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Articles:



Experimental Estimates on Singapore's Digital Trade 2021 to 2024

Page 2



Measuring Singapore's Digital Economy: Experimental Estimates on Digital Industries

Page 6



Geographic Profiling of Singapore's Resident Population

Page 12



Spending on the Final Farewell: A Look at Funeral-Related Household Expenditure

Page 20



Impact of the 2026 Middle East Conflict on Producer Prices of Singapore's Transport and Storage Sector

Page 26



Tracing How Energy Price Shocks Ripple through Singapore's Industries Using Input-Output Analysis

Page 33



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

Page 38



Key Trends in Singapore's Current Account: Analysing the Current Account Balance with the Rest of the World

Page 43



Towards the 2025 SNA and BPM7: Key Themes and Updates to Singapore's National and International Accounts

Page 50



Use of Artificial Intelligence to Extract Unstructured Data from Financial Statements

Page 54



Strengthening Data Ecosystems for Effective Policymaking and Sustainable Development Goals Delivery

Page 56



The DOS Advisory Panel: Round-up of Discussions

Page 59

More in this issue:

Measuring Artificial Intelligence (AI)
› *Page 61*

How Common is Your Birthday?
› *Page 62*

Interactive Dashboard on Resident-Owned Enterprises by Sex of Owner
› *Page 63*

Singapore in Figures
› *Page 64*

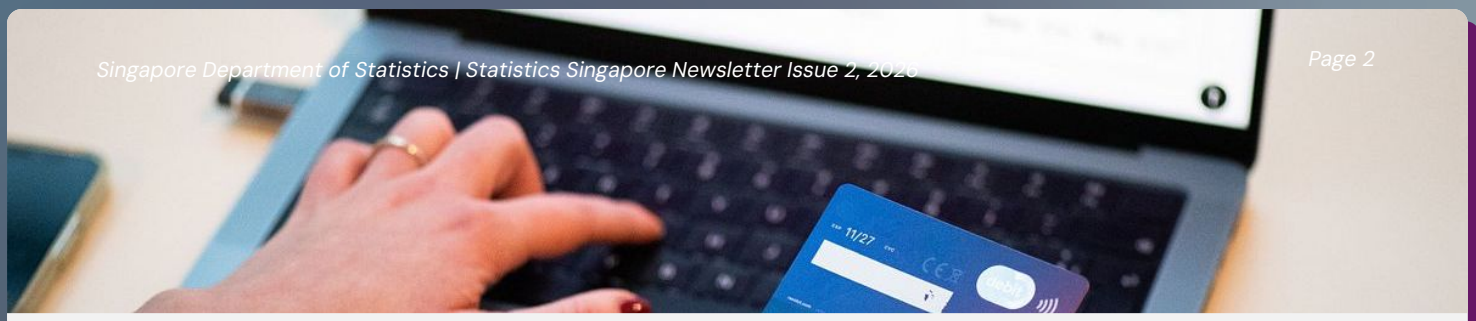
Overseas Visitors & Expertise Sharing at International Fora
› *Page 65*

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Experimental Estimates on Singapore's Digital Trade 2021 to 2024

by **Andrew Goh, Goh Wei Ming, Nicholas Gan, and Soh Sing Pei**
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Introduction



Digital technology has transformed the way businesses and consumers buy and sell across borders. More transactions are now conducted online, for example, goods and services are digitally ordered and services are digitally delivered to consumers. Digital trade is a subset of total international trade in goods and services, covering the exports and imports of goods and services that were digitally ordered [1] and/ or delivered [2].

The Singapore Department of Statistics (DOS) has released experimental estimates on Singapore's digital trade [3], providing new insights into its scale and characteristics. This article highlights key trends in Singapore's digital trade and its contribution to the overall trade and economic landscape from 2021 to 2024.

Why is Measuring Digital Trade Important?

The rapid advancement of digital technologies has expanded the reach of trade beyond traditional geographical boundaries and revolutionised the way goods and services are traded. Transactions once bound by physical and geographical constraints can increasingly be conducted digitally, enabling consumers and businesses anywhere in the world to participate in international trade.

Singapore's digital trade estimates represent a significant step forward in measuring how digital trade contributes to Singapore's overall trade and economic landscape. These estimates offer an expanded dimension on Singapore's trade activities and facilitate international comparisons that help policymakers, analysts and businesses identify opportunities from the growing digital economy.

[1] Digitally ordered trade is defined as international sale or purchase of a good or service, conducted over computer networks by methods specifically designed for the purpose of receiving or placing orders.

[2] Digitally delivered trade is defined as all international trade transactions that are delivered remotely over computer networks.

[3] Singapore's digital trade estimates are compiled based on the conceptual and measurement framework in the Handbook on Measuring Digital Trade, Second Edition (IMF *et al.*, 2023).

Transforming Real World Trade Data Into Real World Trade Evidence

Digital trade in goods and services represents transactions broken down by how the goods or services are ordered and delivered. Singapore's digital trade estimates are primarily compiled through trade and industry surveys and supplemented by other data sources such as credit card transactions and household survey data.

The surveys conducted by DOS and the Infocomm Media Development Authority (IMDA) collect detailed information on digital trade transactions that are unavailable from administrative sources (Table 1). These include DOS's International Trade in Services and Annual Industry Surveys, as well as IMDA's Survey on Infocomm Usage by Enterprises.

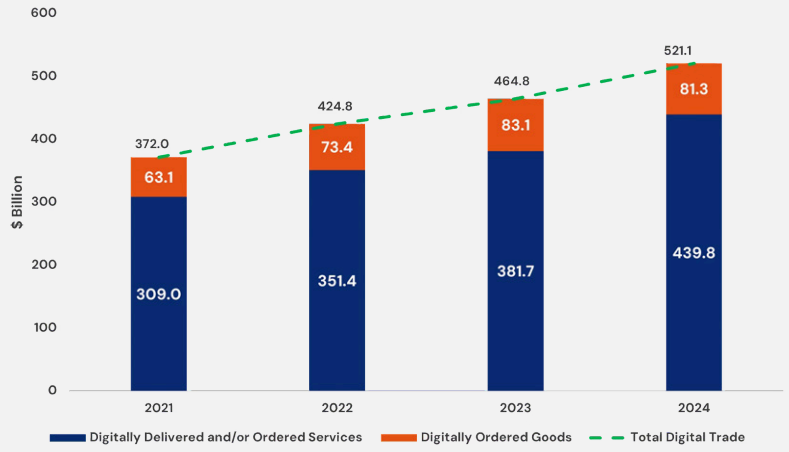
Table 1: How Digital Trade is Measured

Digital Trade Transaction	Transaction Details	Data Source
Digitally delivered services (whether digitally ordered or not)	Services digitally delivered to overseas customers and digitally provided by overseas suppliers	DOS's Annual International Trade in Services Survey [4]
Digitally ordered goods Digitally ordered services that are not digitally delivered (e.g., booking a car rental overseas online)	Sales and purchases via e-commerce or digital platforms	DOS's Annual Industry Survey [5] and IMDA's Annual Survey on Infocomm Usage by Enterprises [6]

Digital Trade Grew from $372.0 billion in 2021 to $521.1 billion in 2024

Singapore's digital trade, defined as the sum of exports and imports of goods and services that are digitally ordered and/ or digitally delivered, grew steadily from $372.0 billion in 2021 to $521.1 billion in 2024, at a compound annual growth rate (CAGR) of 11.9%. This outpaced the total trade growth rate of 7.4% over the same period [7] (Chart 1).

Chart 1: Total Digital Trade ($ Billion)



[4] More details on the **Annual International Trade in Services survey** are available on the SingStat Website .

[5] More details on the **Annual Industry Survey** are available on the SingStat Website.

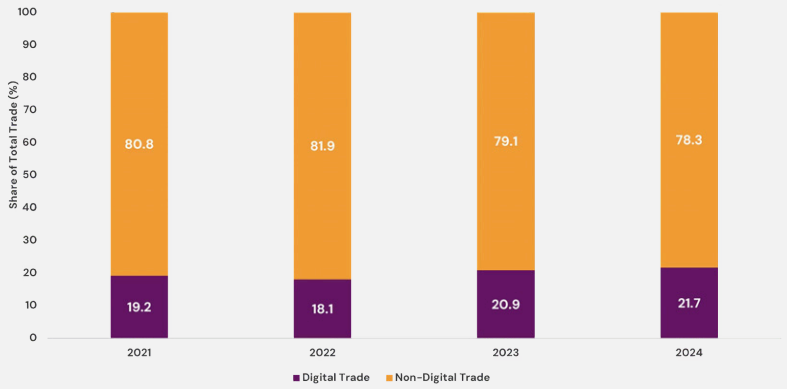
[6] More details on the **Annual Survey on Infocomm Usage by Enterprises** are available on IMDA's website.

[7] Total trade, defined as the sum of goods and services exports and imports, grew from $1.9 trillion in 2021 to $2.4 trillion in 2024.

The expansion was largely fuelled by digitally delivered and/ or ordered services, which accounted for most of Singapore's digital trade and reflected the increasing digitalisation of Singapore's exports and imports of services. These services grew from $309.0 billion in 2021 to $439.8 billion in 2024 at a CAGR of 12.5%. Over the same period, digitally ordered goods increased from $63.1 billion to $81.3 billion at a CAGR of 8.8% (Chart 1).

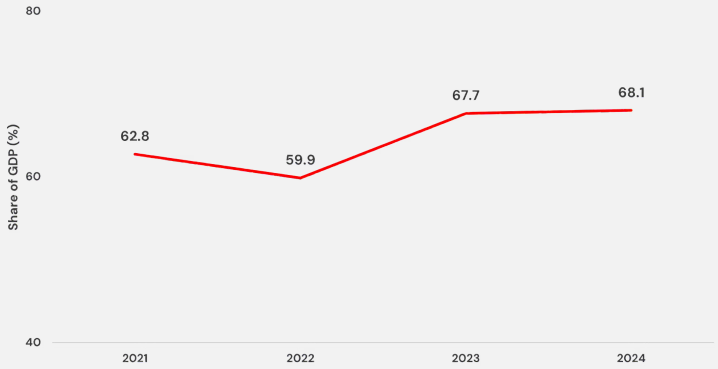
The share of digital trade in total trade also rose steadily from 19.2% to 21.7% between 2021 and 2024, reflecting the growing role of online ordering and digital delivery of services in facilitating Singapore's cross-border transactions (Chart 2).

Chart 2: Digital Trade as a Share of Total Trade



Similarly, digital trade as a share of Gross Domestic Product (GDP at market prices) increased from 62.8% to 68.1% between 2021 and 2024, suggesting the growing impact of digitalisation on the Singapore economy (Chart 3).

Chart 3: Digital Trade to GDP (%)

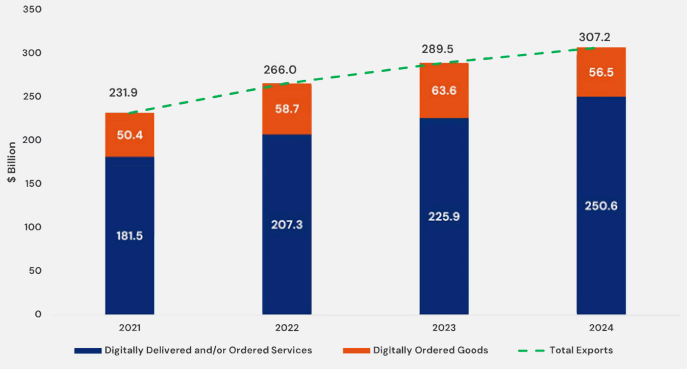


Digital Trade Exports and Imports Grew from 2021 to 2024

Singapore's digital trade exports grew from $231.9 billion in 2021 to $307.2 billion in 2024 at a CAGR of 9.8%. This was largely driven by exports of digitally delivered and/ or ordered services, which increased from $181.5 billion in 2021 to $250.6 billion in 2024, registering a CAGR of 11.4%.

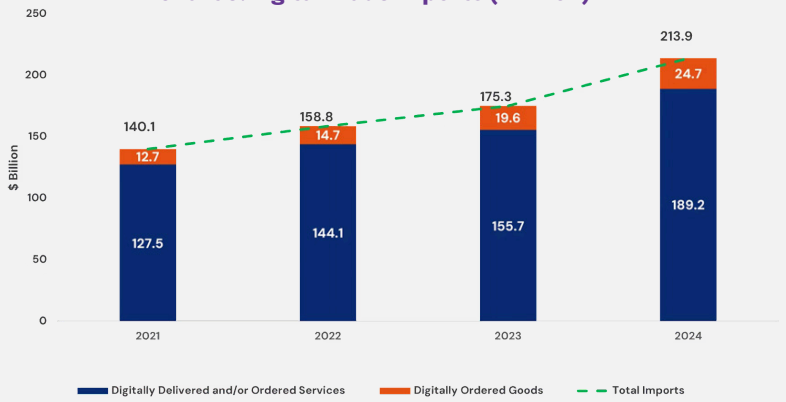
Exports of digitally ordered goods grew at a more modest pace, rising from $50.4 billion in 2021 to $56.5 billion in 2024 at a CAGR of 3.9% (Chart 4).

Chart 4: Digital Trade Exports ($ Billion)



Digital trade imports expanded from $140.1 billion in 2021 to $213.9 billion in 2024 at a CAGR of 15.1%. Imports of digitally ordered goods almost doubled from $12.7 billion in 2021 to $24.7 billion in 2024, growing at a CAGR of 25.0%. Meanwhile, imports of digitally delivered and/ or ordered services grew from $127.5 billion in 2021 to $189.2 billion in 2024, at a CAGR of 14.1% (Chart 5).

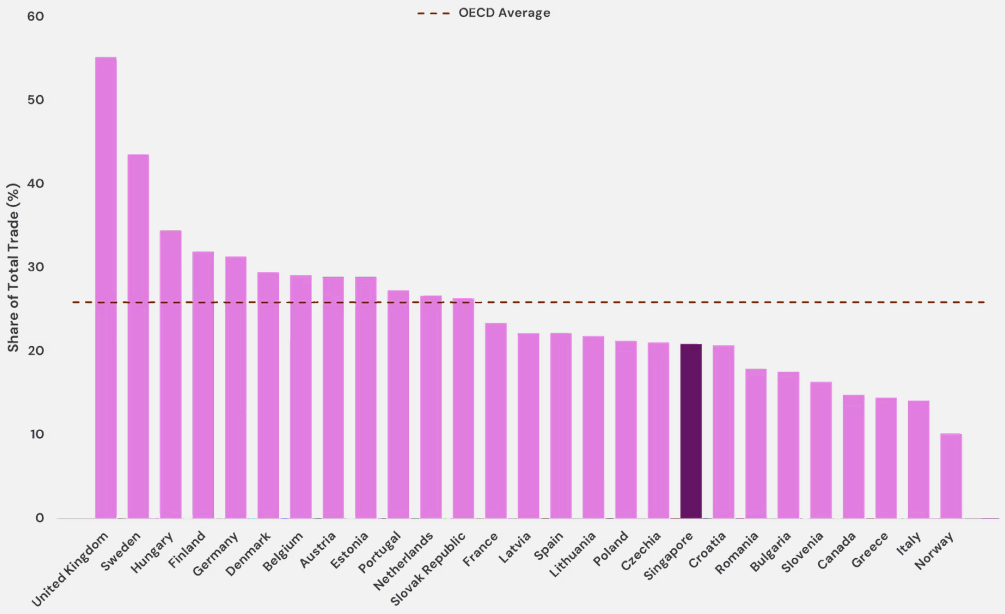
Chart 5: Digital Trade Imports ($ Billion)



Singapore's Digital Trade: Strong Base for Further Gains

As of 2023, Singapore's digital trade share of 20.9% was below the Organisation for Economic Co-operation and Development (OECD) average of 25.9%, albeit higher than several OECD economies such as Canada (14.8%), Greece (14.5%), Italy (14.2%), and Norway (10.2%) (Chart 6) [8]. While Singapore trailed other OECD economies such as the United Kingdom (55.2%) and Sweden (43.6%), the concerted efforts to expand and deepen digital adoption in Singapore present opportunities for further growth in digital trade.

Chart 6: Digital Trade as a Share of Total Trade, 2023



Conclusion

Singapore's digital trade has seen strong growth from 2021 to 2024, supported by growth in digitally delivered services and digitally ordered goods. As digitalisation continues to reshape how goods and services are traded across borders, digital trade is poised to play an even greater role in Singapore's economy. The release of experimental digital trade estimates by DOS offers greater visibility into Singapore's trade activities, supporting policymakers and businesses in making informed decisions.

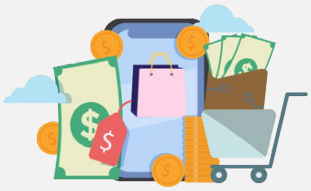
[8] OECD experimental estimates of digital trade as a share of total trade retrieved from the **OECD Going Digital Toolkit**



Measuring Singapore's Digital Economy: Experimental Estimates on Digital Industries

by **Mok Siew Fen** and **Khoo Chee Hau**
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Introduction



The digital economy has been a key driver of economic growth, reshaping how businesses produce goods and services, how consumers shop, and how financial services are delivered. As digital technologies become more deeply integrated across all sectors of the economy, understanding their contribution to economic activity has taken on greater importance. However, as digital activities span across many industries, their impact cannot be easily captured using conventional economic statistics. This has led to varying definitions and measurement approaches being adopted by National Statistics Offices (NSOs) and researchers, making cross-country comparisons challenging.

Recognising the need for internationally comparable estimates, the Organisation for Economic Co-operation and Development (OECD) published the 'Handbook on Compiling Digital Supply and Use Tables' (OECD Handbook) in November 2023, to provide guidance for countries to compile digital economy estimates using a consistent statistical framework. Built on the System of National Accounts (SNA) [1], the framework extends conventional Supply and Use Tables by measuring the digital economy from three complementary perspectives – **digital industries** (who produce), **digital products** (what are produced and consumed) and the **nature of the transaction** (how products are ordered and delivered). Together, these perspectives provide the foundation for the development of the Digital Economy Satellite Accounts (DESA) [2].

[1] The SNA is the internationally agreed standard for compiling measures of economic activity. It provides a coherent, consistent, and integrated set of macroeconomic accounts based on internationally agreed concepts, definitions, classifications, and accounting rules. Adopted by the United Nations Statistical Commission in March 2025, the 2025 SNA introduced a dedicated chapter on digitalisation for the first time. The chapter provides guidance on measuring digital industries, digital products, digital transactions and digital business models, as well as emerging aspects of the digital economy such as artificial intelligence (AI), reflecting the growing role of digitalisation in economic activity and improving its visibility within the national accounts framework. More details of the 2025 SNA and recent developments in the measurement of AI are available in this issue.

[2] DOS has also developed experimental digital trade estimates, with details available in this issue.

Advancing the Measurement of Singapore's Digital Economy

The Infocomm Media Development Authority (IMDA) publishes the annual 'Singapore Digital Economy (SGDE) Report' to provide a holistic assessment of the state and progress of Singapore's digital economy [3]. In their 2023 inaugural report, IMDA reviewed international approaches to measure the size of the digital economy and highlighted the OECD's proposed Digital Supply and Use framework, which provides the statistical foundation for compiling DESA.

Building on these international developments and IMDA's work to measure Singapore's annual digital economy, the Singapore Department of Statistics (DOS) has developed Singapore's first experimental DESA, in line with the international statistical framework. This ensures greater comparability across countries over time, as NSOs adapt to the international guidelines [4].

The experimental estimates for 2021 to 2023 offer additional insights into the industries driving digital transformation, helping policymakers, analysts and businesses to better understand Singapore's evolving digital landscape. As the DESA and SGDE approaches differ in their definitions, scope and methodology, their estimates are not directly comparable and should be viewed as complementary perspectives on Singapore's digital economy. This article focuses on the producer perspective of the digital economy and presents Singapore's experimental estimates of digital industries, their contributions to the overall economy and the key drivers underpinning the nation's digital transformation.

Digital Industries and Data Sources

Under the OECD Digital Supply and Use Tables framework, digital industries are broadly defined as industries that either produce goods and services enabling digitalisation or use digital technologies in their business models and/ or interactions with consumers. As digital industries span across conventional industry classifications, the OECD Handbook groups them into seven categories based on their respective roles in the digital economy (Figure 1).

The experimental estimates of digital industries are compiled by integrating data from surveys and administrative sources. These include annual business surveys conducted by DOS, the Monetary Authority of Singapore (MAS), the Economic Development Board (EDB) and the Building and Construction Authority (BCA), which provide data on the economic activities and performance of establishments across the Services, Manufacturing and Construction sectors.

The estimates also draw on IMDA's Annual Survey on Infocomm Usage by Enterprises (IU), which collects information on businesses' adoption and usage of digital technologies, together with administrative records that supplement information on firms' economic activities, industry classifications based on the Singapore Standard Industrial Classification (SSIC) codes and business operations. In addition, location data on retail and food and beverage services outlets are used to improve the identification of firms operating exclusively through online channels. By combining these complementary data sources, the estimates support more accurate identification and classification of digital industries, while maintaining consistency within the national accounts framework.

[3] In IMDA's SGDE reports, Singapore's digital economy is defined as the sum of two components: the gross value added (GVA) of the Information & Communications (I&C) sector, and the GVA generated from digitalisation across the rest of the economy. The latter is estimated using a growth accounting technique, which attributes firms' value added to returns from investments in and spending on digital capital. This methodology is developed jointly with the Lee Kuan Yew School of Public Policy from National University of Singapore. More details of the methodology are available in the **SGDE Report 2023**.

[4] Several NSOs, including those in Canada, Sweden, the Netherlands, the Republic of Korea, and Japan, have produced experimental GVA estimates of digital industries from reference year 2020 or earlier. Other economies, such as the United States of America, Mainland China, Malaysia, Thailand, and the Philippines, have developed country-specific approaches to measure the VA of digital industries, reflecting their respective economic structures, statistical systems and data availability.

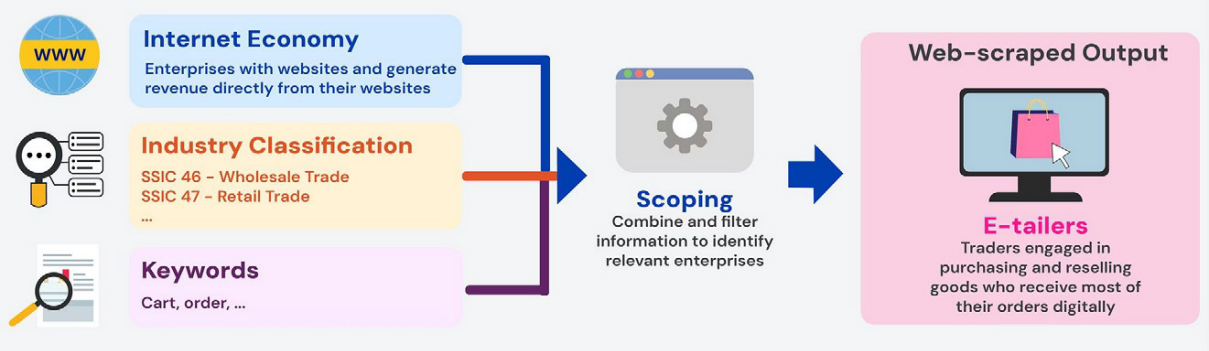
Figure 1: Overview of the Digital Industries



While these data sources build a strong foundation for identifying digital industries, they do not always capture firms' digital business models. To address this gap, DOS supplemented the compilation process by leveraging web-scraped data from companies' websites. Drawing on methodologies employed by NSOs such as Statistics Netherlands, DOS undertook a project to collect and analyse website information using supervised machine learning [5]. The analysis helped identify firms with digital characteristics and business models, thereby improving the coverage and classification of the digital industries. One example is the identification of e-tailers. Web-scraped information capturing website features such as shopping carts and online ordering functions, was integrated with industry classification and other administrative data to identify traders receiving orders digitally through their own websites (Figure 2).

[5] Details on the use of web-based data sources to profile enterprises with internet presence are available in the article 'Experimental Use of Machine Learning and New Data Sources in Updating the Statistical Business Register'.

Figure 2: Web-scraping to Identify E-tailers

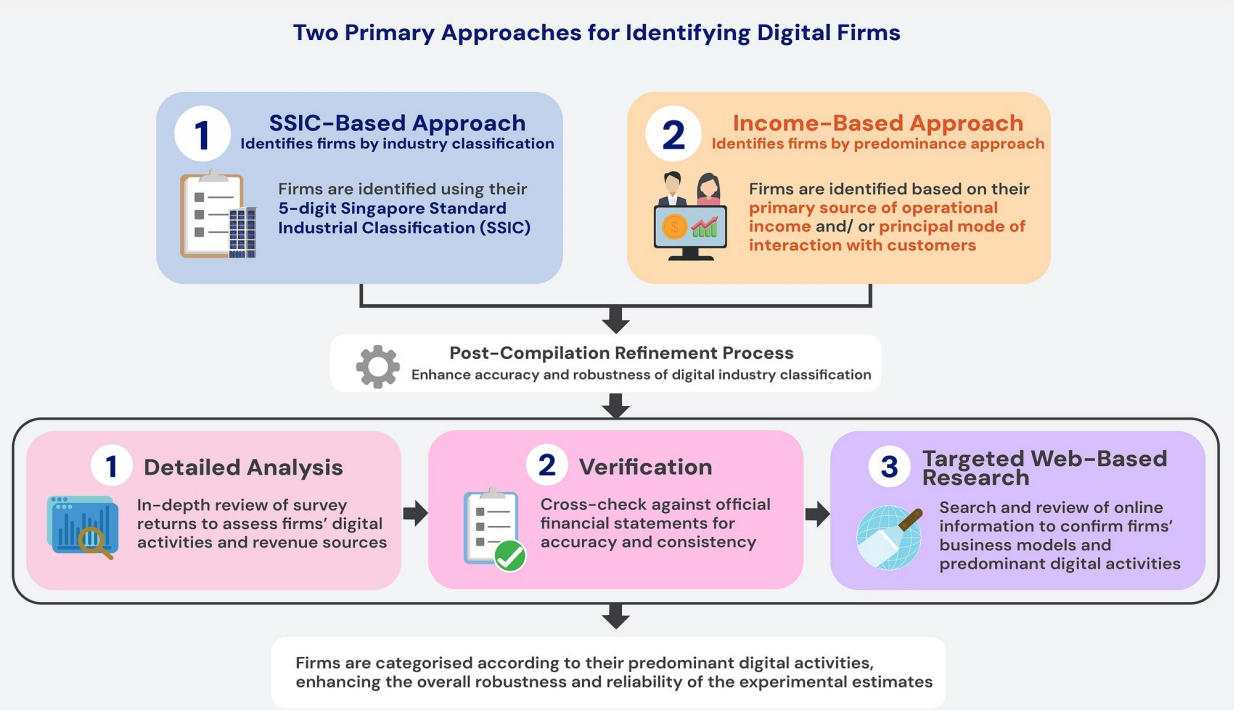


Methodology

The compilation methods for estimating digital industries fall broadly into two approaches, reflecting the primary ways for identifying digital businesses (Figure 3).

The first approach identifies firms based on their 5-digit SSIC codes, where firm classification provides a reliable indicator of digital activities. The second method applies the OECD's **predominance** [6] **approach**, which identifies firms based on their primary source of operational income and/ or principal mode of interaction with customers to distinguish firms that operate predominantly through digital channels from those that operate through both digital and physical business models.

Figure 3: Compilation Methods for Estimating Digital Industries



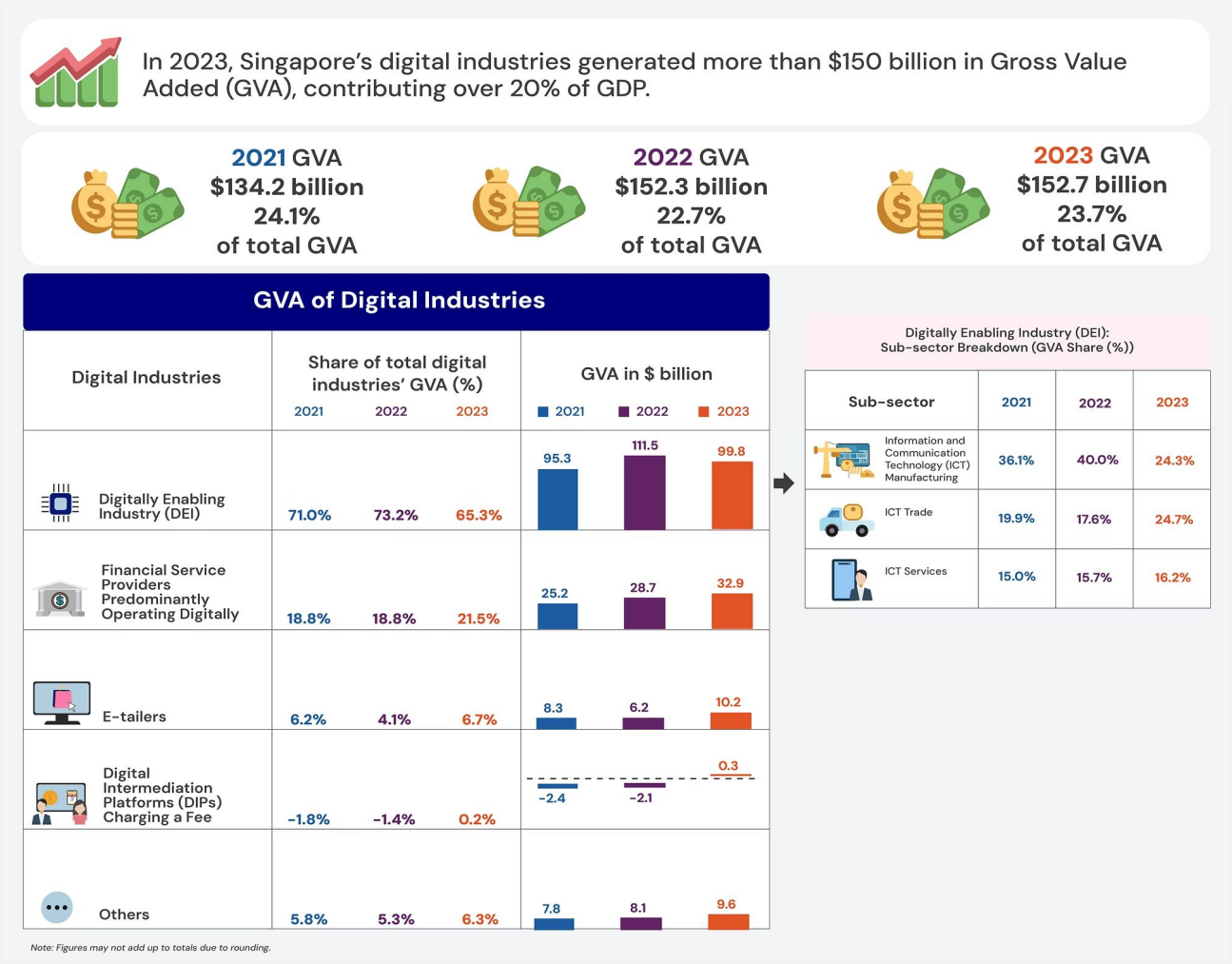
The initial compilation is followed by a refinement process to improve the accuracy of the classification. This involves detailed analysis of survey returns, verification against official financial statements, and targeted web-based research to ensure that the firms are categorised according to their predominant digital activities, thereby enhancing the overall robustness and reliability of the experimental estimates.

[6] Predominance is established where 50% or more of a firm's operational income is derived from e-commerce activities, and/ or where its principal mode of interaction with customers is through digital channels.

Key Findings

Digital industries continued to play an important role in Singapore's economy, accounting for more than 20% of Gross Domestic Product (GDP) between 2021 and 2023. In 2023, they contributed $152.7 billion in GVA, an increase from the $134.2 billion in 2021, while their share to the overall economy remained relatively stable over the same period (Figure 4).

Figure 4: GVA of Digital Industries, 2021-2023



The Digitally Enabling Industry (DEI), comprising ICT manufacturing, ICT trade and ICT services, remained the largest component of Singapore's digital industries. Between 2021 to 2023, the DEI accounted for around 70% of digital industries' GVA on average, with its GVA increasing from $95.3 billion in 2021 to $111.5 billion in 2022, before declining to $99.8 billion in 2023.

The DEI's performance was largely shaped by developments in ICT manufacturing, particularly the semiconductors sector. Strong global demand for chips in 2021 and 2022, underpinned by developments in areas such as 5G, AI, cloud computing and data centres amid a global chip shortage, contributed to the strong performance. This contributed to an expansion in ICT manufacturing's share of digital industries' GVA from 36.1% in 2021 to 40.0% in 2022.

This growth reversed in 2023, as weaker global electronics demand and inventory drawdowns from earlier stockpiling weighed on semiconductor activity, shrinking its share to 24.3%. This decline was partly cushioned by ICT trade, whose share increased from 17.6% in 2022 to 24.7% in 2023, supported by strong wholesale sales of computer equipment, while ICT services remained broadly stable at 16.2%.

Beyond the DEI, other segments also recorded notable developments. Financial service providers predominantly operating digitally (FS) continued to expand, with GVA growing from $25.2 billion (18.8%) in 2021 to $32.9 billion (21.5%) in 2023. This reflected the continued adoption of digital technologies across Singapore's financial sector. Between 2021 and 2022, GVA for E-tailers declined due to the easing of COVID-19 restrictions where some consumer spending shifted back to physical stores, before rebounding to $10.2 billion in 2023 amid continued growth in online spending.

Digital intermediation platforms (DIPs) charging a fee recorded negative GVA in 2021 and 2022, reflecting the impact of the pandemic on segments such as online travel. GVA turned positive in 2023, supported by the recovery of online travel marketplaces following the resumption of international travel, alongside improved performance among e-commerce platforms as they transitioned from rapid expansion towards more sustainable growth. Other digital industries recorded steady GVA growth over the period, reaching $9.6 billion and accounting for 6.3% of digital industries' GVA in 2023.

In 2023, the DEI and digital financial services collectively accounted for 87% of digital industries' GVA, underscoring their central role in Singapore's digital industries. While the downturn in ICT manufacturing weighed on the DEI, stronger contributions from ICT trade, digital financial services and other digital activities helped cushion the impact. Consequently, GVA of Singapore's digital industries remained broadly stable at around $153 billion in 2023, reflecting the sector's resilience amid changing global economic and technological conditions.

Conclusion

Singapore's digital industries played a significant role in our economy, generating over 20% of GDP in 2023. The Digital Enabling Industry (DEI), largely driven by semiconductor manufacturing, accounted for approximately two-thirds of the digital industries' gross value added, while financial services expanded steadily, reflecting the increasing adoption of digital technologies across the sector.

The development of Singapore's experimental DESA marks an important step in strengthening the measurement of the digital economy. By adopting an internationally recognised framework, the estimates provide a more comprehensive and comparable view of the industries driving digital transformation and their contributions to economic activity. While still experimental, they offer a valuable complement to existing measures of Singapore's digital economy.

Looking ahead, efforts are underway to expand DESA to cover other key aspects of the digital economy, including digital products and the nature of the transaction, with findings expected to be released next year.

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Geographic Profiling of Singapore's Resident Population

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Introduction

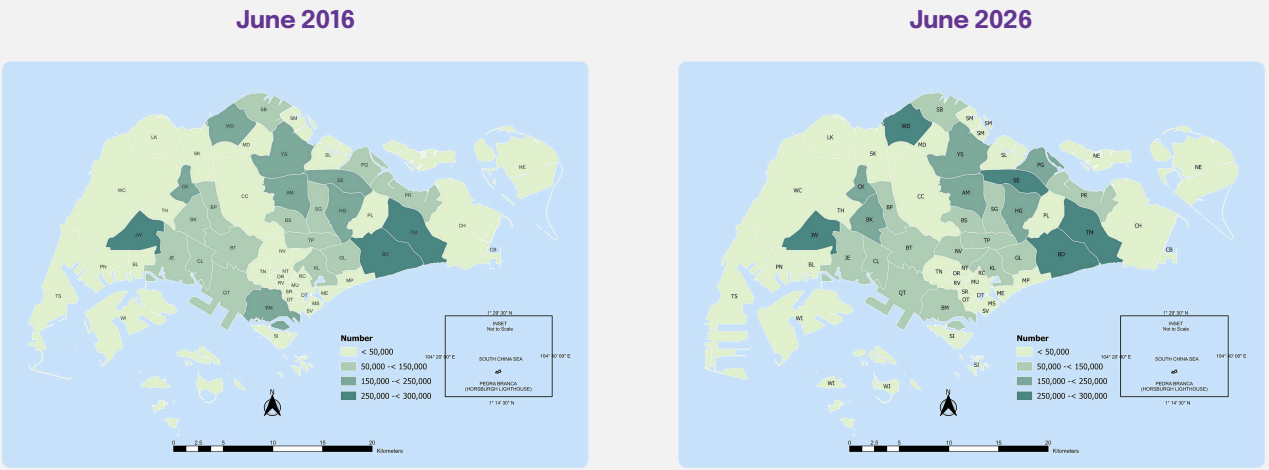


Over the past decade, Singapore's resident [1] population grew by 298,000, from 3.9 million in 2016 to 4.2 million in 2026. This growth was accompanied by changes in population structure and socio-economic profiles at the national level, as well as by shifts across geographical areas. This article provides insights from a geographical profiling of Singapore's planning areas [2], analysing changes in population size, age composition, education qualification, and household income over the past decade.

Top 10 Planning Areas by Population Size

In 2026, the top 10 largest planning areas by resident population size collectively housed more than 2.3 million residents (55.6%) of Singapore resident population. The top five planning areas by population size, namely Tampines, Bedok, Sengkang, Woodlands and Jurong West, each had a population exceeding 250,000 residents (Chart 1). Compared to 2016, Tampines rose from third to first place as the most populous planning area in 2026, while Sengkang climbed to third place, and Punggol and Bukit Batok entered the top 10 (Chart 2).

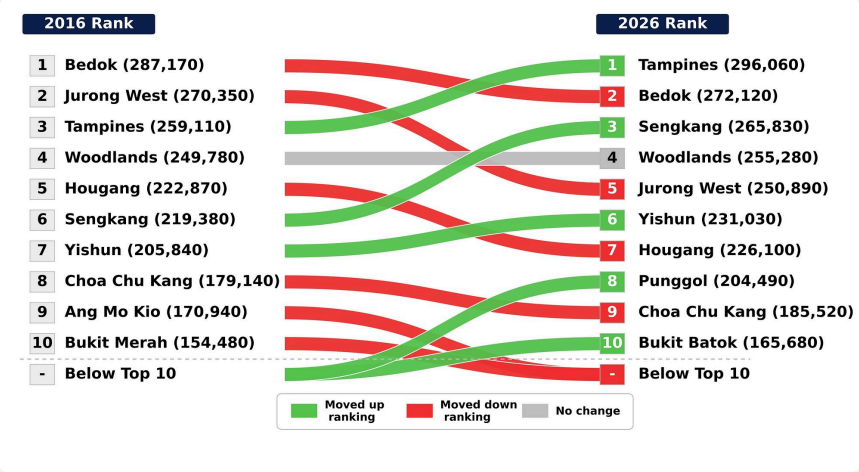
Chart 1: Number of Singapore Residents by Planning Area, June 2016 and June 2026



[1] Singapore residents comprises Singapore citizens and permanent residents.

[2] Planning areas in 2015–2016, 2025, and 2026, refer to areas demarcated in the Urban Redevelopment Authority's Master Plan 2014 (URA MP14), Master Plan 2019 (URA MP19), and Master Plan 2025 (URA MP25) respectively.

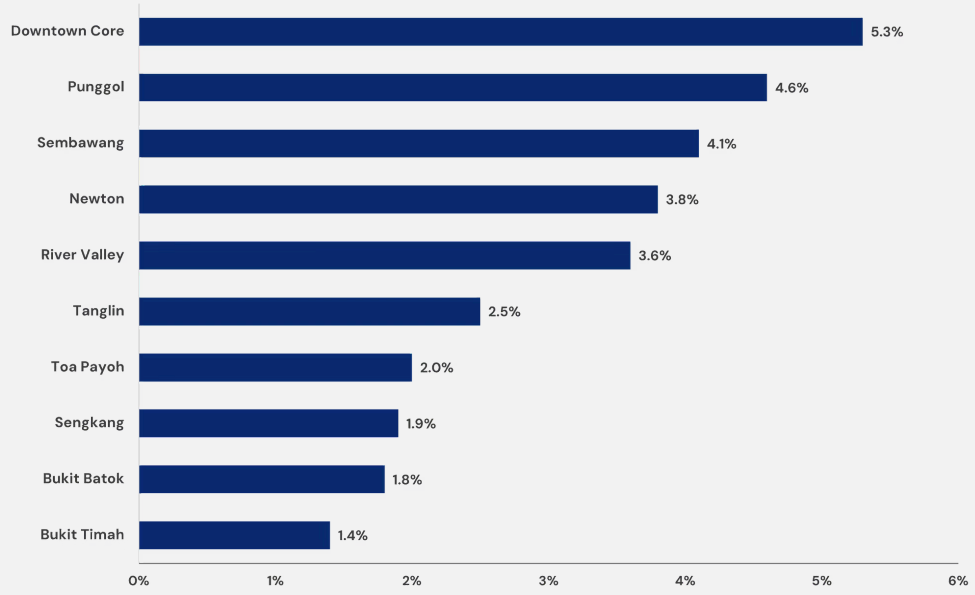
Chart 2: Top 10 Largest Planning Areas, 2016 and 2026



Top 10 Planning Areas by Population Growth

Between 2016 and 2026, new housing estates like Tengah emerged, while towns developed between the late 1990s and early 2000s such as Punggol, Sengkang and Sembawang experienced rapid growth. Over the same period, Downtown Core had the largest percentage growth of 5.3% per annum, followed by Punggol (4.6%) and Sembawang (4.1%) (Chart 3).

Chart 3: Top 10 Planning Areas by Resident Population Growth, 2016 - 2026



Note: Tengah is excluded as it is a new estate with a small resident count of 10 in 2016 which resulted in an exceptionally large growth over the 10-year period. Downtown Core's growth is partially attributed to the change in boundary from URA MP14 to URA MP25.

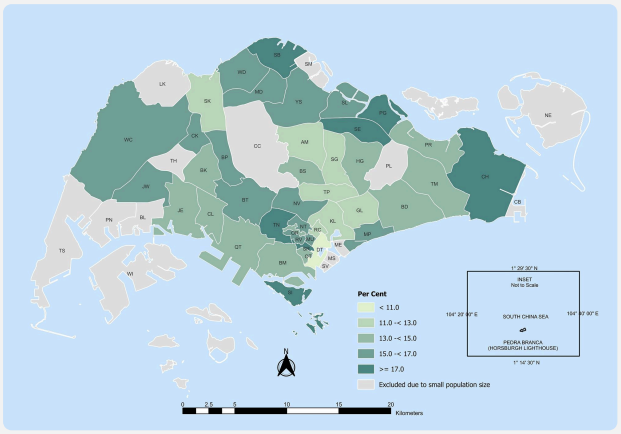
Top 10 Planning Areas by Proportion of Children

The proportion of children aged below 15 years among Singapore residents fell from 15.2% in 2016 to 13.3% in 2026. A similar trend was observed in most planning areas with the proportion of children declining (Chart 4).

In 2026, Tengah had the largest proportion of children at 20.3%, followed by Punggol with 19.6%. Others in the top 10 list included Tanglin, Newton, Bukit Timah, Sengkang, Sembawang, Tampines, River Valley and Novena, with the proportion of children constituting about 14.8% to 17.3% of the resident population. Woodlands, Bukit Panjang and Jurong West, which were among the top 10 in 2016, fell out of the ranking in 2026 (Chart 5).

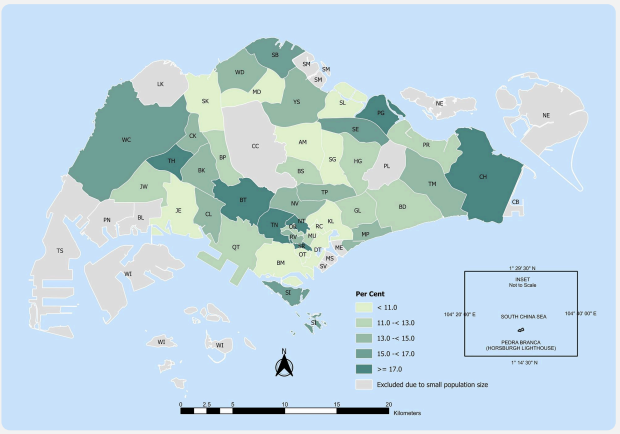
Chart 4: Proportion of Children Aged below 15 Years by Planning Area, June 2016 and June 2026

June 2016



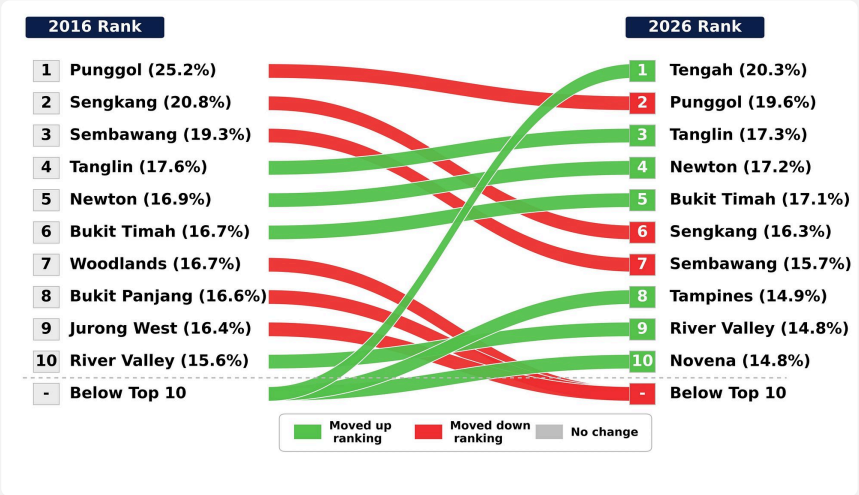
Note: Southern Islands, Changi and Singapore River had small resident counts of 1,600, 2,450 and 2,840 respectively, of which at least 17.0% were children aged 15 below years in each area.

June 2026



Note: Western Water Catchment, Changi, Southern Islands and Singapore River had small resident counts of 590, 1,950, 2,840 and 4,770 respectively, of which at least 15.0% were children aged 15 below years in each area.

Chart 5: Top 10 Planning Areas with Highest Proportion of Children, 2016 and 2026



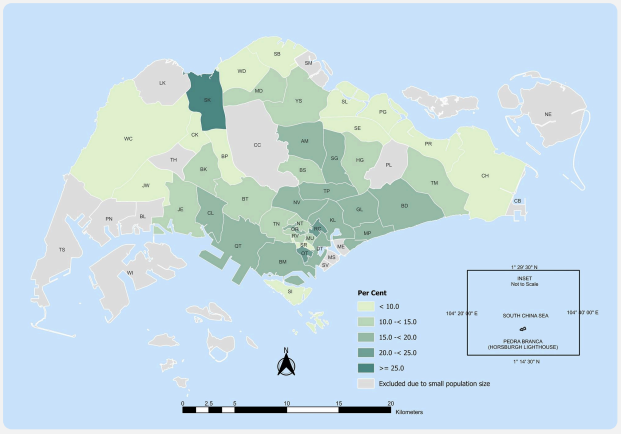
Top 10 Planning Areas by Proportion of Elderly

Conversely, the proportion of elderly aged 65 years and over among Singapore residents rose from 12.4% in 2016 to 19.5% in 2026. The shift towards a composition of larger proportion of older population over the past decade was observed across most planning areas (Chart 6).

In 2026, Outram, Ang Mo Kio, Jurong East, Bukit Merah and Rochor recorded the highest proportion of elderly residents, with over 25% of the resident population aged 65 years and above. Among the top 10 were Serangoon, Bedok, Kallang, Bishan and Queenstown, where each had at least 22.9% of the residents in this age group. This is a stark contrast to 2016, when the proportion of elderly residents in most planning areas was less than 20.0% (Chart 6 and Chart 7).

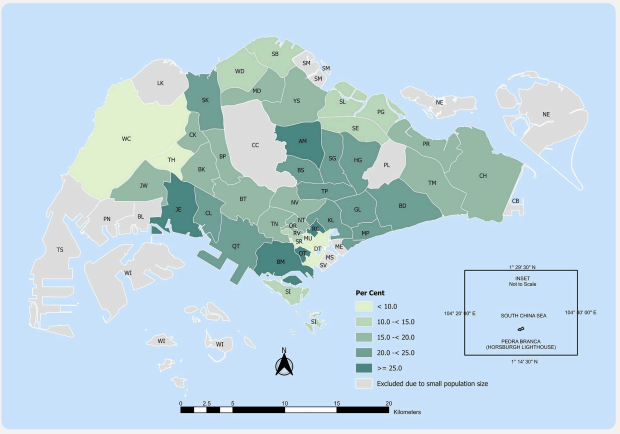
Chart 6: Proportion of Elderly Aged 65 Years and Over by Planning Area, June 2016 and June 2026

June 2016



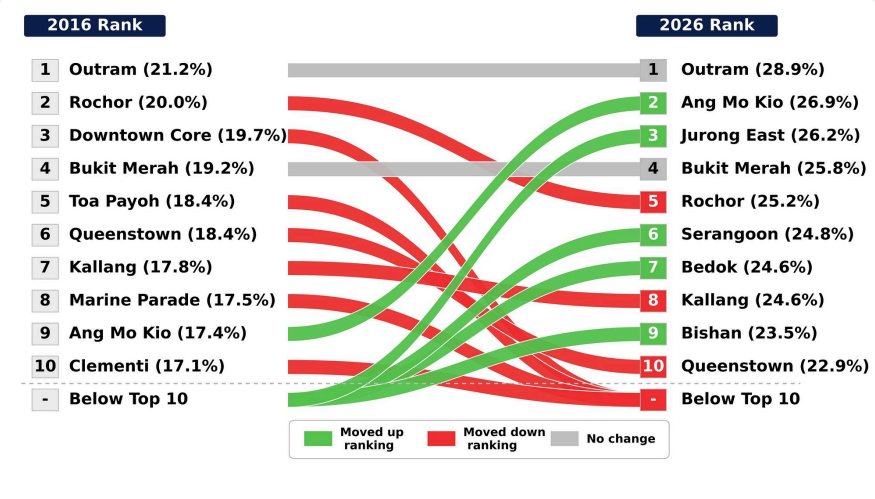
Note: Sungei Kadut had a small resident count of 860, of which at least 25.0% were aged 65 years and over.

June 2026



Note: Sungei Kadut had a small resident count of 700, of which between 20.0% to 24.9% were aged 65 years and over.

Chart 7: Top 10 Planning Areas with Highest Proportion of Elderly, 2016 and 2026



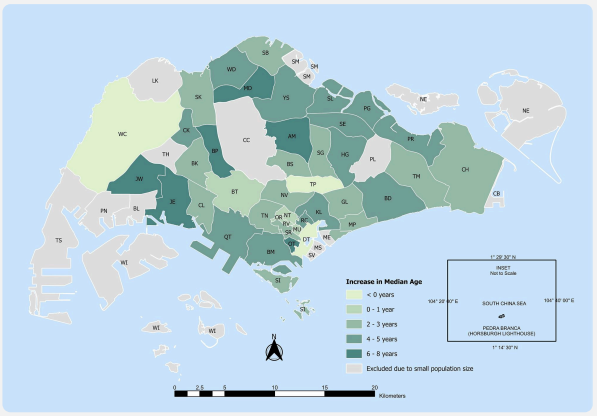
In terms of median age, Outram is the oldest area with a resident population median age of 50, followed by Ang Mo Kio and Jurong East at 49. Residents in Rochor and Bukit Merah each had a median age of 48 years, while the remaining areas had a median age of 47 years and below (Table 1).

Over the past decade, Jurong East, Jurong West, Bukit Panjang, Outram and Ang Mo Kio experienced the largest increase in median age, each ageing approximately 6 to 8 years. Comparatively, Bukit Timah, Newton, Toa Payoh and Downtown Core saw the smallest increase in median age (Chart 8).

Table 1: Top 10 Planning Area by Median Age, June 2026

Planning Area	Median Age
Outram	50
Ang Mo Kio	49
Jurong East	49
Rochor	48
Bukit Merah	48
Bedok	47
Kallang	47
Serangoon	46
Queenstown	46
Marine Parade	45

Chart 8: Increase in Median Age by Planning Area, 2016 - 2026



Note: Mandai had small resident count, of which median age increased between 6 to 8 years from 2016 to 2026.

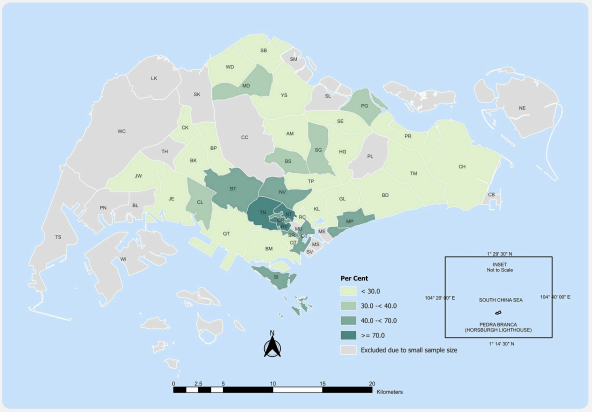
Top 10 Planning Areas by Proportion with University Qualification

The education profile of Singapore residents improved between 2015 and 2025, with most planning areas observing an increase in the proportion of residents with university qualification (Chart 9).

Among the top 10 planning areas with the highest proportion of residents holding university qualification, all except Clementi were concentrated in the central region. In 2025, Tanglin recorded the highest proportion at 83.6%, followed by River Valley, Newton, Downtown Core and Bukit Timah, where more than 70.0% of their residents held university qualification (Chart 10). Clementi and Queenstown rose to the ninth and tenth position respectively, displacing Punggol and Serangoon from the top 10.

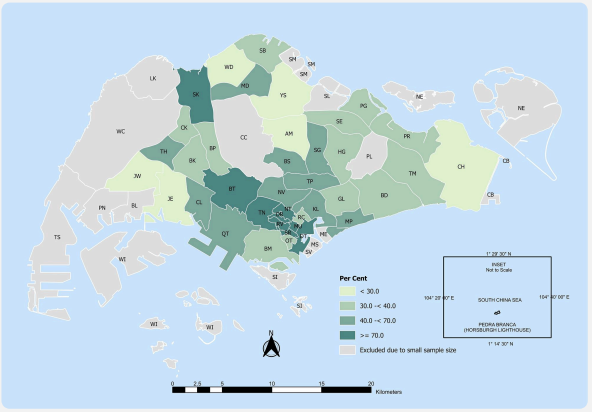
Chart 9: Proportion of Singapore Residents with University Qualification by Planning Area, June 2015 and June 2025

June 2015



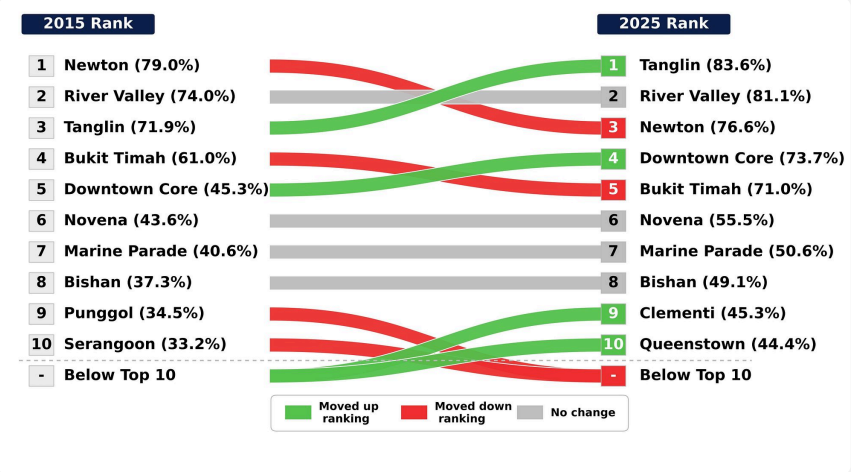
Note: Orchard, Southern Islands, Mandai and Singapore River had small counts of residents aged 15 years and above, of which between 30.0% to 69.9% held university qualifications.

June 2025



Note: Sungei Kadut, Museum, Orchard and Singapore River had small counts of residents aged 15 years and above, of which at least 70.0% held university qualifications in each area.

Chart 10: Top 10 Planning Areas by Singapore Residents with University Qualification, 2015 and 2025



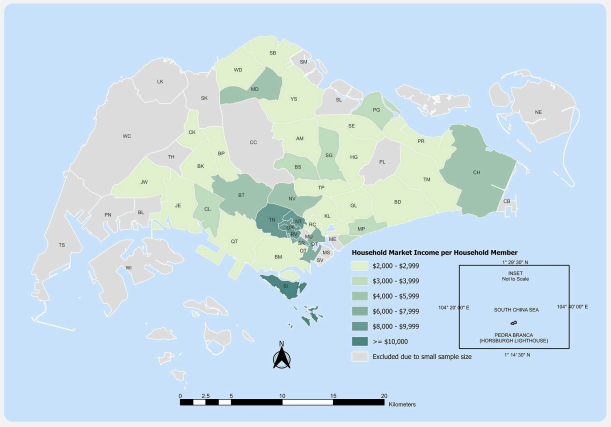
Top 10 Planning Areas by Household Market Income [3]

Areas with higher proportions of university graduates generally had higher household income levels. During the past decade, areas with highest household income remained concentrated in the central region, although household market income had increased in other regions, with more areas making a median monthly household market income of at least $4,000 per household member in 2025 (Chart 11).

In 2025, Downtown Core ranked first with a median monthly household market income per household member of $13,396, followed by Newton ($12,222) and River Valley ($9,923) (Chart 12).

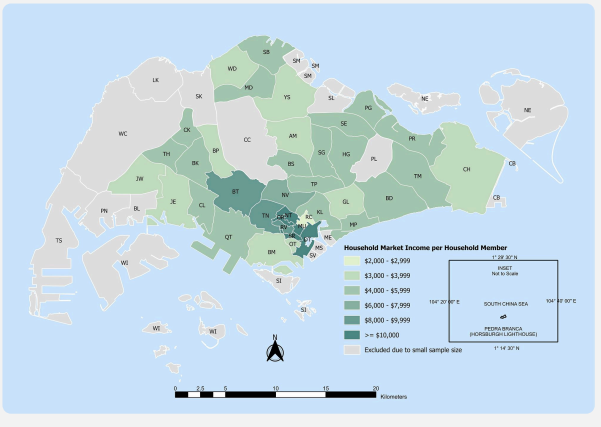
Chart 11: Median Monthly Household Market Income per Household Member Among Resident Households by Planning Area, June 2015 and June 2025

June 2015



Note: Orchard, Southern Islands, Mandai, Changi and Singapore River had small resident counts with median monthly household market income of at least $4,000 per household member.

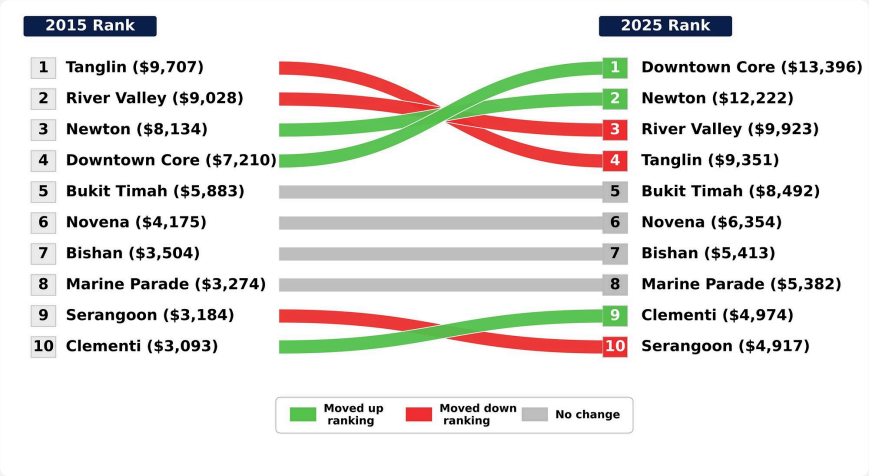
June 2025



Note: Museum, Orchard, Mandai and Singapore River had small resident counts with median monthly household market income of at least $4,000 per household member.

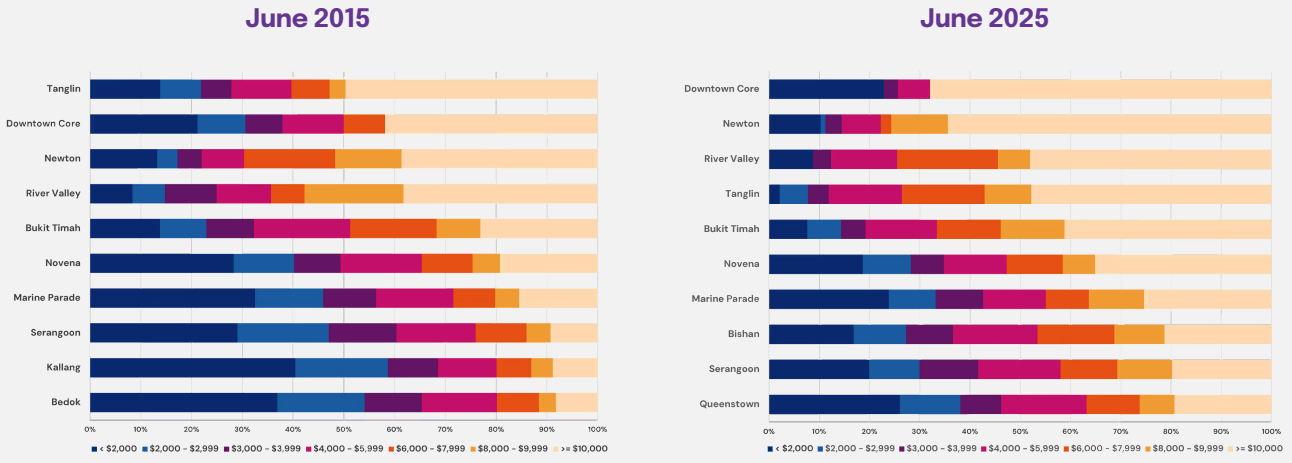
[3] Market income refers to income received by households from the market economy before any government transfers and taxes. It comprises income from employment and non-employment sources including investments (such as interests from savings and/or CPF balances, dividends from investments), rental, contributions from other households (such as allowance from children not staying together, alimony), pensions, annuities, royalties, and regular insurance payouts. For 2015, data on contributions from other households and royalties are not available.

Chart 12: Top 10 Planning Areas by Median Monthly Household Market Income per Household Member Among Resident Households, 2015 and 2025



Similarly, in 2025, Downtown Core had the highest proportion of households with monthly household market income per household member of $10,000 or more at 68.0%, followed by Newton (64.4%) and River Valley (48.0%) (Chart 13). Between 2015 and 2025, the proportion of such households rose across most planning areas.

Chart 13: Top 10 Planning Areas by Proportion of Households in the Highest Monthly Household Market Income per Household Member Band, June 2015 and June 2025



Conclusion

Over the past decade, Singapore's population growth had been accompanied by changes in the demographic and socio-economic characteristics across the planning areas. The development of new housing estates, the ageing of older areas and shifting profiles of planning areas reflect Singapore's dynamic geographical transformation. Data insights at the planning area level are crucial in understanding and responding to the evolving needs of the nation. More data are available via the **SingStat Website**.

Note

Data for Highest Qualification Attained and Household Market Income are based on information collected from the General Household Survey conducted by the Singapore Department of Statistics as at June 2015 and June 2025.

Published maps are based on the following Urban Redevelopment Authority's Master Plan planning area boundaries and Singapore Land Authority's Singapore island profiles:

Map	URA MP	SLA Island Profile
June 2015	2014	2015
June 2016	2014	2016
June 2025	2019	2025
June 2026	2025	2026

The Master Plan 2025 is a forward looking guiding plan for Singapore's development in the medium term over the next 10 to 15 years, and the planning boundaries may not coincide with existing developments for some areas.

Codes for Planning Area

AM	Ang Mo Kio	**GL**	Geylang	**OR**	Orchard	**SL**	Seletar
BD	Bedok	**HG**	Hougang	**OT**	Outram	**SM**	Simpang
BK	Bukit Batok	**JE**	Jurong East	**PG**	Punggol	**SR**	Singapore River
BL	Boon Lay	**JW**	Jurong West	**PL**	Paya Lebar	**SV**	Straits View
BM	Bukit Merah	**KL**	Kallang	**PN**	Pioneer	**TH**	Tengah
BP	Bukit Panjang	**LK**	Lim Chu Kang	**PR**	Pasir Ris	**TM**	Tampines
BS	Bishan	**MD**	Mandai	**QT**	Queenstown	**TN**	Tanglin
BT	Bukit Timah	**ME**	Marina East	**RC**	Rochor	**TP**	Toa Payoh
CB	Changi Bay	**MP**	Marine Parade	**RV**	River Valley	**TS**	Tuas
CC	Central Water Catchment	**MS**	Marina South	**SB**	Sembawang	**WC**	Western Water Catchment
CH	Changi	**MU**	Museum	**SE**	Sengkang	**WD**	Woodlands
CK	Choa Chu Kang	**NE**	North-Eastern Islands	**SG**	Serangoon	**WI**	Western Islands
CL	Clementi	**NT**	Newton	**SI**	Southern Islands	**YS**	Yishun
DT	Downtown Core	**NV**	Novena	**SK**	Sungei Kadut		



Spending on the Final Farewell: A Look at Funeral-Related Household Expenditure

by **Wong Wei Lin** and **Charlene Chan**
Household Surveys and Expenditure Division
Singapore Department of Statistics

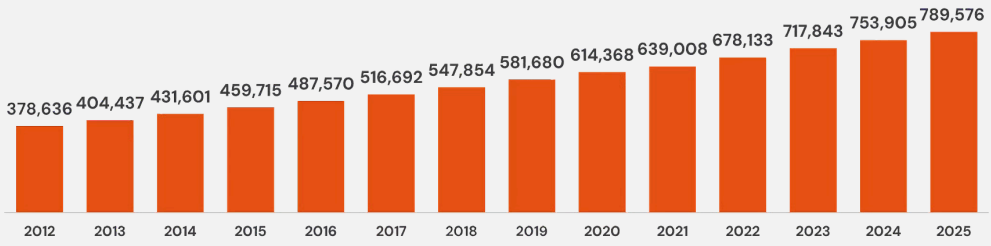
Introduction



Singapore's population has been ageing over the past decade, with both the number and proportion of elderly persons increasing (Chart 1A). As Singapore's population shifts towards older age groups, where mortality rates are naturally higher, the annual number of deaths has also increased (Chart 1B). This demographic shift has, in turn, contributed to greater demand for funeral-related services.

This article examines changes in household expenditure on funeral-related services between 2012/ 13 and 2023, drawing on data from the Household Expenditure Survey (HES) [1]. Expenditures on funeral-related services included funeral packages, fees for funeral services, funerary articles, buffet catering for wakes and rental of premises etc.

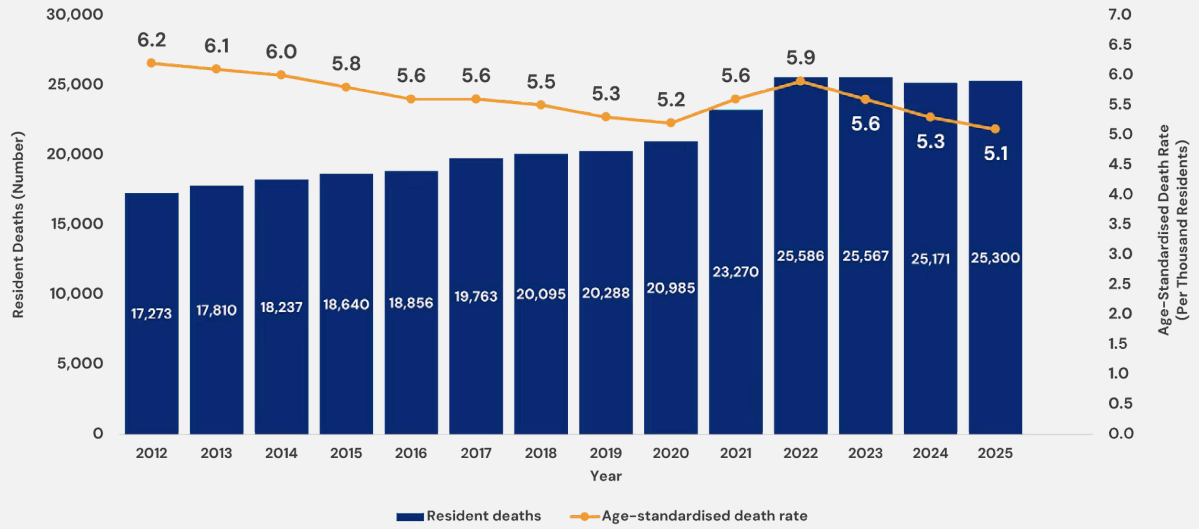
Chart 1A: Number and Proportion of Residents Aged 65 Years and Over, 2012 - 2025



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Proportion of Residents Aged 65 Years & Over (%)	9.9	10.5	11.2	11.8	12.4	13.0	13.7	14.4	15.2	16.0	16.6	17.3	18.0	18.8

[1] Conducted once every five years, the HES collects information on expenditure, socio-economic characteristics and ownership of consumer durables of households. The latest HES was conducted in 2023. To more comprehensively capture large expenses that occur infrequently, the HES introduced a section to collect wedding- and funeral-related expenditures since 2012/ 13, to prompt respondents to recall and report expenditure incurred over the 12 months preceding the survey.

Chart 1B: Annual Resident Deaths and Age-Standardised Death Rate [2], 2012 - 2025



Note: Mortality rates rose during the COVID-19 pandemic, particularly in 2021 and 2022.

Expenditure on Funeral-Related Services Rose

Average monthly household expenditure on funeral-related services **among all resident households** more than doubled from $14 in 2012/ 13 to $29 in 2023 (Chart 2A). While this remained a low share of household expenditure, at about 0.5% of households' average monthly expenditure of $5,931, it grew at a faster pace than the average household expenditure. Funeral services accounted for the largest share of funeral-related expenditure in 2023, at $23 per month (Chart 2B).

Chart 2A: Average Monthly Household Expenditure on Funeral-Related Services Among Resident Households, 2012/ 13 - 2023

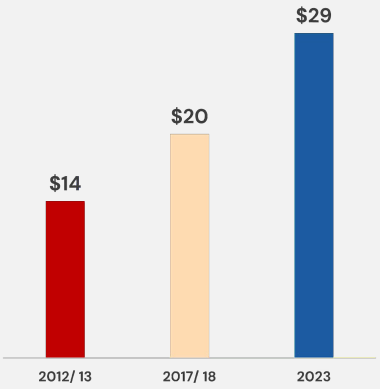
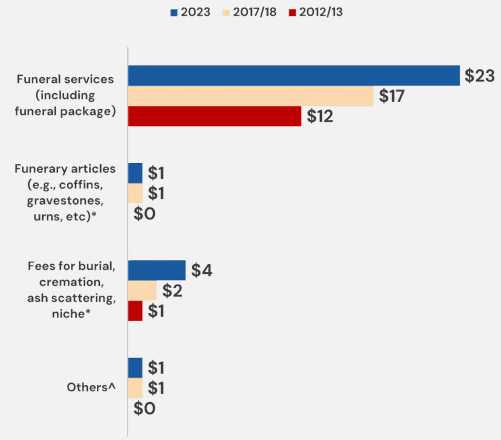


Chart 2B: Average Monthly Household Expenditure on Funeral-Related Services by Type of Services/ Goods*^ Among Resident Households, 2012/ 13 - 2023



Note: The monthly figures represent expenditure incurred over the 12-month survey reference period, averaged across all resident households and expressed on a monthly basis. The average monthly expenditure level may appear low as it includes those that did not incur expenditure on funeral-related services.

* Funerary articles and fees for burial, cremation, ash scattering, niche are not explicitly collected in HES 2012/ 13 and could be subsumed in the Funeral Packages in HES 2012/13.

^ Others include buffet catering and rental of premises, if not part of the funeral package and other funeral and related services not explicitly collected.

[2] Age-standardised death rate is derived by multiplying the age-specific death rates of the reference population by the proportion of the corresponding age group out of a "standard" population. The Singapore resident population as at June 2020 was used to fix the age structure and eliminate its effect on mortality trends. Although age-standardised death rate has generally declined over from 2012, there was a temporary increase during the COVID-19 pandemic, particularly in 2021 and 2022.

To better understand the factors underlying the increase in funeral-related expenditure, the subsequent analyses focus on households incurring such expenses and the amount spent by these households. As funeral-related expenses are typically incurred as one-off events, expenditure among these households is presented as their average total expenditure over the 12-month survey reference period, rather than as a monthly average.

More Households Incurred Funeral-Related Expenses [3] and Spent More

The increase in average household expenditure on funeral-related services among all households reflected both a higher proportion of households incurring such expenses and higher spending among these households. Between 2012/ 13 and 2023, the proportion of households with funeral-related expenditure almost doubled from 1.9% to 3.4%, while average total spending over the 12-month survey reference period among these households rose from $8,126 in 2012/ 13 to $10,339 in 2023 (Charts 3A and 3B).

Chart 3A: Proportion of Households that Incurred Funeral-Related Expenditure, 2012/ 13 - 2023

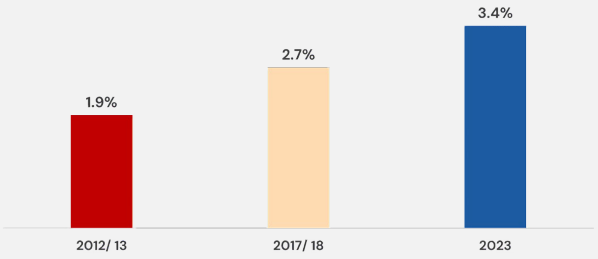
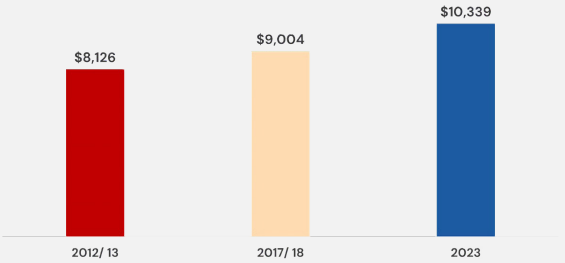
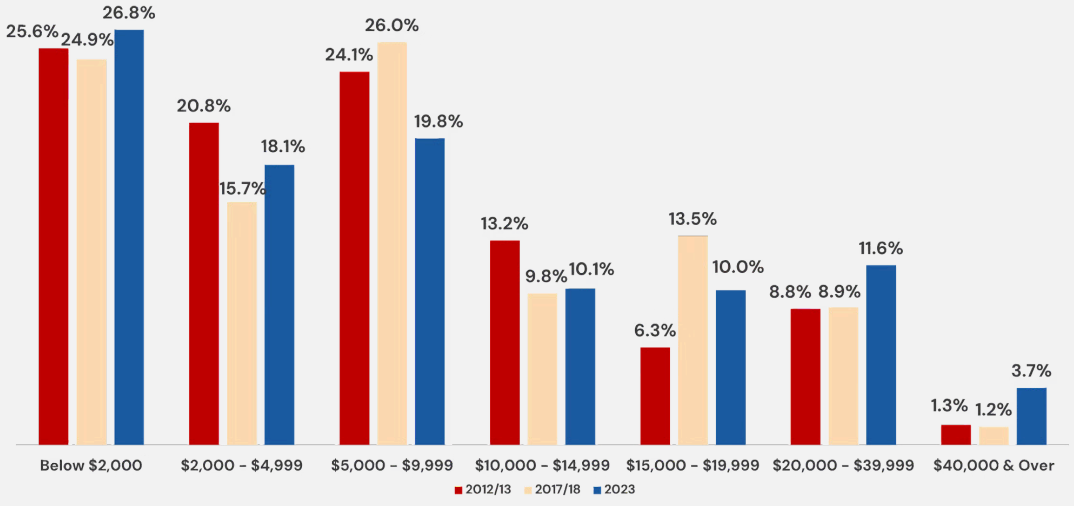


Chart 3B: Average Household Expenditure on Funeral-Related Services Among Households that Incurred Such Expenditure, 2012/ 13 - 2023



Despite average spending among households with funeral-related expenditure reaching around $10,000 in 2023, households spending less than $5,000 formed the largest group at 44.9%, while 19.8% spent between $5,000 and $9,999 (Chart 3C). These proportions were lower than the corresponding 46.4% and 24.1% in 2012/ 13. At the higher end, the proportion of households spending $20,000 or more increased from 10.1% in 2012/ 13 to 15.3% in 2023.

Chart 3C: Distribution of Households that Incurred Funeral-Related Expenditure by Expenditure Amount, 2012/ 13 - 2023



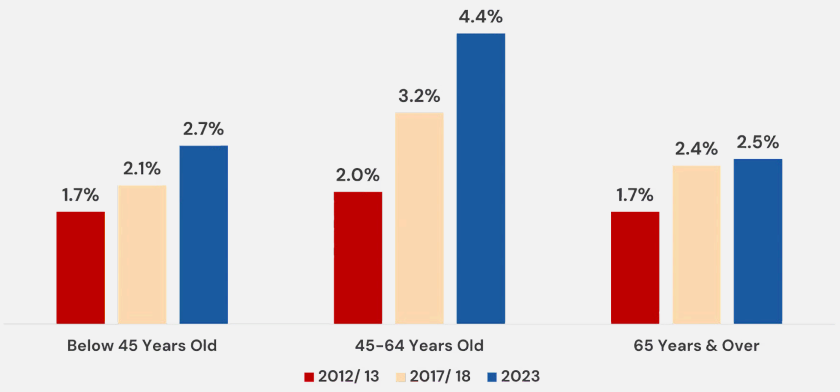
[3] Funeral-related expenses could be shared across households, e.g., siblings living in different households may split the cost.

Middle-Aged Households More Likely to Incur Funeral-Related Expenditure

Funeral-related expenditure patterns varied by the life stage of the household. The proportion of households with funeral-related expenditure increased across all age groups between 2012/ 13 and 2023 (Chart 4A).

Middle-aged households (with Household Reference Persons aged 45-64 years) recorded the highest proportions over this period, with the proportion more than doubling from 2.0% to 4.4%. This could partly reflect their greater likelihood of having elderly parents or other ageing family members, and thus incurring funeral-related expenses.

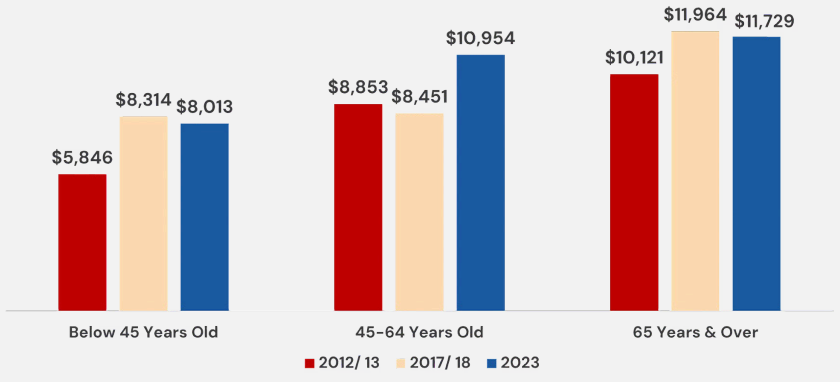
Chart 4A: Proportion of Households that Incurred Funeral-Related Expenditure by Age Group of Household Reference Person, 2012/ 13 - 2023



While middle-aged households had the highest proportion incurring funeral-related expenditure, average funeral-related expenditure was highest among elderly households (with Household Reference Persons aged 65 years and over).

In 2023, average spending ranged from $8,013 among younger households to $11,729 among elderly households, with the latter consistently recording the highest spending from 2012/ 13 to 2023 (Chart 4B).

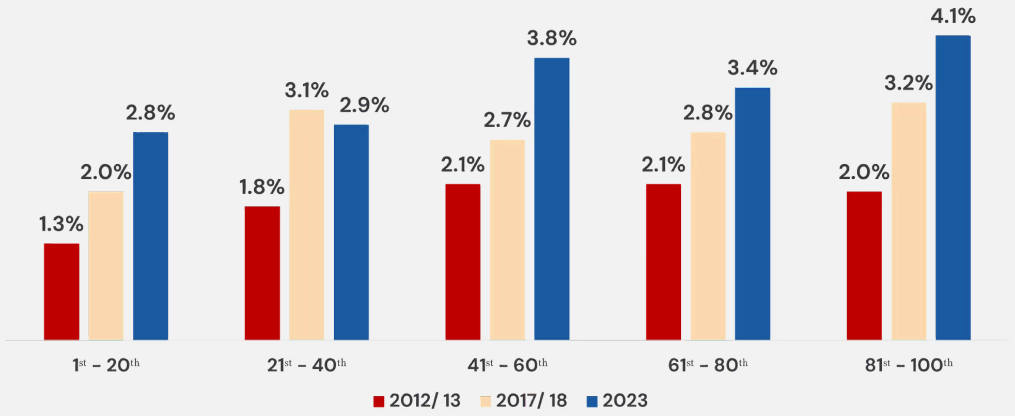
Chart 4B: Average Household Expenditure on Funeral-Related Services Among Households that Incurred Such Expenditure by Age Group of Household Reference Person, 2012/ 13 - 2023



Higher Income Households Tended to Spend More

The incidence of funeral-related expenditure was generally higher among higher-income households (Chart 5A). This could partly reflect their age profile, as a higher proportion of these households had Household Reference Persons aged 45–64 years.

Chart 5A: Proportion of Households that Incurred Funeral-Related Expenditure by Income Quintile, 2012/ 13 - 2023**

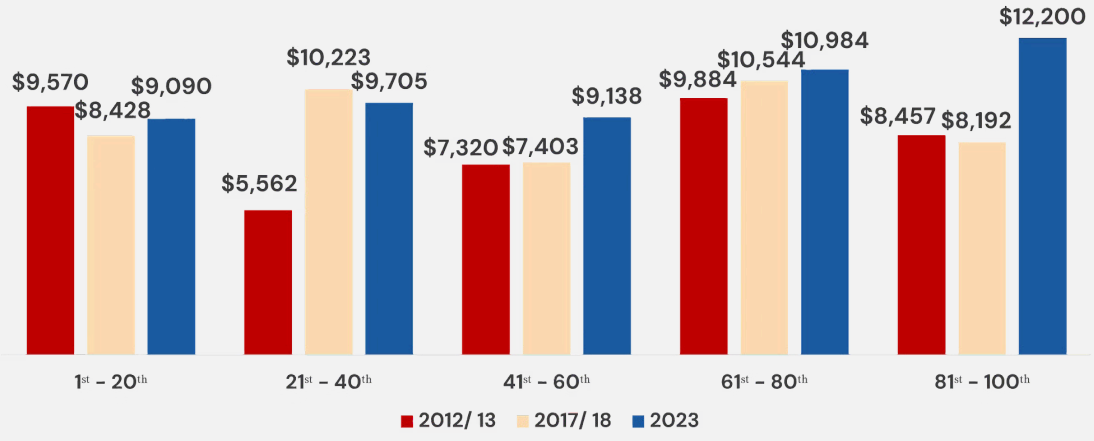


** Based on ranking of all resident households by their monthly household income from all sources per household member (including employer Central Provident Funds (CPF) contributions).

Spending patterns also differed across income groups. In 2023, average spending on funeral-related services was broadly similar for the lower 60% income group, ranging from $9,090 to $9,705, but was higher among households in the top 40% at $10,000 or more (Chart 5B).

Between 2012/ 13 and 2023, spending increased across most income groups, though it remained relatively unchanged for the lowest 20% income group.

Chart 5B: Average Household Expenditure on Funeral-Related Services Among Households that Incurred Such Expenditure by Income Quintile, 2012/ 13 - 2023**

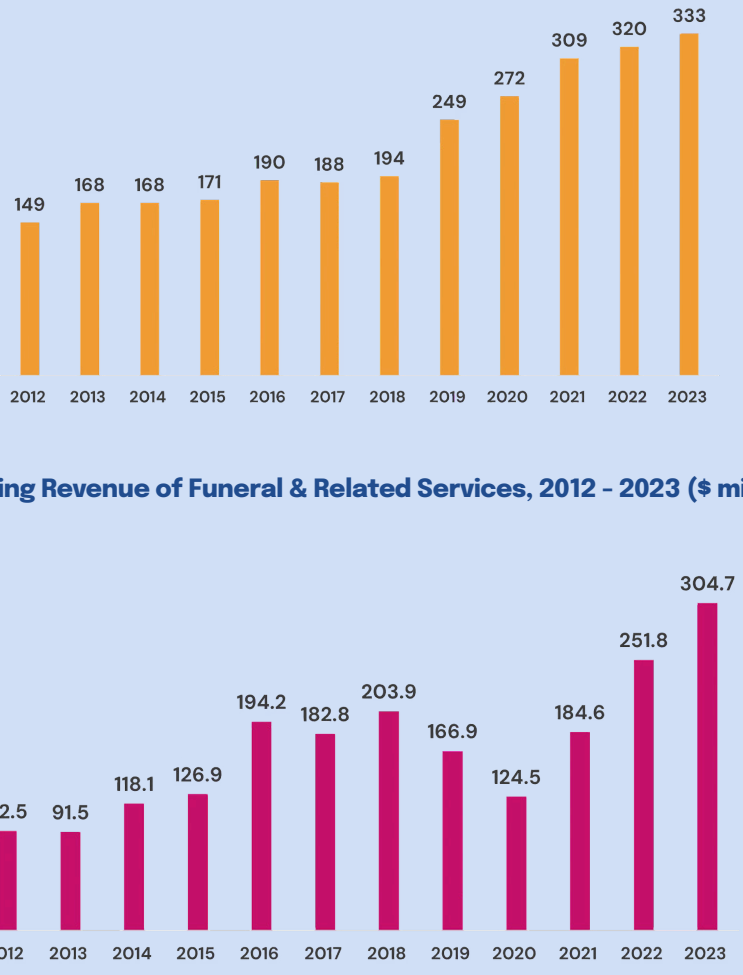


** Based on ranking of all resident households by their monthly household income from all sources per household member (including employer Central Provident Funds (CPF) contributions).

Box Story: Expansion of the Funeral and Related Services Industry

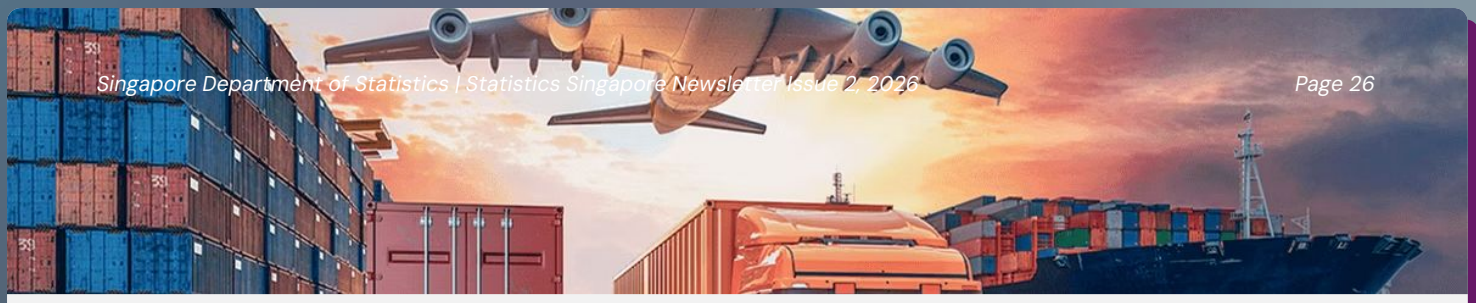
Between 2012 and 2023, the funeral and related services industry expanded, with the number of establishments more than doubling from 149 to 333 and operating revenue more than tripling from $92.5 million to $304.7 million (Chart 6). While the industry experienced a temporary decline in operating revenue between 2018 and 2020, which may partly reflect the restrictions of the COVID-19 pandemic on gatherings and altered funeral practices, operating revenue recovered and surpassed pre-COVID-19 levels in 2022, while the number of establishments continued to grow.

Chart 6: Number of Establishments and Operating Revenue of Funeral-Related Services, 2012 - 2023



Conclusion

Household expenditure on funeral-related services increased between 2012/ 13 and 2023, alongside Singapore's ageing population and the rise in resident deaths. Over this period, not only did the proportion of households incurring funeral-related expenditure increase, but average spending among these households also rose. While funeral-related expenses are incurred relatively infrequently, they can represent considerable expenditure for households. As Singapore's population continues to age, these expenditure patterns will remain relevant to households' spending needs at different stages of the life cycle.



Impact of the 2026 Middle East Conflict on Producer Prices of Singapore's Transport and Storage Sector

by **Jasmine Lee** and **Kelvin Teh**
Prices Division
Singapore Department of Statistics

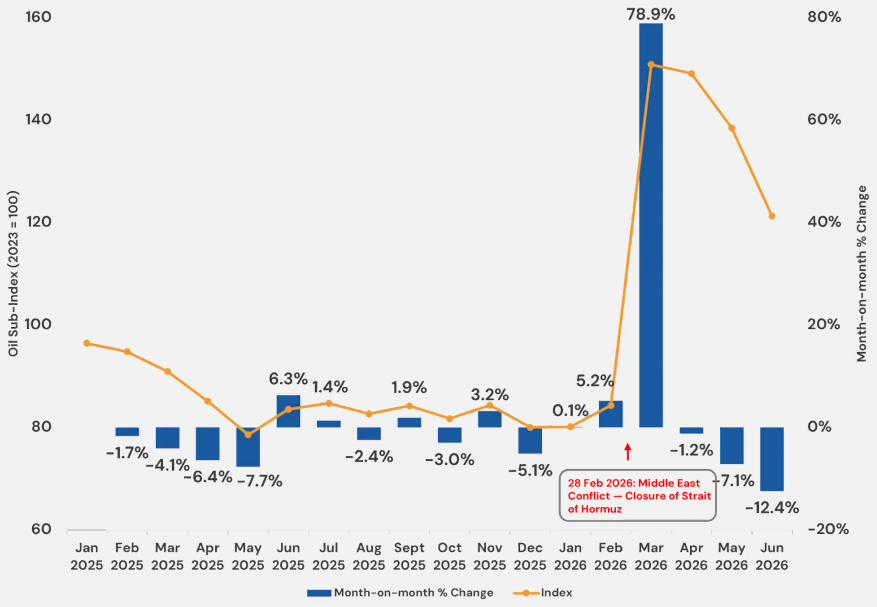
Introduction



Geopolitical tensions in the Middle East have increased attention on global energy markets and supply-chain resilience. As a small and open economy that heavily relies on imported energy and trade flows, Singapore is exposed to changes in global fuel and freight conditions that may impact business costs. These external cost pressures can have wider implications for businesses and households as they pass through the economy. To help cushion the impact of higher costs arising from the Middle East conflict, the Singapore Government has introduced support packages for businesses and households.

Following the Middle East conflict and restrictions along the Strait of Hormuz from 28 February 2026, a critical route for global oil transportation, oil prices rose sharply in March 2026. The Import Price Index (IPI) Oil sub-index [1] surged 78.9% month-on-month in March 2026, before easing in subsequent months while remaining well above pre-restrictions levels (Chart 1).

Chart 1: Oil Sub-Index of the Import Price Index (2023 = 100)



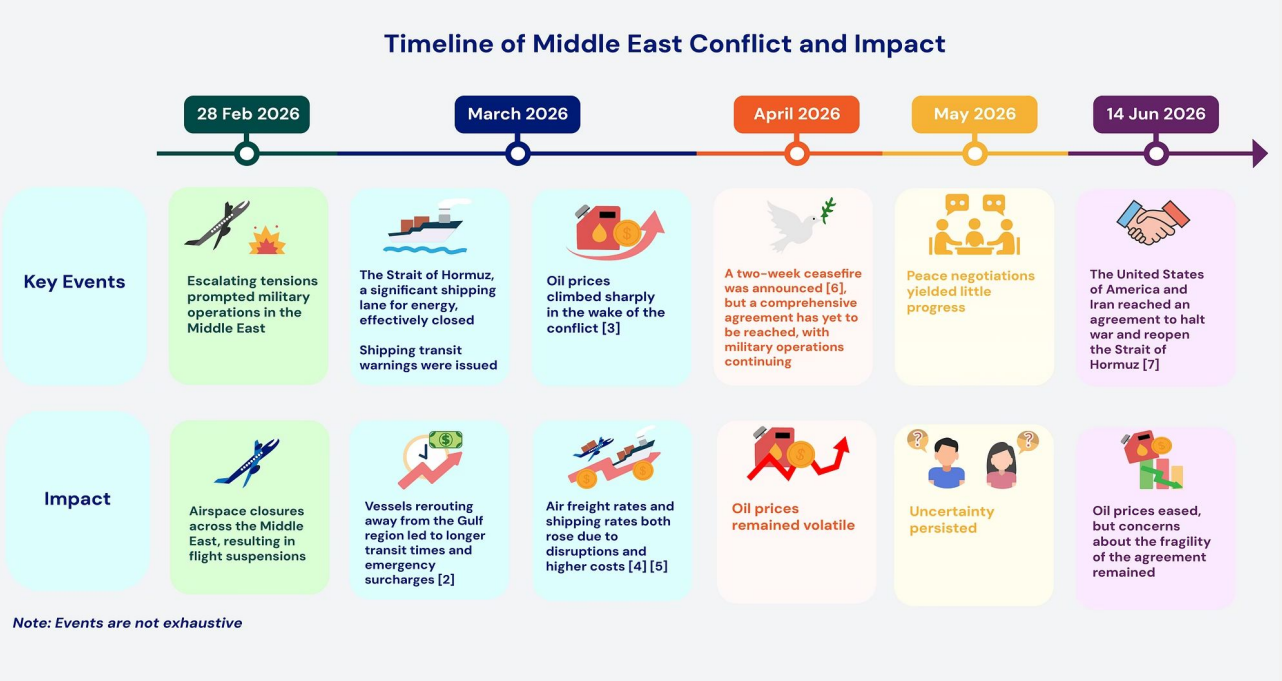
[1] The IPI Oil sub-index tracks price movements of imported mineral fuels, lubricants and related materials, including crude oil and refined petroleum products. Data on the IPI Oil sub-index are available in the **SingStat Table Builder**.

This article examines price developments in Singapore's Transport and Storage (T&S) sector, which is particularly exposed to changes in fuel costs and disruptions to global shipping and logistics networks.

While the IPI reflects oil prices at the point of entry into the domestic economy and can provide an early indication of upstream cost pressures, the extent and timing of pass-through to prices can differ across transport and storage activities. These differences were likely influenced by fuel exposure, route exposure, contract terms, and firms' ability to adjust prices during the period.

The analysis covers the changes on selected Singapore Producer Price Indices from 1Q 2025 to 2Q 2026 (Figure 1). These include the T&S Services Producer Price Indices (SPPIs) — Sea Freight Transport, Freight Forwarding, Cargo Handling, Warehousing & Storage, and Postal & Courier services. Together, these indices provide insights into how oil price volatility and logistics disruptions were reflected in transport and storage prices, although other factors may have also contributed to the observed price movements.

Figure 1: Timeline and Impact on Transport and Storage Sector



[2] The Straits Times (2026, March 26). Shipping disruption from Middle East crisis reaches ports in Asia, including Singapore. https://www.straitstimes.com/business/from-hormuz-to-the-red-sea-new-chokepoint-puts-singapore-at-risk-of-fresh-price-surge

[3] CNA (2026, March 12). Oil prices surge as supply fears offset IEA's record stockpile release. https://www.channelnewsasia.com/business/oil-prices-asian-stock-market-reserves-5988031

[4] The Business Times (2026, March 13). Air freight rates soar as Middle East conflict blocks trade routes. https://www.businesstimes.com.sg/companies-markets/transport-logistics/air-freight-rates-soar-middle-east-conflict-blocks-trade-routes

[5] The Straits Times (2026, April 4). From Hormuz to Red Sea: New choke point puts Singapore at risk of fresh price surge. https://www.straitstimes.com/business/from-hormuz-to-the-red-sea-new-chokepoint-puts-singapore-at-risk-of-fresh-price-surge

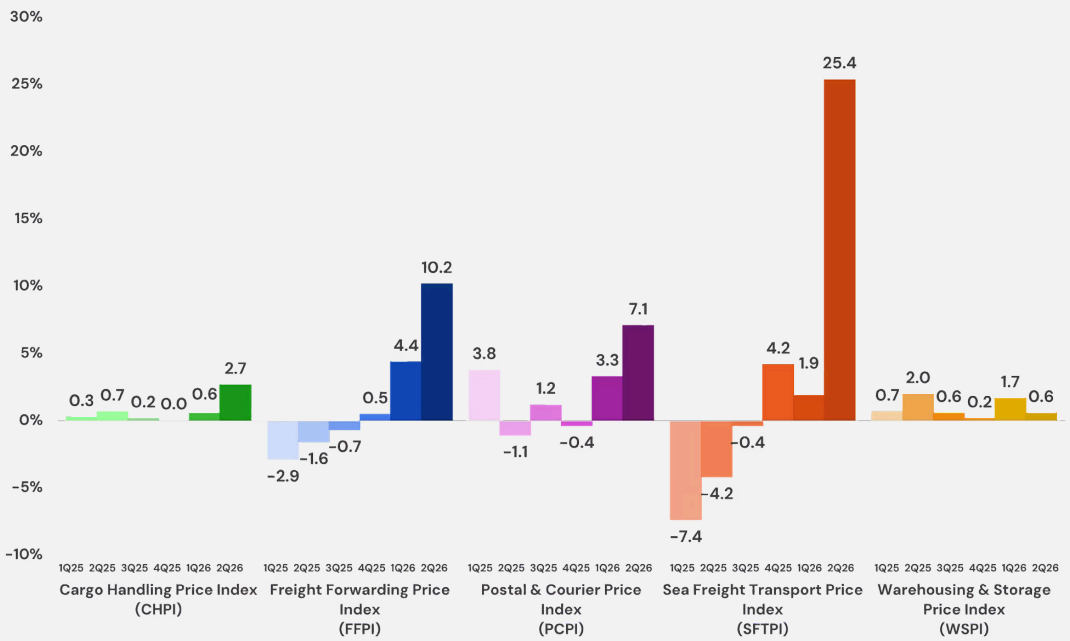
[6] The Straits Times (2026, April 8). US, Iran agree to two-week ceasefire with reopening of Strait of Hormuz. https://www.straitstimes.com/world/middle-east/trump-agrees-to-two-week-ceasefire-iran-says-safe-passage-through-hormuz-possible

[7] CNA (2026, Jun 15). Iran, US agree to halt war and reopen Hormuz, sending oil prices tumbling. https://www.channelnewsasia.com/world/us-iran-peace-deal-strait-hormuz-pakistan-signing-6182881

Impact Across Transport & Storage Sub-Sectors

In 1Q 2026, quarter-on-quarter (q-o-q) prices rose across the T&S sub-sectors, led by Freight Forwarding with an increase of 4.4%, followed by Postal & Courier [8] services at 3.3% (Chart 2). Price increases in the other sub-sectors were modest, at less than 2%.

Chart 2: Quarter-on-Quarter Percentage Change for Transport and Storage Services Producer Price Indices, 1Q 2025 - 2Q 2026



Between 1Q and 2Q 2026, price increases became more pronounced, led by Sea Freight Transport, Freight Forwarding and Postal & Courier where prices rose 25.4%, 10.2% and 7.1% respectively, while the other sub-sectors recorded increases of less than 3%.

The varying price increases across sub-sectors suggest conflict-related cost pressures were uneven across the T&S sector, potentially reflecting differences in exposure to fuel costs, affected routes and pricing arrangements. Sectors with limited exposure to affected routes and related cost pressures may have been less directly affected. The following sections examine these sectoral developments in greater detail.

Sea Freight Transport Services

Sea transport plays a vital role in global merchandise trade and is sensitive to disruptions in international shipping. Prior to the onset of the Middle East conflict, containerised freight transport prices had been on a declining trend, while liquid bulk and gas freight transport prices recorded relatively modest movements. The conflict introduced additional cost and risk pressures to maritime shipping, although the extent of these pressures was likely to vary across shipping segments depending on their exposure to affected routes and associated operating costs.

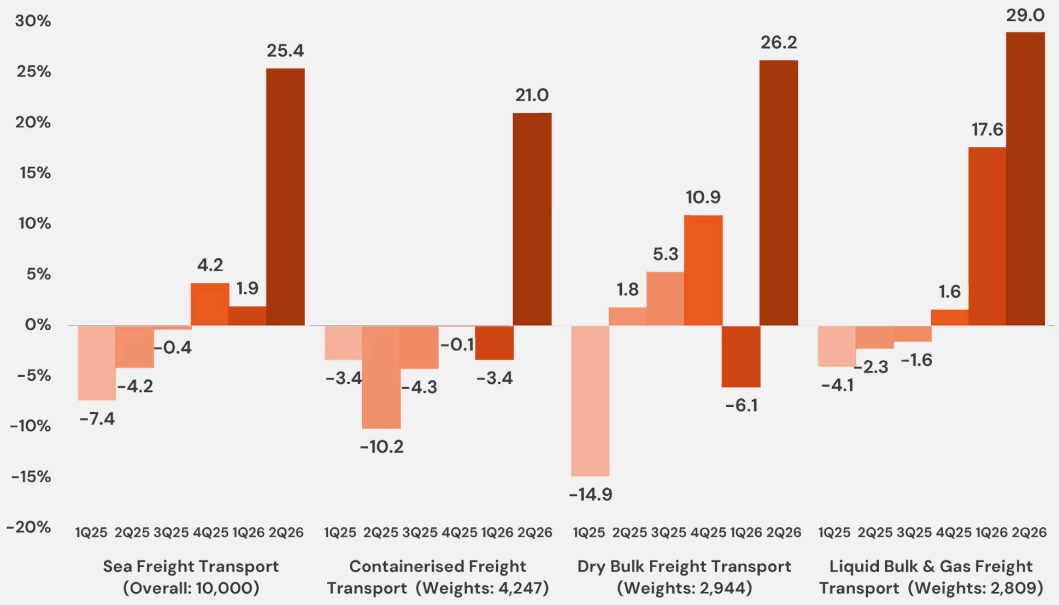
Given the importance of the Strait of Hormuz for global oil and gas shipments, shipping activity involving liquid bulk and gas freight were more directly exposed. Container shipping companies mainly operating outside the region were less directly exposed, although they could face indirect pressures from higher bunker costs and broader shipping disruptions [9].

[8] The increase in postal and courier prices in 1Q 2026 was broadly comparable to the 3.8% rise recorded in 1Q 2025 and may reflect routine annual price adjustments rather than the effects of the Middle East conflict.

[9] UN Trade and Development (UNCTAD). (2026, April 1). Hormuz disruption deepens global economic strain across trade, prices and finance. https//unctad.org/news/hormuz-disruption-deepens-global-economic-strain-across-trade-prices-and-finance.

Against this backdrop, price movements varied across shipping segments in 1Q 2026 (Chart 3). At the overall level, the Sea Freight Transport Price Index (SFTPI) increased 1.9% q-o-q, primarily driven by the 17.6% increase in the Liquid Bulk & Gas Freight Transport sub-index. In contrast, the Containerised Freight Transport and Dry Bulk Freight Transport sub-indices declined 3.4% and 6.1% [10] respectively.

Chart 3: Quarter-on-Quarter Percentage Change for Sea Freight Transport Price Index and Sub-indices, 1Q 2025 - 2Q 2026



By 2Q 2026, prices had increased across all three sub-indices, with the overall SFTPI surging 25.4% q-o-q. The Liquid Bulk & Gas Freight Transport sub-index continued to record strong growth of 29.0%, while the Containerised Freight Transport and Dry Bulk Freight Transport sub-indices both rebounded 21.0% and 26.2% respectively. The increases across all three sub-indices were consistent with wider adjustments in sea freight prices, including freight rates and fuel surcharges, amid shipping disruptions, higher bunker costs, war-risk premiums and other operating cost pressures.

Freight Forwarding Services

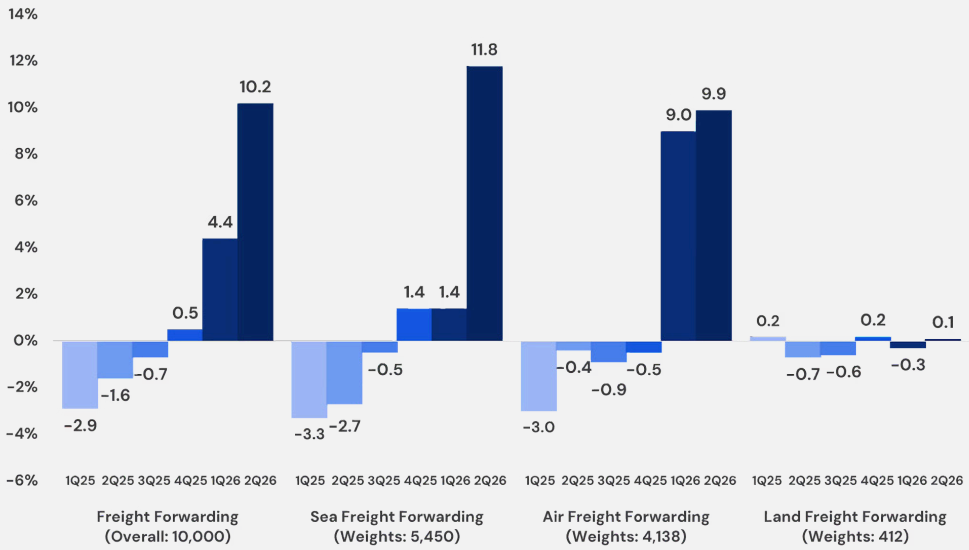
Freight forwarders act as intermediaries between shippers and carriers, coordinating cargo movements across air, sea and land transport networks. Their prices are therefore influenced by carrier rates, route availability, fuel costs, and related surcharges. With the onset of the conflict, air freight forwarding faced the most immediate cost pressures through flight rerouting, reduced capacity and higher fuel costs, while sea freight forwarding faced pressures from higher carrier rates, fuel costs and war-risk surcharges. The timing and extent of price adjustments varied across companies, depending on factors such as route exposure and contract terms.

In 1Q 2026, the Freight Forwarding Price Index (FFPI) rose 4.4% q-o-q, led by a 9.0% increase in the Air Freight Forwarding sub-index (Chart 4). The Sea Freight Forwarding sub-index increased 1.4%, while the Land Freight Forwarding sub-index slipped 0.3%.

The FFPI rose at a faster pace in 2Q 2026, increasing 10.2% q-o-q. The Sea Freight Forwarding and Air Freight Forwarding sub-indices were the main contributors to this gain, recording increases of 11.8% and 9.9% respectively, mainly due to the implementation of fuel surcharges amid higher fuel costs. In contrast, the Land Freight Forwarding sub-index remained broadly stable, edging up 0.1%.

[10] Although the Dry Bulk Freight Transport sub-index has been increasing between 2Q - 4Q 2025, the decline in 1Q 2026 is consistent with that observed in the first quarters of previous years.

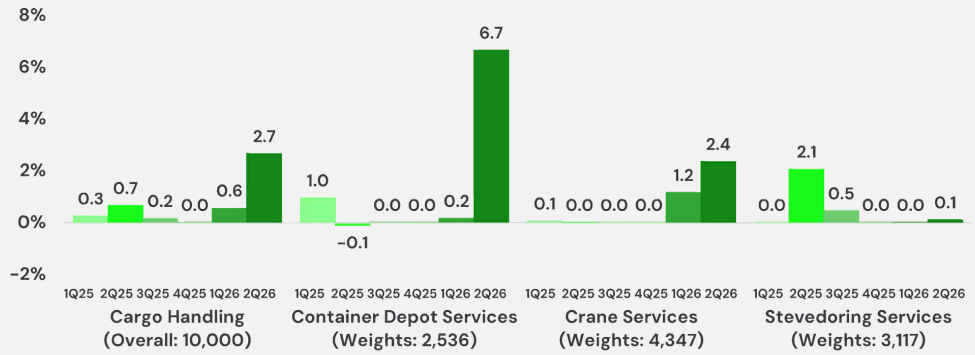
Chart 4: Quarter-on-Quarter Percentage Change for Freight Forwarding Price Index and Sub-Indices, 1Q 2025 - 2Q 2026



Cargo Handling Services

Cargo handling services support the physical movement and handling of goods across ports and logistics facilities. Compared with freight transport, the sector is less directly exposed to international route disruptions, with prices mainly influenced by equipment-operating costs and pricing arrangements. Price movements were relatively modest in 1Q 2026, with the Cargo Handling Price Index (CHPI) inching up 0.6%, mainly driven by the 1.2% increase in Crane Services prices (Chart 5).

Chart 5: Quarter-on-Quarter Percentage Change for Cargo Handling Price Index and Sub-Indices, 1Q 2025 - 2Q 2026

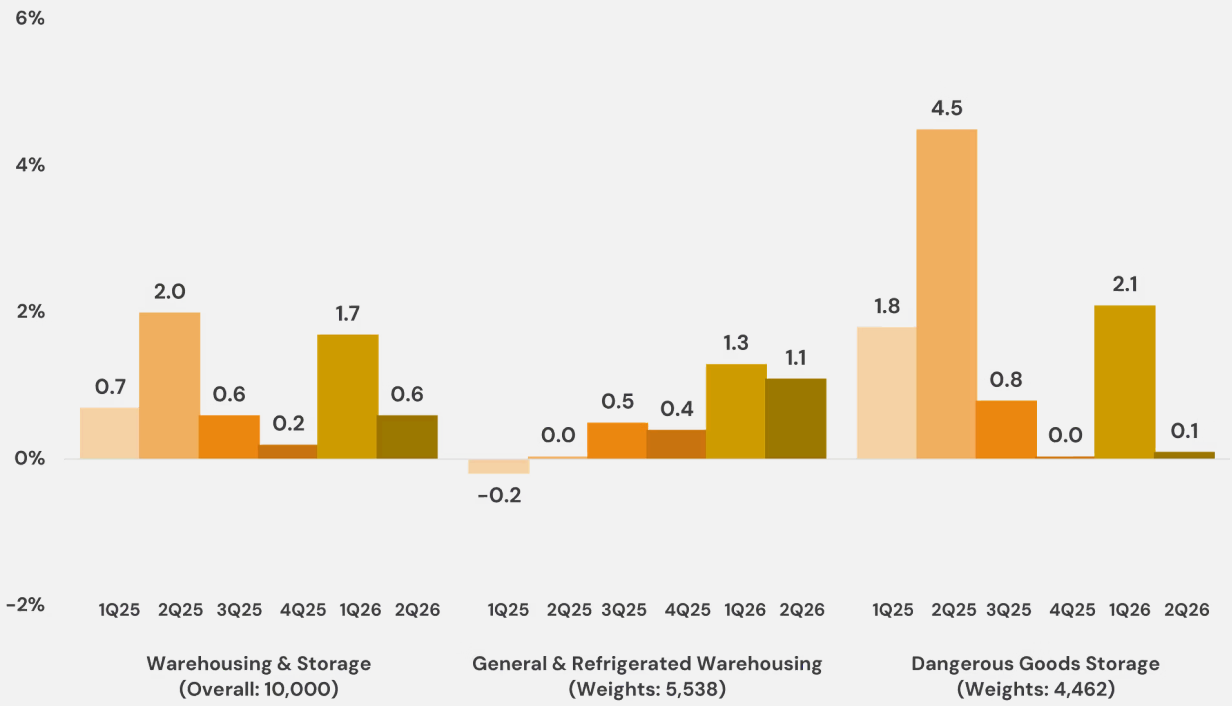


In 2Q 2026, higher diesel costs and related operating cost pressures may have contributed to higher transportation and equipment-operating costs, with some companies introducing fuel-related surcharges. The CHPI increased 2.7% in 2Q 2026, driven mainly by the Container Depot Services sub-index, which saw the largest increase at 6.7%. The Crane Services sub-index rose 2.4%, while the Stevedoring Services sub-index edged up 0.1%.

Warehousing & Storage Services

Warehousing and storage services, such as general and refrigerated warehousing as well as dangerous goods storage, provide storage facilities for goods before onward distribution. Unlike freight transport, prices in this sector are mainly influenced by occupancy levels, storage demand and contractual arrangements. Price movements were modest in 1Q 2026, with the Warehousing & Storage Price Index (WSPI) increasing 1.7% q-o-q, mainly due to a 2.1% increase in the Dangerous Goods Storage sub-index (Chart 6).

Chart 6: Quarter-on-Quarter Percentage Change for Warehousing & Storage Price Index and Sub-Indices, 1Q 2025 - 2Q 2026



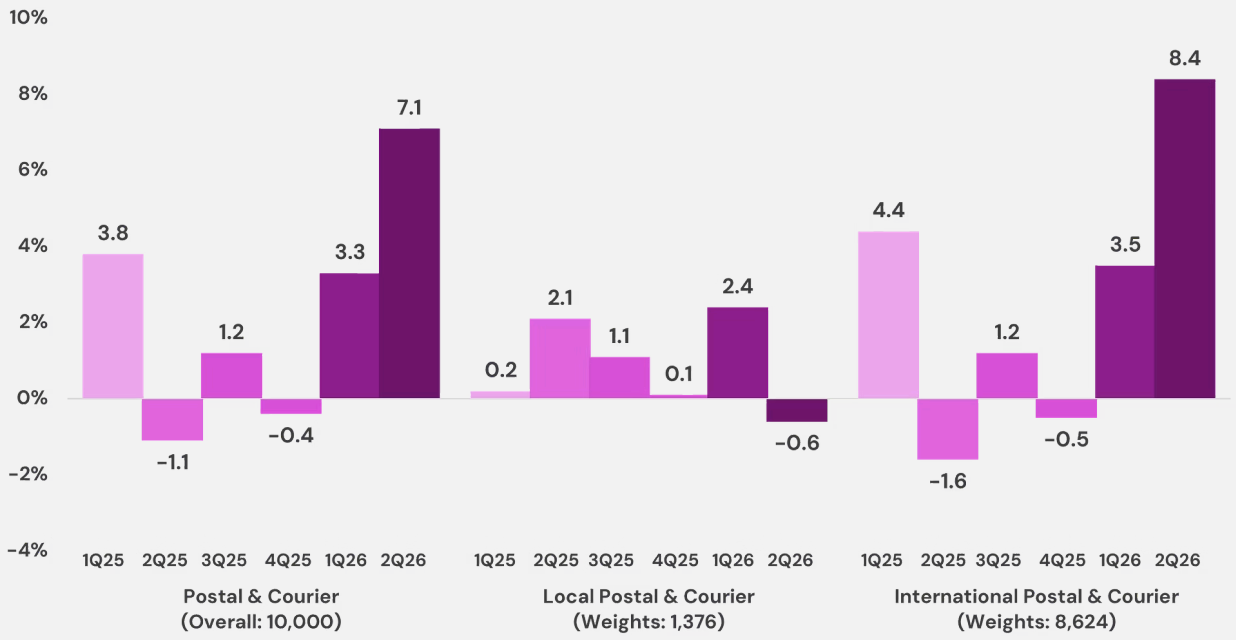
In 2Q 2026, price increases in the WSPI continued at a more moderate pace compared to 1Q 2026, with the WSPI ticking up 0.6% q-o-q. The increase was mainly attributed to the General & Refrigerated Warehousing sub-index, which rose 1.1%, while the Dangerous Goods Storage sub-index recorded a marginal increase of 0.1%. These increases reflected higher rates following contract renewals, annual rate adjustments and fuel-related surcharges.

Postal & Courier Services

Postal and courier services represent the delivery leg of the logistics chain, moving parcels and documents to businesses and consumers. Local postal and courier services are more influenced by domestic delivery conditions, while international postal and courier services may be more exposed to changes in air freight capacity, flight routes and fuel-related surcharges.

The Postal & Courier Price Index (PCPI) rose 3.3% q-o-q in 1Q 2026, led by increases of 2.4% and 3.5% in the Local and International Postal & Courier sub-indices, respectively. In 2Q 2026, the PCPI increased 7.1% q-o-q, driven by an 8.4% increase in the International Postal & Courier sub-index. The increase was consistent with higher fuel-related costs affecting international postal and courier prices (Chart 7).

Chart 7: Quarter-on-Quarter Percentage Change for Postal & Courier Price Index and Sub-Indices, 1Q 2025 - 2Q 2026



Conclusion

The 2026 Middle East conflict highlighted how geopolitical shocks can affect energy markets and global logistics networks, with implications for business costs in Singapore.

The IPI Oil sub-index reflected the increase in imported oil prices, while the SPPIs showed how price movements spilled over into various transport and storage segments. The timing and magnitude of these movements differed across sectors, depending on factors such as exposure to fuel costs, international routes, affected trade lanes, and pricing arrangements.

While the Singapore Government has introduced support packages to help businesses and households manage cost pressures, continued monitoring of producer prices remains important as global developments continue to evolve. The **Producer Price Indices** provide timely insights to support businesses and policymakers in understanding emerging price pressures.

Check out this dashboard!



www.singstat.gov.sg

Services Producer Price Indices Dashboard

Explore trends in Singapore's Services Producer Price Indices by various industries across the years.



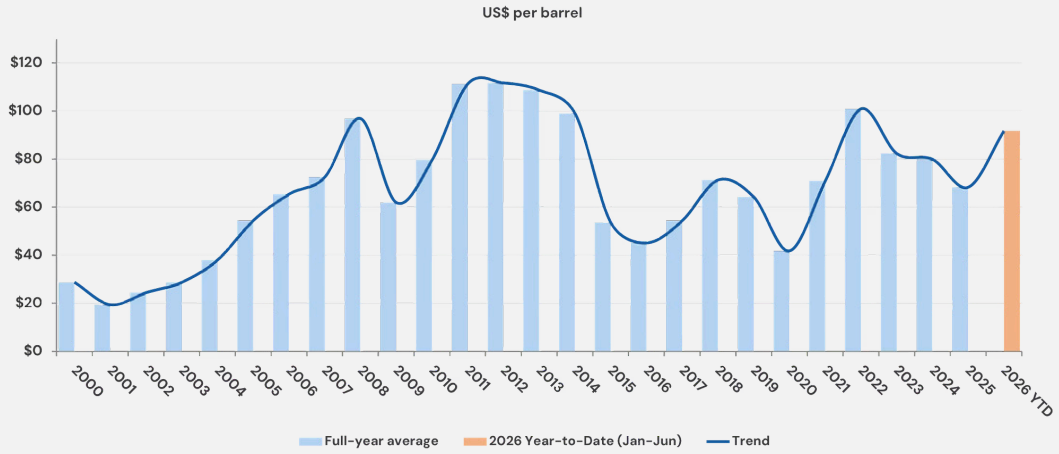
Tracing How Energy Price Shocks Ripple through Singapore's Industries Using Input-Output Analysis

by **Priscilla Lim** and **Bradford Loh**
Input-Output Tables Division
Singapore Department of Statistics

Introduction

Changes in crude oil prices can have effects well beyond the Energy sector. As industries purchase inputs from one another, higher oil prices can ripple through supply chains, raising transport and distribution costs for businesses and ultimately consumers. As a highly interconnected economy with limited domestic energy resources, Singapore relies heavily on energy imports. Crude oil and refined petroleum products are key inputs to refining, petrochemicals, transport and manufacturing, in addition to their use as fuels. As Chart 1 shows, oil prices can also fluctuate sharply over time.

Chart 1: Brent Crude Oil Price (USD), 2000 - Jun 2026



Source: U.S. Energy Information Administration, Europe Brent Spot Price FOB.

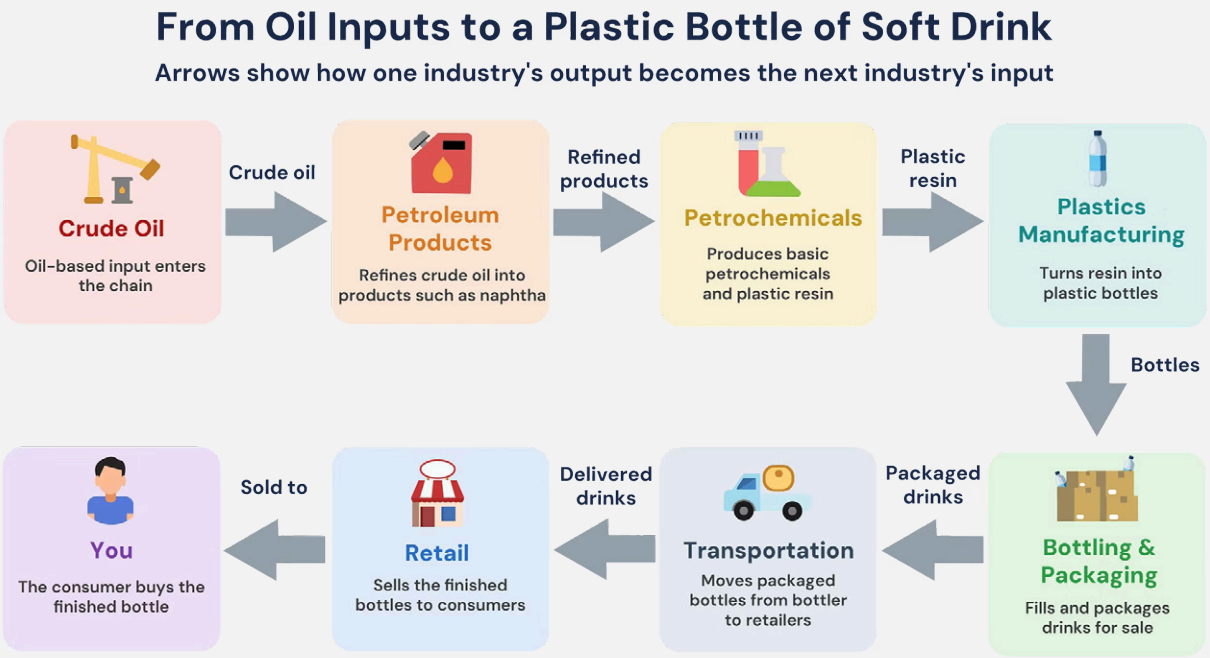
This article examines how higher oil prices can affect different industries in Singapore using the Supply, Use and Input-Output Tables (SU-IOTs). It illustrates the direct impact of a simulated 10% increase in imported petroleum prices on the Petroleum Products industry, and how the same framework can be used to understand broader supply-chain effects. The method can also be applied proportionally to analyse price shocks of varying magnitudes.

Concepts & Methodology

SU-IOTs and Their Applications

As an illustration, consider the production of a plastic bottle of soft drink. Refined petroleum products such as naphtha are processed into petrochemical products, then plastic resin, which is moulded into bottles, filled and packaged before being sold to consumers. At each stage, one industry purchases inputs from another, illustrating production linkages captured in SU-IOTs (Figure 1).

Figure 1: From Oil Inputs to a Plastic Bottle of Soft Drink



When the price of crude oil rises, the impact can extend beyond refineries as higher input costs spill over to interconnected production chains and affect downstream industries.

SU-IOTs help trace these linkages by mapping out who buys what from whom. Supply and Use Tables (SUTs) show how goods and services are produced, imported and used in the economy, while Input-Output Tables (IOTs), derived from the SUTs, show how industries are connected through their purchases and sales.

The Leontief price model is applied to estimate how an input price shock propagates through these linkages by capturing:

Direct Effects	Indirect Effects
Higher costs for industries that purchase the affected input directly	Higher costs for downstream industries that source from impacted suppliers

The sum of direct and indirect effects reflects the **total impact** of the price shock.

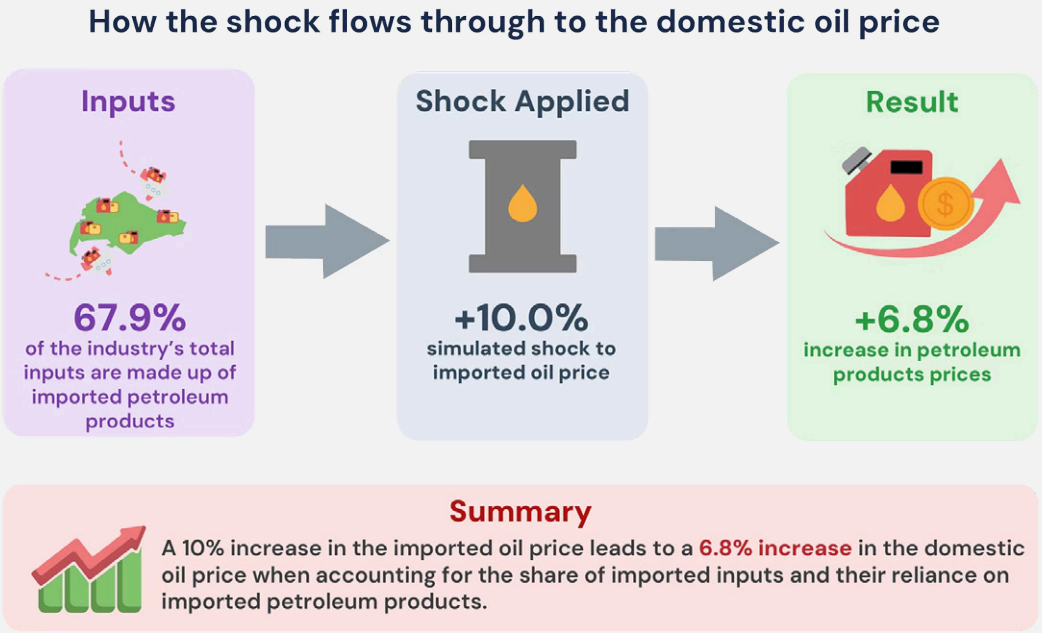
The Leontief price model is a structural analysis tool rather than a forecast. It assumes that industries maintain the same input mix after the price shock and fully pass on higher input costs. Therefore, it does not capture adjustments such as absorbing costs through profit margins, switching suppliers, changing production processes or altering the output mix. The model is useful for identifying where cost pressures may arise across the economy, but more sophisticated models are needed to assess how businesses may respond in practice.

Findings

Direct Impact of an Imported Oil Price Shock

The simulation begins with the Petroleum Products industry, which is most directly exposed to the shock. In the 2023 SU-IOTs, imported petroleum products, mainly crude oil, accounted for 67.9% of the Petroleum Products industry's inputs. If imported petroleum prices were to increase by 10%, the direct impact is a 6.8% increase in the output prices of the Petroleum Products industry, assuming the increased cost is fully passed through (Figure 2).

Figure 2: Direct Impact of a 10% Price Increase in Imported Oil on Output Prices in Singapore's Petroleum Products Industry



As 67.9% of the industry's total inputs are imported petroleum products, a 10% increase in the cost will translate into a broadly proportionate increase in the industry's modelled output price.

For comparison, Brent crude oil rose about 10% between January and October [1] in 2023 while the average retail price of 95 octane petrol in Singapore increased 6.6% [2] over the same period.

The increases are not directly comparable. The 6.8% increase reflects the broader industry's modelled output price, whereas retail petrol prices carry other cost components and business considerations. Nonetheless, the trends move in the same direction and by a broadly similar magnitude. The SU-IOTs therefore provide a structured way to estimate how import price shocks may affect prices across Singapore's industries.

How the Price Shock Ripples Further

Beyond the direct effect on petroleum products shown in Figure 2, SU-IOTs also show how a price shock can propagate through the economy (Figure 3).

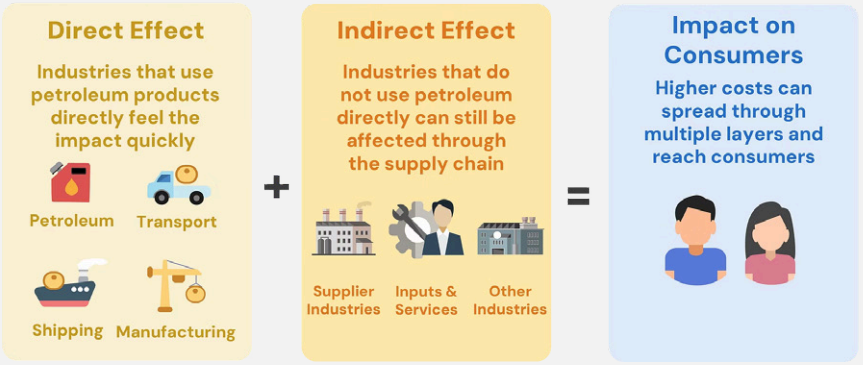
The Transport industry feels the impact relatively quickly as they directly rely on petroleum-linked products in its day-to-day operations. An industry that does not purchase petroleum may source inputs from industries that do, building cost pressures in the goods and services purchased. This pathway is best traced structurally via the SU-IOTs.

[1] U.S Energy Information Administration (EIA), Europe Brent Spot Price FOB

[2] Singapore Department of Statistics, Average Retail Prices of Selected Consumer Items

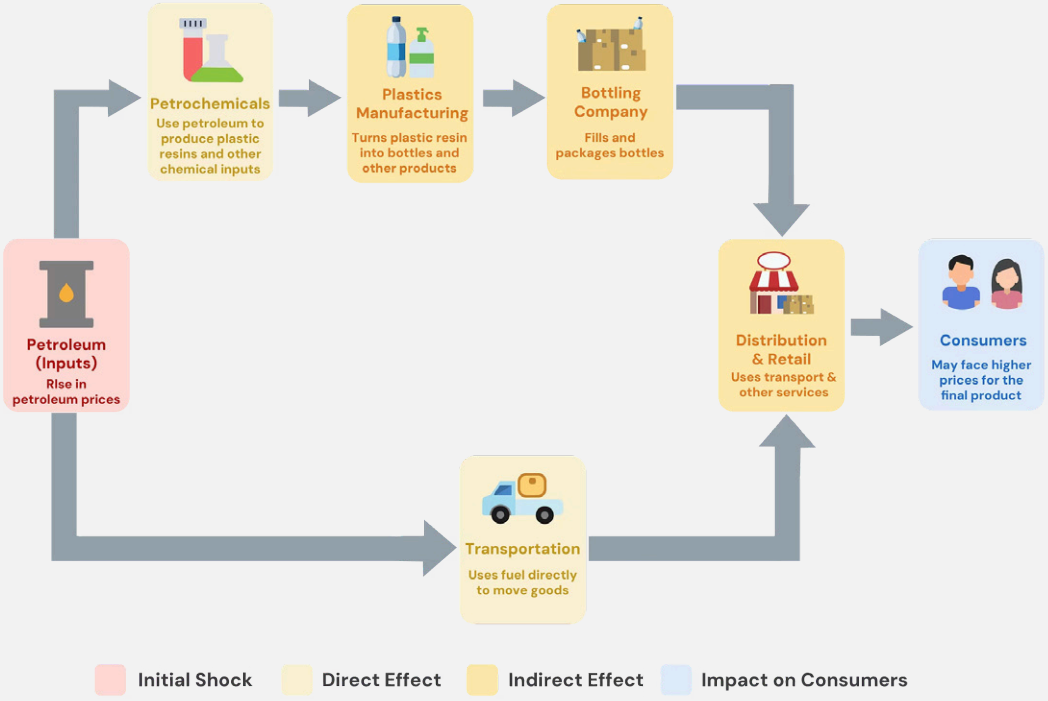
Figure 3: Effects of a Petroleum Price Shock

A rise in imported petroleum prices affects many industries through direct and indirect pathways, which together determine the total impact on consumers.



Example: Bottled Soft Drink

Tracing how a rise in petroleum prices reaches consumers through the supply chain for a bottle of soft drink



The ripple effect applies to the wider economy — industries that rely more heavily on transport, materials and logistics tend to see a relatively greater indirect exposure than those that do not. For example,



Food retailers may face petroleum-linked cost pressures through distribution, cold-chain logistics, packaging and imported supplies.



Construction firms may be affected through higher fuel costs for transport, equipment operation, and raw materials.



Service industries are generally less exposed but not immune to petroleum-related cost pressures, which can still spill over indirectly through utilities, outsourced services and supplier costs.

This analysis helps identify where cost pressures are likely to emerge and which industries may warrant closer monitoring when oil prices change. Together, these direct and indirect pathways illustrate how a price shock can spread across Singapore's production network.

Why Real-World Prices may Differ from the Model

Several situations can cause actual prices to diverge from the model's estimates:

Firms may absorb part of the cost increases through **lower profit margins**, pass it on gradually depending on contractual arrangements and demand conditions.

Businesses may **adapt** by switching suppliers, substituting inputs, or improving efficiency.

Final consumer prices reflect more than just the cost of petroleum-linked input costs. Other factors such as labour, rent, logistics, taxes and fees, distribution and business margins play a role too.

Therefore, when an industry faces higher input costs, the eventual price paid by consumers may grow by a different amount, depending on various factors.

Table 1: Leontief Price Model Assumptions vs. Real-World Outcomes

What the model assumes	What happens in practice
Fixed input relationships Industries are assumed to retain the same mix of inputs.	**Firms may adjust** Businesses can change suppliers, substitute inputs where feasible, or improve processes.
Proportional cost pass-through Higher input costs are assumed to flow through production costs in a consistent way.	**Pass-through may vary** Some firms may absorb costs, delay price changes, or pass on only part of the increase.
Industry-level output prices The estimate refers to broad industry prices, not a specific consumer item.	**Retail prices include more** Final prices also reflect labour, rent, logistics, taxes, fees, distribution and margins.
Immediate structural exposure The model shows where cost pressure sits in the production network.	**Timing and demand matter** Actual prices may depend on contracts, inventories, pricing cycles, competition and demand.

The model estimates are best interpreted as indicators of exposure to the price shock, rather than predictions of actual price movements. The estimates identify which industries are relatively more exposed to the original oil price shock, and whether that exposure primarily stems from direct purchases or through upstream suppliers.

SU-IOTs are useful for this purpose, providing a consistent framework to trace cost pressures across Singapore's production network.

Conclusion

A rise in the price of a key input such as petroleum affects industries both directly and indirectly. Sectors in the Petroleum Products industry that rely on petroleum-related inputs face higher costs first. These pressures then pass through suppliers and the wider production network, with industries such as food retailers and construction typically more exposed than services. A shock to a single input can reach well beyond the industries most directly exposed to it, extending their impact across the wider economy.

SU-IOTs trace these transmission channels by identifying who buys what from whom, and how cost pressures propagate through the production network. Real-world prices will not move exactly as the model suggests, given factors such as existing contracts and market conditions, but the model remains useful for understanding structural exposure to the price shock and why other industries may be affected through supply-chain connections.

By making these linkages more explicit, SU-IOTs provide a comprehensive map of Singapore's production network. Increases in taxi fares, delivery fees and grocery prices are examples of how higher oil prices may affect consumers through supply-chain linkages, which SU-IOTs help to reveal.



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

by **Tan Xiying**
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Introduction

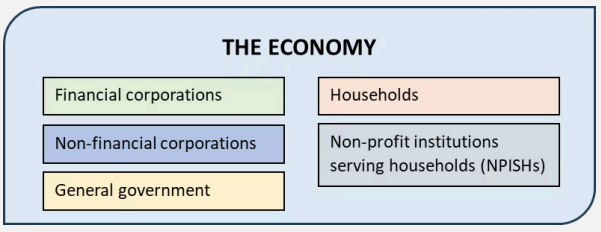
Cross-country comparisons of household sector indicators facilitate assessment of households' economic well-being relative to other countries, and support evidence-based policymaking. For data comparability, Household Sector Balance Sheet is often expressed as a percentage of Gross Domestic Product (GDP)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

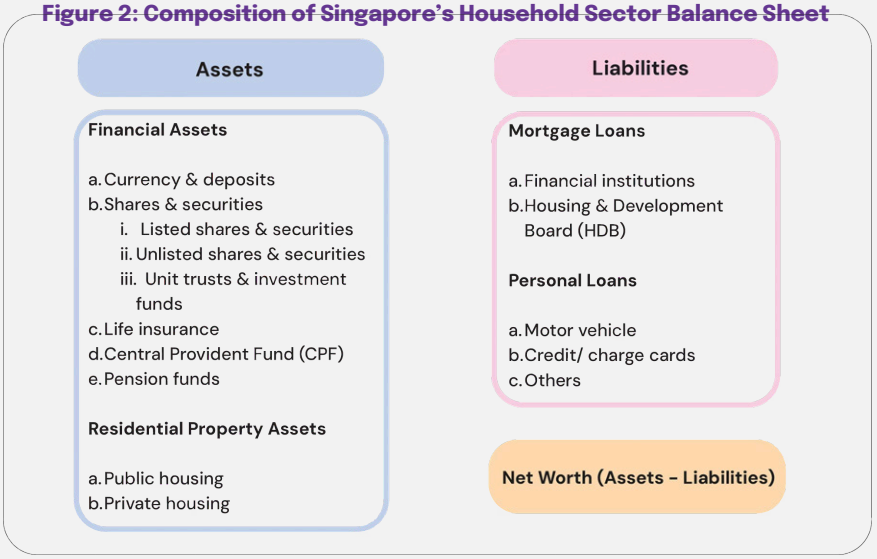
[3] These countries were selected as they have timely and comprehensive data on household sector balance sheet and personal disposable income.

[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).

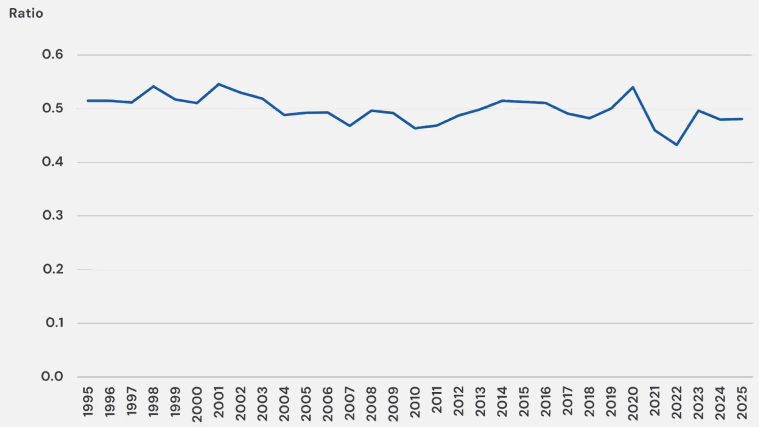
The Household Sector Balance Sheet [5] provides information on the assets and liabilities held by households in Singapore as at end of the period. Households' assets show the amount of wealth (e.g., financial and residential property assets) owned, while households' liabilities show the level of debts (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

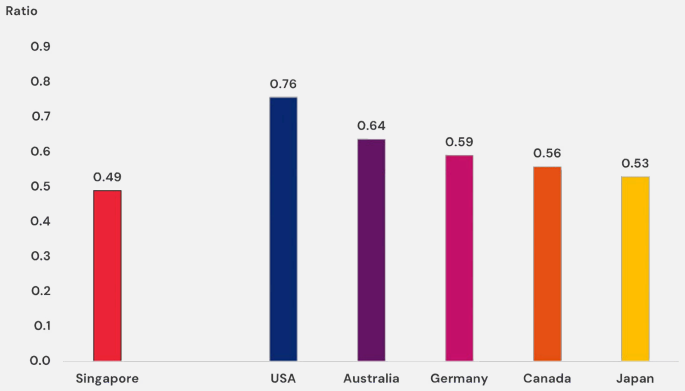
Singapore's low PDI-to-GDP ratio and its impact on cross-country comparisons

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.

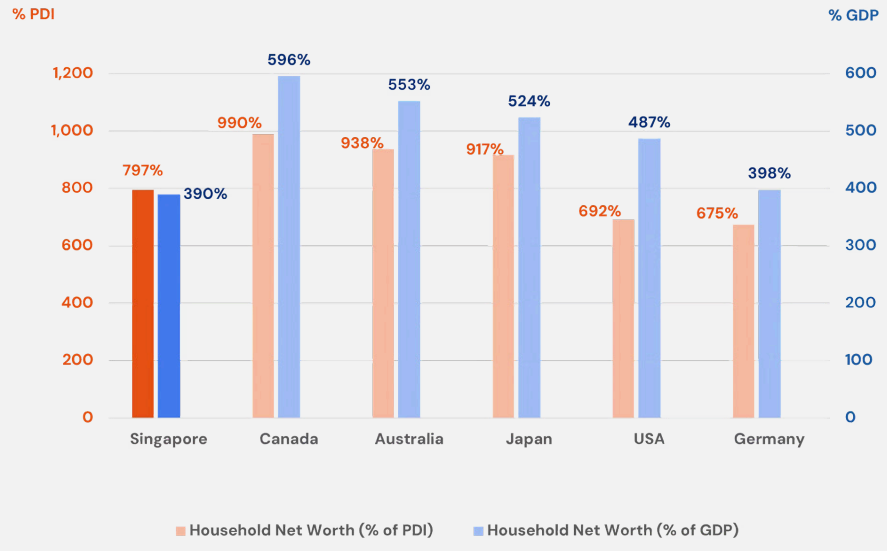
From 2015 to 2025, Singapore had the lowest average household net worth-to-GDP ratio at 0.49 compared to Australia, Canada, Germany, Japan, and the USA (Chart 2).

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



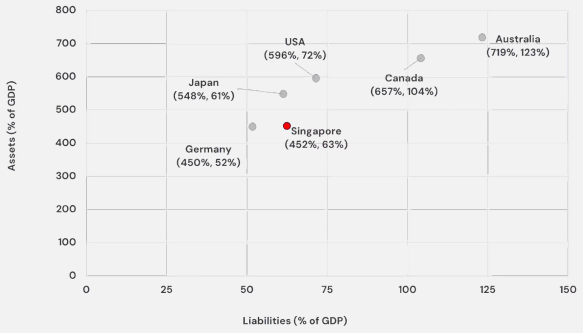
[8] Data from the five countries were obtained from the respective national statistics offices and central banks' websites, and the indicators were derived by DOS.

[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.

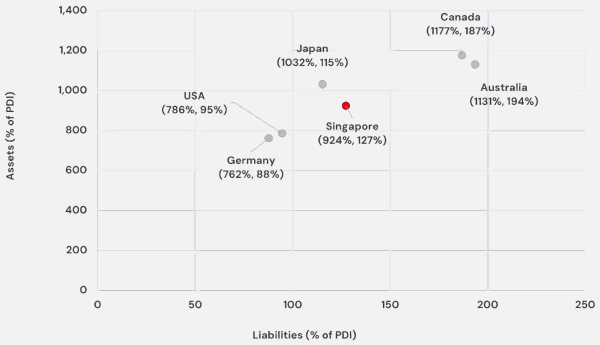
Singapore's assets-to-GDP was one of the lowest among the six countries and comparable to Germany's, while our liabilities-to-GDP was lower than that of Australia, Canada, and the USA (Chart 4). In terms of PDI, Singapore's assets and liabilities were higher than Germany and the USA (Chart 5).

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



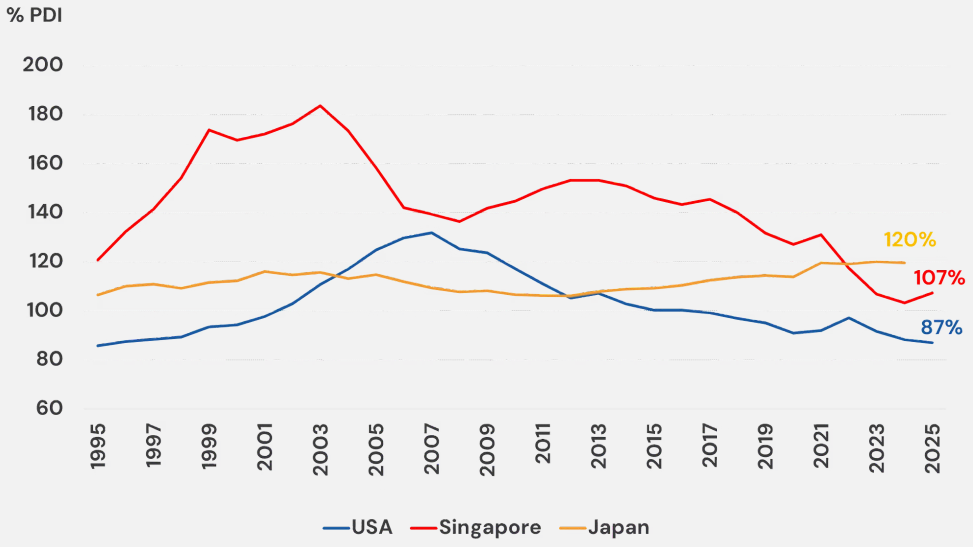
Note: Data labels are formatted as 'Country (Assets in % of PDI, Liabilities in % of PDI)'.

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.

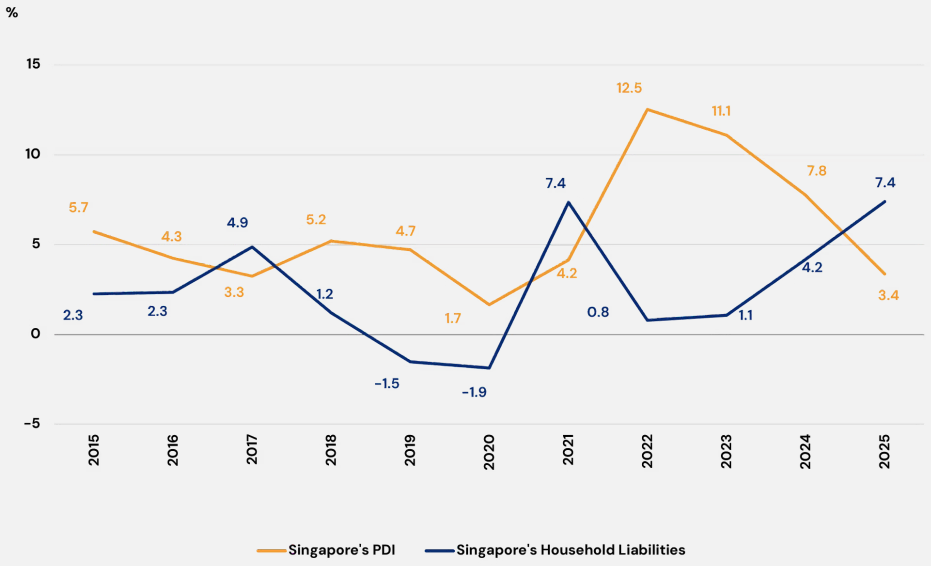
[12] Data on home ownership rates in Japan, Singapore and the USA were obtained from the websites of the respective national statistics offices.

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.



Key Trends in Singapore's Current Account: Analysing the Current Account Balance with the Rest of the World

by **Regina Loo** and **Teo Zhiwei**
International Accounts Division
Singapore Department of Statistics

Introduction



This article examines key trends in Singapore's current account in the Balance of Payments. As a small, open economy and major international trading hub, Singapore's current account reflects its deep integration into global trade and investment networks.

The analysis focuses primarily on the international trade perspective, tracing how the four components of the current account, namely goods, services, primary income, and secondary income, have evolved over time and responded to recent global economic developments.

Understanding the Current Account in the Balance of Payments

The **Balance of Payments (BOP)** is a statistical statement that summarises the economic transactions between residents of an economy and the rest of the world over a given period. It comprises the current account as well as the capital and financial account.

From the **international trade perspective**, the **current account** records the net flow of current transactions between residents and non-residents across four components:

Goods Account	Services Account	Primary Income Account	Secondary Income Account
Exports and imports of goods	Exports and imports of services such as transport, travel, and financial services	Earned income such as investment income and compensation of employees	Current transfers such as cross-border remittances and net non-life insurance premiums and claims

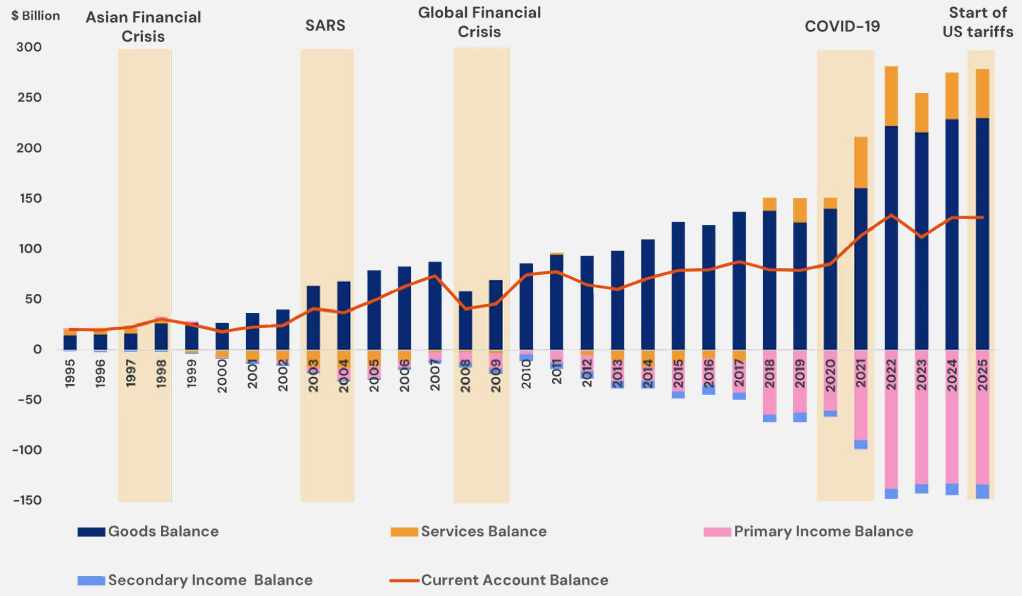
From a **saving-investment perspective,** the current account balance (CAB) is a macroeconomic identity: it is equivalent to national saving (S) less domestic investment (I), expressed as CAB = S - I. A current account surplus arises when a country saves more than it invests domestically, and excess savings can be channelled abroad, making the economy a net lender to the rest of the world.

For Singapore, the continued surplus in the current account reflects national saving exceeding domestic investment. This is similarly represented in Singapore's overall current account balance, where surpluses in the goods and services accounts significantly outweigh deficits in the primary and secondary income accounts.

Current Account

Singapore has consistently recorded current account surpluses since the mid-1990s, reaching $132.0 billion in 2025 (Chart 1). This has primarily been driven by the goods account, while the services account has also strengthened, shifting from mostly deficits since 1999 to sustained surpluses from 2018. These surpluses have been partially offset by growing deficits in the primary and secondary income accounts.

Chart 1: Current Account



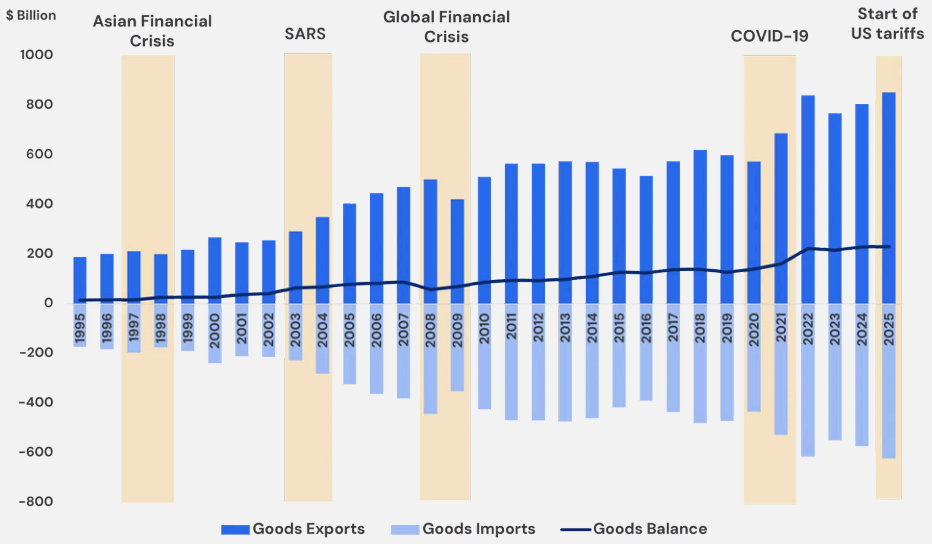
Overall, Singapore's current account surplus has averaged around 18% of gross domestic product (GDP at current prices), peaking at 27.1% in 2007 as the goods account surplus widened amid strong global economic growth prior to the Global Financial Crisis before tapering down over the years.

Goods Account

The goods account surplus increased more than fifteenfold from $14.8 billion in 1995 to $230.4 billion in 2025, or 29.2% of GDP, as the growth in goods exports outpaced that of imports. Goods exports and imports have tracked each other closely with exports growing from $188.5 billion to $852.0 billion over the same period and goods imports rising from $173.7 billion to $621.6 billion (Chart 2).

This reflects Singapore's role as a trade entrepôt and manufacturing hub, where a significant share of imports comprises raw materials and intermediate goods used in production or subsequently re-exported. As such, large gross trade flows are a structural feature of Singapore's role in regional and global value chains.

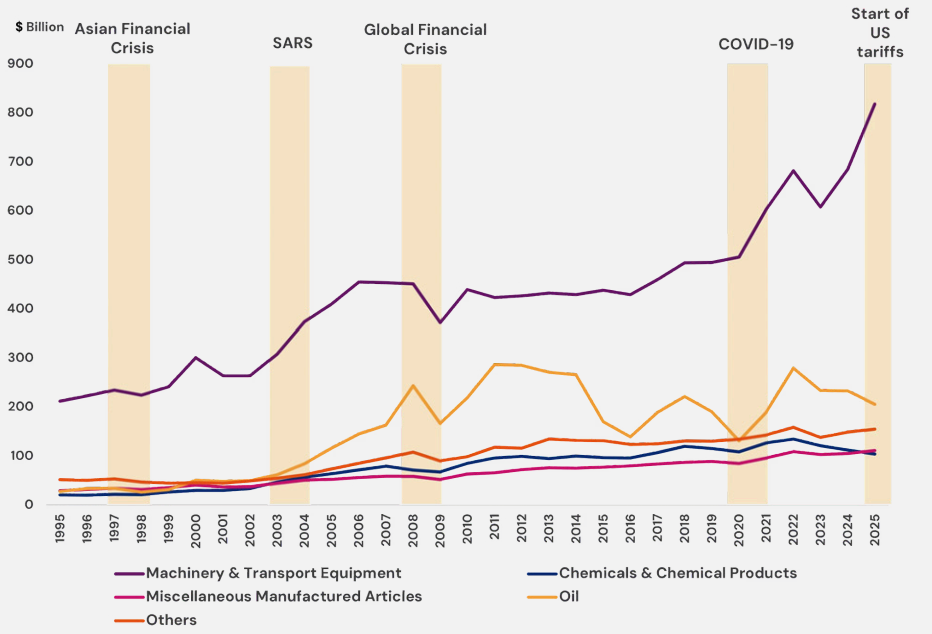
Chart 2: Goods Account



The trends in goods exports and imports have generally been consistent with merchandise trade [1]. In recent years, Net Exports of Goods under Merchanting [2] have accounted for an increasing share of BOP goods exports, reflecting Singapore's position as a global trading hub.

The composition of goods trade has evolved over time alongside the broader transformation of the economy, including the shift towards higher-value manufacturing and Singapore's expanding role in global trade. Machinery & Transport Equipment, Chemicals & Chemical Products, and Miscellaneous Manufactured Articles have consistently accounted for the bulk of merchandise trade (Chart 3). In recent years, export growth has been supported by stronger demand for artificial intelligence (AI) related and healthcare products such as Semiconductors, Pharmaceuticals and Biomedical Products. Non-monetary Gold has also become more prominent, reflecting Singapore's growing role as a gold trading and storage hub.

Chart 3: Total Merchandise Trade



[1] Under international statistical standards in the IMF's Balance of Payments and International Investment Position Manual, Sixth Edition (BPM6), BOP trade in goods statistics are compiled according to the change-of-economic-ownership principle, whereas merchandise trade statistics are compiled principally on the basis of the physical movement of goods across Singapore's customs border.

[2] Merchanting is a form of global production arrangement and refers to the purchase of goods by a resident from a non-resident and the subsequent resale of the same goods to another non-resident without the goods being present in the economy of the resident.

In the first half of 2026, Singapore's goods balance remained robust despite the ongoing geopolitical uncertainty and tensions in the Middle East.

The goods account surplus increased 20.6% year-on-year in 1Q 2026 and 17.1% in 2Q 2026. In 1Q 2026, goods exports expanded by 23.8% while imports grew 24.8%. Growth further strengthened in 2Q 2026, with goods exports and imports rising by 34.4% and 41.4% respectively.

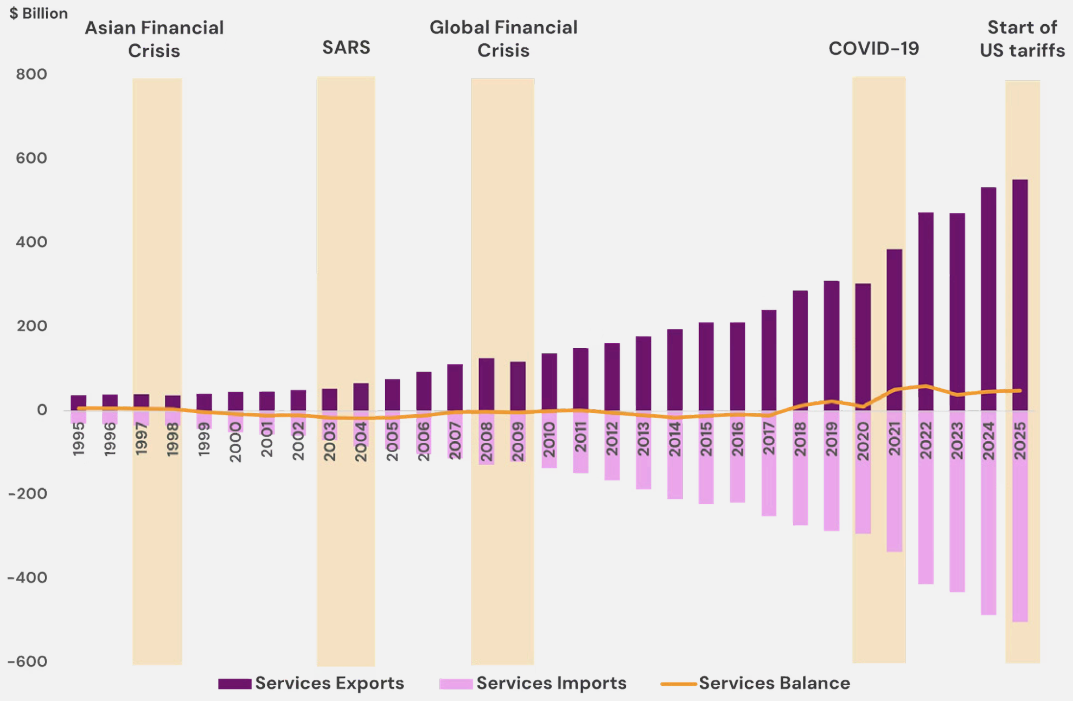
Overall, Singapore's goods account surplus has remained relatively resilient through successive external shocks, supported by the economy's shift towards producing higher-value goods. At the same time, Singapore's high degree of trade openness and reliance on imported inputs means that goods flows remain sensitive to shifts in global demand, commodity prices and geopolitical developments.

Services Account

Over the past three decades, the services account underwent significant changes. From a modest surplus of $6.0 billion in 1995, the services balance shifted to a deficit in 1999 and remained mostly negative for nearly two decades. It returned to a sustained surplus from 2018, rising to $49.1 billion or 6.2% of GDP in 2025 (Chart 4).

The turnaround reflected the growing scale and diversification of Singapore's services exports, as its role expanded beyond a traditional transport and tourism hub to encompass Financial, Telecommunications, Computer and Information Services, as well as Other Business Services such as Advertising and Market Research Services.

Chart 4: Services Account

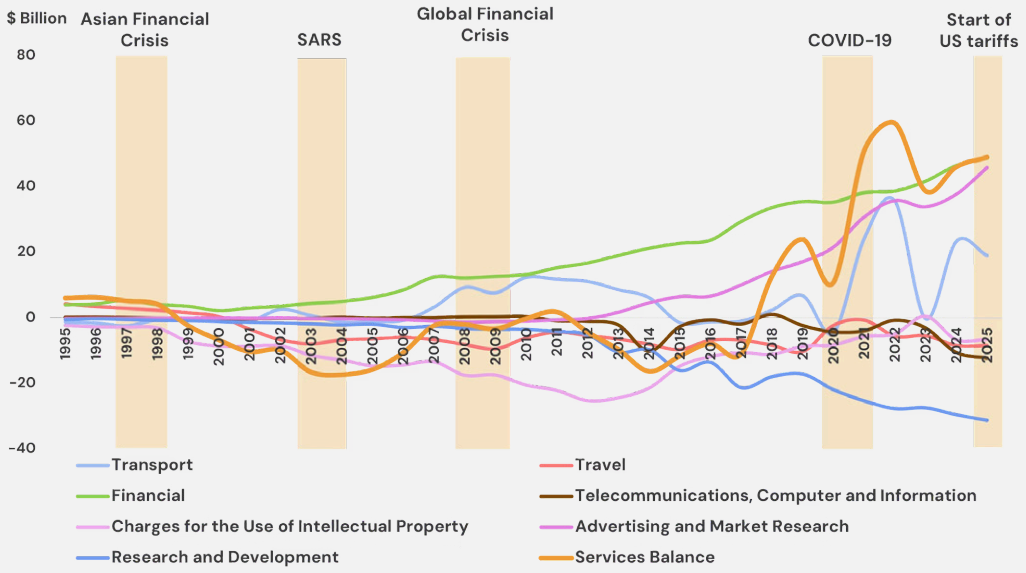


Beyond these longer-term structural shifts in Singapore's services trade, major global disruptions have generated sizeable but generally temporary movements in particular services categories.

During the SARS outbreak, the overall services deficit widened as Travel receipts fell amid declining tourist arrivals. On the other hand, the COVID-19 pandemic had a more varied impact. While Travel Services plunged as borders closed, the decline was offset by strong gains in other services categories such as Transport where net exports of Freight Services increased sharply as freight rates surged amid global supply chain disruptions and strong demand for goods (Chart 5).

Net exports of Freight Services peaked at $54.2 billion in 2022 before moderating, though remaining elevated at $34.6 billion in 2025.

Chart 5: Net Services Exports



In the first half of 2026, the services balance has remained relatively resilient amid heightened global trade and geopolitical uncertainty. Singapore maintained a services trade surplus in 1Q 2026 despite an 8.2% year-on-year decline as imports rose more than exports.

The surplus subsequently recovered, increasing 16.7% year-on-year in 2Q 2026. Services exports rose 10.2%, supported by expanding receipts from Transport Services, Advertising and Market Research Services, and Financial Services. Imports of services rose 9.6%, driven by rising payments for Transport Services, Telecommunications, Computer and Information Services and Research and Development Services.

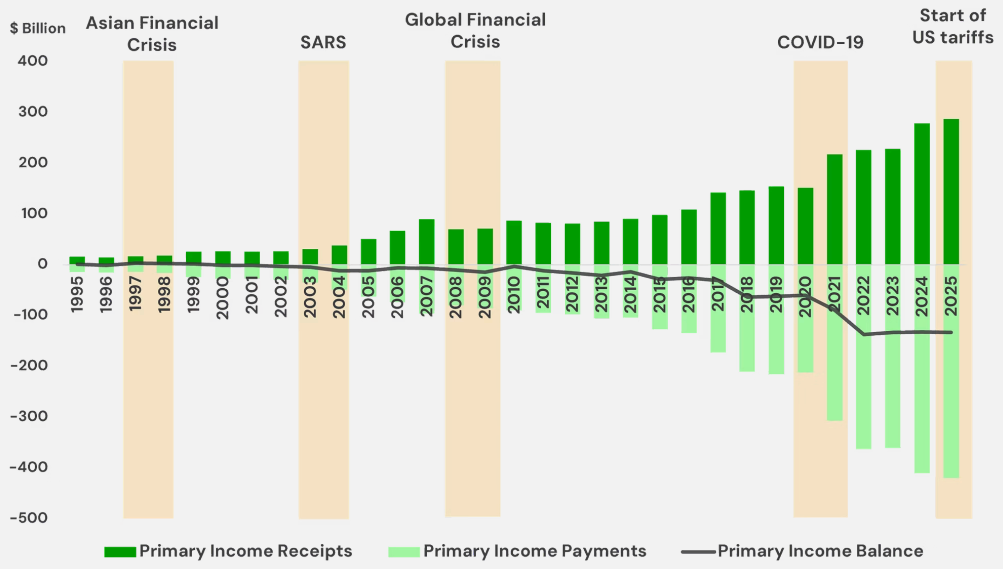
Overall, the evolution of Singapore's services account reflects a broader structural transformation of the economy and its expanding role as a global services hub. While Transport and Travel remained important, the growth of Financial, Telecommunications, Computer and Information, as well as Advertising and Market Research Services, has supported the shift to a sustained surplus since 2018.

This diversification has also provided some resilience to external shocks, although Singapore's open and trade-reliant economy remains sensitive to shifts in global conditions.

Primary Income Account

Unlike the goods and services accounts, Singapore's primary income account has consistently recorded a deficit since 2000, which increased to reach $133.4 billion or 16.9% of GDP in 2025 making it the largest negative component of the current account (Chart 6).

Chart 6: Primary Income Account



The primary income account is dominated by investment income flows, with both receipts and payments increasing substantially over the years in tandem with Singapore's growing external assets and liabilities. The growth was interrupted by sporadic declines in some years, such as during the Global Financial Crisis in 2008 and the COVID-19 pandemic in 2020.

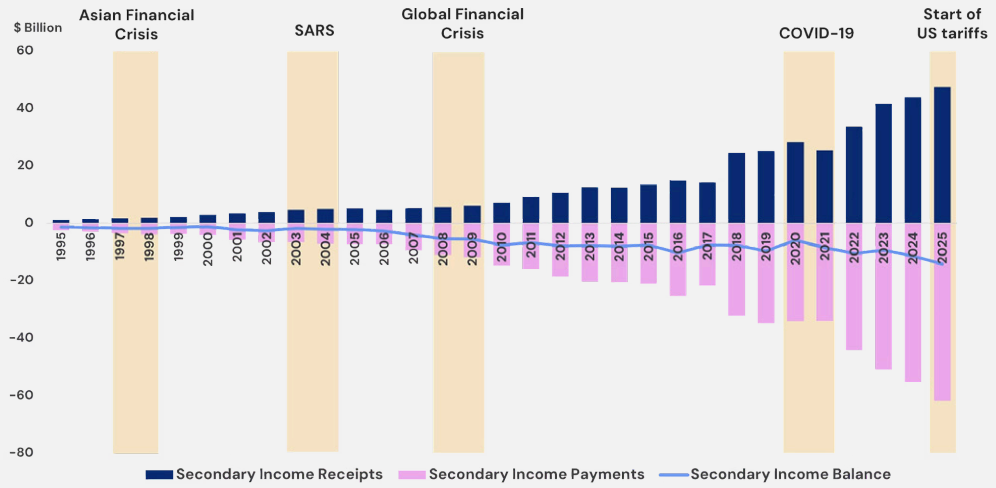
Primary income payments have generally grown at a faster pace, expanding from $14.9 billion in 1995 to $420.4 billion in 2025, compared to receipts, which grew from $15.8 billion to $287.0 billion (Chart 6). This resulted in continued deficits, which reflect Singapore's position as an attractive destination for foreign investment, as well as a global business and financial hub.

Secondary Income Account

The secondary income account remained in deficit throughout, widening from $1.3 billion in 1995 to $14.1 billion or 1.8% of GDP in 2025 as payments grew more than receipts, though it remains considerably smaller than the primary income deficit. Both payments and receipts grew significantly, with payments rising from $2.4 billion to $61.7 billion, while receipts grew from $1.2 billion to $47.6 billion (Chart 7).

Personal transfers, including remittances, and non-life insurance-related flows, such as premiums and claims, were key drivers to Singapore's secondary income flows.

Chart 7: Secondary Income Account



The higher growth in secondary income payments partly reflects Singapore's sizeable migrant workforce and the associated remittances sent to recipients abroad. Rising remittances coincided with changes in regulatory reporting requirements for payment service providers from 2020, which led to an expansion of licensed remittance service providers and better formalised remittance channels.

Net non-life insurance-related flows have also grown over time, alongside Singapore's development as a regional insurance hub. The expansion of cross-border insurance activity has contributed to larger flows in both directions, including premiums receivable from abroad and claims payable to overseas policyholders.

While claims may fluctuate depending on the occurrence and severity of insured events, the expansion of Singapore's cross-border insurance activities has contributed to the growth in these flows over time. Overall, the secondary income account remained relatively stable through major economic disruptions, reflecting the more structural nature of remittance and insurance flows.

Conclusion

Singapore's current account has remained consistently in surplus over the past three decades, reflecting the country's role as a global hub for trade, finance and investment. The goods account remains the primary driver, while the services account has become an increasingly important contributor as Singapore's international trade undergoes a structural shift from goods towards services.

Persistent deficits in the primary and secondary income accounts largely reflect features of Singapore's open economy, including substantial foreign investment and a sizeable foreign workforce, rather than external vulnerabilities. Together, these trends illustrate how Singapore's trade, investment and financial linkages with the rest of the world have shaped the composition of its current account over time.

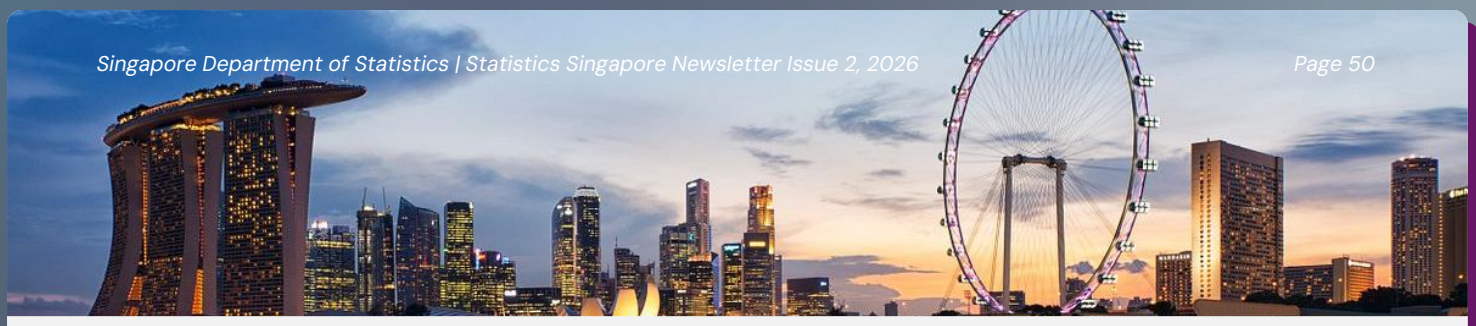
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Balance of Payments Dashboard

Explore trends in Singapore's Balance of Payments, the Current Account and Capital & Financial Account components.



Towards the 2025 SNA and BPM7: Key Themes and Updates to Singapore's National and International Accounts

by **Nikky Toh**, Economic Accounts Division,
Khoo Chee Hau, Input-Output Tables Division,
and **Hya Ting Yu**, International Accounts Division
Singapore Department of Statistics

Introduction



The global economy continues to evolve, shaped by digitalisation and rapid technological advances, shifts in global production and supply chains, and growing sustainability considerations. The System of National Accounts (SNA), and the Integrated Balance of Payments and International Investment Position Manual (BPM) are established statistical frameworks used globally for measuring economic activity and external sector statistics respectively. The frameworks were updated to better reflect these developments and ensure that macroeconomic statistics remain relevant.

This article highlights the main themes of these updates and outlines Singapore's implementation plans for transitioning to the new standards.

What Are the New 2025 SNA and BPM7 Frameworks?

In March 2025, the United Nations Statistical Commission (UNSC) officially adopted the updated System of National Accounts 2025 (2025 SNA), while the International Monetary Fund (IMF) released the Integrated Balance of Payments and International Investment Position Manual, Seventh Edition (BPM7). Developed in parallel to ensure consistency between domestic and external economic statistics, these revised standards have replaced the 2008 SNA and BPM6. They are the culmination of years of technical research and global consultations involving statistical agencies worldwide, including the Singapore Department of Statistics (DOS).

Why Do the New Frameworks Matter?

The 2025 SNA and BPM7 provide a unified structural response to rapid shifts in the modern economic landscape. By integrating harmonised methodologies and having a shared glossary of core macroeconomic terms, the new standards offer an updated framework for measuring emerging developments such as globalisation, digitalisation, and financial innovation. This ensures that macroeconomic data compiled under the new standards remain equipped to track evolving economic shifts.

Digitalisation and Financial Innovation

The updated standards more accurately capture the rapid transformation of the digital economy and financial landscape, incorporating a broad range of enhancements to improve the measurement of digital and financial activities.

Key updates cover areas such as:



Data as a Produced Asset

Recognition of data as a produced asset reflects businesses' investment in labour and capital to gather, clean and organise data to generate ongoing value.

Under the updated standards, expenditures on data are recognised as a long-term capital investment rather than a one-time expense.



Crypto Assets

Introduced definitions and treatment of crypto assets to reflect the emergence of new forms of digital assets. This provides greater clarity on how these assets should be classified and recorded, improving the consistency and comparability of official statistics.



Digital Activities

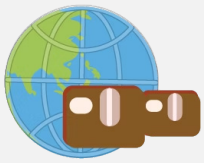
Enhanced visibility of digital activities, products and transactions as well as the measurement of digital trade [1] to reflect how digital technologies have transformed the way goods and services are produced, consumed and transacted.

Clearer guidance on measuring and recording key aspects of digitalisation, such as digitally ordered and digitally delivered transactions, enables official statistics to more accurately capture the scale and nature of the digital economy and digital trade.

Globalisation

Given the increasing complexity and interconnectivity of the global economy, the updated standards introduce a broad range of enhancements to improve the measurement and international comparability of cross-border production, trade and investment.

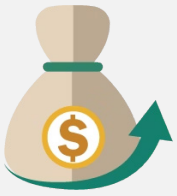
Key updates cover areas such as:



Global Production Arrangements

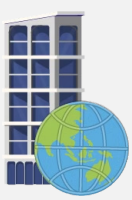
Clearer guidance on global production arrangements, including factoryless goods production (FGP) and merchanting, reflects the fragmentation of production across economies. Businesses may design, develop and market products, while others may outsource manufacturing to producers in other economies, or trade goods across borders without the goods entering the trader's economy.

The new guidance provides a more consistent approach to record these activities, ensuring that official statistics reflect today's global value chains.



Foreign Direct Investment (FDI)

Improved measurement of FDI to better reflect increasingly complex cross-border investment structures. The new recommendations introduce more detailed information on the type of FDI relationships and ultimate investing economy, alongside improved guidance on valuing unlisted equity. This provides a more comprehensive picture of international investment and strengthens the analysis of cross-border capital flows.



Multinational Enterprises (MNEs)

Expanded statistics on MNEs to better reflect how businesses organise their operations across multiple economies. Additional guidance supports the compilation of more detailed information on the cross-border activities of MNEs, providing greater transparency on their role in global production and investment and a better understanding of the impact of globalisation.

[1] DOS has developed experimental digital economy satellite accounts and digital trade estimates. More details available in this issue.

Well-being and Sustainability

Beyond measuring economic activity, the updated standards broaden the national accounts framework to provide a more comprehensive view of economic progress, alongside well-being and sustainability. They include a range of enhancements that strengthen links between economic, social and environmental information.

Key updates cover areas such as:



Broader measures of Economic Progress

Broader measures of economic progress complement traditional indicators such as Gross Domestic Product. The updated SNA strengthens the national accounts by linking economic information with social and environmental indicators, providing a more comprehensive view of well-being and sustainability.



Natural Resources

Improved accounting for natural resources to better reflect their contribution to the economy. The updated guidance strengthens the recording and valuation of natural resources, and enhances consistency with environmental-economic accounting. This provides a broader view of natural assets and supports better assessment of the long-term sustainability of economic growth.



Environmental-Economic Accounting

Stronger integration with environmental-economic accounting to support the measurement of environmental sustainability. Closer alignment with the System of Environmental-Economic Accounting facilitates the integration of information on natural capital and environmental assets with the national accounts, enabling more informed policy analysis.

Other Enhancements

In addition to the key thematic updates, the updated standards introduce other methodological and conceptual enhancements to improve the quality, consistency and relevance of official statistics. Greater emphasis is placed on effective communication to help users better understand and interpret economic statistics. Together, these enhancements strengthen the overall accounting framework while promoting greater transparency and accessibility.

Key updates cover areas such as:



Central Bank Output

Updated measurement of central bank output by treating all central bank output as non-market output, reflecting the primary role of central banks in supporting monetary and financial stability.



Greater Harmonisation between 2025 SNA and BPM7

Greater harmonisation between 2025 SNA and BPM7 to improve the coherence, consistency and comparability of macroeconomic statistics.

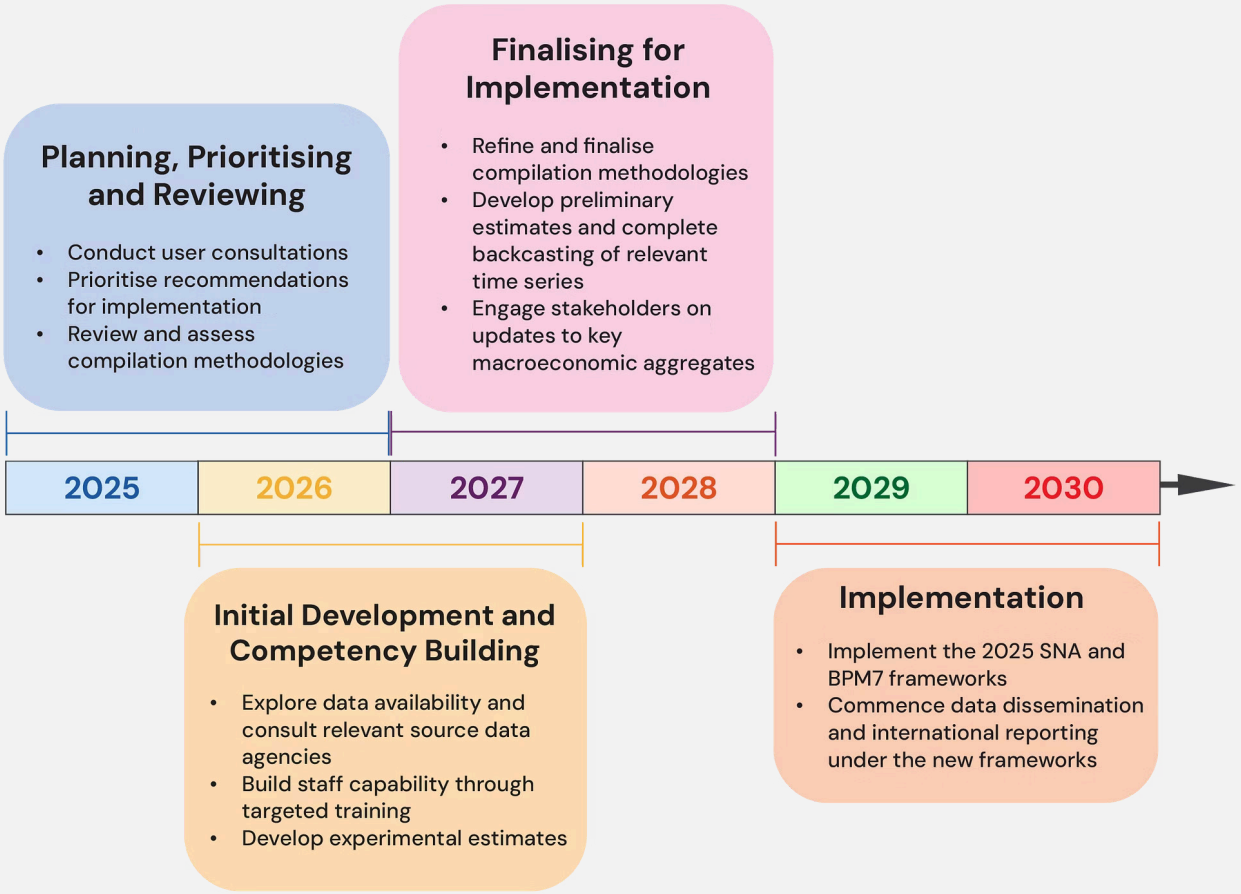


Improved Communication of Official Statistics

Improved communication of official statistics by encouraging the use of clear, simple language and transparent explanations of methodological changes to help users better understand and interpret official statistics.

Implementation Plan

The UNSC and IMF have developed a joint global strategy to synchronise the implementation of 2025 SNA and BPM7 between 2029 and 2030. Singapore is actively working to meet this global timeline through the following phased implementation plan:



Conclusion

The transition to the 2025 SNA and BPM7 represents a concerted effort to ensure that Singapore's national and international accounts remain relevant, dynamic, and adaptable to new phenomena in a rapidly changing global economy.

For National Statistics Offices, the path ahead involves careful implementation planning, capacity building and effective stakeholder and user engagement, so that official macroeconomic statistics continue to accurately reflect the evolution and structural shifts in the economy.

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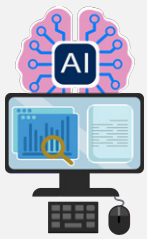
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Use of Artificial Intelligence to Extract Unstructured Data from Financial Statements

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Singapore Department of Statistics

Introduction



The Singapore Department of Statistics (DOS) adopts an Administrative-and-Big-Data-First strategy in the compilation of official statistics. Under this approach, administrative and other non-survey data sources are utilised where possible before conducting statistical surveys. This reduces respondent burden, lowers data collection costs, and supports the production of more timely and comprehensive statistics.

With technological advancements, DOS is exploring the use of Artificial Intelligence (AI) and Machine Learning (ML) to extract information contained in unstructured administrative data such as financial statements.

This article highlights DOS's development of Integrated Business Survey System (IBSS)Pro-AI, an AI-enabled system that automates the extraction of information from firms' financial statements to support the compilation of business statistics.

Extracting Valuable Insights from Financial Statements

Business statistics compiled by DOS rely extensively on administrative data, with a key source being the financial statements that firms submit to the Accounting and Corporate Regulatory Authority (ACRA).

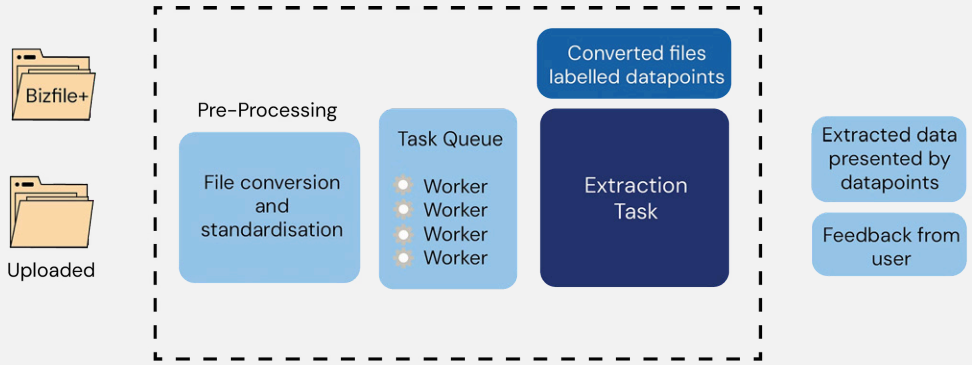
Since 2014, DOS has utilised financial statements filed in the eXtensible Business Reporting Language (XBRL) format — a structured and machine-readable way of reporting financial information. However, only selected variables are mandatory under XBRL reporting requirements, in which other detailed financial items required for statistical compilation are only available in the complete financial statements submitted in PDF or Rich Text Format.

These documents contain valuable information but are largely unstructured, making automated processing difficult. Prior to the adoption of AI-enabled solutions, case officers manually reviewed each financial statement and extracted the required information. Depending on the complexity of the financial statement, this process could take up to one hour per case.

Developing IBSS Pro-AI

In 2024, DOS developed IBSS Pro-AI to improve operational efficiency and further leverage administrative data. The AI-enabled system automates the extraction of information from financial statements, reduces the manual processing, and enhances the timeliness and comprehensiveness of business statistics. The extraction workflow in IBSS Pro-AI is illustrated in Figure 1.

Figure 1: IBSS Pro-AI Extraction Workflow



The workflow consists of three main stages.

Firstly, financial statements are ingested into the system and pre-processed daily for new files to be incorporated in a timely manner. During this stage, the documents are converted into a standardised machine-readable format using Optical Character Recognition, preparing them for subsequent analysis.

Secondly, IBSS Pro-AI applies a combination of rule-based extraction techniques and Natural Language Processing (NLP) to identify and retrieve relevant information from financial statements. Rule-based techniques leverage accounting conventions, semantic anchors and table layouts to efficiently identify variables. NLP complements this by recognising synonyms and variations, such as identifying 'Turnover' as 'Revenue', thereby improving the flexibility and accuracy of the extraction. Named Entity Recognition further enhance the process by recognising and labelling text such as dates, organisations, and currency.

Finally, the system incorporates a human-in-the-loop feedback mechanism where case officers validate the extracted information against the original financial statements and make corrections where necessary. These corrections are looped back into the system to refine extraction rules and improve extraction accuracy.

Validation rules are also integrated to ensure extracted values conform to defined guidelines such as ensuring variables like total assets or revenue are non-negative values. The system also provides export functionality to facilitate downstream statistical processing.

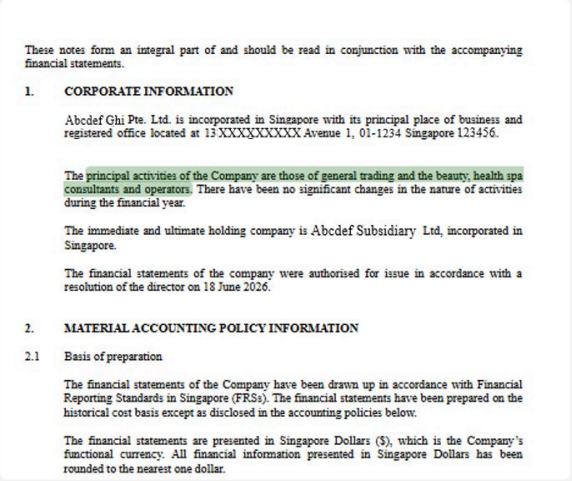
Enhancing Statistical Compilation with IBSS Pro-AI

IBSS Pro-AI has substantially improved the efficiency of processing firms' financial statements.

The system can extract more than 100 qualitative and quantitative variables including principal activity, detailed income, expenditure and fixed asset items commonly collected through DOS's Annual Industry Survey (Figure 2). By integrating extracted data into the statistical compilation process, IBSS Pro-AI has helped to reduce respondent burden and data collection costs.

Figure 2: Example of the Extracted Data from Financial Statement in IBSS Pro-AI

Firm's Financial Statement



These notes form an integral part of and should be read in conjunction with the accompanying financial statements.

1. CORPORATE INFORMATION

Abcdef Ghi Pte. Ltd. is incorporated in Singapore with its principal place of business and registered office located at 13 XXXXXXXXX Avenue 1, 01-1234 Singapore 123456.

The principal activities of the Company are those of general trading and the beauty, health spa consultants and operators. There have been no significant changes in the nature of activities during the financial year.

The immediate and ultimate holding company is Abcdef Subsidiary Ltd, incorporated in Singapore.

The financial statements of the company were authorised for issue in accordance with a resolution of the director on 18 June 2026.

2. MATERIAL ACCOUNTING POLICY INFORMATION

2.1 Basis of preparation

The financial statements of the Company have been drawn up in accordance with Financial Reporting Standards in Singapore (FRSs). The financial statements have been prepared on the historical cost basis except as disclosed in the accounting policies below.

The financial statements are presented in Singapore Dollars ($), which is the Company's functional currency. All financial information presented in Singapore Dollars has been rounded to the nearest one dollar.

Extracted Data in IBSS Pro-AI

	Extracted	
Company's Financial Year-end () Generic Level	2025-12-31	-%
Principal Activity () Generic Level	principal activities of the Company are those of general trading and the beauty, health spa consultants and operators	-%
Currency Reported () Generic Level	SGD	-%
Units Reported () Generic Level	Actual	-%
Current period start date () Generic Level	2025-01-01	-%

Operational efficiency has significantly improved. Previously, case officers typically spent up to one hour manually extracting information from a financial statement. With IBSS Pro-AI, officers can now validate approximately two to three financial statements within the same timeframe, allowing resources to be deployed more effectively while maintaining data quality.

Conclusion

By combining administrative data with AI and ML technologies, DOS has transformed a manual data extraction process into a more efficient and scalable workflow.

Looking ahead, DOS will continue the adoption of AI, including integrating Large Language Models to improve contextual understanding of complex financial statements to strengthen extraction accuracy of such document, and enhance the system's ability to interpret related information across different sections of a financial statement.



Strengthening Data Ecosystems for Effective Policymaking and Sustainable Development Goals Delivery

High Level Political Forum on Sustainable Development 2026
Side Event on Digitisation, Statistics, and Artificial Intelligence: A Path Towards Well-Informed Decision-Making
Keynote Address Delivered by **Dr. Koh Eng Chuan**, Chief Statistician, Singapore Department of Statistics

Introduction

The world faces a combination of challenges that are complex, interconnected and rapidly evolving. Key issues such as energy transitions, climate action, ageing population and economic uncertainty require governments to make timely, coordinated and evidence-based decisions.

At the same time, expectations of the Government have increased. At the micro level of service delivery, citizens expect public services to be responsive, targeted and effective. At the macro level of national planning and governance, policymakers need better information to understand what is happening and evaluate whether policies are effective.

The 2030 Agenda for Sustainable Development, the Pact of the Future, and the Global Digital Compact all recognise the importance of data, digital technologies and international partnerships in addressing global challenges.

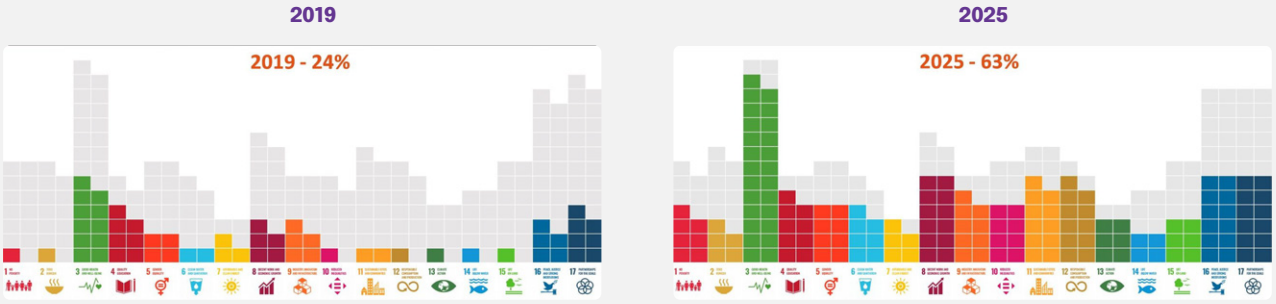
This piece discusses three issues:

1. **The data challenges facing the monitoring and delivery of Sustainable Development Goals (SDG)**
2. **The opportunities presented by digitalisation, administrative data, big data and Artificial Intelligence (AI)**
3. **The transformation of diverse data sources to official statistics, and policy insights for SDG monitoring and decision-making**

1. The SDG Data Challenge

The SDGs are ambitious and comprehensive. While countries have made substantial progress in strengthening their statistical systems since the SDGs were conceived in the early 2010s, significant data gaps remain. When Singapore began monitoring the SDGs in 2019, significant data gaps existed. Since then, steady progress has been made in closing these gaps and achieving coverage across more SDG Targets (Chart 1).

Chart 1: SDG Progress in 2019 and 2025



Several challenges are common across countries.

1. Timeliness

Traditional surveys and censuses are essential, but they can be costly and time-consuming. Policymakers often need information faster and more regularly than traditional data collection cycles allow.

2. Granularity

National averages can hide important differences between regions, socio-economic and population groups. In line with the SDG commitment of leaving no one behind, finely disaggregated data are needed to help identify vulnerable groups.

3. Data Fragmentation

Useful data available across government agencies and the private sector often remain undiscovered, disconnected and underutilised.

4. Resource Constraints

National Statistics Offices (NSOs) face increasing demand and expectations while expertise and budgets do not keep pace. Access to technology, AI, and infrastructure require investments that many countries find difficult to support.

2. New Opportunities from Digitalisation, Administrative Data and AI

As 2030 draws near, there is limited time for countries to close the gaps. Fortunately, the rise of big data, digital technologies, and AI presents an unprecedented opportunity.

NSOs today have access to more data than before. In addition to surveys and censuses, there are growing volumes of:



Administrative records



Geospatial and satellite data



Mobile and internet data



Digital and online transaction data

The challenge lies in understanding, acquiring, integrating, and developing the capability to govern and use these data effectively.

Administrative data is one of the most valuable yet underutilised resources available to governments. Such examples include:

1. **Education records**
2. **Health records**
3. **Business registers**
4. **Tax data**
5. **Utility databases**
6. **Social security systems**

Governments need to enable the integration and interoperability of these datasets to develop more timely and detailed indicators, while reducing reporting burdens and costs.

In Singapore, the Public Sector (Governance) Act (PSGA) was introduced in 2018 to harness the wealth of administrative data in government agencies, so that citizens can benefit from the Tell-Us-Once approach. Under the PSGA, the Singapore Department of Statistics (DOS) took on the role of a Trusted Data Intermediary, and was designated as the Trusted Centre for Individual and Business Data (DOS TC) to integrate, use and share administrative data. DOS is well-positioned with the wealth of experience and knowledge in data management built up over the decades. This expanded DOS's role and relevance, positioning itself as the trusted first stop for users to obtain data and data services quickly and securely.

AI presents unprecedented opportunities. With the right approach and resourcing, AI can help NSOs throughout the data production chain. For example, web scraping applications have evolved to capture both structured and unstructured data for statistical production. In 2022, a Digital Transformation Unit was established in DOS to explore the potential of AI and Machine Learning (ML) in statistical processes within controlled sandboxes. As the value of this work became evident, embedding these capabilities across the entire data value chain becomes essential. This led to the formation of the Data Products and Innovation Division in 2026, with a mandate to develop and scale digital and AI capabilities.

AI can now extract information from images and text, process large volumes of structured and unstructured data, help in coding, improve data quality checks, perform outlier detection, analyse trends and write reports, and overall accelerate the production of statistical outputs — functioning like junior statisticians.

At the same time, these technologies must be approached responsibly. Risks include data privacy and confidentiality concerns, misinformation and hallucination, cybersecurity vulnerabilities, and the loss of professional knowledge through over-reliance on AI systems.

As producers of official statistics, NSOs need to set the standards and methods, understand the processes and concepts, and ensure the quality of their outputs. Trust remains the foundation of any data ecosystem. Without it, data cannot effectively support policymaking or public confidence.

3. Building Strong National Data Ecosystems: Transforming Diverse Data Sources into Official Statistics

Use Case on Supporting SDG 3 - Good Health and Well-Being



Diverse new data sources can help close the data gap.

In Singapore, the SDG Indicator 3.2.1 (Under-5 mortality rate) is computed from the life tables derived using official death registrations. This provides a more complete and accurate measure of mortality than survey reporting.

Similarly, other NSOs and government agencies can combine vital registration data that universally captures key life events such as births, deaths, marriages and divorces, with hospital records, census data, and administrative population and dwelling registers. This integration proved valuable during the COVID-19 pandemic.

Where data gaps exist, AI and ML models are increasingly capable of integrating and creating network graphs with diverse data sources, incorporating socio-economic and geographical characteristics of the population to enable a more holistic picture of the healthcare landscape. As countries place greater emphasis on delivering quality healthcare, harnessing these capabilities allows governments to:

Better identify emerging healthcare challenges particularly in poorer neighbourhoods

Assess the effectiveness of healthcare policies and resource allocation

Deliver more targeted and personalised healthcare interventions for individuals and communities

New data sources and technology are enabling more robust and expanded monitoring of the SDGs. Mobile data can capture travel patterns, satellite imaging can identify land use patterns, and utilities data can help to determine population and dwelling coverage. The future of SDG monitoring will be dependent on the robustness and interoperability of national data ecosystems instead of a single dataset or institution. Four key elements are important:

Governance

Clear legal frameworks, data stewardship arrangements and responsible data-sharing mechanisms are essential.

NSOs are well positioned to take on a larger data stewardship role, given their experience as primary users of data for statistical production and in large database management.

Interoperability

Data must be able to move securely across systems through unique identifiers, common standards, consistent metadata and streamlined IT architectures.

NSOs need to partner their technology counterparts to modernise both the statistical agency and administrative data agencies to harness the full potential of these data.

Investments in Capabilities

Governments need to invest in statistical skills, data science expertise, digital literacy and AI capabilities.

NSOs may increasingly need to cultivate a new breed of data-stats engineers - professionals who can bridge the worlds of statistical rigour and modern data engineering.

Trust

Citizens must have confidence that their data are protected and responsibly used. NSOs need to be transparent in their methodology and in how data are used.

Additionally, NSOs must ensure that the data are produced in a timely manner, of good quality, and responsive to the needs of users to remain as a trusted source of data.

Conclusion

The potential benefits of a strong data ecosystem are within reach. By combining traditional data sources with administrative data, big data, geospatial information, digital technologies and responsible AI, NSOs can significantly improve the data available for policymaking and SDG monitoring and delivery.

To realise this potential, governments should invest in the right capabilities and ensure that innovation is accompanied by strong governance, robust safeguards and public trust. Concurrently, NSOs need to be innovative in their use of AI and digital tools, transparent in their methods and concepts, and comprehensive in the use of data.

Harnessing the wealth of existing data, transforming them to fit-for-purpose data and indicators, and ensuring their reusability requires a Whole-of-Government approach. This approach will result in better decisions, stronger institutions, and better outcomes for people.



The DOS Advisory Panel: Round-up of Discussions

by **Hya Ting Yu**
Communications and Engagement Division/ International Accounts Division
Singapore Department of Statistics

Introduction

The DOS Advisory Panel (DAP) was established in 2021 to provide strategic guidance and help ensure that the Department remains relevant and responsive to the diverse and evolving needs of data users. It has been a valuable platform for DOS to tap external expertise and perspectives amid a rapidly changing data and technology landscape. Over the years, the Panel has discussed a range of themes reflecting DOS's priorities - from digitalising statistical processes to harnessing new technologies and data sources and considering the wider role of National Statistics Offices in an increasingly complex data ecosystem (Figure 1).

Figure 1: The DAP Discussion Themes through the Years

2021

Digitalisation Across the Data Value Chain



2022

Challenges in the Post-Pandemic Era and Rise of the Digital Economy



2023

Data Stewardship and Governance in an Evolving Data Ecosystem and Measuring the Green Economy and Sustainability



2024

Technology Enablers for Digital Transformation of National Statistics Offices and Measuring Well-being Beyond GDP



2025

Extension and Expansion of Use of Registers/ Administrative Databases for Statistics Production and Role of Statistics and Data Leadership across the Whole-of-Government



2026

The Future of National Statistical Offices as National Data Offices: Meeting Evolving Needs, Using Advance Tech, and Building a Strong Presence



Bringing Together Diverse Expertise

Chaired by the Singapore Chief Statistician, Dr Koh Eng Chuan, the DAP comprised local and international members with expertise spanning official statistics, data science and technology, academia, financial services and sustainability (Figure 2). This diversity enabled DOS to examine emerging issues under varied lenses, drawing lessons from international and private-sector practices, and reflecting on their applications in Singapore's context.

Figure 2: The DAP Members from 2021 to 2026

Local Experts

Mr Sameer Gupta
Chief Analytics Officer,
DBS Bank, Singapore

Prof Ng See-Kiong
Professor of Practice, School of Computing
Director, Translational Research,
Institute of Data Science,
National University of Singapore,
Director, AI Technology, AI Singapore

Mr Benny Chan
Managing Director, Head of Group
Channels and Digitalisation,
United Overseas Bank, Singapore

Prof Ong Yew Soon
Endowed Yidan Professorship in Artificial
Intelligence,
Nanyang Technological University

Mr Lee Bing Yi
Partner, Sustainability & Climate Change,
Financial Services Assurance,
PwC Singapore

Foreign Experts

Dr Tom Smith
Managing Director, Data Science
Campus, Office of National Statistics,
United Kingdom

Dr Arthur Turrell
Acting Director, Data Science Campus,
Office of National Statistics,
United Kingdom

Mr Osama Rahman
Director, Data Science Campus,
Office of National Statistics,
United Kingdom

Prof Bertrand Loison
Vice Director General and Head of Data
Science Competence Centre
Swiss Federal Statistical Office,
Switzerland

Mr Gary Dunnet
Deputy Chief Methodologist,
Statistics New Zealand,
New Zealand

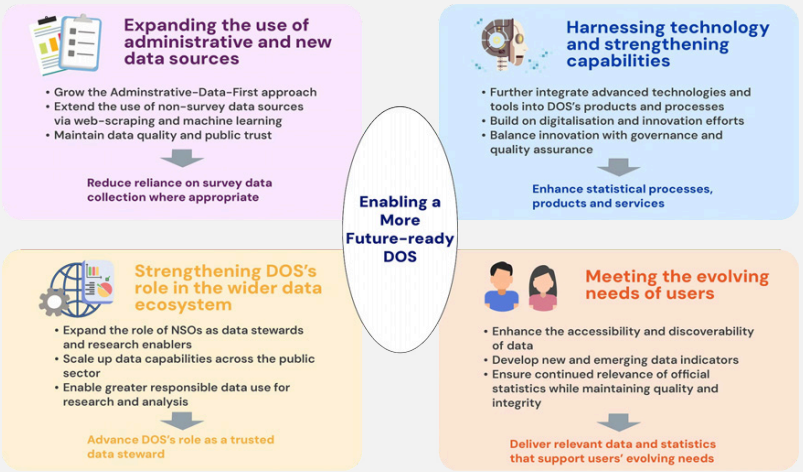
Mr Carsten Ulrik Zangenberg
Vice Director, Statistics Denmark

Ms Teresa Dickinson
Former Deputy Australian Statistician,
Australian Bureau of Statistics

Key Insights and Outcomes from the DAP

The DAP offered a forum for DOS to bounce off ideas, challenge assumptions and learn from the expertise and best practices of advanced statistical agencies, academia and the private sector. In the areas of technology and AI, the continual conversation has helped inform and reinforce DOS's development over the years (Figure 3).

Figure 3: DOS's Initiatives and Priorities Discussed at the DAP



Reflecting and Looking Ahead

Looking across the Panel's six-year journey, a consistent message has been the need for official statistics to evolve while preserving the qualities that make them trusted. New technologies and data sources offer significant opportunities, but also bring new considerations around data quality, governance, capabilities and public trust.

The DAP also underscored the broader role that NSOs can play beyond producing statistics. Statistical agencies can add value through their expertise in bringing together data, establishing standards, enabling responsible data use and supporting users in deriving meaningful insights.

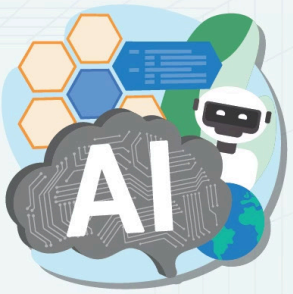
For DOS, the DAP offered a platform to look beyond immediate priorities, draw lessons from international and private-sector practices, and assess how new approaches could be adapted to Singapore's circumstances. These insights will continue to guide DOS as we respond to new developments and changing user needs, as well as prepare for the future of official statistics.

DOS expresses its appreciation to all panel members for sharing their knowledge, insights and perspectives, which have enriched the discussions and contributed to DOS's development over the past six years.

MEASURING ARTIFICIAL INTELLIGENCE (AI)

INTERNATIONAL EFFORTS & RECENT DEVELOPMENTS

AI is rapidly transforming businesses, workplaces and economies, creating a growing need for reliable statistics on its **adoption**, **investment**, and **economic & social impacts**. International organisations and National Statistics Offices (NSOs) are actively developing concepts, indicators and methodologies to improve the measurement and comparability of AI-related statistics.



WHAT TO MEASURE?

ADOPTION & USE	INVESTMENT	WORKFORCE & SKILLS	ECONOMIC & SOCIAL IMPACTS
Which firms and workers are using AI, what types of AI are they using, and where is AI being applied?	How much are firms investing in AI technologies, software, services, data and related infrastructure?	How is AI changing jobs and skills, and how are firms building AI and workforce capabilities?	How is AI contributing to firm-level productivity, innovation and economic growth, and what are its wider social impacts?

WHY IS AI DIFFICULT TO MEASURE?

Like the technological and Internet of Things (IoT) revolution, AI is changing how people and organisations work, while rapidly evolving and transforming productivity and the workforce in different ways. This gives rise to three key measurement challenges.

RAPID CHANGE	DIVERSE APPLICATIONS	DIFFERENT USE CASES
AI technologies and their uses evolve quickly, making measurement frameworks harder to keep up to date.	AI is used across many activities. E.g., customer service, data analysis, manufacturing and research.	Firms may build AI themselves, buy AI services, or use products with embedded AI, making AI difficult to track.

INTERNATIONAL EFFORTS

International statistical work on AI measurement is **active but still evolving**, spanning the development of common concepts, indicators, metadata and data collection approaches to measure the broader economic contribution of AI and its impacts. Given the many dimensions of AI, measurement will likely draw on **multiple indicators and data sources**.

UNITED NATIONS TASK TEAM ON DIGITALISATION

Developing Comparable AI Business Indicators

The task team is working with international organisations and NSOs to develop **business indicators that improve the measurement of AI,** as part of broader efforts to strengthen the measurement of digitalisation in macroeconomic statistics. This work is complemented by ongoing international initiatives to develop guidance for measuring AI through Information and Communication Technology surveys.

NATIONAL STATISTICS OFFICES

Exploring Broader Measures

Some NSOs are **going beyond measuring AI adoption and use**. For e.g., the United States (US) Bureau of Economic Analysis is developing experimental estimates to measure the size of the US AI economy, while the United Kingdom's (UK) Office for National Statistics is developing a thematic account to estimate AI's contribution to the UK economy.

SINGAPORE'S APPROACH

Singapore measures AI from different perspectives. National surveys and newer initiatives from government agencies like the Infocomm Media Development Authority and the Ministry of Manpower examine:

- AI adoption and use among enterprises and workers
- Depth of firm's AI adoption
- Productivity and workforce outcomes
- Barriers to adoption and capability building

Recent research has also drawn on alternative data sources, such as the Ministry of Energy, Trade and Industry's study using **online job postings linked to administrative data** to measure firm-level AI use and its effects on firm performance and employment.

As AI measurement continues to evolve, the Singapore Department of Statistics will monitor and contribute to international developments and strengthen local data sources and measurement methods.



HOW COMMON IS YOUR BIRTHDAY?

Rank of Count

Most Common 1 366 Least Common

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	32	136	30	362	356	20	27	15	22	9	5	14
2	223	59	181	153	275	119	271	30	93	77	37	64
3	62	212	19	178	123	181	264	167	165	130	148	316
4	98	350	325	283	311	340	199	353	259	194	283	298
5	55	259	273	211	16	301	207	174	126	104	93	67
6	63	321	153	156	185	7	316	194	161	174	181	91
7	173	196	110	301	227	242	11	253	139	242	50	167
8	122	114	23	178	88	33	59	6	50	157	18	144
9	222	307	84	303	251	254	343	114	4	217	161	229
10	229	104	196	191	123	106	189	345	17	1	110	178
11	24	351	254	174	161	293	108	280	170	108	2	342
12	64	147	220	119	136	66	98	207	58	27	91	3
13	309	341	319	233	348	278	286	361	132	351	327	316
14	337	24	327	335	357	283	247	309	53	264	218	298
15	349	97	167	257	152	338	132	140	81	110	77	225
16	233	271	307	331	190	161	181	106	53	85	37	148
17	93	298	273	261	207	359	114	291	82	35	98	270
18	12	114	170	43	70	44	153	24	46	10	47	44
19	241	236	347	229	203	319	159	321	29	213	264	191
20	170	69	248	114	140	286	268	196	52	59	101	68
21	204	315	165	236	334	144	157	311	39	73	135	102
22	136	8	77	188	236	119	102	144	75	71	13	242
23	236	275	57	306	140	333	204	185	48	85	201	236
24	275	242	261	242	248	282	185	291	177	126	295	359
25	140	343	295	129	77	314	227	229	72	48	132	364
26	293	305	225	218	204	321	130	223	41	35	327	355
27	269	286	248	258	286	220	110	338	39	201	207	279
28	150	123	41	213	199	75	280	21	33	126	89	159
29	325	366	267	251	263	286	213	82	87	213	96	363
30	346		55	254	295	233	358	74	311	191	327	332
31	321		303		354		335	90		150		365

Note: Based on total number of births between 2016 and 2025

Here's what we observed based on births data between 2016 and 2025:

- **10 October (10/10), 11 November (11/11) and 12 December (12/12)** were the top 3 most common birthdays. These are repeater dates (where the day and month share the same number) which appear to be favourites, with 6 appearing among the top 10.
- **September and October** were the most common birth months.
- The **1st of the month** was the most common birth date, while the **31st was the least common**, as only 7 months have 31 days.
- Excluding leap year babies born on 29 February, which occurred thrice during the reference period, the **least number of births** fell on **Christmas Day (25 December)** and **New Year's Eve (31 December).**

INTERACTIVE DASHBOARD ON

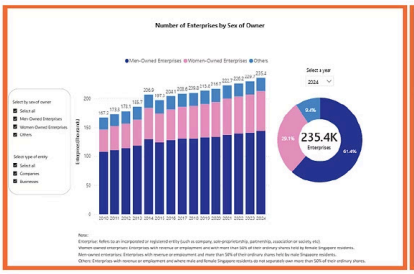
RESIDENT-OWNED ENTERPRISES BY SEX OF OWNER

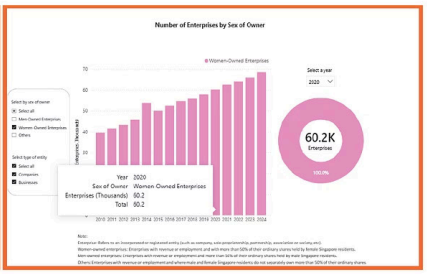
IS NOW AVAILABLE!

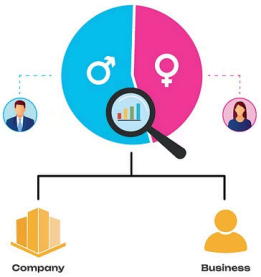


1 ENTERPRISE COUNT

Explore how enterprise ownership is distributed across sex and entity type

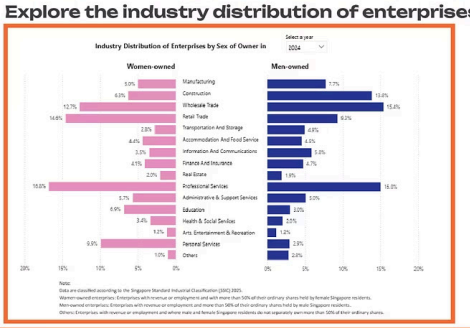






2 INDUSTRY DISTRIBUTION

Explore the industry distribution of enterprises by sex of owner





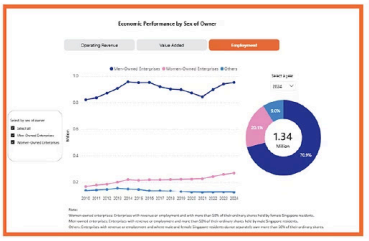
3 ECONOMIC PERFORMANCE

Explore how economic outcomes vary across enterprises by sex of owner









Revenue Value-added Employment

Explore the Dashboard

SINGAPORE IN FIGURES

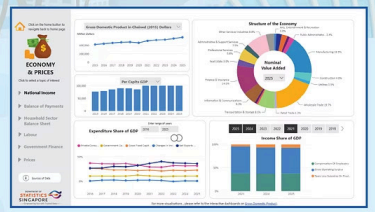
Explore the latest economic and socio-demographic data trends through interactive dashboards today!

Key Indicators



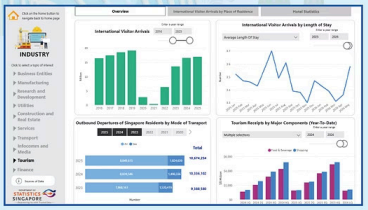
- Economy
- Socio-Demography

Economy and Prices



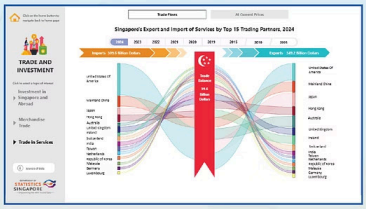
- National Income • Balance of Payments
- Household Sector Balance Sheet • Labour
- Government Finance • Prices

Industry



- Business Entities • Manufacturing
- Research and Development • Utilities
- Construction and Real Estate • Services
- Transport • Infocomm and Media
- Tourism • Finance

Trade and Investment



- Investment in Singapore and Abroad
- Merchandise Trade
- Trade in Services

Population and Households



- Population Structure
- Marital Status, Marriages and Divorces
- Births and Fertility
- Deaths and Life Expectancy
- Households • Education

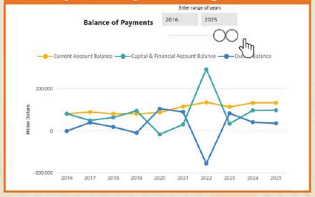
Society

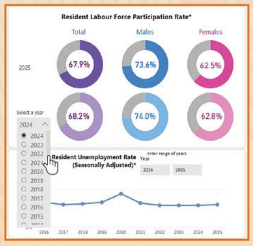


- Culture and Recreation
- Environment
- Health

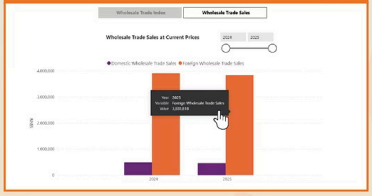
Interactive Features at a Glance

Select and view data by year or year range

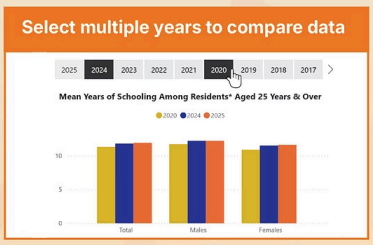




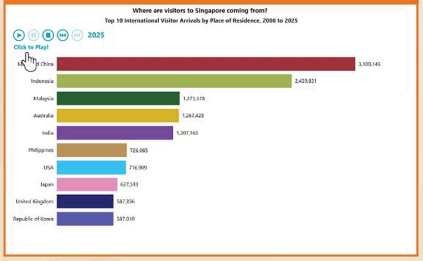
Hover over chart for information



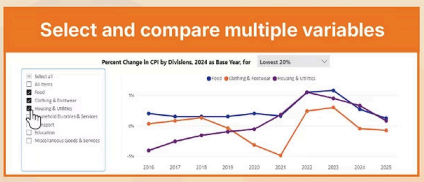
Select multiple years to compare data



Click to play animated chart



Select and compare multiple variables



Explore the Dashboards

Overseas Visitors

From April to September 2026, the Singapore Department of Statistics (DOS) hosted study visits by teams from Portugal and Tanzania. DOS also hosted online sharing sessions with teams from Mongolia, Philippines and United Arab Emirates as well as joint sessions with the ASEAN Secretariat's ASEAN Statistics Division.

National Statistics Office of Mongolia

Team led by **Mr. Erdenemunkh Tsenkherbor**, Director-General, Information Technology and Data Engineering Department

Philippine Statistics Authority

Team led by **Mr. Jing B. Jalisan**, Assistant National Statistician of the Information Technology and Dissemination Service

Sharing Sessions under the ASEAN-Help-ASEAN Framework

National Statistical Offices of ASEAN Member States

National Bureau of Statistics, Office of Chief Government Statistician - Zanzibar, Ministry of Finance, Ministry of Communication and Information Technology, Prime Minister's Office - Regional Administration and Local Government, Ministry of Foreign Affairs and East Africa Cooperation of Tanzania

Team led by **Dr. Amina Suleiman Msengwa** – Statistician General

Centre for Public Policy Planning and Evaluation, Portugal

Team led by **Mr. Pedro Saraiva**, Director

Abu Dhabi Department of Health

Team led by **Mr. Mohamed Abdalla Hassan Ali Alhosani** - Acting Executive Director Government Programs Sector

Embassy of the People's Republic of China

Team led by **Ms. Wang Nan**, First Secretary, Economic and Commercial Office

Public Administration and Constitutional Affairs Committee (PACAC) of the United Kingdom Parliament

Team led by **Mr. Simon Hoare**, Member of Parliament, Chair of the PACAC

Expertise Sharing at International and Regional Fora

DOS shared our expertise in the following international and regional fora from April to September 2026:

International Fora

- United Nations (UN) High-Level Political Forum on Sustainable Development

  Represented by **Dr. Koh Eng Chuan** (DOS's Chief Statistician) as the key guest speaker at the side event on Digitisation, Statistics, and AI: A Path Towards Well-informed Decision-making

- UN Statistics Division (UNSD) and UN Statistical Institute for Asia and the Pacific (SIAP) Collaboration Webinar on Using Administrative Data for Statistics Production

  Presented by **Tan Yeow Lip** (Deputy Director, Household, Income and Population Division) on *Singapore's Administrative Data Sharing Arrangements*

- UN Committee of Experts on Business and Trade Statistics Bureau Meeting

  Represented by **Cui Hui Min** (Deputy Director, Business Statistics Division) and discussed on Singapore's experience in multi-source data integration and integrating business & people data in the Statistical Business Register, presented on *Task Team on Statistical Business Registers - Progress Update* on the progress update and work plan of the task team and presented on *SBR Research Group on Data Integration* on the progress update and proposed outline of the Guidance Note on Data Integration in the Statistical Business Register

- UNSD Webinar The AI-Powered Census: Applications for the 2030 Round

  Presented by **Sally Lim** (Deputy Director, Household Surveys and Expenditure Division) on *Singapore Department of Statistics' Virtual Assistant in Census of Population 2020* and presented by **Chua Yi Xin** (Manager, Communications & Engagement Division) on *Statistics ANd Data Retrieval A.I. Assistant (SANDRA)*

- 40th Meeting of the Voorburg Group on Services Statistics

  Presented by **Chan Zi Qi** (Assistant Director, Prices Division) on *Development of the Experimental Health Services Producer Price Indices (SPPI)*

- 20th International Association for Official Statistics Conference

  Presented by **Lynn Zhang** (Manager, Business Statistics Division) *on Use of Artificial Intelligence to Extract Unstructured Data from Financial Statement*

Regional Fora

- UN Economic and Social Commission for Asia and the Pacific (UNESCAP) Asia-Pacific Stats Café Series

  Represented by **Dr. Koh Eng Chuan** (DOS's Chief Statistician) as a panel member for the discussion on *Building Trust in Official Statistics in a Digital Society*

- UNESCAP, SIAP and the ASEAN Secretariat Collaboration Webinar Series on Digitalisation in the 2025 System of National Accounts

  Presented by **Mok Siew Fen** (Senior Assistant Director, Input-Output Tables Division) on *Singapore's Journey in Measuring the Digital Economy*

- 32nd Meeting of the ASEAN Community Statistical System (ACSS) Sub-Committee on Planning and Coordination (SCPC)

  Represented by **Priyadharshini Navaratnam** (Director, Communications & Engagement Division) and presented by **Cheng Ze Ying** (Senior Assistant Director, Communications & Engagement Division) on *Updates on Singapore's ACSS Chairmanship 2027*

- 24th Meeting of the ASEAN Working Group on Data Sharing, Analysis, Dissemination and Communication of Statistics (WGDSA)

  Presented by **Wong Pui Mun** (Senior Manager, Communications & Engagement Division) *on Inclusion of Readily Available Statistical Key Outcome Indicators of the ASEAN Economic Community (AEC) Strategic Plan 2026–2030 in the ASEAN Statistical Indicators Consolidated Template (ASI-CT),ASI-CT Section J2 - Proposed Updates to Education Indicators, Review of the ACSS Committee Open Data Index* and *Schedule of ACSS Committee, ACSS SCPC and Working Group Meetings hosted by Singapore DOS in 2027.*

- 40th Meeting of the Working Group on International Investment Statistics

  Presented by **Ng Dong Yang** (Senior Assistant Director, International Accounts Division) and **Josie Ng** (Statistician, International Accounts Division) on *Singapore's Foreign Direct Investment Statistics Workplan 2026 and Methodology for the Estimation of Foreign Direct Investment by Type*

- 13th Meeting of the ASEAN Working Group on Statistics of International Trade in Services

  Presented by **Teo Zhiwei** (Senior Assistant Director, International Accounts Division) on Singapore's International Trade in Services Workplan 2026

Hear from Our Officers on Their International Statistical Involvement

Lynn Zhang
Business Statistics Division

Transforming Statistical Production with AI: Singapore's Experience at the International Association for Official Statistics (IAOS) Conference

The Singapore Department of Statistics (DOS) makes use of a wide range of data sources for the compilation of official statistics, prioritising the use of administrative and other non-survey data sources where possible. Greater use of such data reduces respondent burden and data collection costs, while supporting the production of more timely and comprehensive statistics. With advances in Artificial Intelligence (AI) and Machine Learning (ML), there are opportunities to further leverage administrative data by extracting information from unstructured sources that traditionally require manual processing.

IAOS Conference panel on "Data Sources for AI", featuring DOS' representative and international experts from Croatia and Brazil

The 20th IAOS Conference**,** themed "Navigating the Data Revolution: Innovations and Impact in Modern Statistics", was held from 12 to 14 May 2026 in Vilnius, Lithuania, with participation from DOS. The conference brought together statisticians, policymakers, researchers and data experts from around the world to exchange experiences on contemporary challenges and innovations in official statistics, including the integration of administrative, survey and other data sources and the application of emerging technologies in statistical production.

DOS contributed to the international discussions by sharing its experience in using AI to reduce the manual effort involved in data collection for business statistics. DOS presented **IBSS-Pro AI**, an AI-enabled system that automates the extraction of information from firms' financial statements to support the compilation of business statistics. Financial statements contain detailed information required for statistical compilation but are largely unstructured, which traditionally requires case officers to manually review the documents and extract the relevant information. DOS's sharing provided a practical reference for other National Statistical Offices (NSOs) to explore the use of AI to improve the efficiency of data collection and processing.

DOS's sharing on Integrated Business Survey System (IBSS) Pro-AI at the IAOS Conference



DOS also gained insights from international experts on how advancement in AI could further enhance the extraction of information from financial statements. Participants shared on more advanced AI approaches, including the use of Large Language Models (LLMs), providing useful references for DOS as it explores ways to improve the accuracy and efficiency of data extraction. The conference also provided insights into emerging developments such as Agentic AI and the responsible application of AI in official statistics. These international exchanges provide useful guidance on DOS's ongoing efforts to explore new applications of AI in statistical production.

Through its participation in the IAOS Conference, DOS was able to share Singapore's experience in applying AI to improve statistical processes while learning from developments in other statistical organisations. DOS will continue to engage actively in international platforms to keep abreast of emerging developments, exchange best practices and contribute Singapore's experiences to the global statistical community.