

Cross-Country Analysis of Household Sector Balance Sheet: Gross Domestic Product or Personal Disposable Income

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Introduction

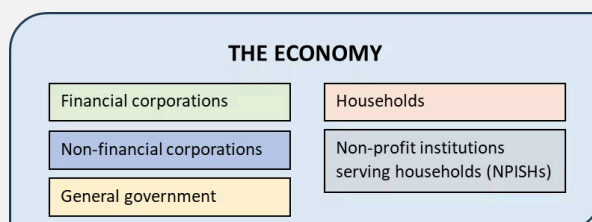
Cross-country comparisons of household sector indicators facilitate assessment of households' economic well-being relative to other countries, and support evidence-based policymaking. For data comparability, Household Sector Balance Sheet is often expressed as a percentage of Gross Domestic Product (GDP) [1] or Personal Disposable Income (PDI) [2].

This article discusses the suitability of using GDP or PDI to derive household sector indicators and highlights key observations from cross-country comparisons of Singapore's indicators against five selected countries (Australia, Canada, Germany, Japan, and the United States of America (USA)) [3].

Understanding DOS's Data - Household Sector Balance Sheet, GDP & PDI

The Singapore Department of Statistics (DOS) publishes data on Household Sector Balance Sheet, GDP, and PDI on a quarterly basis. These national accounts indicators are largely compiled based on the System of National Accounts (SNA) [4] conceptual framework. According to the SNA, the economy consists of five mutually exclusive institutional sectors (Figure 1).

Figure 1: Five Institutional Sectors of the Economy



[1] Data on GDP at current market prices are used.

[2] PDI measures the income (e.g., compensation of employees, self-employment income) of the personal sector (i.e., households and non-profit institutions serving households such as charities and religious organisations which provide goods and services to households for free or at subsidised rates), after accounting for net investment income received (e.g., interest and dividends), net current transfers received (e.g., CPF top-ups and donations) and personal income tax paid.

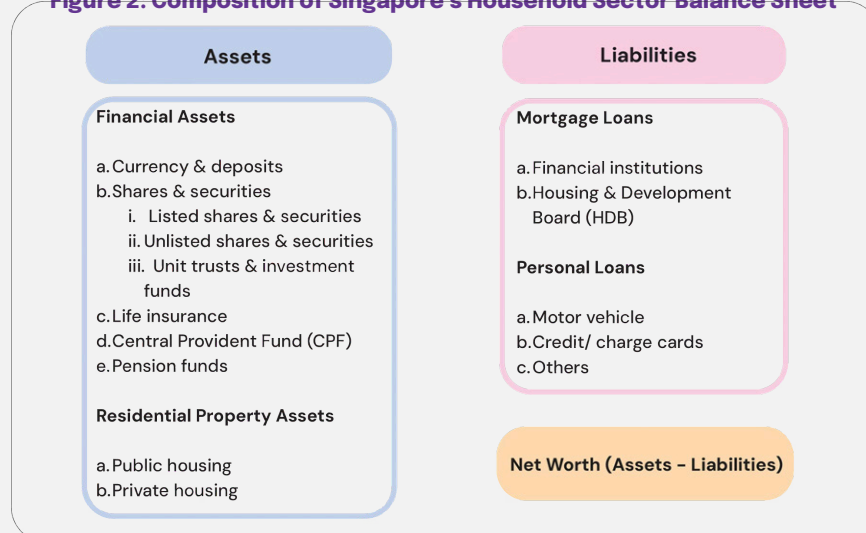
[3] These countries were selected as they have timely and comprehensive data on household sector balance sheet and personal disposable income.

[4] Online reference of SNA 2025 is available via <https://unstats.un.org/unsd/nationalaccount/sna2025.asp>

The household sector consists of all household institutional units that have engaged in economic activities in Singapore for at least a year, including Singapore citizens, permanent residents, foreigners, and unincorporated enterprises (e.g., sole proprietorships).

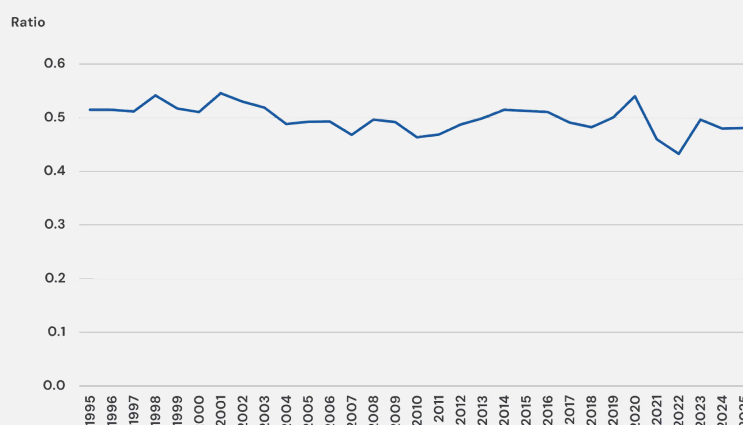
The Household Sector Balance Sheet [5] provides information on the assets and liabilities held by households in Singapore as at end of the period. Households' assets show the amount of wealth (e.g., financial and residential property assets) owned, while households' liabilities show the level of debts (e.g., mortgage and personal loans) incurred by households. Hence, household net worth refers to the difference between total assets and total liabilities, and it provides an indication of households' financial health (Figure 2).

Figure 2: Composition of Singapore's Household Sector Balance Sheet



GDP serves as a measurement of a country's economic performance, while PDI reflects the income available to the personal sector for consumption. Between 1995 to 2025, Singapore's PDI-to-GDP ratio remained relatively stable, ranging from 0.43 to 0.55 (Chart 1). Hence, when analysing Singapore's household sector data alone, the underlying economic trend would generally not differ significantly whether expressed in terms of GDP or PDI.

Chart 1: Singapore's PDI-to-GDP Ratio [6], 1995 - 2025



However, for **cross-country** comparisons of household sector indicators, expressing the household sector data as a percentage of PDI, instead of GDP, eliminates the undue influence of the corporations and government sectors, providing a more meaningful comparison and analysis.

Most cross-country comparisons of household sector indicators are already expressed as a percentage of PDI. For example, the Organisation for Economic Co-operation and Development (OECD) has published a dashboard on households' economic well-being which highlighted charts on household debt and household financial net worth as a percentage of household disposable income [7]. Such ratio consequently standardises international comparisons, facilitating more insightful analysis of Household Sector Balance Sheet data across countries.

[5] The quarterly Household Sector Balance Sheet data on assets and liabilities are compiled from a macroeconomic perspective, using mainly aggregated data from administrative sources. Disaggregated Household Sector Balance Sheet data by percentile or individuals are hence not available.

[6] Singapore's PDI-to-GDP ratio peaked in 2020, due to the sharp contraction in GDP because of the COVID-19 pandemic. Thereafter, due to the low base in 2020, GDP grew at much faster pace than PDI in 2021 and 2022, resulting in a decline in PDI-to-GDP ratio from 0.54 in 2020 to 0.43 in 2022.

[7] The OECD dashboard on 'Households' economic well-being' is available via <https://www.oecd.org/en/data/dashboards/households-economic-well-being-the-oecd-dashboard.html>

Analysis of Household Sector Indicators in Terms of PDI and GDP

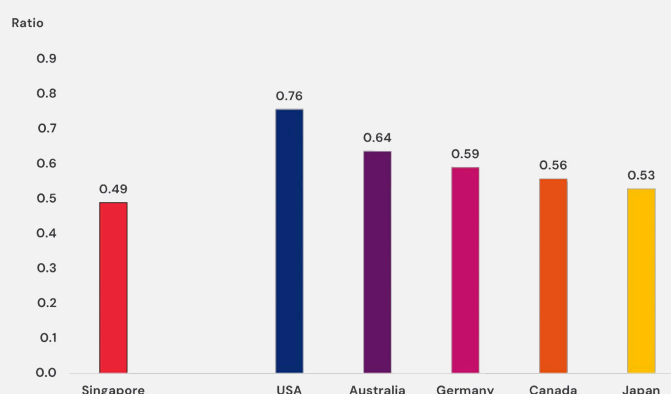
Singapore's low PDI-to-GDP ratio and its impact on cross-country comparisons

Comparing Singapore's key household sector indicators against the five other countries from 2015 to 2025 [8], different conclusions were derived depending on the denominator of the indicators (i.e., GDP or PDI).

Given Singapore's relatively low PDI-to-GDP ratio [9], our Household Sector Balance Sheet data (i.e., net worth, assets and liabilities) may be understated if GDP is used as the denominator for cross-country comparisons. Meanwhile, PDI provides a more appropriate common metric as it compares only the disposable income of households across countries.

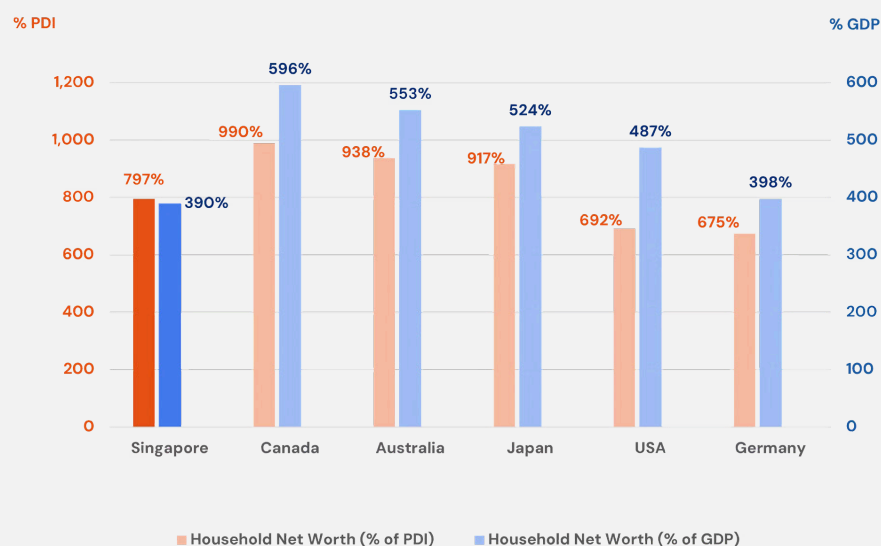
From 2015 to 2025, Singapore had the lowest average household net worth-to-GDP ratio at 0.49 compared to Australia, Canada, Germany, Japan, and the USA (Chart 2).

Chart 2: Average PDI-to-GDP Ratio [10], 2015-2025



In terms of PDI, Singapore's household net worth was higher than that of the USA and Germany. From 2015 to 2025, Singapore's average household net worth-to-PDI was 797% (Chart 3). This implied that Singapore's average household net worth was nearly eight times larger than its PDI.

Chart 3: Average Household Net Worth in terms of GDP and PDI, 2015-2025



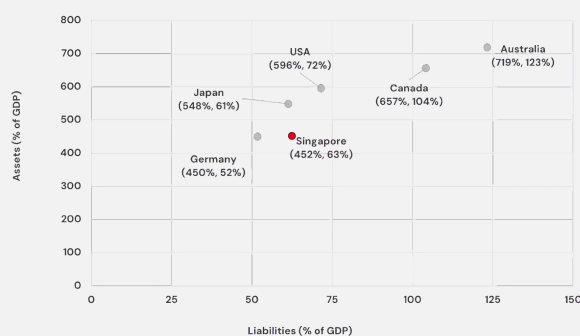
[8] Data from the five countries were obtained from the respective national statistics offices and central banks' websites, and the indicators were derived by DOS.

[9] In Singapore, compensation of employees or wage accounts for about 80% of PDI. A feature article '[A Look at Wage Share and Wages in Singapore](#)', published by the Ministry of Energy, Trade and Industry noted that Singapore's wage share of GDP was lower compared to most developed economies.

[10] The ratio is derived with PDI as the numerator and GDP as the denominator.

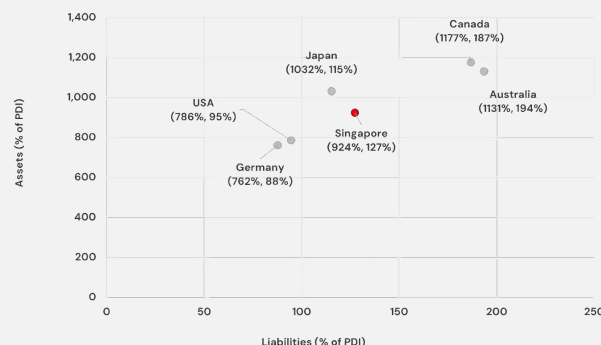
Singapore's assets-to-GDP was one of the lowest among the six countries and comparable to Germany's, while our liabilities-to-GDP was lower than that of Australia, Canada, and the USA (Chart 4). In terms of PDI, Singapore's assets and liabilities were higher than Germany and the USA (Chart 5).

Chart 4: Average Assets and Liabilities in terms of GDP, 2015-2025



Note: Data labels are formatted as 'Country (Assets in % of GDP, Liabilities in % of GDP)'.

Chart 5: Average Assets and Liabilities in terms of PDI, 2015-2025



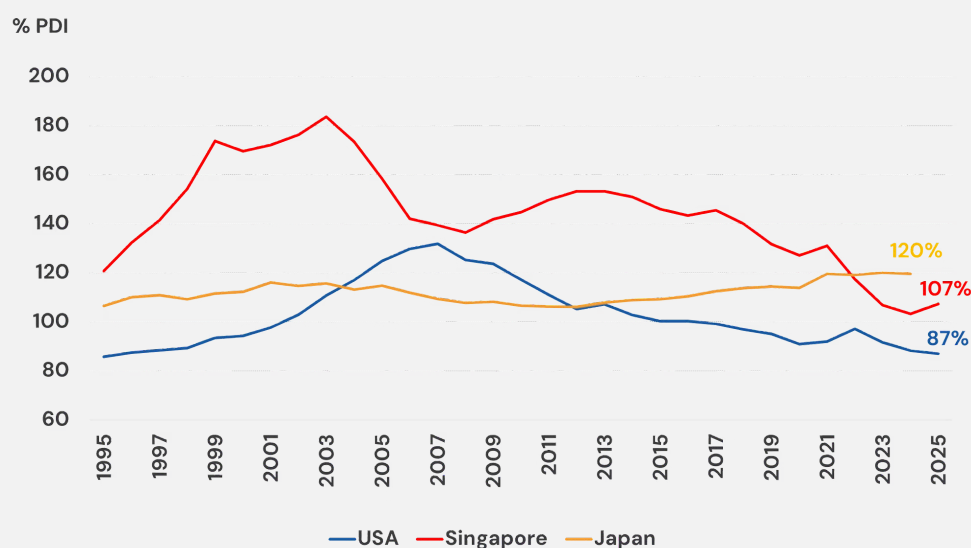
Note: Data labels are formatted as 'Country (Assets in % of PDI, Liabilities in % of PDI)'.

Singapore's High Home Ownership Rate

Drawing from the Household Sector Balance Sheet data for Singapore, Japan [11], and the USA from 2010 to 2025, deeper insights on the economic well-being of the households can be derived.

Analysis of household liabilities in terms of PDI suggested that households in Singapore had the most debt among the three countries prior to 2022 (Chart 6). As Singapore has a high home ownership rate of about 90% compared to about 60% in the USA and Japan [12], mortgage loans accounted for about 75% of total household liabilities in Singapore.

Chart 6: Household Liabilities-to-PDI, 1995-2025



[11] Japan's Household Sector Balance Sheet data were only available up to year 2024.

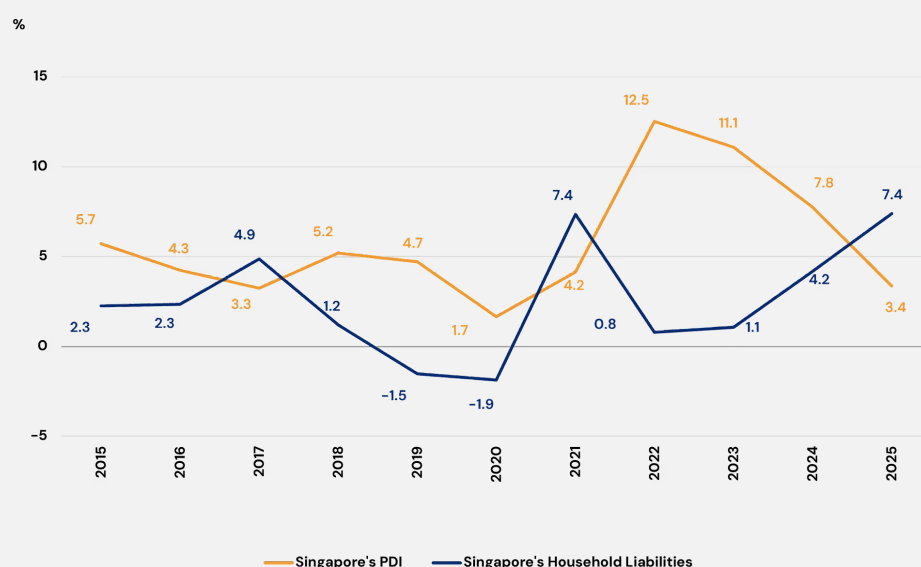
[12] Data on home ownership rates in Japan, Singapore and the USA were obtained from the websites of the respective national statistics offices.

Singapore's Household Liabilities-to-PDI Peaked in 2021 and Reached a Trough in 2024

Since 2017, Singapore's household debt had declined at a faster pace compared to that of the USA and Japan. A key contributing factor could be the set of measures implemented by the Singapore Government since the 2010s to tighten financing conditions for both public and private housing, encouraging greater financial prudence in households.

It is also worth noting that Singapore's household liabilities-to-PDI recorded a peak in 2021 before declining to a trough in 2024. The peak in 2021 was mainly attributed to the faster pace of growth in household liabilities compared to PDI (Chart 7). Household liabilities grew by 7.4% as at 4Q 2021 [13] supported by growth in mortgage loans and personal loans, while PDI grew by 4.2% in the same period. In 2022 and 2023, PDI subsequently registered a double-digit growth primarily driven by growth in compensation of employees and cash payouts from the Cost-of-Living Special Payment & Assurance Package, while growth in household liabilities moderated following the property cooling measures announced in end 2021 [14].

Chart 7: Year-on-year Growth in Singapore's PDI and Household Liabilities, 2015-2025



Conclusion

The analysis demonstrates how the choice of denominator affects cross-country comparisons of household sector indicators. Expressing Household Sector Balance Sheet data in terms of GDP may potentially distort cross-country analysis due to the relative size and influence of corporations and the government sectors. Presenting in terms of PDI is preferred as it provides a more appropriate common metric as it specifically focuses on the household sector only.

DOS's findings uncovered that Singapore's household debt-to-PDI had declined since 2015 following government policy measures to cool property prices, despite higher debt levels reflecting our 90% home ownership rate. These insights underscore the importance of using PDI-based indicators for accurate policy analysis and international benchmarking of households' economic financial well-being.

[13] The Monetary Authority of Singapore (MAS) Financial Stability Review 2021 noted that the key driver of growth in household debt in 2021 had been housing loans. In particular, the strong growth in housing loans since end-2019 had been underpinned by the robust residential property market with rising property prices and higher transactions despite the COVID-19 pandemic.

[14] The Ministry of Finance, Ministry of National Development and MAS jointly issued a media release on '[Measures to Cool the Property Market](#)' on 15 December 2021 to announce a set of measures to cool the private and public housing markets.