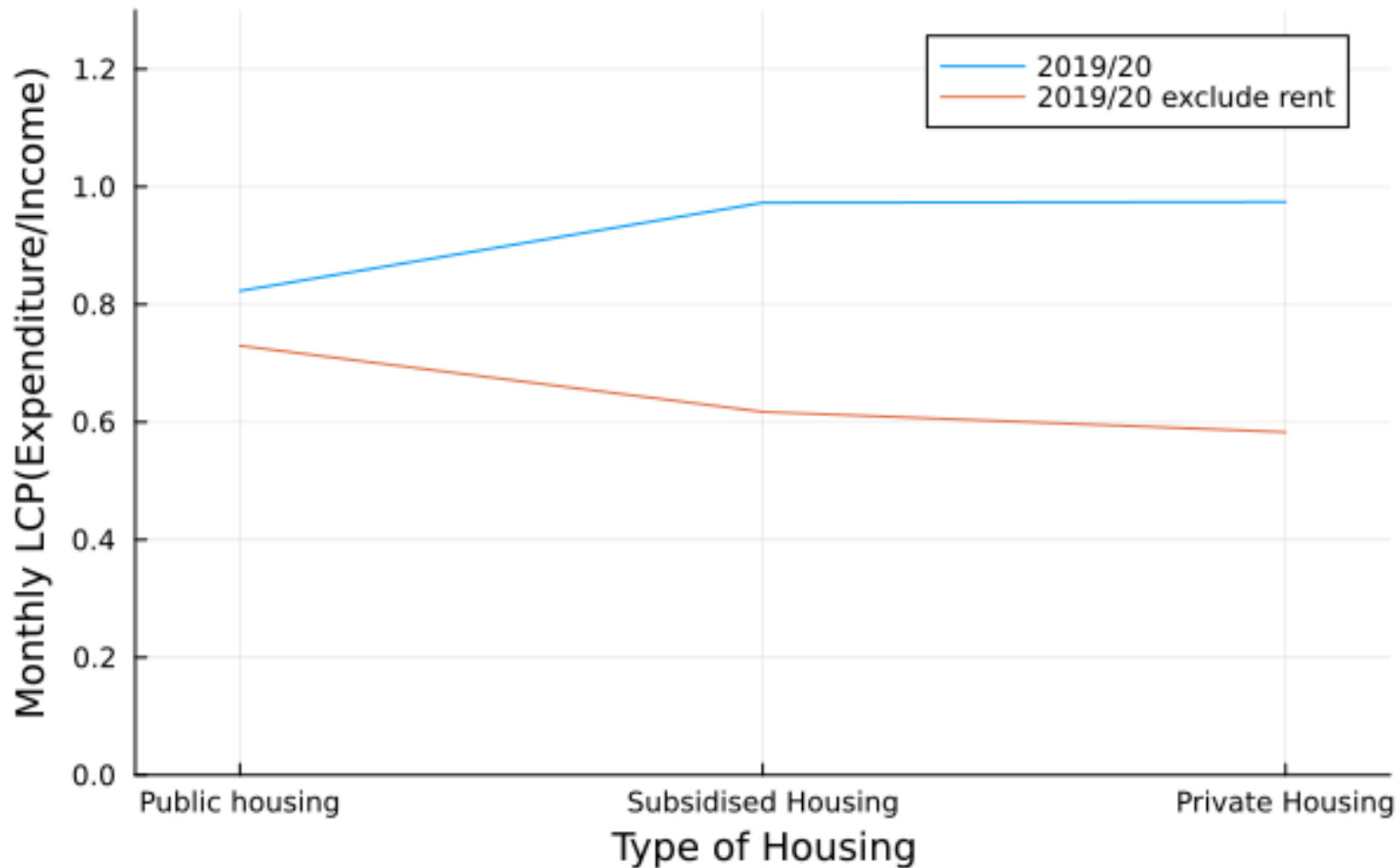ESTIMATED SG LCPC by Type of Work Pass

- Rental HDB or condo?

LCPC not just for SG

Let's look at Hong Kong!

HK LCPC by type of housing

- Relocating from HK to SG for smaller living cost pressure?

Conclusion

LCPC has only two simple idea:

- Ratio between expenditure and income: LCP
- LCP for different group, form a curve LCPC

LCPC is simple but versatile.

All data and source code are available at:

- https://github.com/Wuvist/lcpc

SG is expensive? Cite LCPC

Thank You