

Our Compass in a Complex World



*The world is changing rapidly and we are
“preparing for the road ahead”*

Lim Boon Heng
Chairman, Temasek

[→ Read our Chairman's message](#)

[→ Download Temasek Review 2023 – full version](#)

i The world is rapidly changing. We must stay agile and adaptable in order to anticipate emerging trends. As part of our T2030 strategy, we have identified six key issues — challenging economic environment, geopolitical events, rising protectionism, climate change, cyber risks, and Industry 4.0 — that pose current and future challenges and opportunities.



Resilient & Forward Looking Portfolio



Sustainability at the Core



Temasek Operating System



Organisation, Talent & Capabilities



Our T2030 strategy guides us to navigate a volatile, uncertain, complex, and ambiguous world.

- Understand the six top-of-mind issues we have identified
- Learn more about the strategic pillars that make up our 10-year roadmap

i Temasek staff brainstorming about the current and future challenges and opportunities in this volatile operating environment

We ended the year with a net portfolio value of S\$382 billion;

And continue to invest in line with our long term structural trends, to build a resilient and forward looking portfolio.

→ [Find out how we invest today, with tomorrow in mind](#)

→ [Get an update of our investment activities](#)

S\$382b

Net portfolio value

63%

Exposure to Asia

-5.07%

One-year return to shareholder

14%

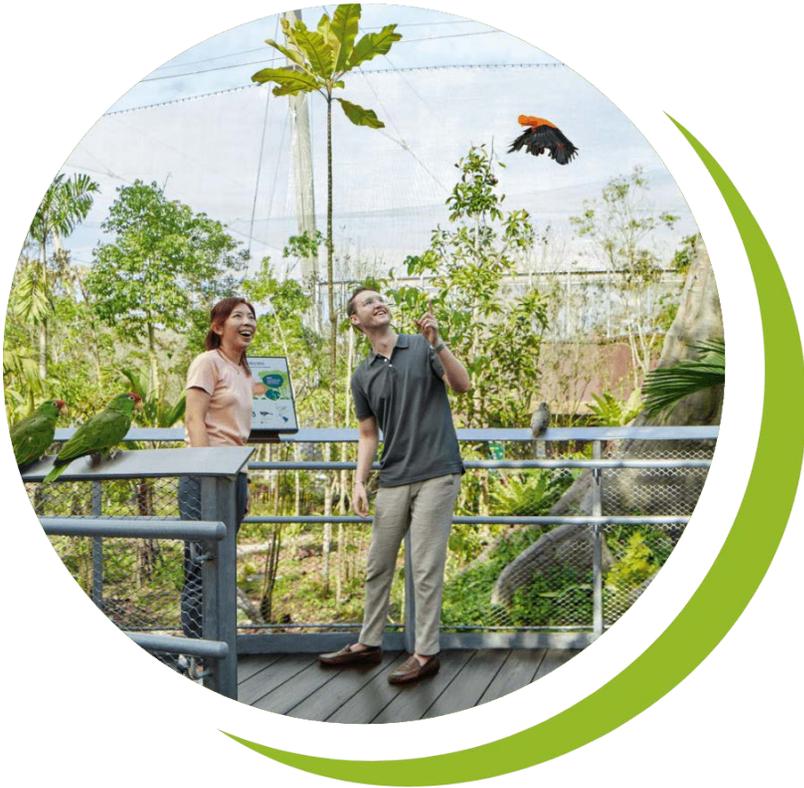
Total shareholder return since inception

S\$31b

Invested during the year

S\$11b

Dividend income



Sustainability is an ongoing journey. We are committed to embedding it in all that we do, from taking sustained action to combat the climate crisis to building a more inclusive and equitable society.

- Learn about our sustainability journey and the progress made in recent years
- Understand how we strive for a climate positive world, while achieving sustainable value over the long term

We are building future-centric capabilities within the organisation and across our ecosystem to embrace a rapidly changing world.

- Find out how we enable innovation and growth across our ecosystem
- Learn more about how we are building a future-ready team



i Temasek staff utilising technology in their work to increase efficiency and collaboration between teams



By creating value for all stakeholders, we seek to contribute to the progress, cohesion, and resilience of our communities.

- Find out how we are growing alternate talent to create a more socially inclusive workforce
- Learn about our efforts to generate positive impact for the underserved

i Temasek hosted 320 socially isolated seniors from Lions Befrienders for a day of fun and games during our 2022 edition of Community Day, as part of our long-standing tradition to celebrate Temasek's incorporation by giving back to our communities

So every Generation prosper

Our Purpose guides us to make a difference, by actively shaping and boldly building a better tomorrow for today's and future generations.

→ [Read more about the principles that underpin why we do what we do](#)





Overview

Moving Ahead with Purpose

In a volatile era, we must anticipate not just the road ahead,
but what lies around the corner.

It is crucial to have a viewpoint on what the world will be like.

We have identified six top-of-mind issues —
challenging economic environment, geopolitical events, rising protectionism,
climate change, cyber risks, and Industry 4.0.

Against this backdrop, we continue to move ahead with our T2030 strategy,
which serves as Our Compass in a Complex World.

We deploy catalytic capital to deliver sustainable value over the long term.
As a networked organisation, we will collaborate with partners to scale our impact.

To do well, do right, and do good, as we work towards our Purpose —
So Every Generation Prospers.



Overview

From Our Chairman

Our T2030 strategy serves as our compass in a complex world and guides us to our North Star, our Purpose.

We live in a volatile, uncertain, complex, and ambiguous world. 2022 has been the most challenging year for markets over the last decade. It started with optimism, with the clouds of the pandemic clearing, but shocks on multiple fronts soon followed.

We are seeing unprecedented rate hikes by central banks, sticky inflation, contemporaneous declines in equity and bond markets, and banking stresses in the US. This is happening even as the effect of earlier events — the global pandemic, the Russia-Ukraine war, and supply chain disruptions — continue to be felt. We are also seeing new trends such as the emergence of generative Artificial Intelligence, with implications across the political, social, and economic spheres. This is taking place against a backdrop of restrictive macro policy, lower growth, and a highly polarised geopolitical environment. At the same time, climate change remains an existential threat and time is running out to address it.

These challenges underscore the need for dialogue and understanding between nations, and for the public and private sectors to work together. Companies and governments can no longer sit on the sidelines. All of us must play an active role in solving shared global challenges as businesses cannot succeed unless societies thrive.

Having a strong and clear purpose enables companies to stay true to their course. Temasek's Purpose — So Every Generation Prospers — is our North Star. Our Purpose is embedded in everything we do and ensures we do our part to build a better, more inclusive, and sustainable world.

Portfolio Performance

Amidst the uncertainty in global markets, we slowed down our investment pace, and invested S\$31 billion and divested S\$27 billion in the financial year ended 31 March 2023, with a net investment of S\$4 billion. This is compared to our net investment of S\$24 billion in the last financial year.

As at 31 March 2023, our net portfolio value was S\$382 billion, down S\$21 billion from the previous year, largely due to a fall in the valuation of global equities, both in the private and public markets. Our Singapore portfolio remained resilient.

One-year Total Shareholder Return (TSR) was -5.07%. Our longer term 10-year and 20-year TSRs were 6% and 9% respectively. TSR since inception in 1974 was 14%.

The resilience of our portfolio remains our core strength. We will continue to shape our portfolio in line with long term structural trends, with the aim of achieving sustainable returns over the long term.

S\$382b
Net portfolio value
as at 31 March 2023

S\$31b
Invested
for the year

S\$27b
Divested
for the year



Temasek Review 2023

Navigating Uncertainty

The global economy remains fragile. Geopolitical tensions have continued to intensify on several fronts such as US-China tensions and the effects of the Russia-Ukraine war. [Monetary policy](#) remains tight globally as inflation stays elevated, although that has started to moderate which should result in central banks slowing down the pace of tightening. Global growth is likely to slow down. [Recession risks](#) are looming in key developed markets, which could be exacerbated by a culmination of shocks. These include the earlier banking stress that resulted in a slowdown in loan growth, particularly in the US.

In the US, the labour market has remained relatively tight. Hence, underlying inflationary pressures remain high. The Federal Reserve is therefore expected to [keep monetary policy at current restrictive levels](#) for longer. We are now seeing clearer signs of a more meaningful economic slowdown. This is due to the lagged impact on the economy from the Fed's aggressive pace of monetary policy tightening since 2022 and tighter credit conditions following issues with regional banks. This also raises the risk of a recession later this year. However, should a recession happen, healthy private sector balance sheets suggest less need for households and corporates to reduce debt, which should help minimise the length and negative impact of a recession.

The Eurozone experienced a growth boost as [gas prices fell](#) on the back of an unusually warm winter. However, the material tightening in credit conditions which has continued to worsen are headwinds to growth. We therefore expect a slowdown in the Eurozone in 2023. Nevertheless, we believe opportunities can be found in quality investments that can withstand economic downturns, and sectors that will see an acceleration in capital spending due to business transformation and the green transition.

China's top leadership has set a goal of [around 5% economic growth for 2023](#), which appears achievable as the domestic economy reopens after COVID-19 restrictions. Services and consumption are expected to drive growth, fuelled by pent-up demand in the initial phase of the recovery. However, uncertainties remain on the sustained strength of the recovery in terms of job market improvement and income growth. A slowdown in foreign direct investments into the Chinese economy over the last few years has impacted economic growth. The government's policy support is likely more modest than previous years, given the conservative growth target that is likely to be met, while high leverage limits the possibility of more aggressive policy easing.

In the near term, Singapore faces [slowing global growth and elevated inflation against a challenging macro backdrop](#). While China's reopening could provide some support, the Singapore economy is geared more towards domestic demand in developed markets, which are likely to experience a recession. Adding to the complexity, geopolitical tensions have risen, although Singapore could stand to benefit from diversification of supply chains around the region, both in the near and medium term.

Preparing for the Future

The world is changing rapidly and we are preparing for the road ahead. To this end, in 2019, Temasek developed our [T2030 strategy](#) — our 10-year roadmap to guide our strategic planning, capability building, and institutional development initiatives.

One of the key pillars of our T2030 strategy is building a [resilient and forward looking portfolio](#) that is able to withstand exogeneous shocks and perform through market cycles, while at the same time focusing on growth opportunities with the [potential for higher returns](#).

Over the past year, we continued to invest into opportunities that align with long term structural trends and [engaged our large Singapore portfolio companies](#) to seize opportunities of the future. Meanwhile, we also de-risked certain positions that we assessed as facing major headwinds.

Our T2030 strategy guides our strategic planning, capability building, and institutional development initiatives.

During the year, the merger of Sembcorp Marine and Keppel Offshore & Marine was completed, leading to the formation of [Seatrium](#), a global player in offshore renewables, new energy, and cleaner offshore and marine solutions. We took part in [SATS' S\\$0.8 billion rights issue](#) to partially fund the strategic acquisition of [Worldwide Flight Services](#), which will transform SATS from a regional into a global air cargo handling platform. [Olam Group](#) completed the US\$1.24 billion sale of a substantial minority stake in [Olam Agri](#) to [Saudi Agricultural and Livestock Investment Company \(SALIC\)](#), and Olam Agri entered into a strategic supply and cooperation agreement with SALIC. The transaction unlocks significant value for shareholders and accelerates Olam Agri's growth.

Temasek, as an asset owner, seeks to deliver [sustainable returns over the long term](#). While there are inherent [risks](#) whenever we invest, we believe that we have to invest in new sectors and emerging technologies to understand how these areas may impact the business and financial models of our existing portfolio, and whether they would be drivers of future value in an [ever-changing world](#). This is why we invest in early stage companies.

We seek to deliver sustainable returns over the long term.

With FTX, as alleged by prosecutors and as admitted by key executives at FTX and its affiliates, there was fraudulent conduct intentionally hidden from investors, including Temasek. Nevertheless, we are disappointed with the outcome of our investment, and the negative impact on our reputation.

An independent team has conducted an internal review of the investment and the findings were directly presented to the [Board Risk & Sustainability Committee](#) and to our Board. Although there was no misconduct by the investment team in reaching their investment recommendation, the investment team and senior management, who are ultimately responsible for investment decisions made, took collective accountability and had their compensation reduced.

Striving for a Sustainable World

We live in a time where humanity and businesses are being challenged in unprecedented ways through the confluence of Environmental, Social, and Governance (ESG) issues. These disproportionately impact the most vulnerable and add to complexities. Our long term stability and success against such a backdrop depend on thriving societies and cohesive, resilient communities. Our [stewardship role](#) means that we have a responsibility to protect our planet, as well as uplift communities by contributing towards a more equitable and inclusive future. As part of our ESG considerations, we also expect our portfolio companies to abide by sound [corporate governance](#) and to act ethically always.

We place [sustainability at the core](#) — from our mandate to deliver sustainable value over the long term, to our strategy of how we operate as an [institution](#), [shape our portfolio](#), and [engage our portfolio companies](#) to build sustainable businesses. We seek to build a resilient and inclusive Temasek by developing our people, capabilities, and processes around sustainability, good governance, and a strong set of [values](#).

We expect our portfolio companies to abide by sound corporate governance and to act ethically always.

[Climate change](#) is arguably the biggest crisis of our lifetime, and the pathway to limit warming to 1.5 degrees Celsius (1.5°C) is fraught with many difficulties. The positive momentum for the transition to net zero created at the United Nations' COP26 conference in 2021 has been temporarily curtailed by geopolitical events, notably the Russia-Ukraine war. Countries have to now balance between the twin strategic interests of energy security and climate change.

However, although these events have reignited demand for coal and other fossil-based energy in the short term, they have concurrently spurred the push for green alternatives and an accelerated energy transition to address energy security and affordability. What is clear is the need for both developed and emerging markets to step up diversification of the energy mix — from renewables to nuclear energy — to bolster energy security while reducing carbon emissions. Greater funding is also needed to [develop, commercialise, and scale](#) carbon sequestration and [technology-enabled decarbonisation solutions](#), to ultimately accelerate the transition of the real economy from grey to green.

At the same time, COP15 — the [Biodiversity COP](#) — last year brought to the fore the importance of nature conservation and restoration. We cannot achieve net zero by 2050 if we do not take swift actions to conserve and restore nature before 2030. We cannot halt and reverse nature loss if we are not successful in limiting global warming.

We accelerated our efforts to invest in climate-aligned opportunities.

As a company, we uphold our commitment to carbon neutrality, and have been [carbon neutral for the fourth year running](#). We remain committed to our target to reduce the net carbon emissions attributable to our portfolio to half the 2010 levels by 2030, as we aim for [net zero emissions by 2050](#).

Over the year, we [accelerated our efforts](#) to invest in climate-aligned opportunities, to enable carbon negative solutions and to encourage decarbonisation efforts in businesses. We have stepped up investments to scale innovative green solutions, and leaned in to accelerate the transition of incumbent companies. For example, we are part of a consortium led by [Brookfield Renewable Partners](#) that signed a binding agreement to acquire [Origin Energy's](#) Energy Markets business, an Australian integrated power generator and energy retailer. The acquisition will accelerate decarbonisation of the energy grid, retire coal generation responsibly, and enable the energy transition in Australia.

Expanding our Footprint

To better access investment and partnership opportunities, and enhance our stakeholder engagements in Europe, we [announced plans to open an office in Paris](#). This will complement our London and Brussels offices to strengthen Temasek's network in Europe, extend our global footprint, and grow our [talent pool](#) across both the European Union and the broader Europe, Middle East, and Africa region. Our new Paris office will bring our total number of [office locations](#) to 13 across 9 countries.

Our Purpose — *So Every Generation Prospers*

In last year's message, I shared that the Temasek team collectively defined our Purpose in the statement "[So Every Generation Prospers](#)". Our Purpose serves as a single, unifying pledge that encapsulates who we are, and why we do what we do.

Temasek finds its purpose in being a provider of catalytic capital to help create value and generate returns and outcomes across the four dimensions of financial, human, social, and natural capital. We provide financial capital to invest in innovation and growth; human capital to invest in human potential; social capital for social progress that will build resilience in societies; and natural capital to protect our planet for future generations.

Having a Purpose will ensure that we stay true to our mission despite the challenges we face.

We are facing an uncertain future. Having a Purpose, underpinned by our [values](#), culture, and behaviours, will ensure that we stay true to our mission despite the challenges we face.

In Appreciation

I am proud of our Temasek team for staying resilient in an extremely challenging year. They have shown incredible adaptability and stayed true to our Purpose.

As always, [our international and regional advisors](#) have been generous with their insights and advice. I thank Sir Jeremy Farrar, who retired from our Temasek International Panel (TIP) on 31 January 2023 upon assuming the role of Chief Scientist of the [World Health Organization](#). We have benefitted greatly from his guidance and insights, particularly during the COVID-19 pandemic, and wish him well in his new role. I welcome Robert Ng, Chairman of [Sino Group](#), and Axel Weber, former Chairman of [UBS Group AG](#), to the TIP. Robert had served on our Board for seven years before retiring on 1 October 2021, prior to taking up his new role with us. We look forward to tapping into their insights and advice in the coming years.

I am deeply appreciative for my fellow Directors' counsel, perspectives, and guidance that have enabled us to [navigate a complex world](#).

I am grateful to Teo Ming Kian who retired from our Board on 30 September 2022, after 16 years of service. We are pleased that he has taken on the role of Board Director of [Temasek Trust](#). Robert Zoellick has also [retired from our Board](#) on 30 June 2023 after 10 years of service. I am happy to share that he has assumed the roles of non-executive Chairman, Americas of Temasek International and Chairman of the Temasek Americas Advisory Panel from 1 July 2023. Ajay Banga also [stepped down from our Board](#) on 30 April 2023 in view of his nomination as the [World Bank Group](#) President. I wish him well in his new role. We thank them for their contributions to our strategies and Board deliberations over the years.

Whilst the road ahead looks uncertain, we always embrace the mindset that every challenge brings with it new opportunities. By staying committed to [doing well](#), [doing right](#), [doing good](#), and staying true to [our Purpose](#), we are confident that Temasek will contribute to help every generation prosper.



LIM BOON HENG

Chairman

July 2023

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Overview

The Temasek Charter



Temasek is an active investor and shareholder.

We deliver sustainable value over the long term.



Temasek is a forward looking institution.

We act with integrity and are committed to the pursuit of excellence.



Temasek is a trusted steward.

We strive for the advancement of our communities across generations.



Overview

Performance Overview

We ended the year with a net portfolio value of S\$382 billion.

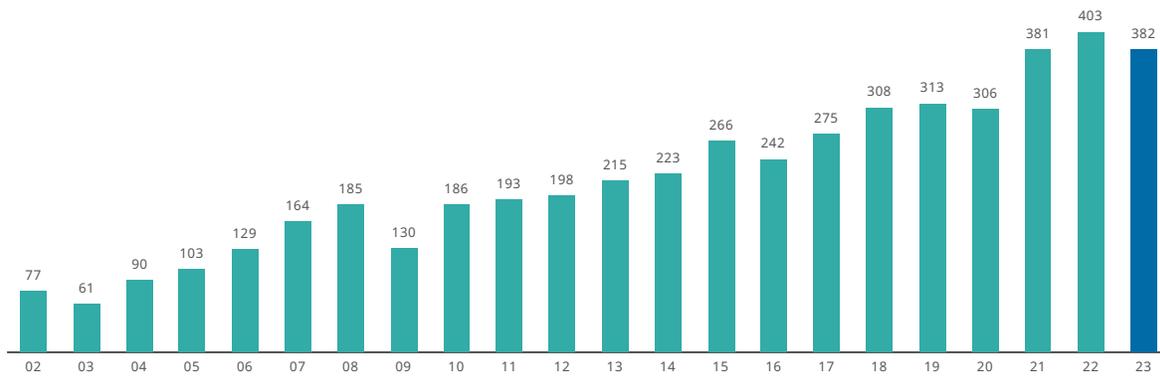
(as at 31 March)

S\$382b

Net portfolio value

Up S\$167 billion over the last decade

Net Portfolio Value (S\$b)



[Find out more about Temasek's Net Portfolio Value since Inception](#) →

S\$31b

Invested during the year

Invested S\$326 billion over the last decade

Investments & Divestments (S\$b)



63%

Exposure to Asia

Singapore exposure up S\$42 billion over the last 10 years

Portfolio by Geography (%)

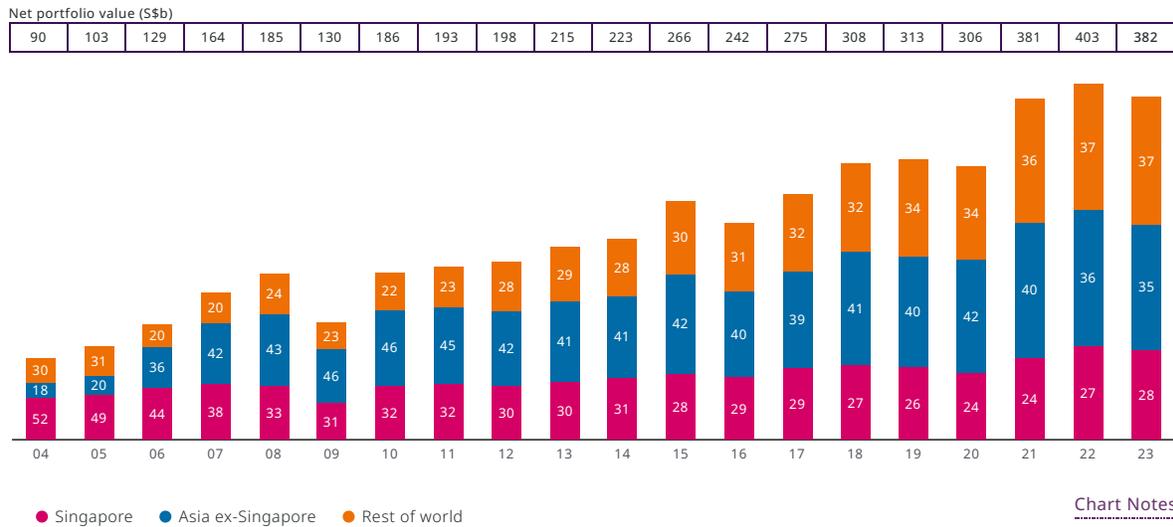


Chart Notes

53%

Exposure to unlisted assets

Unlisted exposure up from 27% to 53% over the last 10 years

Portfolio by Liquidity (%)

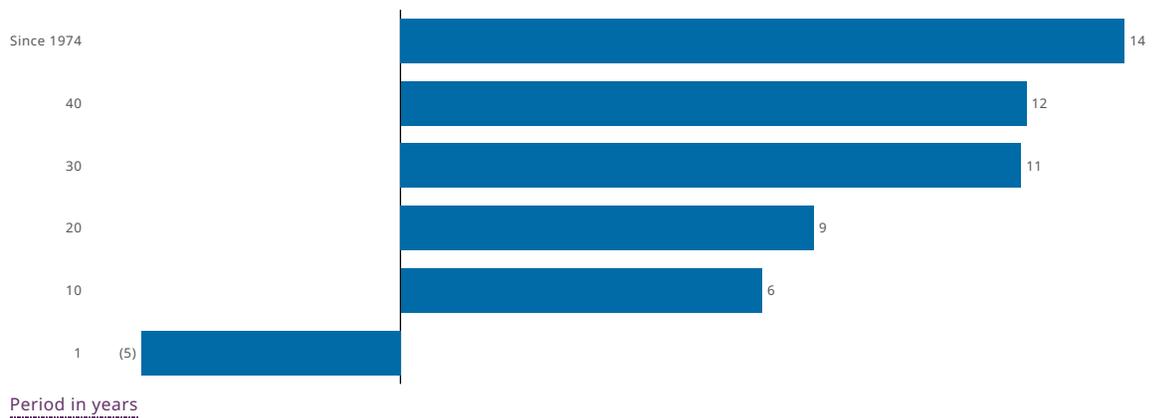


-5.07%

One-year return to shareholder

Total shareholder return of 14% since inception

\$ Total Shareholder Return (%)



9%

20-year return to shareholder

One-year returns of -9% to 25% during the last decade

Rolling S\$ Total Shareholder Return (%)

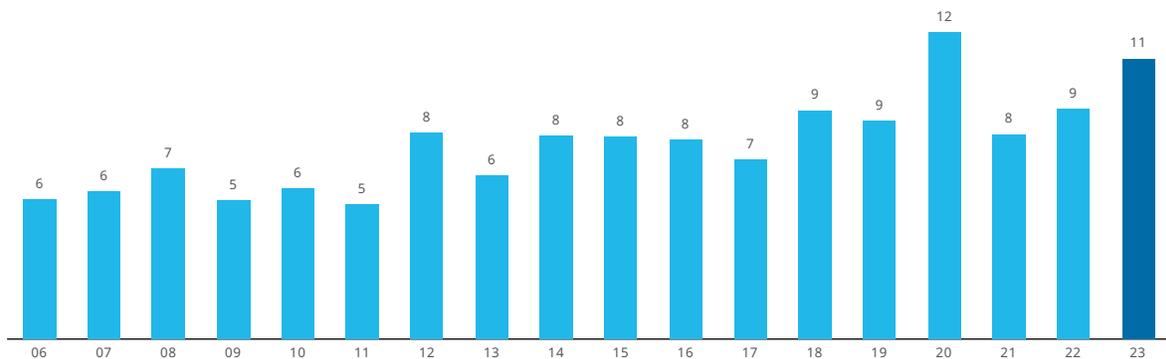


S\$11b

Dividend income

Average annual dividend income of S\$9 billion over the last decade

Dividend Income (S\$b)



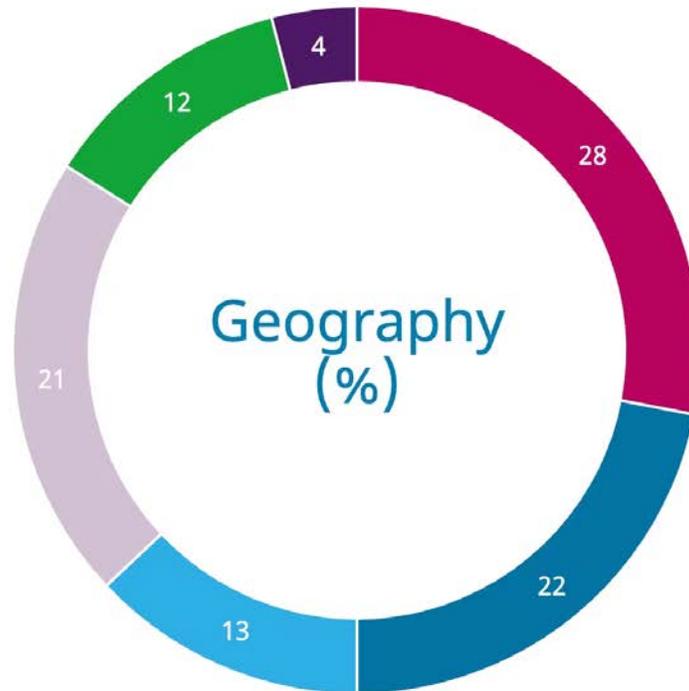


Overview

Portfolio Highlights

Anchored in Asia, we have 64% underlying exposure to developed economies.

- Geography**
- Sector
- Liquidity
- Currency
- Single Name



S\$382b Portfolio

(as at 31 March)

| | 2023 | 2022 | 2021 | 2020 | 2019 |
|--------------------------------|------|------|------|------|------|
| ● Singapore | 28 | 27 | 24 | 24 | 26 |
| ● China | 22 | 22 | 27 | 29 | 26 |
| ● Asia (ex Singapore & China) | 13 | 14 | 13 | 13 | 14 |
| ● Americas | 21 | 21 | 20 | 18 | 16 |
| ● Europe, Middle East & Africa | 12 | 12 | 12 | 11 | 12 |
| ● Australia & New Zealand | 4 | 4 | 4 | 5 | 6 |

Our T2030 Journey

Navigating a Complex World

As part of our T2030 strategy, we identified six key issues that pose current and future challenges and opportunities.

In 2019, the Temasek senior management team conceived our T2030 strategy to guide our scenario and strategic planning, capability building, and institutional development initiatives. Our world was and is still changing across all spheres from social, economic, and political to the environment, and we wanted to be prepared for the road ahead. The Board endorsed and approved the strategy in July 2019.

The strategy reflects the importance we place on staying agile and being adaptable. We must be quick to probe, sense, and respond to the changing environment. Anchored by clear thinking and judgement, we anticipate emerging trends that are around the corner.

It is crucial to have a viewpoint on how the world would be like in this decade.

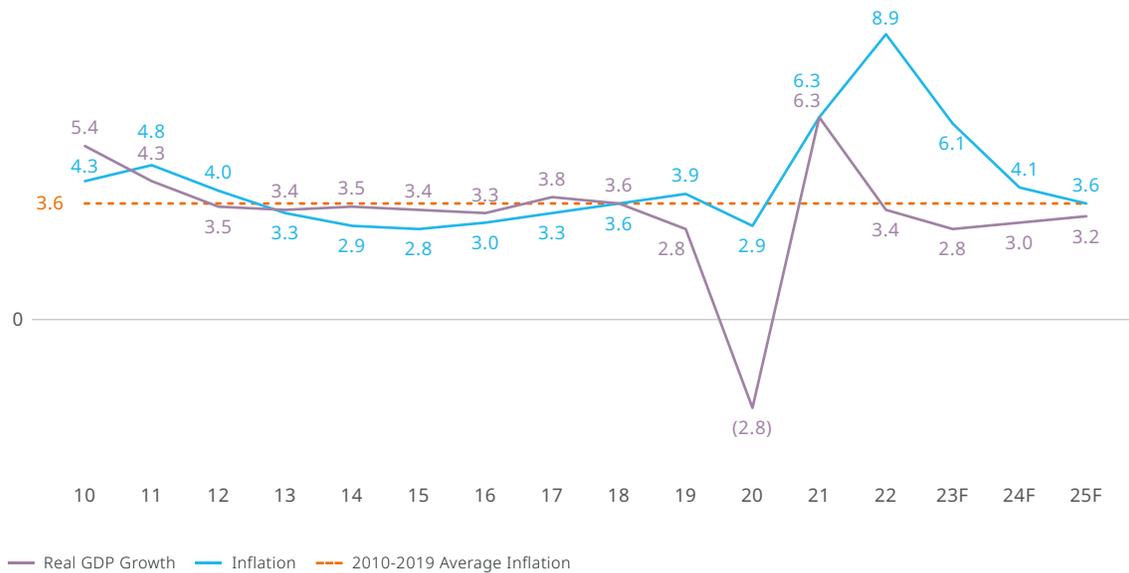
It is crucial to have a viewpoint on how the world would be like in this decade. This will enable us to be astute in scoping out current and future challenges and opportunities. To this end, we identified six top-of-mind issues.

1. Persistent Inflation, Restrictive Macro Policy, Lower Growth



Inflation is expected to ease only gradually in developed markets but will remain elevated in the near term relative to the past decade. Therefore, macroeconomic policy needs to remain restrictive. Lower growth and the risk of stagflation remain. These factors create a more challenging environment with increasing costs and market volatility.

Global Real GDP Growth and Global Inflation Rate (%)



2. Geopolitical Events and Decoupling in a Post-COVID World



The world is becoming more fragmented, as geopolitical tensions escalate between the US and its allies and China. Government actions could well lead to the decoupling of intertwined supply chains and value-generating ecosystems which are the cornerstones of globalisation, in order to ameliorate vulnerabilities premised on national security and strategic competition considerations. Where the world heads will hinge on how the US-China relationship pans out in the coming years. However, what is clear is that decoupling will drive up inflation and business costs.

The Russia-Ukraine conflict also has far-reaching implications for Europe and the world. Sanctions on Russian fossil fuel supplies have led to an energy crisis. Food supplies to many countries have been disrupted with two of the world's largest exporters of

wheat and other crucial crops at war for the second year.

3. Foreign Investment Regimes



The trade and investment regulatory environment has become more complex. Foreign investment regimes have increased significantly in the past few years, accompanied by heightened regulatory scrutiny and greater enforcement actions. Rising nationalism is sweeping the world with more countries adopting measures to protect national assets and critical industries. Governments are tightening trade and investment restrictions and scrutinising trade deals. A fragmented world will be a poorer one. The [International Monetary Fund](#) estimates trade restrictions will lead to global output losses of close to 2%. However, these losses will be felt most acutely by emerging markets and developing economies, both of which will experience reduced investment and lower productivity gains as the transfer of better technologies and know-how from advanced economies may be curtailed.

4. Sustainability and Climate Change



Concerns about energy security and affordability, including the [effects of the Russia-Ukraine war](#), have disrupted progress on energy transition. Decarbonisation efforts in the short term have slowed, even as the build-out of low carbon solutions in the long term accelerated, albeit at a pace and scale insufficient to address the climate crisis. It has also become evident that the impacts of nature loss, ecosystem degradation, water scarcity, and plastic pollution will have far-reaching consequences for economies and societies.

Addressing these challenges requires the collective efforts of governments, businesses, and societies. Governments are stepping up adoption of various policy tools, such as mandates and phase outs, trade restrictions, and carbon pricing (including carbon border adjustment mechanisms), as well as incentives to encourage accelerated decarbonisation across industries. As physical risks of climate change increasingly manifest, it is important for organisations to prepare for an operating environment where environmental externalities need to be internalised. New global sustainability disclosure standards, such as the ones developed by the [International Sustainability Standards Board](#), will help drive increased levels of transparency and accountability.

5. Cyber Risks



Cybersecurity breaches have grown exponentially with organisations and individuals falling victim to cybercrimes such as data breaches, phishing, and ransomware attacks. The pandemic has accelerated the adoption of digital technologies and increased exposure to cyber attacks. Furthermore, the shifting focus and evolving techniques of malicious actors have resulted in more successful and impactful attacks on organisations. In 2022, there were over [24 billion stolen credentials](#), of which a sizeable portion is available on the dark web. [Cybercrime is also expected to grow by 15% per year and cost the world US\\$10.5 trillion annually by 2025](#). The advances in technologies like 5G connectivity, Artificial Intelligence, and Web 3.0 will only amplify this trend.

We have introduced measures to strengthen the cybersecurity systems of our firm and those in our ecosystem.

Temasek has introduced measures to strengthen the cybersecurity systems of our firm and those in our ecosystem. Cyber resilience is now part of a company's licence to operate. It is essential to the sustainability of businesses and enables business resilience.

6. Industry 4.0 and Workforce 4.0



While Industry 4.0 has boosted economic productivity, it has also led to social challenges such as job displacements and rising inequality. There is a growing demand for highly skilled workers, and greater [displacement of workers](#) whose jobs have been replaced by automation, and may be affected by generative Artificial Intelligence. The result is a job market with a hollowing out of the middle. This explains growing disillusionment among middle skilled workers who are worried about their job security or that their incomes and those of their children in the future will stagnate. This has led to a sense of disenfranchisement particularly among the middle income population in some countries. We must guard against fractured societies and fraying social compacts which give rise to worrying trends such as extremism and xenophobia. As companies embrace the opportunities of Industry 4.0 and transform their businesses, there is a need to consider the transformation of the workforce, with job redesign and skilling, reskilling, and upskilling.

Temasek is committed to building a social compact where everyone has opportunities to progress in life.

As a [long term generational investor](#), Temasek is committed to building a [social compact](#) where everyone has opportunities to progress in life. We want to ensure that there is sustainable and inclusive growth, so this and future generations prosper.



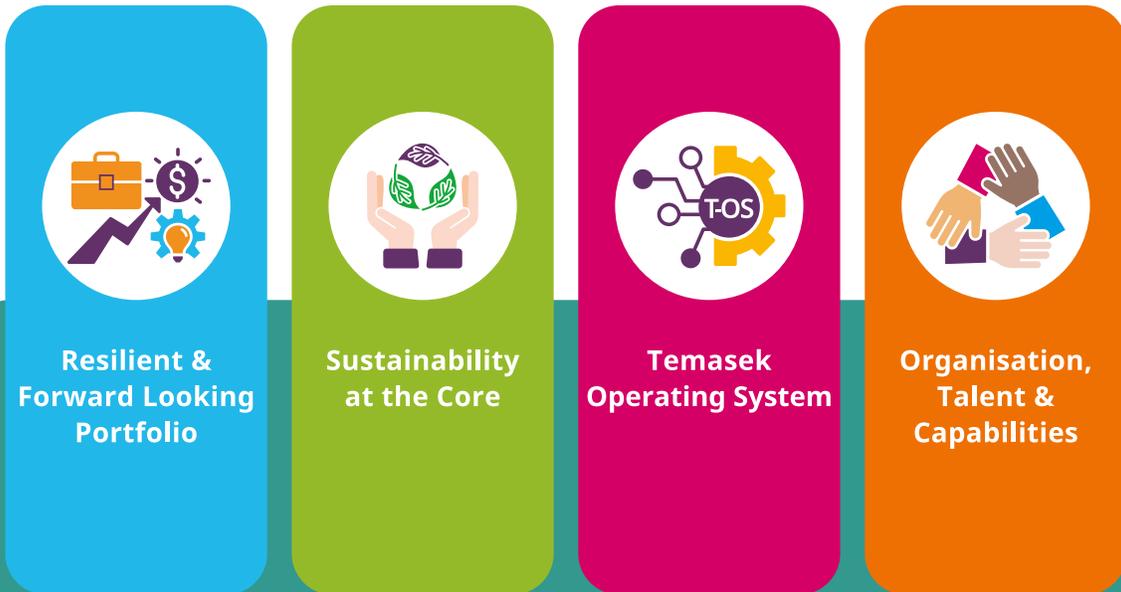
Our T2030 Journey

Pillars and Foundational Enablers

Our T2030 strategy serves as our compass in a complex world and guides us to our North Star, our Purpose — *So Every Generation Prospers*.

The four pillars of our T2030 strategy are anchored by our Purpose and underpinned by our three foundational enablers.

Our Four Key Pillars



Our Three Foundational Enablers



Four Key Pillars



Resilient & Forward Looking Portfolio

Constructing a portfolio that can withstand exogenous shocks and market volatility while focusing on sustainable growth over the long term

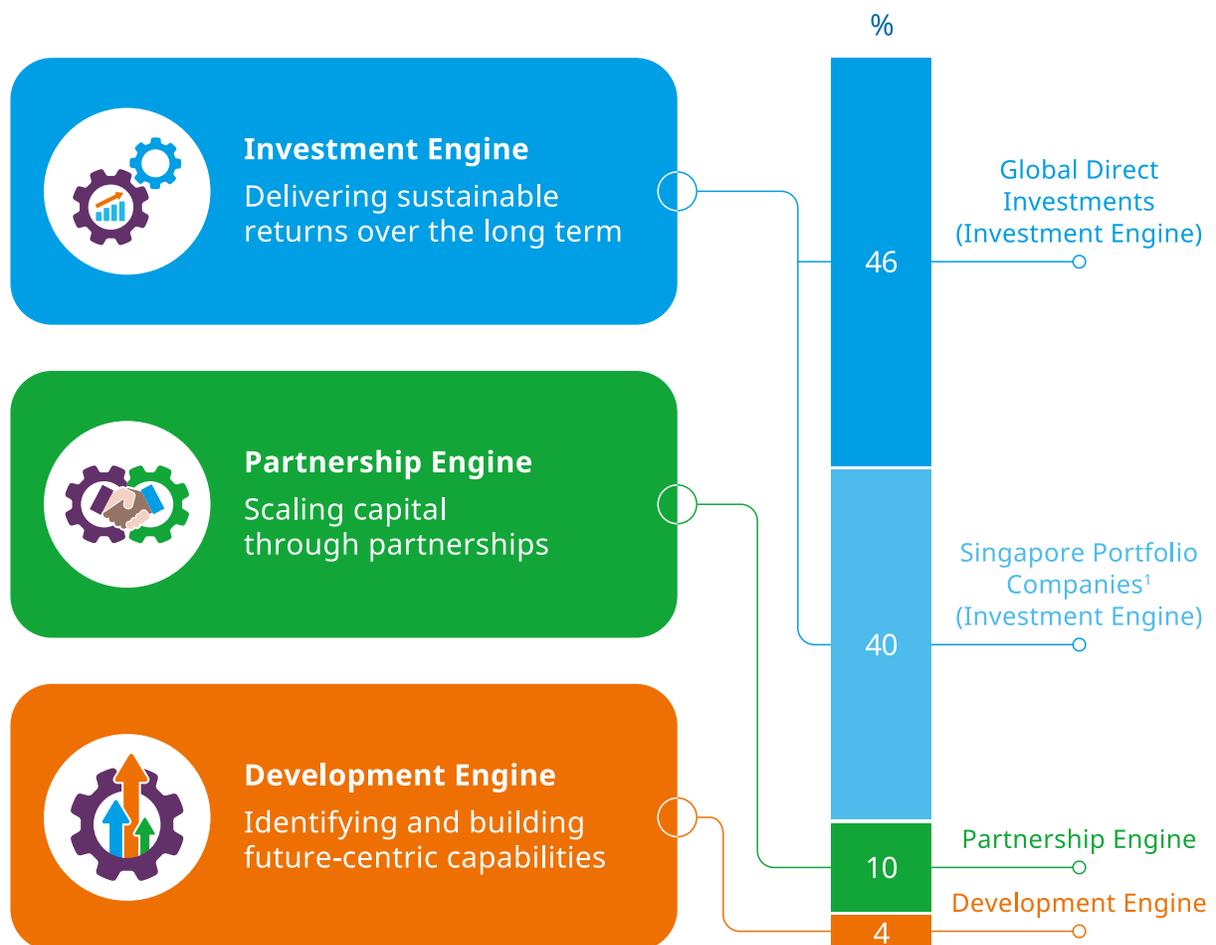
We focus on the construction of a resilient and forward looking portfolio — one which is able to withstand exogenous shocks and perform through market cycles, while at the same time capitalising on growth opportunities with the potential for sustainable returns above our risk-adjusted cost of capital over the long term.

Such a portfolio comprises broadly two categories of investments: a resilient component which is held for the long term, and can provide stable and sustainable returns, and/or liquidity in the form of dividend income; and a dynamic component where investments are held for a shorter duration, and capital is recycled for investing in higher growth opportunities for higher returns.

We have three growth engines to help us build a resilient and forward looking portfolio.

(Portfolio composition as at 31 March 2023)

Three Growth Engines



1. Includes only key portfolio companies headquartered in Singapore.

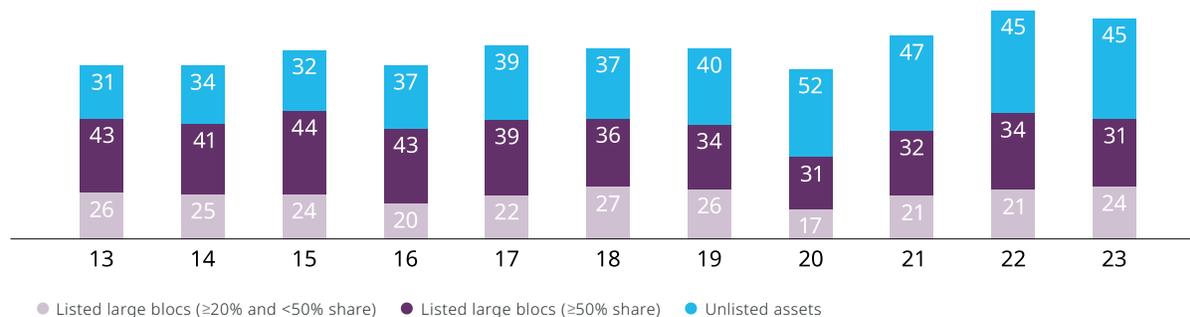
Investment Engine: Delivering sustainable returns over the long term

Makes up 86% of our portfolio as at 31 March 2023, consisting of:

- Singapore portfolio companies that have a consolidated revenue of about S\$145 billion. They have been stalwarts for us and have, as a portfolio, delivered sustainable returns.

(as at 31 March)

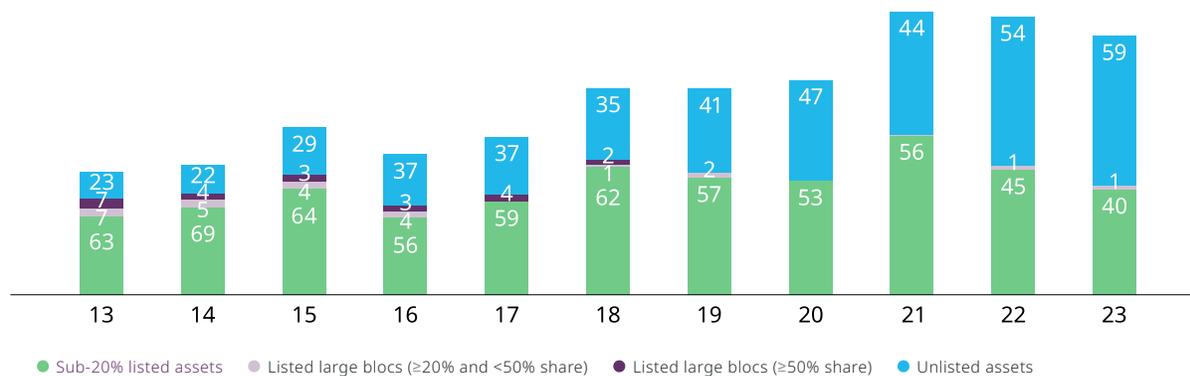
Singapore Portfolio Companies by Liquidity (%)



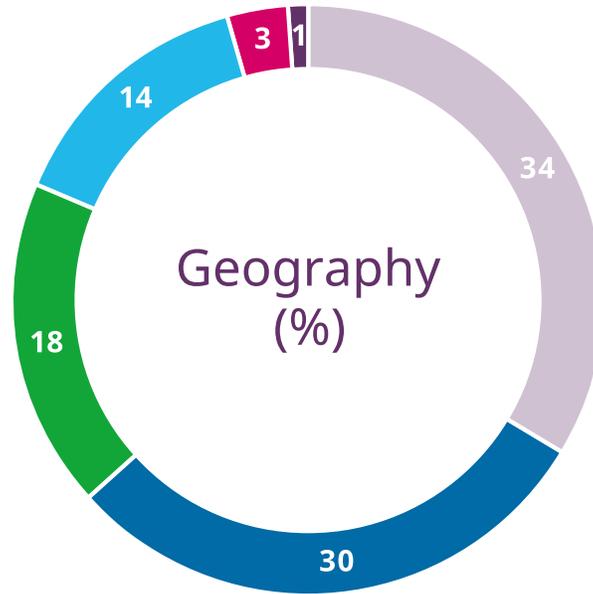
- Global direct investments which consist primarily of growth equity in companies with the potential to be market leaders and to be globally competitive. They also include early stage investments, which account for under 6% of our portfolio. Such investments foster innovation and allow us to keep abreast of emerging technology and business models. We also invest in private credit and funds.

(as at 31 March)

Global Direct Investments by Liquidity (%)

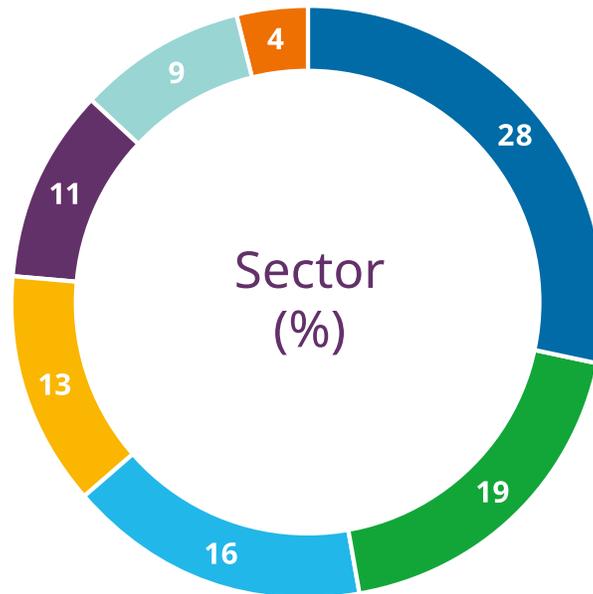


Global Direct Investments by Geography (%)



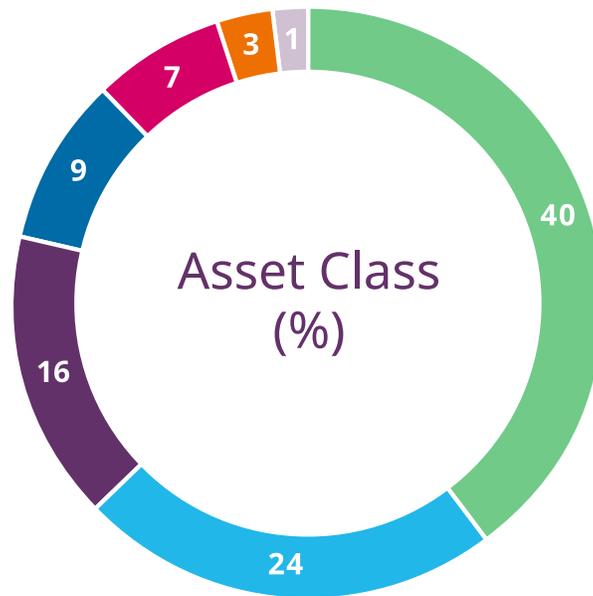
● Americas ● China ● Europe, Middle East & Africa ● Asia (ex Singapore & China) ● Singapore ● Australia & New Zealand

Global Direct Investments by Sector (%)



● Financial Services ● Telecommunications, Media & Technology ● Life Sciences & Agri-Food ● Consumer & Real Estate
● Transportation & Industrials ● Multi-sector Funds ● Others

Global Direct Investments by Asset Class (%)



- Sub-20% listed assets
- Other unlisted assets
- Other funds
- Early stage (including funds)
- Co-investments
- Credit (including funds)
- Listed large blocs (>=20% and <50% share)

Partnership Engine: Scaling capital through partnerships

Makes up 10% of our portfolio as at 31 March 2023, consisting of:

- Assets Under Management (AUM) businesses that have about S\$79 billion of AUM and provide products like private equity, private credit, public market investing, and capital solutions; includes firms such as [Seviora Holdings](#), [Vertex Holdings](#), [65 Equity Partners](#), [Decarbonization Partners](#), and [ABC Impact](#).
- Other partnerships such as with [LeapFrog Investments](#) and [Emerald Technology Ventures](#).

Development Engine: Identifying and building future-centric capabilities

Makes up 4% of our portfolio as at 31 March 2023.

- This includes investments driven by our Enterprise Development Group, [Temasek Operating System](#), and Emerging Technologies team that focus on cutting-edge innovations in areas such as compute and cognition, deep tech, and sustainable energy solutions.

→ To learn more about our investments that focus on the future, please click here



Sustainability at the Core

Embedding sustainability in all that we do — from our mandate to deliver sustainable value over the long term, to our strategy of how we operate as an institution, shape our portfolio, and engage our portfolio companies to build sustainable businesses

Temasek is committed to embedding [sustainability at the core](#) of everything we do, as we seek to deliver sustainable value over the long term for all stakeholders.

We believe that our long term success as an investor and an institution is contingent on the presence of thriving businesses and economies; cohesive societies and communities; and resilient people and planet. We therefore have a part to play in aligning our investment activities and institutional practices towards protecting our planet, uplifting our communities, and fostering an inclusive environment for our employees and partners alike.

As an investor, we seek to build a resilient and forward looking portfolio that generates sustainable returns over the long run. As a shareholder, we seek to add value to our portfolio companies in their journey to build sustainable businesses. As an institution, we embed principles of sustainability, inclusivity, and good governance in our processes, and anchor ourselves with a strong set of values. As a steward, we also have a constitutional responsibility to safeguard and ensure the sustainability of Temasek's reserves. We also contribute to building resilient and inclusive communities across generations.

Goals for our Portfolio

We remain committed to reduce the net carbon emissions attributable to our portfolio to half the 2010 levels by 2030, as we aim for net zero emissions by 2050. To achieve this goal, we focus on three pathways:

- Investing in climate-aligned opportunities in focus areas such as food, water, waste, energy, materials, clean transportation, and built environment
- Enabling carbon negative solutions through investments in nature and technology-based solutions and carbon markets infrastructure
- Encouraging decarbonisation efforts in businesses, where we lean in to work with companies in our portfolio, supporting their business transformation and abatement actions in a financially responsible way, rather than divesting them

Our role as an investor enables us to deploy capital purposefully to catalyse solutions and contribute towards the transition to a net zero carbon economy. Over the years, we have been actively investing in opportunities presented by the transition towards a low carbon future. Examples include existing investments in hard-to-abate sectors such as in energy and urban solutions provider Sembcorp Industries, which has been on a journey to transform its portfolio to provide sustainable solutions; as well as the formation of new enterprises such as O2 Power, a renewable energy platform in India jointly established with EQT Infrastructure that serves utility and corporate customers.

We have also integrated an Environmental, Social, and Governance (ESG) framework across our investment process from pre-investment due diligence to post-investment engagement. This enables us to better manage material risks, engage our portfolio companies to advance ESG practices, and strengthen portfolio resilience and alignment with our sustainability objectives.

Beyond addressing climate challenges, we deploy capital to generate positive social impact for underserved communities while achieving sustainable returns. Our Impact Investing team focuses on such opportunities in the areas of financial services, healthcare services, education, agriculture, and climate, across emerging markets in Asia, Africa, and Latin America.

Goals for our Institution

As a company, we uphold our commitment to carbon neutrality, and we are carbon neutral for the fourth year running.

We have set an internal carbon price for the firm to embed the cost of carbon in our investment and operating decisions. An initial carbon price of US\$42 per tonne of carbon dioxide equivalent (tCO₂e) was set in 2021, and subsequently raised to US\$50 per tCO₂e in 2022, with the aim to increase it to US\$100 per tCO₂e by 2030.

To reinforce commitment to our carbon emissions goals, we have a carbon charge against our portfolio performance. This reduces our incentive pool for distribution in years with positive Wealth Added (WA), and increases the clawback when WA and portfolio returns are negative. In addition, a portion of our long term incentives is aligned with our portfolio carbon emissions reduction targets. Vesting is subject to us achieving these targets, and each co-investment grant tranche will have a life cycle of up to 12 years.



Temasek Operating System (T-OS)

Building specialised capabilities in Artificial Intelligence (AI), Blockchain, Cybersecurity, Data & Digital, and Sustainable Solutions to bring value to our ecosystem and the marketplace

T-OS was built as a suite of specialised, next-generation capabilities which we believe will be essential skill sets for the future and could differentiate us as a value-adding investor and shareholder.

By setting up Centres of Excellence in the areas of AI, Blockchain, Cybersecurity, Data & Digital, and Sustainable Solutions, we are able to:

- Offer common services and critical skill sets to others in our ecosystem
- Grow and develop specialised talents with economies of scale, and offer them a wide range of career pathways within our ecosystem
- Innovate new applications, business models, and ventures

→ For more information about our T-OS, please click here



Organisation, Talent & Capabilities

Focusing on our organisational and talent development to grow our people, capabilities, and teams for the future

We take an active approach to ensure our organisation evolves and has the right structure and capabilities for the future, as we build a forward looking institution.

We also develop a diverse team with multidisciplinary skill sets to take on more complex challenges. Our strategic workforce planning process allows us to identify and plan for new capabilities that we need via a multi-pronged approach — “buy, borrow, build, or bot”. Over the years, we have built and deepened our capabilities in areas such as digital technology, data science, AI, blockchain, cybersecurity, and sustainability.

We create a culture of learning agility that encourages our talent to constantly adapt and grow. Our talent and multi-rater feedback frameworks are core to our talent development and performance review processes. Our continual focus on succession planning culminates in an annual senior leadership discussion to identify and review our talent pipeline.

We believe that workforce development is an integral part of business transformation, and support Singapore’s model of tripartism that sees unions, employers, and the Government collaborating to ensure inclusive and sustainable economic growth. To this end, we established a Workforce Taskforce to work alongside partners in our ecosystem, including our portfolio companies, unions, and government agencies. We aim to develop a future-ready workforce by co-curating solutions in areas such as training and skills uplifting, workplace health and safety, and inclusivity in the workforce.

We value [diversity](#), equity, and inclusion and are committed to [creating an inclusive and cohesive work environment](#). Our *Inclusivity@Temasek* initiative continues to strengthen our diversity practices and reinforce our culture of belonging. These efforts include the [Temasek Women’s Network](#), which supports and inspires our female colleagues in their career journeys.

We also promote and adopt the policy of fair employment for all on an equitable and non-discriminatory basis.

Our Foundational Enablers

The four pillars in our T2030 strategy are underpinned by three foundational enablers, all of which are key to our success.



**Catalytic
Capital**



**Networked
Organisation**



**Purpose
Culture
Values**

First, our capital must be catalytic and help to create value and generate returns and outcomes across the four dimensions of financial, human, social, and natural capital. We provide financial capital to invest in innovation and growth; human capital to invest in human potential; social capital for social progress that will build resilience in societies; and natural capital to protect our planet for future generations.

Second, we operate as a networked organisation, both internally and externally. Within the firm, we work collaboratively across teams and locations, harnessing both individual and cross-functional skill sets to achieve our institutional goals. Beyond the firm, we also augment our capabilities with that of our external partners and collaborators, so as to collectively address and create solutions for complex challenges of the future.

Third, we instil a clear sense of purpose, build a culture of teamwork, and cultivate a strong set of values in our workforce to navigate the challenges and uncertainties ahead as a team. We aspire to help every generation thrive by empowering the well-being of our people, portfolio companies, partners, communities, and the planet we share as a common home. Importantly, we see the responsibility to do this not just for today’s, but also for future generations.

Our Purpose Principles underpin why we do what we do, highlighting our unique strengths as a firm.

- **We invest in human potential:** We actively embrace diverse perspectives and skill sets, empowering the linear and lateral thinking of our people to realise their fullest potential both individually and collectively.
- **We catalyse solutions:** Problem-solving with agility and investing with integrity, we mobilise financial, human, social, and natural capital to transform complex challenges into opportunities.
- **We build with courage:** With conviction and courage, we turn ambition into actions that chart the course for those who come next.
- **We grow for generations:** We steward and grow our portfolio, communities and the future, creating positive outcomes that will outlive us all.

Our Purpose 

Why We Exist

So every *Generation* prospers

Invest in Human Potential | Catalyse Solutions | Build with Courage | Grow for Generations

Our Charter

Who We Are

Investor
Institution
Steward

Our Values

How We Act and Behave

Meritocracy | Excellence
Respect | Integrity
Teamwork | Trust

Our T2030 Strategy

What We Do

As a Purpose-Driven
Organisation



As we move ahead, we look to our T2030 strategy as our compass to guide us to our Purpose. We will stay committed to [doing well](#), [doing right](#), and [doing good](#) to ensure that every generation prospers.

Focusing on the Future

Tech-driven innovation is creating industry disruptions and accelerating commercialisation cycles. This may create large, future markets and also impact Temasek's portfolio.

Our Emerging Technologies (ET) team's understanding of emerging science and technology, global reach, investment expertise, and new business development capabilities allow them to identify disruptive technology investment opportunities. We have set aside up to S\$1 billion a year to fund such initiatives.

The ET team has three main objectives:

- Foresee technology disruptions "around the bend" to position Temasek for participation in major future market inflections
- Reinforce firm-wide efforts to maintain an overall resilient and forward looking portfolio
- Support Singapore's deep tech ecosystem by investing in and building future deep tech champions and establishing linkages with global markets

The team focuses on four core themes: net zero technologies, the future of compute and cognition, disruptive material science, and other emerging frontier technology.

It has invested in Electra, a US-based venture that is developing a novel low temperature electrochemical iron production process that reduces carbon emissions in steelmaking, and invested in companies developing quantum computing technologies such as PASQAL, a France-based venture, co-founded by a Nobel Prize winner, that is advancing quantum computing. Quantum computing has processing power that can outperform classical computing and provide breakthrough capabilities for complex problem-solving across multiple sectors. The team has also cultivated strategic partnerships with deep tech investors, including Breakthrough Energy Ventures (BEV). Temasek and BEV have made several co-investments to expedite the commercialisation of promising technologies capable of addressing climate change challenges on a global scale.

Resilient & Forward Looking Portfolio

How We Invest

Driven by our views of the trends shaping societies, we invest today with tomorrow in mind, so every generation prospers.

We aim to build a resilient and forward looking portfolio that delivers sustainable returns over the long term. We deploy capital to catalyse solutions that can enable companies to transition to a more sustainable future, tap on opportunities to invest in future growth sectors and business models, and encourage enterprises to transform through efforts in innovation. Our investment activities are aligned to four structural trends that shape our long term portfolio construction.



Digitisation

Cross-sectoral digital technologies



Sustainable Living

Products and services for sustainability



Future of Consumption

New shifts in consumption types and patterns



Longer Lifespans

Growing needs driven by longevity

Digitisation and Sustainable Living are megatrends with a pervasive impact across all sectors and on the business models of incumbent and emerging businesses. Future of Consumption and Longer Lifespans reflect structural shifts in consumption patterns and growing needs arising from population growth and longer expected lifespans. These trends are interconnected, transcend sectors and countries, and persist through economic cycles.

We continue to align our portfolio with such trends. We [invest into companies](#) that directly enable, drive, and benefit from these trends.

We set aside a small portion of our investment capital to back innovations and technologies at pre-commercialisation stages. We are cognisant of the [risks](#) and challenges these early stage companies face and accept the binary risks that come with investing in them. However, these companies also have the potential to achieve significant growth over time and deliver outsized returns. In addition, we engage closely with portfolio companies on their efforts to assess potential disruption risks and to identify transformation opportunities arising from these new technologies.

Integrating ESG Across Our Investments

We apply an [Environmental, Social, and Governance \(ESG\) assessment framework](#) throughout our investment process to ensure that the opportunities we consider align with our sustainability objectives. We also continue to engage investee companies to advance best practices post-investment. Among the objectives are achieving our climate targets, helping to develop diverse, equitable, and inclusive workplaces, and [fostering good governance](#).

We engage with our investees on their sustainability priorities, practices, and stance.

We evaluate material ESG factors as part of our due diligence for each investment we are considering. In addition, as an active shareholder in companies and an investor in funds, we [engage with our investees](#) on their sustainability priorities, practices, and stance.

Investment Framework and Risk-adjusted Cost of Capital

Our investment discipline is centred around intrinsic value and our [risk-return framework](#). This framework forms the basis of our investment decisions, capital allocation, performance measurement, and [incentive system](#).

For each investment, we conduct a bottom-up intrinsic value analysis, with expected returns evaluated against a risk-adjusted cost of capital that we derive using the capital asset pricing model.

Each investment's risk-adjusted cost of capital is based on its country risk, industry risk, and capital structure. Investments in riskier sectors or markets will have higher costs of capital.

We add an illiquidity risk premium for unlisted investments and a venture risk premium for early stage investments. Our risk-adjusted cost of capital framework helps to normalise the assessment of risks as we compare the relative attractiveness among investment opportunities.

We also factor into each investment an internal carbon price of US\$50 per tonne of carbon dioxide equivalent (tCO₂e), to assess the possible climate transition impact and to further guide our investment decisions. We expect to increase this to US\$100 per tCO₂e by 2030. This allows us to better allocate capital with regard to investment opportunities, and evaluate the risks related to the long term value of our portfolio, adjusted amongst other things, for the confluence of future carbon taxes and levies, as well as the potential increase in financial costs arising from the pace of mitigation, adaptation, and transition.

Capital Allocation

At the portfolio level, we set a three-year rolling capital allocation and divestment plan that is reviewed by senior management and approved by our Board annually. This plan guides our investment and divestment activities, and liquidity, to maintain a strong balance sheet.

We have full discretion as an owner and investor to reshape and rebalance our investment holdings as the situation warrants. From time to time, we may invest in or divest from selected positions based on our outlook and risk-return appetite. We may take concentrated positions, remain in cash, and/or use derivatives to hedge currency or protect against potential losses of our underlying investments.

Our investments are predominantly in equities. We adopt a long term view of our investments and are not focused on short term volatility. We do not have targets for investing by asset class, country, sector, or single name. We manage our liquidity and balance sheet for resilience and investment flexibility.

We manage our liquidity and balance sheet for resilience and investment flexibility.

Portfolio Composition

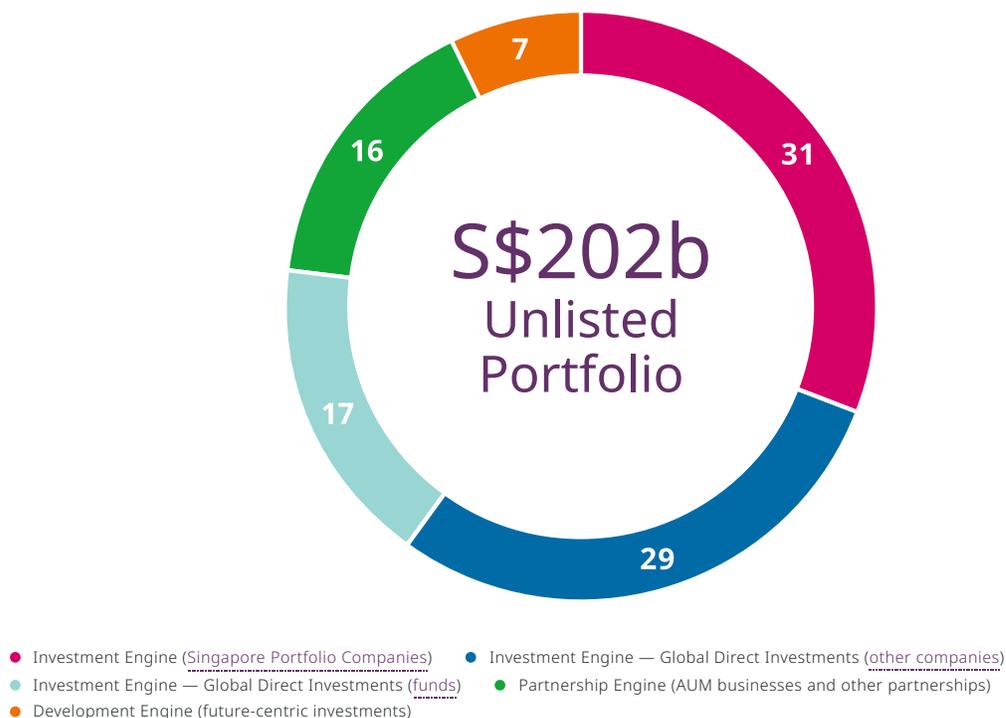
Our portfolio comprises both listed and unlisted assets, including our investments in funds. The unlisted portfolio has grown steadily over the years as we invested in attractive opportunities in the private markets and benefitted from the increase in the value of our unlisted assets.

As at 31 March 2023, 47% of our portfolio was in liquid and listed assets, and 53% was in unlisted assets and funds.

Unlisted Investments

We value our unlisted investments at book value less impairment. We only recognise any value uplift of these investments upon listing or sale. Over the last decade, our unlisted portfolio generated returns of over 10% per annum, delivering higher returns than our listed portfolio.

Marking our unlisted portfolio to market would provide S\$18 billion of value uplift which is approximately 9% of our unlisted portfolio as at 31 March 2023.

Unlisted Portfolio (%)

Our unlisted portfolio is well diversified across geographies and sectors.

Unlisted Singapore companies constitute over a third of our unlisted portfolio and include mature companies such as Mapletree, PSA and SP Group.

Our asset management businesses are approximately a sixth of our unlisted portfolio and include Seviora Holdings and Vertex Holdings. Our asset management businesses manage around S\$79 billion in assets, which includes third-party capital as well as our own capital.

Investments in private equity and credit funds are approximately a sixth of our unlisted portfolio. They have enabled us to gain deeper insights into new markets and sub-sectors of specialisation, and have provided co-investment opportunities.

The rest of our unlisted portfolio comprises direct investments into private companies. Our investments include Ant Group, A.S., Watson, Ceva Santé Animale, Element Materials Technology, Global Healthcare Exchange, Rivulis, Schneider Electric India, Topsoe, Verily Life Sciences, and WuXi AppTec and represent over a quarter of our unlisted portfolio.

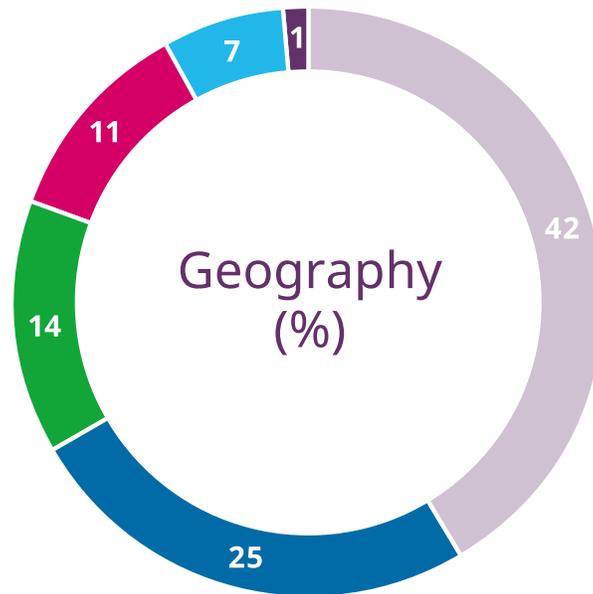
Our unlisted portfolio offers us liquidity through divestments; steady dividends from mature companies; and distributions from the high-quality portfolio of funds we have built up over the years. The funds are well diversified across geographies, sectors, and vintages. We also achieve liquidity from our unlisted portfolio through public listings. For example, in the past five years, some of our holdings such as Adyen, Meituan, and Roblox have listed.

Early Stage Investments

As an asset owner seeking sustainable returns over the long term, we want to anticipate what is around the corner. We invest in early stage companies to keep abreast of the latest technologies and innovations; to identify potential winners early and scale up investment as companies develop; and to drive broader portfolio development efforts.

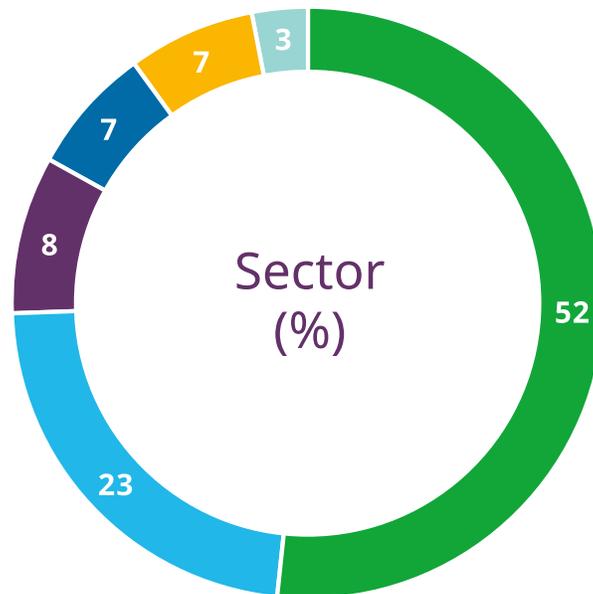
Investing in early stage companies means we accept the binary risks associated with such investments. However, they also have the potential to achieve significant growth over time and deliver outsized returns. Given the higher underlying risk, our early stage portfolio is diversified across geographies and sectors, and we evaluate performance for this strategy on an overall portfolio basis.

Early Stage Portfolio by Geography (%)



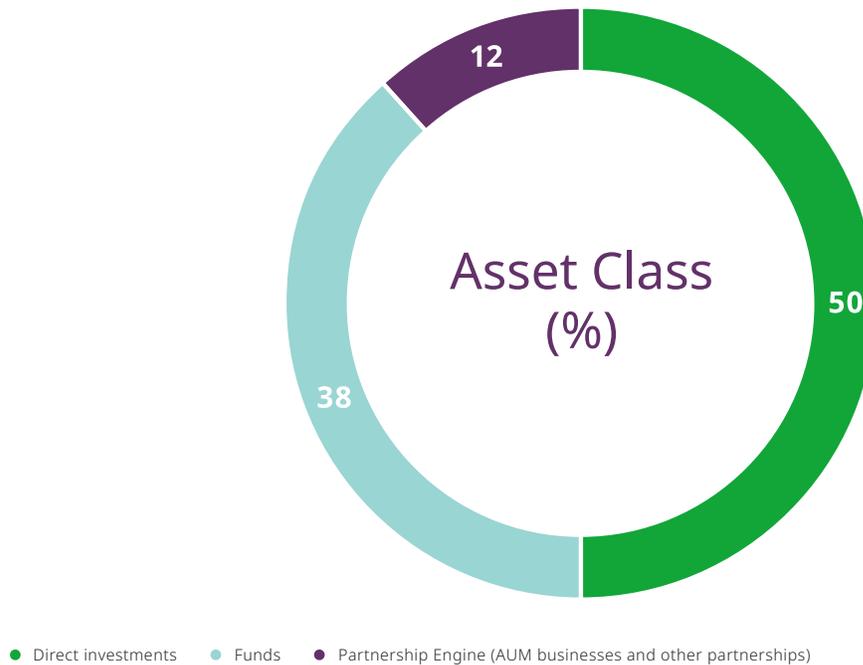
● Americas ● China ● Europe, Middle East & Africa ● Singapore ● Asia (ex Singapore & China) ● Australia & New Zealand

Early Stage Portfolio by Sector (%)



● Telecommunications, Media & Technology ● Life Sciences & Agri-Food ● Transportation & Industrials ● Financial Services
● Consumer & Real Estate ● Multi-sector Funds

Early Stage Portfolio by Asset Class (%)



We manage our early stage [risk exposure](#) by incorporating a venture risk premium into the cost of capital for these investments and by sizing our investments appropriately. We typically invest smaller amounts at the time of initial investment, with a view to increasing our stake if the company demonstrates successful de-risking. In addition, we cap our exposure to this segment to 6% of our overall portfolio as part of our risk management framework. Currently, our early stage investments, including exposure through venture capital funds, account for under 6% of our total portfolio.

Over time, early stage companies may mature into successful growth stage entities and generate attractive returns for our portfolio. Since 2016, we have been actively making early stage investments, which after marking them to market, have generated returns above industry averages.

As an active and engaged shareholder, we seek to add value to our listed and unlisted investee companies across all stages of growth, from early stage to mature enterprises. We work together with our portfolio companies to enhance value through partnerships, innovation, growth strategies, and transformational possibilities. We proactively promote good governance, ethical business practices, and compliance with all laws.

Early stage companies have the potential to achieve significant growth over time and deliver outsized returns.

We encourage our companies to adhere to the highest standards by having quality boards. Boards should have a high level of independence, which involves having separate persons holding the Chairman and CEO roles. We hold the boards accountable for the activities of their companies. We look to them to drive strategy and oversee management, who, in turn, are responsible for the day-to-day operations of their companies.



Resilient & Forward Looking Portfolio

How We Grew

We grew with Singapore in our early years. In 2002, we stepped out to build a second wing of growth with a transforming Asia. We have since increased our exposure outside Asia to capture global opportunities in line with our structural trends.

Our developed markets exposure is now 64% of our portfolio and our growth markets exposure is 36% of our portfolio as compared to 58% and 42% respectively in 2013.

Our initial portfolio in 1974 reflected Singapore's early stages of industrialisation. Some of these companies, and others added since, have grown into iconic Singapore brands, such as the Singapore Zoo. Others, like DBS and Singapore Airlines, have transformed into regional and global champions. As at 31 March 2023, 54% of our portfolio comprised companies headquartered in Singapore.

We focus on trends driven by technological advances that cater to demographic shifts and sustainability objectives, transforming business models, or shifting consumption patterns.

We continue to seek companies that create new opportunities through innovative and sometimes disruptive solutions.

As at 31 March 2023, our net portfolio value was S\$382 billion.

Temasek Net Portfolio Value since Inception

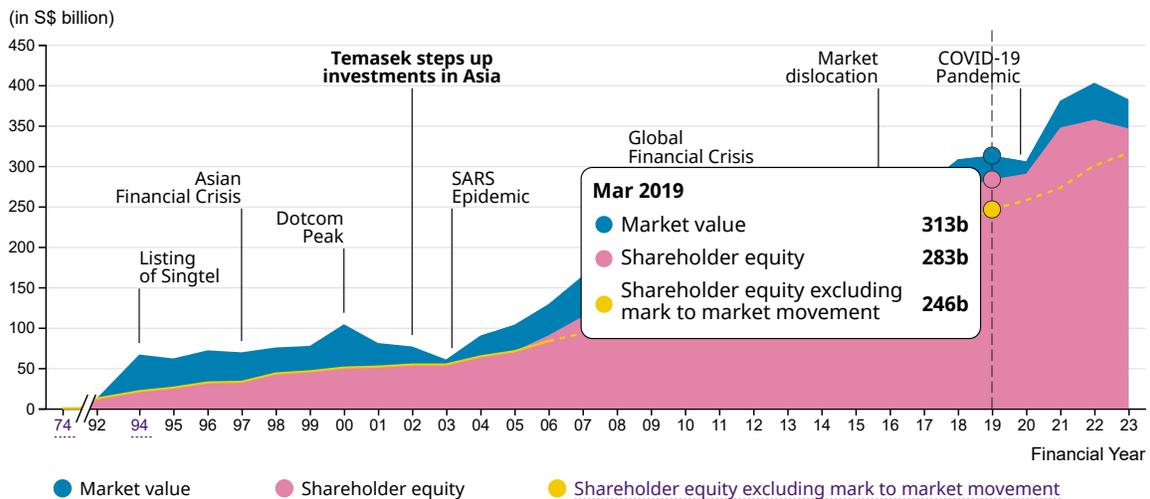
If S\$1,000 had been invested...

The chart below shows the growth of our net portfolio value since its inception in 1974.

The **blue area** reflects our portfolio valued on a mark to market basis, which is subject to greater volatility caused by external events.

The **pink area** reflects our shareholder equity. From the financial year ended 31 March 2006, the accounting standards require sub-20% investments to be marked to market.

The **yellow dashed line** reflects our shareholder equity excluding mark to market movement of our sub-20% investments. Its growth reflects the underlying profitability of our portfolio companies and returns from our investment activities.

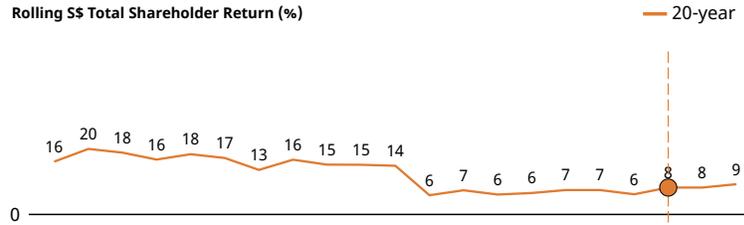


Relation between Net Portfolio Value and Total Shareholder Return

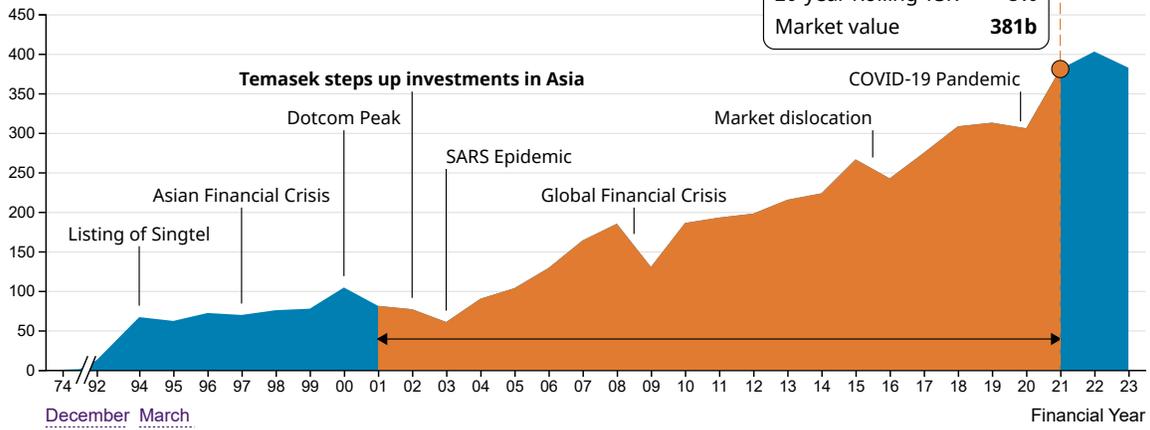
Our Total Shareholder Return (TSR) measures the returns that we deliver to our shareholder. It reflects the change in our net portfolio value over a specific timeframe. This includes dividends paid to our shareholder and excludes investments made by our shareholder in Temasek's shares.

One-year 10-year Rolling 20-year Rolling ↓

Rolling S\$ Total Shareholder Return (%)



Temasek Net Portfolio Value since Inception (in S\$ billion)





Resilient & Forward Looking Portfolio

Total Shareholder Return

We track our total returns to our shareholder over various time periods.

Total Shareholder Return (TSR) is a compounded and annualised measure, which includes dividends paid to our shareholder and excludes investments made by our shareholder in Temasek's shares. Our TSR over different time periods are a snapshot of our performance, with the longer time periods being more representative of our performance as a long term investor.

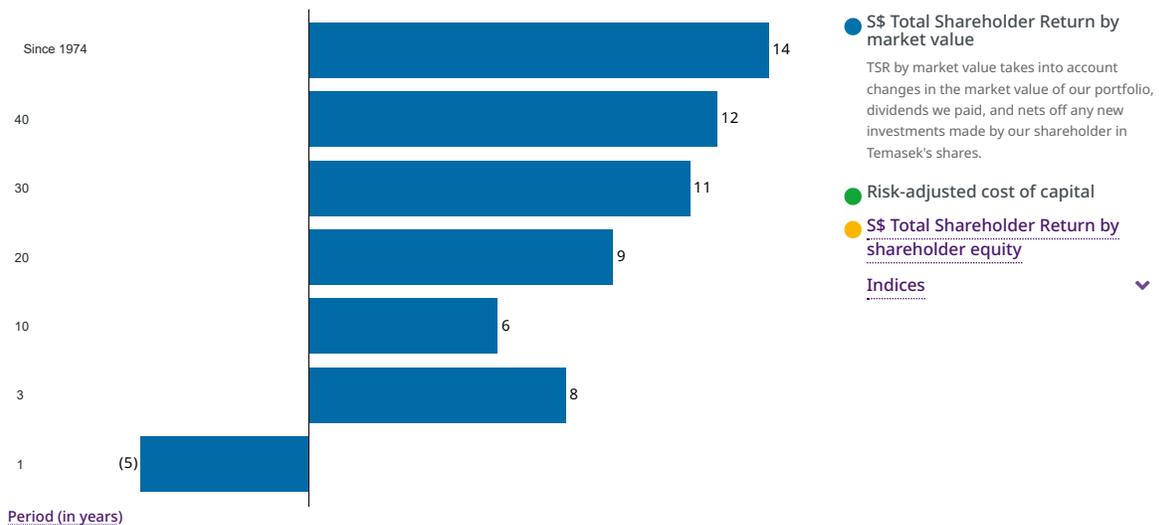
As at 31 March 2023, our Singapore dollar one-year TSR was -5.07%. Our three-year TSR was 7.74% and our 10-year TSR was 6%.

Our 20-year TSR was 9%, versus the Singapore 20-year annualised core inflation of 1.8%. Longer term 40-year TSR was 12%.

For each investment we make, an individual risk-adjusted cost of capital (RACOC) is derived bottom-up using the capital asset pricing model. Investments in riskier sectors or markets have a higher cost of capital. We impute premiums for illiquidity and other risks.

We assess our performance by measuring our TSR against our overall RACOC, which is the weighted average RACOC across all our individual investments.

S\$ Total Shareholder Return (%)





Resilient & Forward Looking Portfolio

Investment Update

Even as we navigate an increasingly complex and volatile environment, we continue investing in line with long term structural trends to build a resilient and forward looking portfolio.

Amidst the uncertainty in global markets, we slowed down our investment pace, and invested S\$31 billion and divested S\$27 billion in the financial year ended 31 March 2023, with a net investment of S\$4 billion. This is compared to our net investment of S\$24 billion in the last financial year.

We invested in opportunities aligned to [four structural trends](#) as we de-risked certain positions that faced headwinds. Consistent with the past, we realised liquidity from divestments based on our intrinsic value tests and our disciplined approach towards recycling capital to continuously reshape our portfolio.

As part of our T2030 strategy, three [growth engines](#) drive our portfolio construction — Investment, Partnership, and Development. With sustainability at the core of everything that we do, we invest to build a sustainable and inclusive future.

Investment Engine — Investing across Key Sectors and Geographies

Singapore Portfolio Companies

To prepare our local companies for the future, we engage them on their transformation journeys to deliver [sustainable value over the long term](#).

The combination of Sembcorp Marine and Keppel Offshore & Marine was completed in February 2023, leading to the formation of [Seatrium](#), a global player in offshore renewables, new energy, and cleaner offshore and marine solutions.

We also took part in [SATS'](#) S\$0.8 billion rights issue to partially fund the strategic acquisition of [Worldwide Flight Services](#). This will transform SATS from a regional into a global air cargo handling platform.

[Olam Group](#) completed the US\$1.24 billion sale of a substantial minority stake in [Olam Agri](#) to [Saudi Agricultural and Livestock Investment Company \(SALIC\)](#), and Olam Agri entered into a strategic supply and cooperation agreement with SALIC. The transaction unlocks significant value for shareholders and accelerates Olam Agri's growth.

Global Direct Investments

In the financial services sector, we stepped up investments in capital market infrastructure and wealthtech companies that focus on the democratisation of access to alternative investment products and modernisation of wealth management. We invested in [Blackstone](#) and [TPG](#) which are global alternative asset managers. We also made a follow-on investment in [iCapital](#), a financial technology company powering access to alternative investments.

In the technology and consumer sectors, we continued to invest in technology-enabled businesses underpinned by the structural trends of Digitisation and Future of Consumption. We invested in early stage companies such as [Trigo](#), an Israel-based retail automation platform using computer vision and sensors to enable cashierless checkout in supermarkets and retail stores, and [V7](#), a UK-based Artificial Intelligence data platform. We made follow-on investments in [Internet Brands](#), a US-based fully integrated online media and software services company, and [Zomato](#), an India-based online food delivery platform.

In China, we continued to invest and empower category leaders across new consumption patterns and innovation. We invested in [Koutech](#), a microsurgery robotics company; [Shanghai Friendless Electronic Technology](#), a laser cutting control system provider; and [Yum China](#), a quick service restaurant operator.

In India, we strengthened our technology, consumer, and financial services portfolio by increasing our stakes in existing investments and investing in market leaders and early stage companies in emerging categories. New investments included [Country Delight](#), a subscription-based food essentials platform; [HealthKart](#), a nutrition and wellness supplements manufacturer and retailer; and [OneCard](#), a mobile-first credit card issuance platform. We increased our stakes in [Shiprocket](#), a customer experience platform for direct commerce; and [HDFC Life](#) and [ICICI Prudential Life](#), which are life insurance providers. Post 31 March 2023, we entered into an

agreement to acquire a 41% stake in [Manipal Health Enterprises](#), a hospital chain in India. On completion, this would increase our shareholding to 59% when aggregated with the stake held by our wholly-owned subsidiary, [Sheares Healthcare Group](#).

In North America, we invested in [Stripe](#), a payments and software platform for online and omni-channel businesses, and [Kaseya](#), a provider of unified IT management and security software, to fund its acquisition of [Datto](#), a provider of security and cloud-based software solutions. We increased our stakes in [Mastronardi](#), a company that cultivates and distributes fresh produce grown in greenhouses.

In Europe, we invested in [EuroGroup Laminations](#), which makes components for electric motors. We also completed our acquisition of [Element Materials Technology](#), a provider of testing, inspection, and certification services, increasing our shareholding to 88%.



i Element Materials Technology provides testing, inspection, and certification services to clients in sectors such as aerospace, connected technology, mobility, life sciences, energy & built environment

Southeast Asia continues to offer attractive investment opportunities driven by strong economic fundamentals, favourable demographics, and secular tailwinds. We invested in [Oatside](#), a Singapore-based start-up that manufactures and supplies oat milk products; [Vietcombank](#), the largest commercial bank in Vietnam by market capitalisation; and [Waresix](#), an Indonesia-based digitally-enabled truck brokerage platform.

Partnership Engine — Enabling Growth through Platforms

[EvolutionX Debt Capital](#), a growth stage debt financing platform jointly established by Temasek and [DBS](#), has continued to provide non-dilutive financing to growth stage technology-enabled companies across Asia, with a focus on China, India, and Southeast Asia.

Our existing platforms such as [Azalea Investment Management](#), [Fullerton Fund Management](#), [InnoVen Capital](#), Pavilion Capital, and [SeaTown Holdings International](#) have continued to deliver returns while growing their businesses in an increasingly competitive environment.

Development Engine — Building Businesses of the Future

We continued to invest in deep tech and innovative technologies which could disrupt existing businesses or offer exponential growth potential in the future. For example, [PASQAL](#), a France-based quantum computing hardware and associated software stack designer, and [Ionblox](#), a US-based company developing next-generation lithium-ion batteries.



i PASQAL designs, manufactures and commercialises quantum computing hardware based on laser-trapped neutral atoms as well as associated software, for application across a broad range of fields

We have also set up ventures to enable innovation and growth across our ecosystem. We founded [minden.ai](#), a technology venture that enables more personalised and rewarding interactions between brands and consumers through the use of machine learning and Artificial Intelligence. In 2022, [minden.ai](#) launched [yuu Rewards Club](#), a digital consumer rewards programme in Singapore, in strategic partnership with [DFI Retail Group](#) and its coalition partners [BreadTalk Group](#), [DBS](#), [PAssion Card](#), [Mandai Wildlife Group](#), and [Singtel](#). yuu saw a million consumers sign up within four months of its launch.

[ClavystBio](#), a company that accelerates the commercialisation of life sciences research and innovation in Singapore, was launched by CLA Real Estate Holdings, a wholly-owned subsidiary of Temasek. It focuses on venture investing and partners private and public institutions to grow companies developing novel solutions to improve human health globally. ClavystBio aims to build and bridge life sciences communities and advance Singapore's rise as a global life sciences hub.

Sustainability at the Core — Investing to Drive Sustainable and Inclusive Growth

Over the year, we continued [investing in climate-aligned opportunities](#) in focus areas such as food, water, waste, energy, materials, clean transportation, and built environment; enabling carbon negative solutions through nature and technology-based solutions; and encouraging decarbonisation efforts in businesses.

We deployed capital towards companies with pivotal technologies and clean energy solutions that enable the shift away from carbon heavy fossil fuels to support the acceleration towards net zero.

For example, we invested in [BRUSA HyPower](#), a Switzerland-based designer and manufacturer of power electronics for medium to heavy-duty fuel cell electric vehicles; [Neste](#), a Finnish renewable fuels and circular solutions provider; [Ola Electric](#), India's largest electric two-wheeler player; and [Our Next Energy](#), a US-based energy storage company focused on battery technologies that will accelerate the adoption of electric vehicles and expand energy storage solutions. Post 31 March 2023, we committed to a financial investment in [Westinghouse](#), a US-based provider of nuclear fuel and services and a nuclear reactor original equipment manufacturer.

We also made follow-on investments in [Einride](#), a Sweden-based electric and autonomous freight mobility platform that enables sustainable and cost-efficient operations; [Solugen](#), a US-based specialty chemical manufacturing platform that aims to decarbonise the chemicals industry; and [Form Energy](#), a US-based energy storage company that is developing a low cost and multi-day duration battery for grid applications.



i Autonomous Gen 2 - Einride's latest electric powered and autonomous shipping truck (Photo: Einride)

We invested in carbon removal solutions such as [Living Carbon](#), a US-based biotechnology company that enhances CO₂ absorption and storage in trees through photosynthesis enhancement and shortening tree growing cycles, and made a follow-on investment in [Svante](#), a Canada-based carbon capture and removal solutions provider.

We also invested in companies in the circular economy. These included investments in [Circ](#), a US-based textile recycling company that chemically recycles polycotton textile waste into recycled polyester and lyocell, and [Samsara Eco](#), an Australia-based company that is developing a novel low cost and low energy recycling technology that breaks down PET and other types of plastic.

In the agri-food sector, we invested in [Agriconomie](#), a France-based agritech e-commerce platform, and [Brightseed](#), a US-based biosciences company that uses Artificial Intelligence and machine learning to discover bioactive plant compounds and validate their benefits for human health. We also made a follow-on investment in [Rivulis](#), a micro-irrigation company dual headquartered in Singapore and Israel that provides water-saving technology solutions to farmers worldwide. Rivulis recently completed its merger with [Jain Irrigation's](#) International Irrigation Business to become the world's second largest drip irrigation player. We also launched [Rize](#), a venture that is jointly incubated with [Breakthrough Energy Ventures](#), [GenZero](#), and [Wavemaker Impact](#). The company aims to reduce greenhouse gas emissions from rice production in South and Southeast Asia in a scalable and profitable way, while increasing productivity and farmer income to drive adoption of sustainable rice cultivation techniques.

We continued to forge partnerships with investors to further scale feasible and novel solutions to drive decarbonisation.

Together with [HSBC](#), we established [Pentagreen Capital](#), a debt financing platform dedicated to marginally bankable sustainable infrastructure projects, with an initial focus on Southeast Asia. The platform also has the support of the [Asian Development Bank](#) and [Clifford Capital Holdings](#). We are also part of a consortium led by [Brookfield Renewable Partners](#) that has signed a binding agreement to acquire [Origin Energy's](#) Energy Markets business, an Australian integrated power generator and energy retailer. The acquisition will accelerate decarbonisation of the energy grid, retire coal generation responsibly, and enable the energy transition in Australia.

We continued to step up our investments in funds and companies that aim to [generate a positive impact for underserved communities](#) while achieving sustainable returns over the long term. Over the year, we committed to a new fund managed by our strategic partner [LeapFrog Investments](#). We also invested in two other impact funds and made a direct investment in [SarvaGram](#), a company that provides financial and productivity enhancing solutions to rural households in India.



i A SarvaGram agent collecting information directly from a rural household in Garade, Maharashtra, India, to tailor the right financial products to offer



Resilient & Forward Looking Portfolio

How We Manage Risks

There are inherent risks whenever we invest, divest, or hold our assets, and wherever we operate.

We adopt a long term view of our investments, with the flexibility to take concentrated positions. We invest across all stages of the business life cycle, from [early stage](#) and/or unlisted, to large or listed assets. We do not have targets for investing by asset class, country, sector, or single name.

Our long investment horizon means we have a portfolio of predominantly equities which deliver higher risk-adjusted returns over the long term. Our stable funding base allows us to invest and benefit from companies with high growth potential through listed and [unlisted assets](#) (including private equity funds).

Consequently, given the high equity component, our portfolio is expected to have [higher year-to-year volatility of annual returns](#), with a greater risk of negative returns in any one year.

Our investment posture is to ride out short term market volatility and focus on generating [sustainable returns over the long term](#).

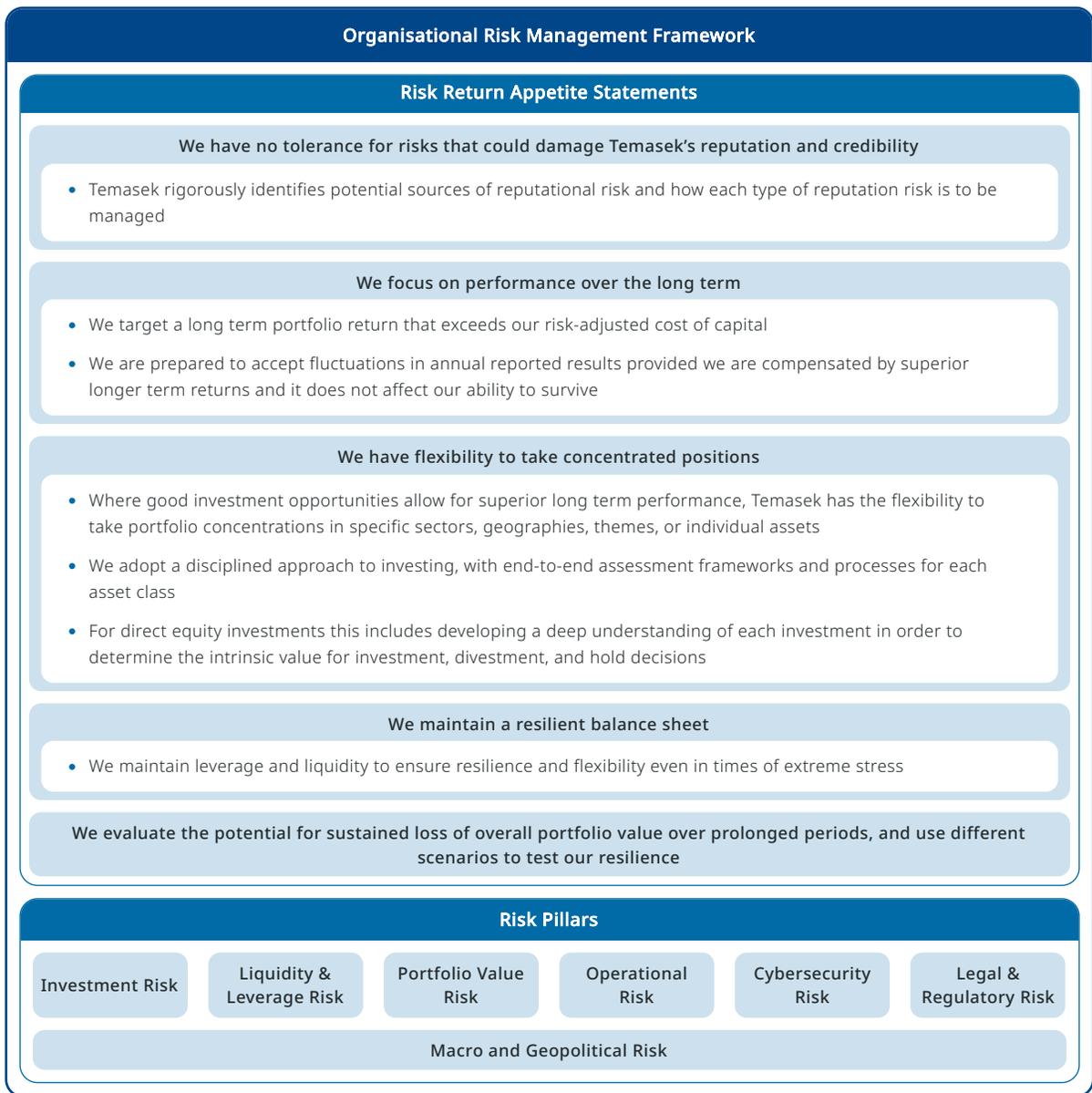
Given the expected volatility, we manage our leverage and liquidity prudently for resilience and investment flexibility, even in times of extreme stress.

Our investment posture is coupled with a culture of risk ownership throughout the organisation. This applies to both our investment activities and institutional capabilities. Our [risk-sharing compensation philosophy](#) puts the institution above the individual, emphasises long term over short term, and aligns the interests of our staff with those of our shareholder.

We have no tolerance for risks that could damage the reputation and credibility of Temasek.

Our Organisational Risk Management Framework includes Risk Return Appetite Statements which set out various levels of risks tolerance, from reputational risk to liquidity risk, and risk of sustained loss of overall portfolio value over prolonged periods.

We have no tolerance for risks that could damage the reputation and credibility of Temasek.



Risk Governance

There are various risk pillars by which we assess risks across a wide spectrum of domains. These risk pillars are supported by specialised teams comprising members from different functions and report to senior management for general oversight. We embed risk management in our systems and processes. These include our approval authority delegation, company policies, standard operating procedures, and risk reporting to our Board and [Board Risk & Sustainability Committee](#).

We embed risk management in our systems and processes.

Investment Risk

All new investment proposals are subject to a due diligence process commensurate with the nature of the investment to be made. This is intended to validate business theses and examine material risks. The exact scope of the required pre-investment analysis will be determined based on the specific risk profile being considered. Pre-investment analysis is done by our deal origination teams whose expertise is supplemented by internal experts or external professionals who perform additional due diligence in specialised areas such as legal, tax, and climate risks.

When we invest in companies, we will conduct a bottom-up fundamental valuation analysis, in addition to doing due diligence. We also use an appropriate [risk-adjusted cost of capital](#) to determine a best estimate of company valuation. Our analysis enables us to

estimate a fair value for the company. We also generate stress case valuations to help us gauge the degree of variability in potential future returns under different assumptions.

We will compare our reasonable estimate of fair value with current market pricing and valuation to determine if an investment makes sense at the proposed price and if it provides sufficient spread to our risk-adjusted cost of capital (RACOC), including an estimated cost of carbon emissions.

The cost of capital used in the modelling process will be a weighted value based on estimations of the likely financing structure of the company and its costs of debt and equity capital. We utilise the capital asset pricing model to derive an equity cost based on the relative riskiness of the business operations being undertaken. This takes into account leverage, the type of industry, and the countries of operation of the company. Investments in riskier sectors or markets will have higher costs of capital. We then add an illiquidity risk premium for unlisted investments and a venture risk premium for [early stage investments](#) to account for their respective risks.

We use the individual RACOC to normalise the assessment of risks, when we compare the relative attractiveness among investment opportunities. We may dial up or down the required spread over RACOC as a tool to tighten or loosen our investment risk appetite.

Depending on the external outlook and our [investment stance](#), we may choose to invest in opportunities with positive expected returns, which are below their respective individual RACOC. We deploy our excess liquidity in short term liquid investments that may give us returns lower than our cost of capital, as we assess opportunities to deploy in longer term investments.

All prospective investments must be reviewed and approved by our [Senior Divestment and Investment Committee \(SDIC\)](#).

Investment proposals made to SDIC are typically submitted by both market and sector teams who provide geographic and industry expertise. Depending on the size or risk significance, these proposals may be escalated to our [Board Executive Committee or Board](#) for a final decision.

Post-investment monitoring is performed by the investment teams on a continuous basis, and formally by senior management, at quarterly review meetings chaired by the Chief Investment Officer. They assess if the investment is performing to our expectations and whether any action should be taken.

Foreign Exchange Risk

Our projected risk-adjusted return for each investment proposal takes into account any anticipated foreign exchange (FX) movements.

We also selectively hedge FX exposures from confirmed nearer term cash flow and expected divestments within our forecast period.

Environmental, Social, and Governance (ESG) Risk

Our investments are evaluated on the basis of our ESG framework, which encompasses material ESG considerations across the investment process including a focus on the analysis of climate-related risks.

For example, we consider the effects of climate change, including physical and transition risks, in our investment analysis in sectors with higher exposure to climate risks. We use an internal carbon price of US\$50 per tonne of carbon dioxide equivalent ([tCO₂e](#)) to better assess the resiliency of companies to transition, and factor it into our returns expectation. We expect to increase our internal carbon price progressively to US\$100 per tCO₂e by the end of the decade.

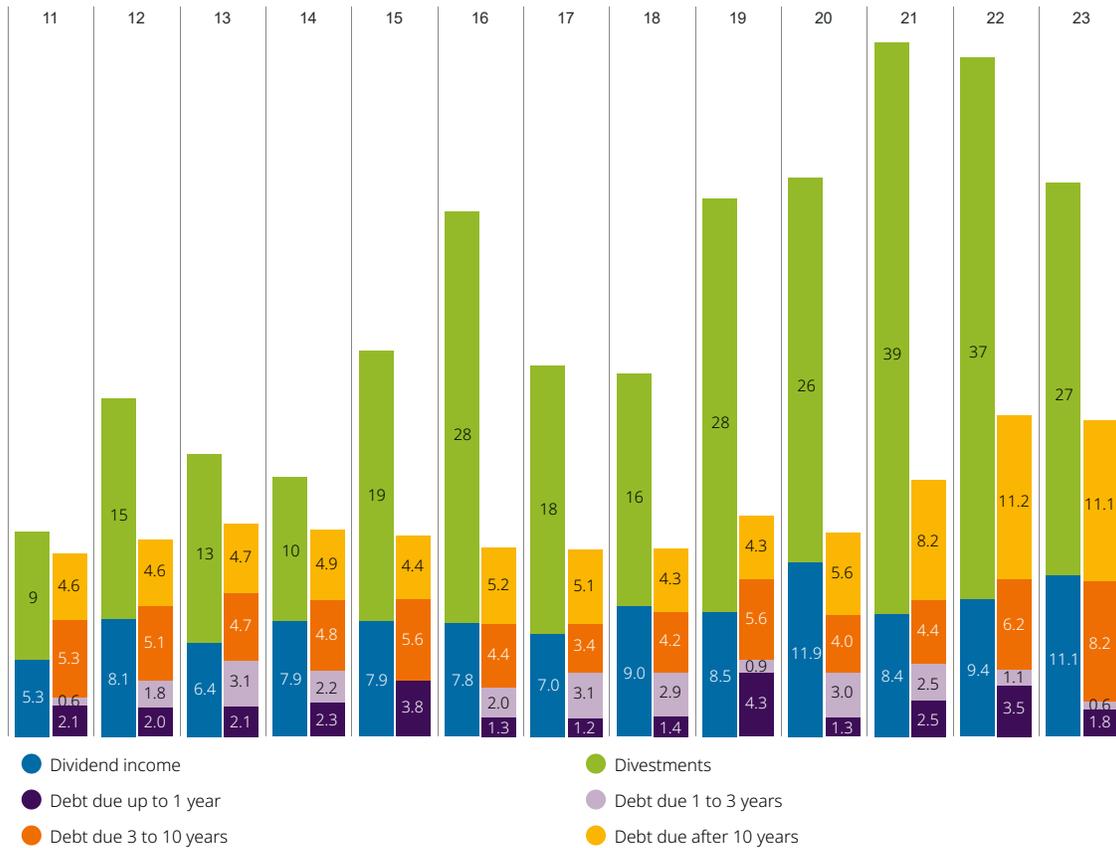
Liquidity & Leverage Risk

We manage our [leverage, liquidity, and balance sheet](#) prudently for resilience and flexibility. We manage our liquidity risk by ensuring that our primary recurring sources of cash flows can cover our non-discretionary expenses, such as operating expense, taxes, and interest to bondholders.

Our recurring income includes divestments, dividends from portfolio companies, and distributions from funds.

Our liquidity is supported primarily by our recurring income, supplemented by proceeds from debt issuances via [Temasek Bonds](#) and [Euro-commercial Paper](#), as well as bank borrowings. Total leverage is restricted to an overall debt limit set by our Board. The debt limit takes into account our portfolio value, shareholder funds, forecast cash flow, and credit profile. We maintain a well distributed [debt maturity profile](#), avoiding large refinancing risk in any one year.

Key Recurring Income vs Debt Maturity Profile (\$b)



Besides maintaining the discipline of regular divestments to generate liquidity, the construction of our portfolio enables us to tap into liquidity in times of stress. As at 31 March 2023, our liquid and sub-20% listed assets alone were about five times our debt outstanding. In the very unlikely extreme scenario where we have no other cash inflows, aside from using our liquidity balance, divesting a small part of our liquid and sub-20% listed assets would be sufficient to cover the total debt outstanding in under two weeks.

Further, Temasek does not provide any financial guarantees for the obligations of our portfolio companies.

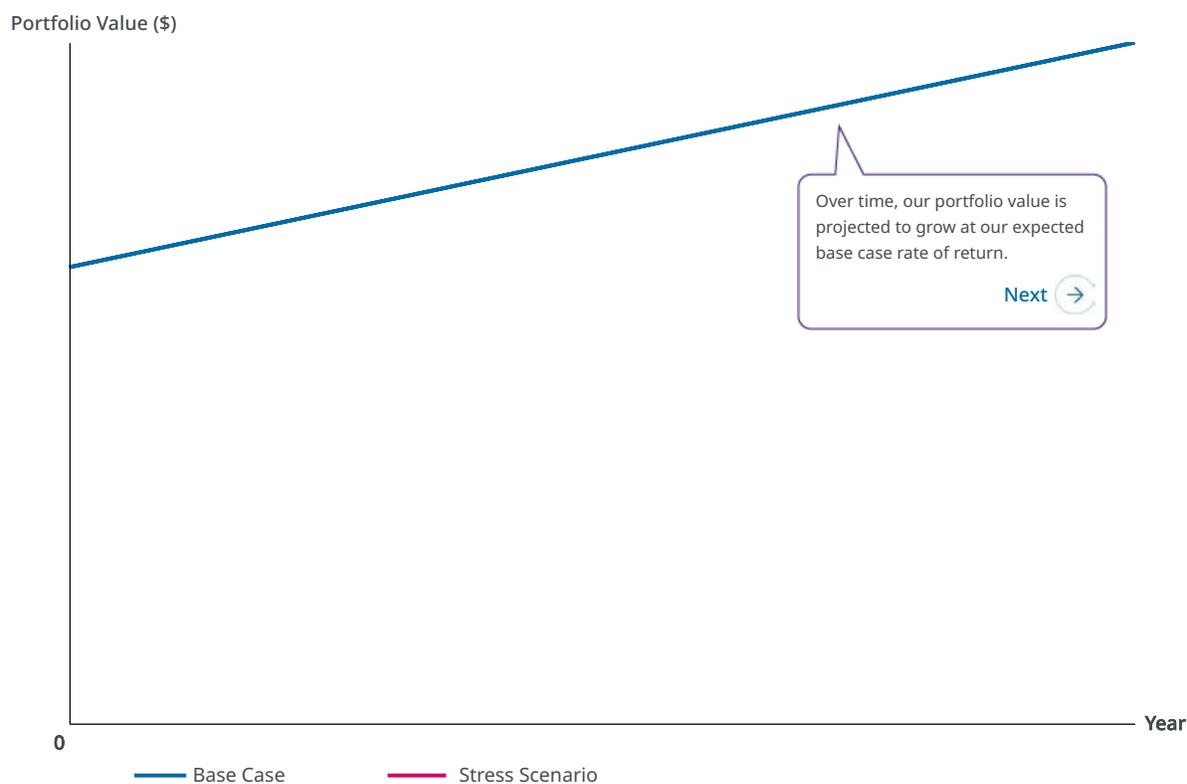
Portfolio Value Risk

We track and manage risks proactively, through economic and market cycles, including specific risks at the asset level.

We assess the sustained impact of multiple risk scenarios on the intrinsic value of our investments. The aggregate of these changes provides an estimate of the portfolio level variation in present value, future cash flows, and income in each scenario.

As illustrated in the diagram below, Fundamental Earnings Impact is our estimate of sustained loss. This is different from Trough Impact, which includes mark to market effects due to short term increases in risk aversion. We do not manage our portfolio to short term mark to market changes.

Illustration of Fundamental Earnings Impact



Based on our assessments of any likely sustained loss, consistent with our intrinsic value discipline, we may manage the risks as follows:

- Divest, hold, or protect the individual investment impacted;
- Change the portfolio composition for the long run;
- Take actions to protect the portfolio, for example, by entering into tactical single stock, index or rates hedges.

Operational Risk

We have institutionalised a risk incident reporting process which encourages staff to proactively report gaps, perform root cause analysis, and adopt appropriate remediating measures for all reported risk incidents. This contributes to a work environment with a focus on excellence and helps build a healthy risk management culture in Temasek.

We are committed to continuously improve the way we manage business continuity risks. Our contingency management framework ensures business continuity and manages incidents arising from safety, physical security, cybersecurity, and other threats. The framework also takes into account the potential impact of emerging risks, such as physical threats and health situations around the world.

Over the year, we conducted response exercises regularly to ensure that our contingency plans and disaster recovery remain effective, relevant, and adequate, including responses to failure of important information infrastructure and potential physical threats. We constantly work on improving our capabilities to ensure that our staff and visitors remain safe, and that critical business functions can resume functioning in a timely manner during times of emergencies.

In addition, staff volunteers are trained as part of our *Care Supporter Programme* to provide psychological support to their fellow colleagues affected by traumatic events. Our *Care Supporters* network has been extended across our international offices and is integrated with our contingency management plans for a holistic response to incidents.

Cybersecurity Risk

To protect our firm and investments from threats in the evolving cybersecurity landscape, we regularly monitor and track [cyber risks](#) and continuously enhance our cybersecurity defence and resilience. We continually assess and perform regular testing of our environment to ensure our cybersecurity controls are effective. We engage our portfolio companies and partners on a regular basis to champion best practices in the cyber space and elevate our respective cyber defence and resilience.

We regularly monitor and track cyber risks and continuously enhance our cybersecurity defence and resilience.

Our cybersecurity team, supported by expertise from our [cybersecurity platform companies](#), assess the cybersecurity health of potential investee companies as part of the investment due diligence process. Their assessment is based on four areas: key data assets; regulatory requirements and data privacy; cybersecurity policy and governance; and assessment and incidents. If additional information is required after their assessment, a comprehensive cybersecurity scan on potential investee companies may be conducted.

Legal & Regulatory Risk

We comply with all obligations under Singapore laws and regulations, including those arising from international treaties and UN sanctions, as well as the laws and regulations of jurisdictions where we have investments or operations.

Our global footprint, coupled with a fast and ever evolving legal and regulatory environment and increasing enforcement and oversight by authorities, reinforces the importance of robust transactional processes and compliance programmes. We continue to build expertise across novel and developing areas that we are involved in to ensure that we are able to identify and manage legal, regulatory, and compliance risks appropriately.

We comply with the laws and regulations of jurisdictions where we have investments or operations.

Our Legal & Regulatory (L&R) department ensures that policies, processes, and systems are appropriately designed and implemented, consistent with applicable laws, and, aligned with Board directives to advance the firm's objectives while managing risks and safeguarding its interest. For instance, our policy on derivative transactions permits only personnel authorised by a board resolution to enter into such transactions within strict scopes and limits on behalf of specific designated entities. Other examples include implementing policies and control processes to prevent financial crime such as bribery and corruption, and sanctions violations, and to ensure compliance with foreign direct investment, merger control and export controls regimes. We continuously monitor regulatory developments to ensure that our policies, procedures, and monitoring systems reflect these changes.

L&R monitors regulatory reporting compliance through a systematic securities tracking process. Regulatory requirements and monitoring systems are continually reviewed and updated to reflect changes in laws and regulations, governance principles, and market practices.

We encourage and facilitate the development of a sound corporate culture that incentivises good staff behaviour. High ethical standards and compliance with applicable laws and regulations are expected in the pursuit of our business interests. Specific attention is directed at governance, incentive systems, and training.

Our policy permits only personnel authorised by a board resolution to enter into derivative transactions within strict scopes and limits.

At the core of this is our Temasek Code of Ethics and Conduct (T-Code) and its related policies that guide our Board directors and staff in their daily dealings and conduct. With integrity as the key overarching principle, T-Code policies cover areas such as anti-bribery, whistle-blowing, management of confidential information, and prohibition against insider trading. Our annual staff bonus plans include T-Code compliance requirements.

Macro and Geopolitical Risk

Over the last decade, besides the ever-changing macroeconomic landscape, we have seen heightened [geopolitical](#) tensions arising from events such as war and the pandemic, as well as great power rivalry.

Our views around the global economy help to guide Temasek's investment stance and our overall deployment pace. We also recognise that there has been a renewed and urgent focus on national security (encompassing economic security and competition), resiliency including energy and commodity sufficiency, data ownership, techno-nationalism, and the use of subsidies, to name a few

pressing issues. The presumptive gains from the globalisation of trade, investment, and technology are subject to ever greater scrutiny.

To stay ahead of these developments, our International Policy and Governance teams — located in Beijing, Brussels, Singapore, and Washington, DC — actively monitor geopolitical risks and anticipate policy developments in our key markets that could impact our activities.

Through our engagement with thought leaders and authorities, we exchange views so as to promote better outcomes for all in the design and implementation of policy. In particular, we aim to promote a better understanding of how we operate based on commercial principles, and independent of government interference and support.



Resilient & Forward Looking Portfolio

12-month Returns Simulation

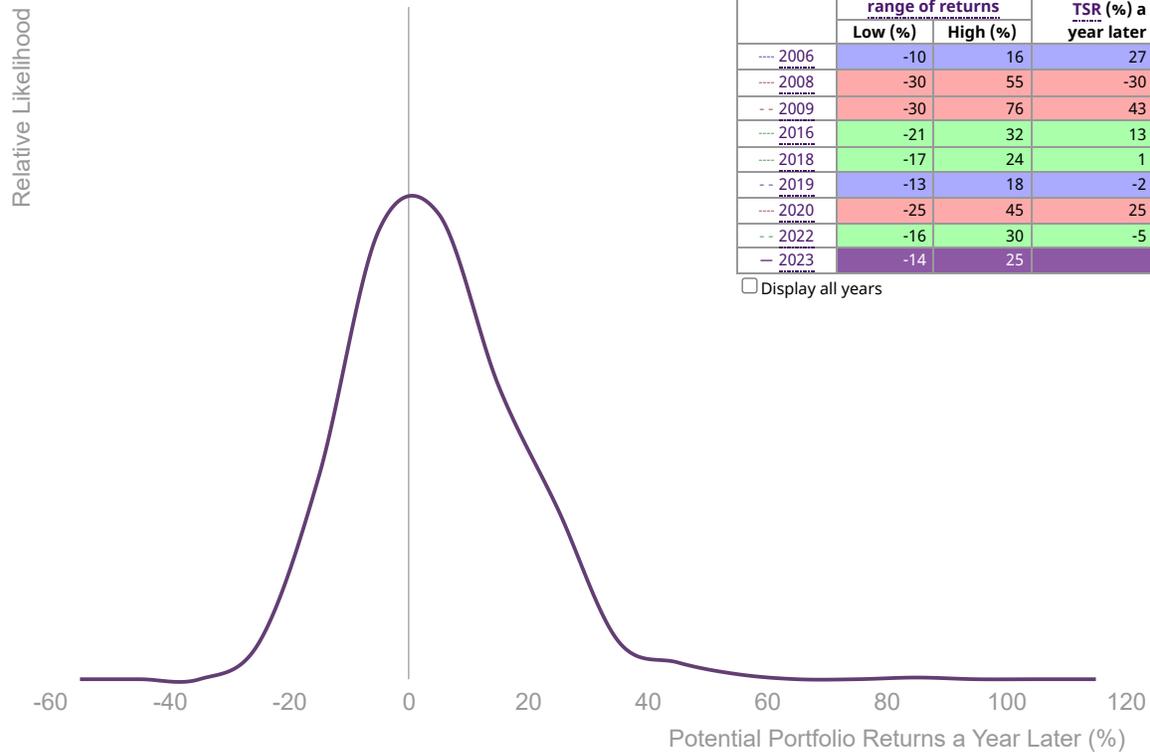
While we expect volatility consistent with a largely equities portfolio, we manage our portfolio to deliver sustainable returns over the long term.

For our current portfolio mix, our Monte Carlo simulations show a five-in-six chance that one-year forward portfolio returns may range from -14% to +25%. Our annual returns ranged from -30% to +46%, over the past 20 years.

Narrower curves in the chart below mean less volatility compared, for instance, to the flatter curves of the 2008/09 Global Financial Crisis (GFC) years.

(as at 31 March)

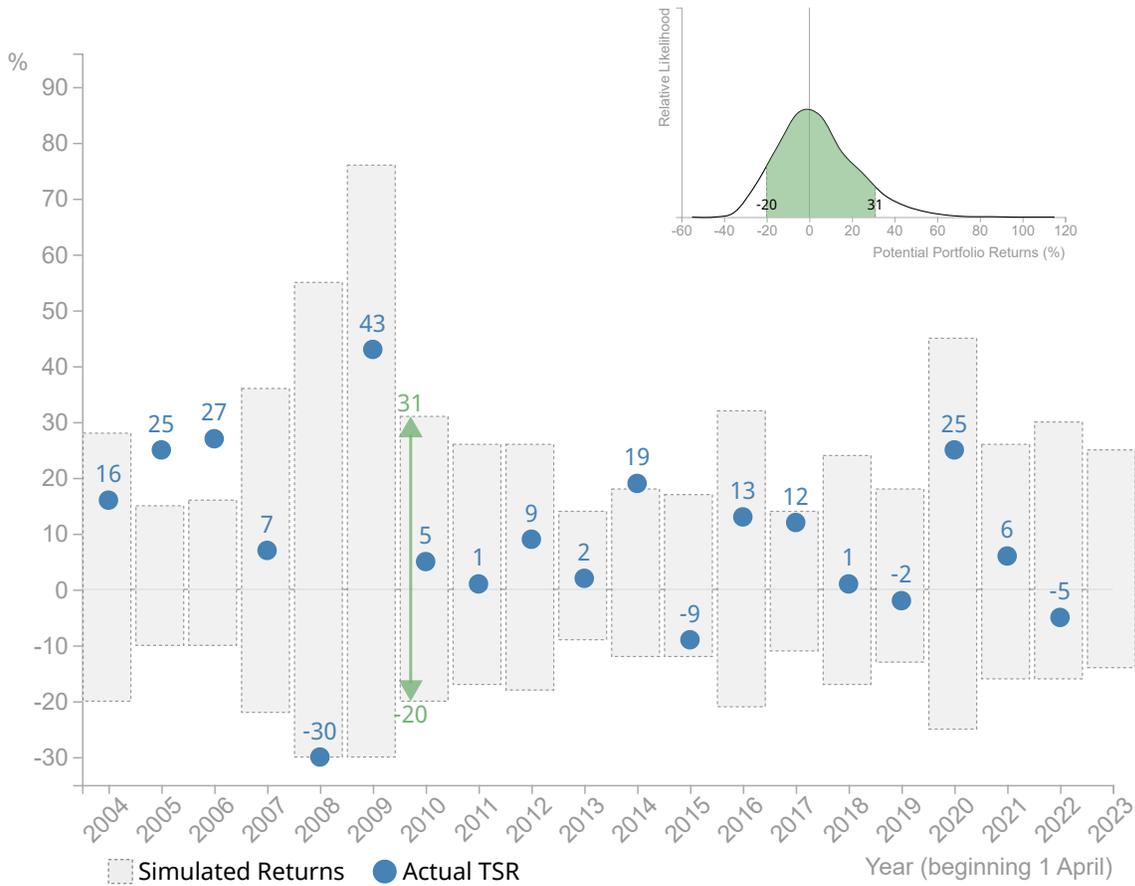
Simulation of 12-month Forward Portfolio Returns



Volatility of Returns

A wider simulated range means a more volatile outlook.

For the year **2010/2011**, the simulated five-in-six chance portfolio return was between **-20%** and **+31%**, corresponding to a period of **medium** market volatility. Actual TSR was **5%**.



The range of possible returns from the simulation is dependent on the prevailing volatility and correlation conditions of asset markets. When prevailing volatility is high, such as at the onset of the COVID-19 pandemic or during the GFC years, the wider range of one-year simulated forward returns signals greater probability of larger gains and losses.



Resilient & Forward Looking Portfolio

20-year Returns Outlook

Our Temasek Geometric Expected Return Model, or T-GEM, simulates the range of possible returns for our portfolio over the next 20 years. These simulations do not predict actual outcomes.

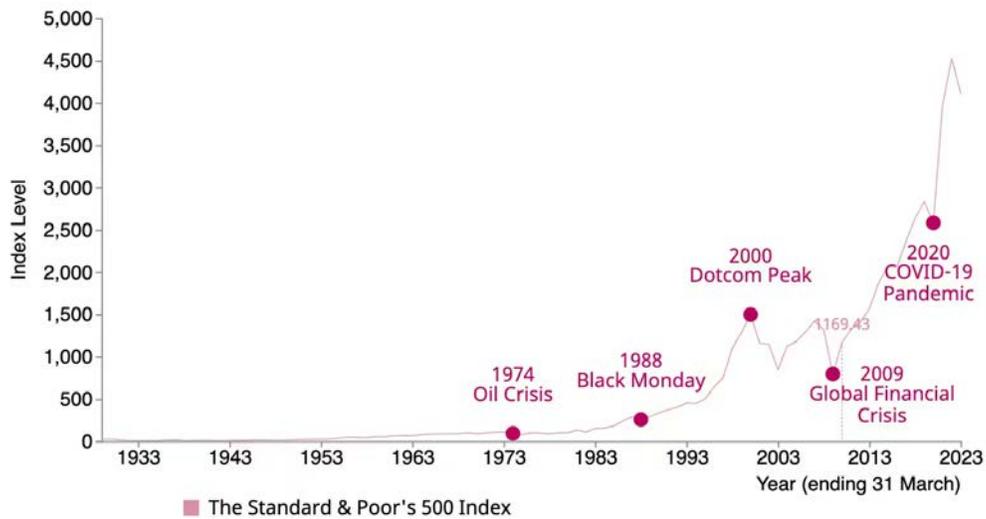
(for year ended 31 March)

1. Markets are volatile

2. Annual equity returns are volatile

3. Long term equity returns are also volatile

The S&P 500 Index has swung widely, underpinned by cycles of boom and bust.

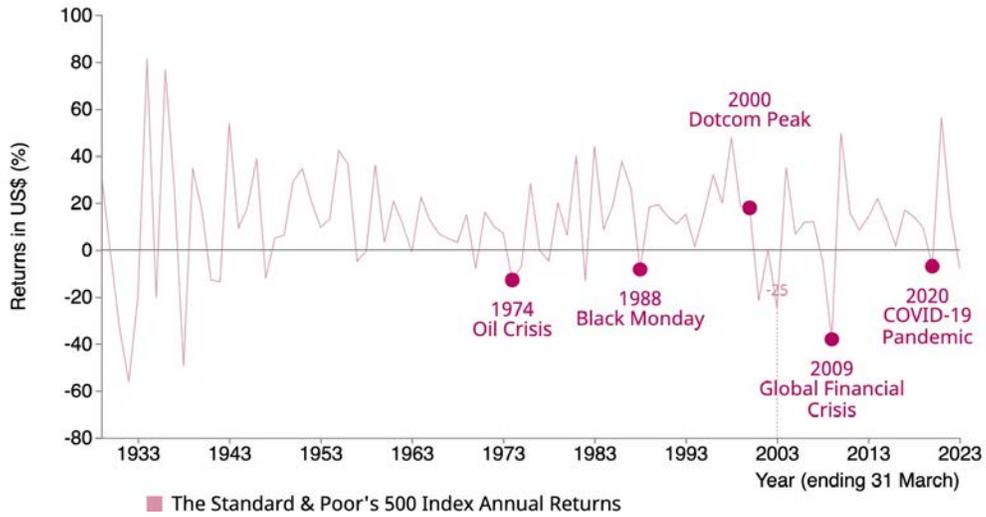


1. Markets are volatile

2. Annual equity returns are volatile

3. Long term equity returns are also volatile

Equity returns are volatile over time, driven by macroeconomic or geopolitical events.



1. Markets are volatile

2. Annual equity returns are volatile

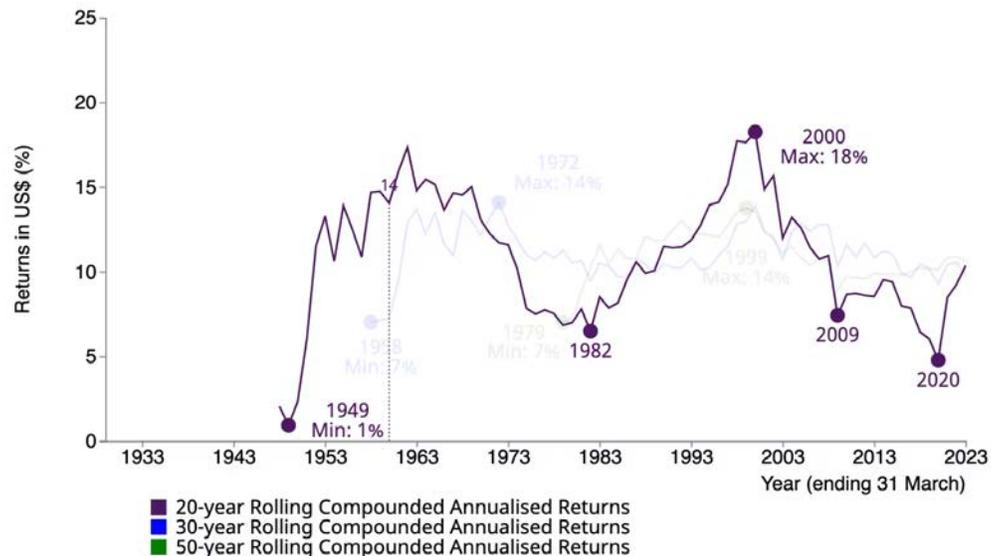
3. Long term equity returns are also volatile

Even on a 20-year rolling basis, returns varied significantly across time. Likewise, on a longer 30-year or 50-year rolling basis, returns still vary significantly.

20-year Rolling

30-year Rolling

50-year Rolling



1. Markets are volatile

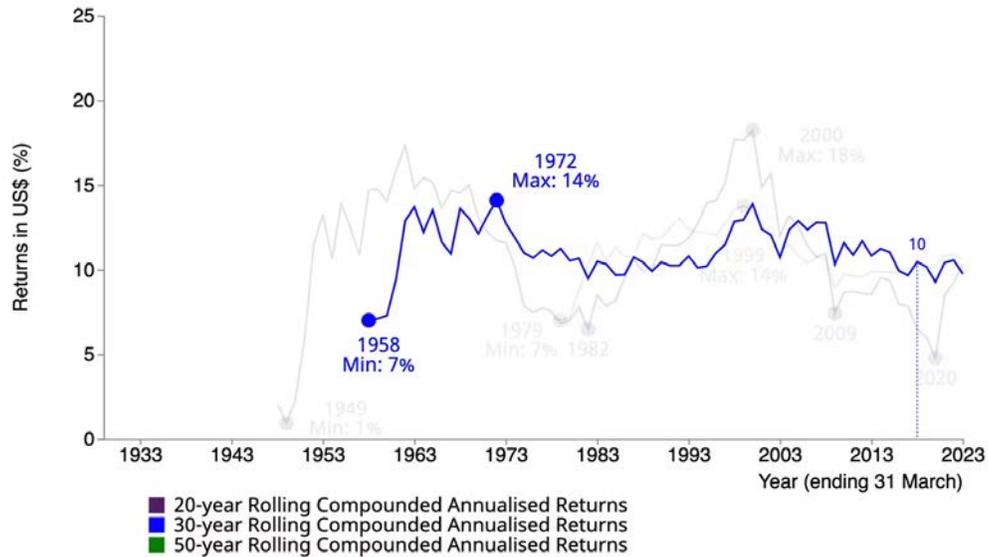
2. Annual equity returns are volatile

3. Long term equity returns are also volatile



Even on a 20-year rolling basis, returns varied significantly across time. Likewise, on a longer 30-year or 50-year rolling basis, returns still vary significantly.

20-year Rolling 30-year Rolling 50-year Rolling



1. Markets are volatile

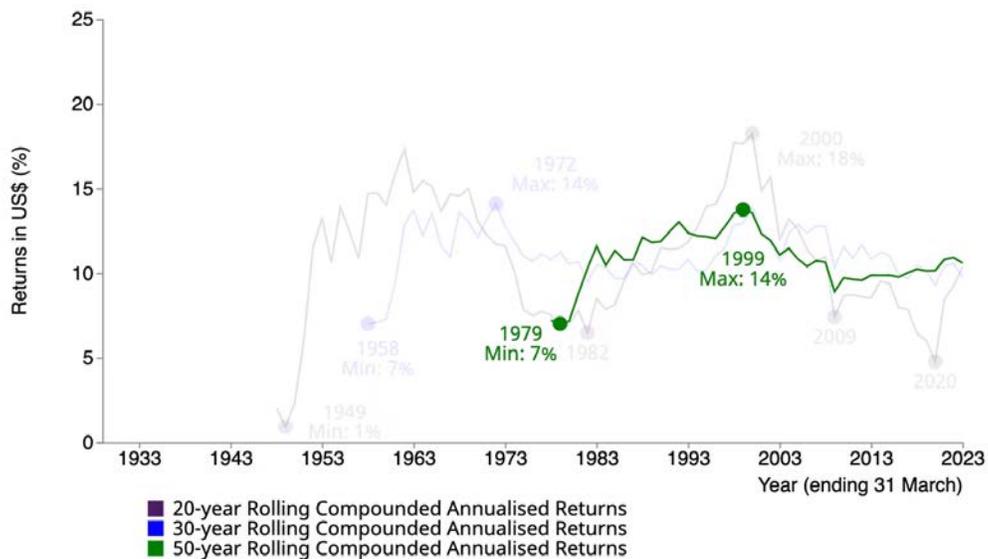
2. Annual equity returns are volatile

3. Long term equity returns are also volatile



Even on a 20-year rolling basis, returns varied significantly across time. Likewise, on a longer 30-year or 50-year rolling basis, returns still vary significantly.

20-year Rolling 30-year Rolling 50-year Rolling



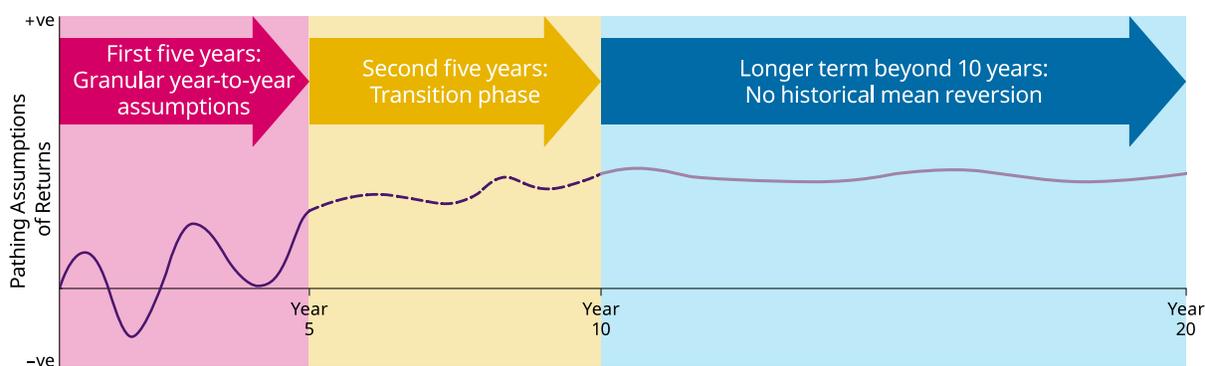
Economic Scenario-Based Approach

Equity returns are volatile over time, and influenced by macroeconomic or geopolitical events and shocks. Hence, T-GEM uses a scenario-based approach to simulate our 20-year long term expected returns. This approach takes into account our views of long term macroeconomic fundamentals over the next 20 years, adjusted for current market valuations.

Projection Based on Economic Fundamentals

In projecting economic fundamentals, we make more granular year-to-year assumptions for the first five years, and transition to more general assumptions based on longer term fundamentals as we go beyond 10 years. This “pathing” approach incorporates assumptions about changes in economic conditions over time. We do not assume an equilibrium return that remains unchanged over the 20-year period, nor do we assume a reversion to the historical mean.

Economic Scenario Pathing (Illustrative)



20-year Expected Returns for Different Portfolio Mix

The charts below illustrate the simulated returns for a [Global Bond Portfolio](#), a [Global Equity Portfolio](#), and the Temasek Portfolio. The simulations are based on our Central Scenario.

The Global Bond Portfolio has the lowest upside potential, as compared to the Global Equity and Temasek Portfolios. It also has the least volatility, as shown by its narrower year-to-year annual returns distribution curve.

The Temasek Portfolio has the highest upside potential (see blue shaded) at the end of the 20-year period, but also the highest volatility.

Likelihood of Geometric Returns (Compounded Annualised) at the End of 20-year Period, by Portfolio Mix

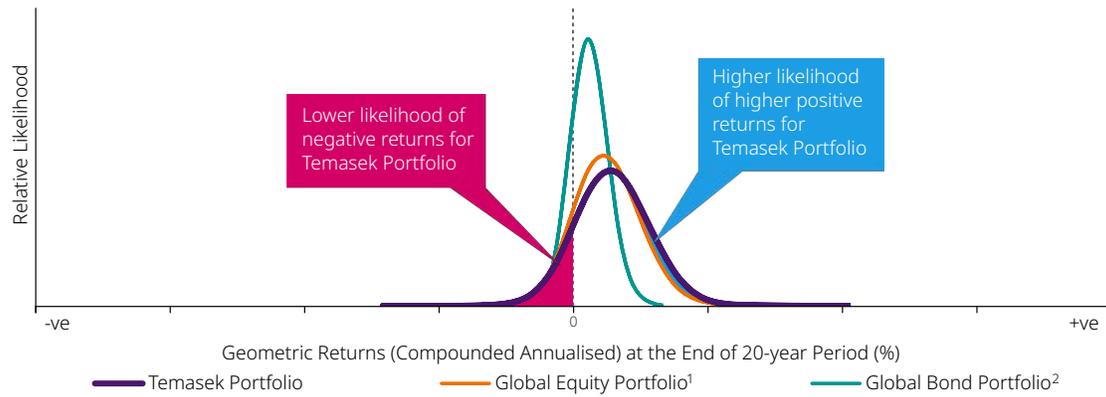


Chart Notes

Likelihood of Year-to-year Annual Returns during 20-year Period, by Portfolio Mix

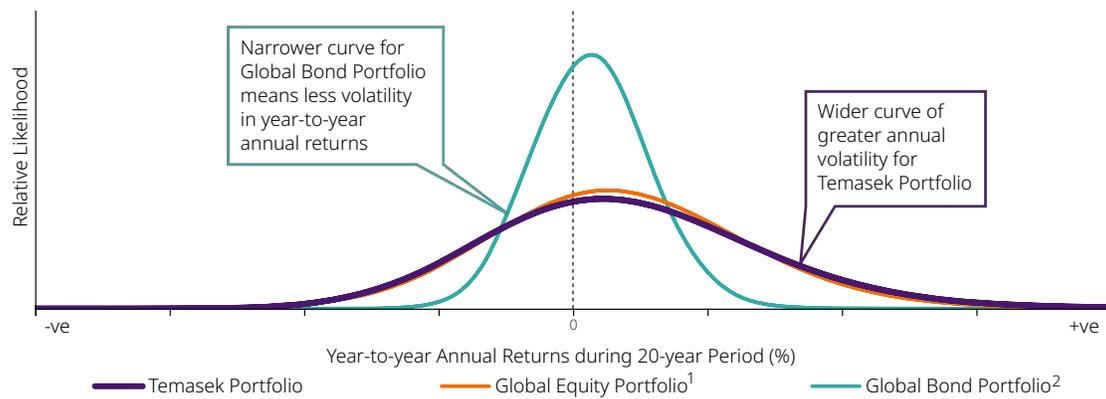


Chart Notes

20-year Expected Returns for Various Temasek Scenarios

We simulate our 20-year expected returns under different scenarios.

Potential Scenarios for 2023 and Beyond

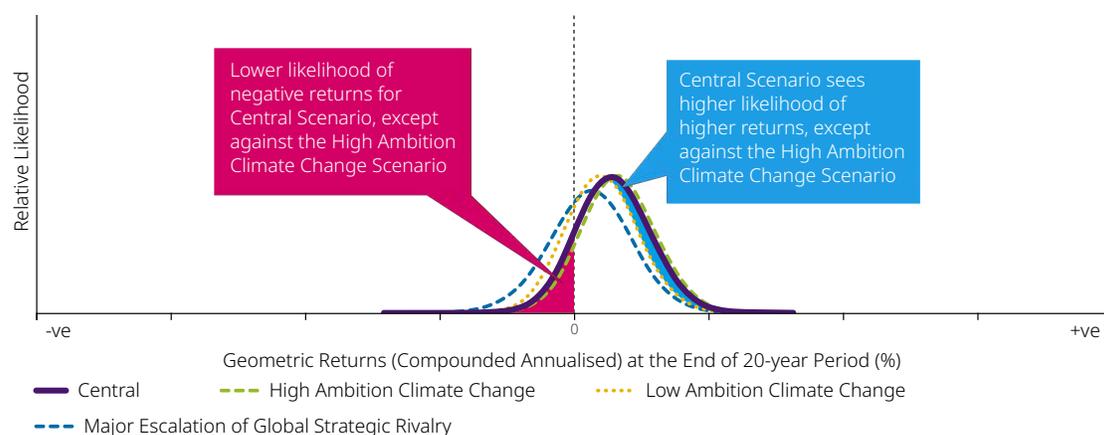
| Potential Scenarios | Description |
|--|---|
| Central (Our most likely scenario) | Our baseline expectations of growth and inflation, that also include longer term challenges such as climate change as well as high and rising geopolitical tensions. |
| Differing Climate Change Pathways (Less likely scenarios) | Our "High Ambition" scenario assumes greater mitigation efforts to slow the rise in temperatures. Our "Low Ambition" scenario assumes no further mitigation efforts, which results in a disastrously steep rise in temperatures by 2100. |
| Major Escalation of Global Strategic Rivalry (Less likely scenario) | A significant intensification of tensions between the global superpowers accelerates bifurcation across various economic blocs. This would result in a global stagflationary environment amidst structurally lower levels of productivity and economic growth (from reduced trade and investment), with elevated prices as global supply chains remain constrained. |

The T-GEM 20-year returns curves for the Temasek Portfolio are shown below for the Central, Differing Climate Change Pathways, and Major Escalation of Global Strategic Rivalry Scenarios.

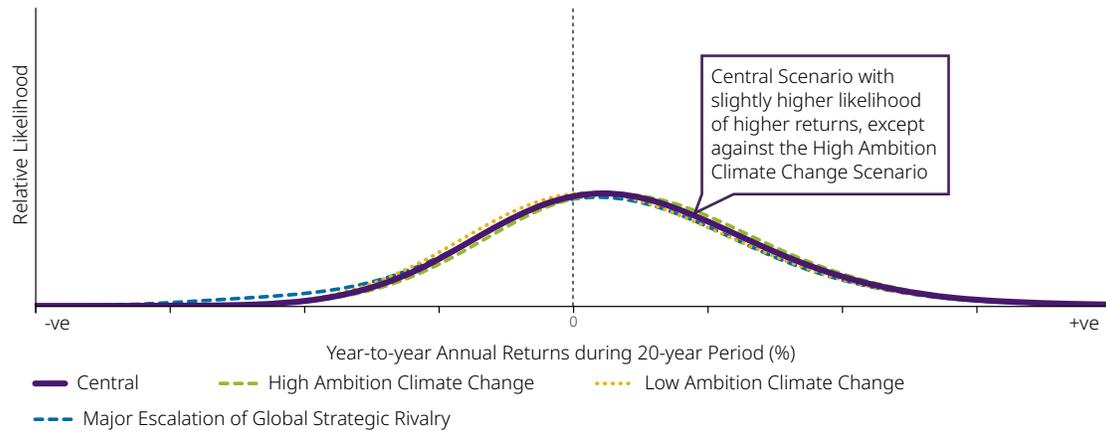
Broadly, the Central Scenario offers higher 20-year expected returns for the Temasek Portfolio, compared to those under the other alternate scenarios. The exception is the High Ambition Climate Change Scenario, where there is concerted effort and strong actions to mitigate climate change and carbon emissions, for a more liveable world.

(as at 31 March 2023)

Likelihood of Geometric Returns (Compounded Annualised) at the End of 20-year Period, by Potential Scenario

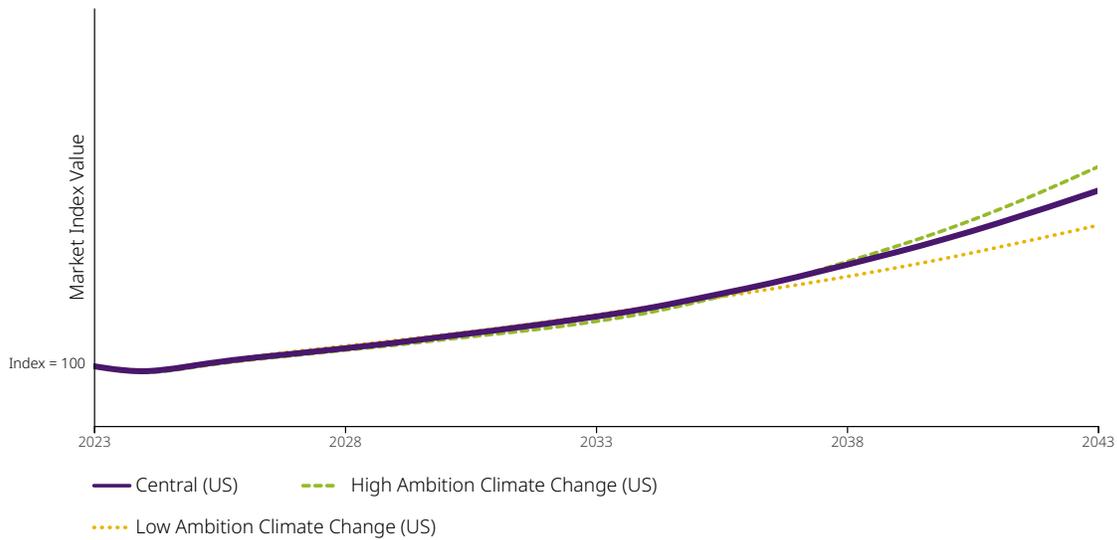


Likelihood of Year-to-year Annual Returns during 20-year Period, by Potential Scenario

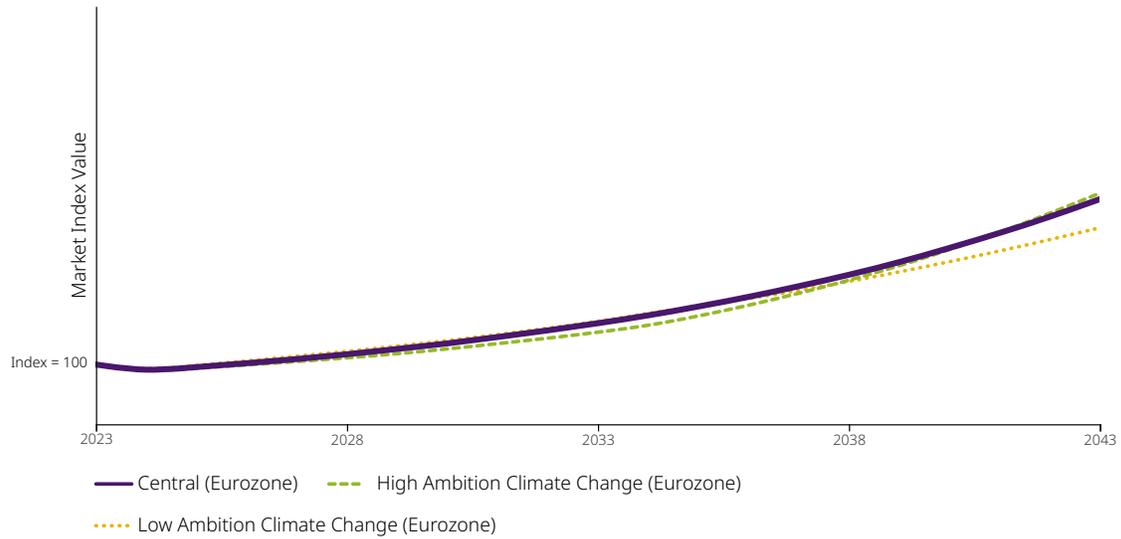


The four charts below show the positive impact of the High Ambition Climate Change Scenario on the 20-year returns in the four key markets of the US, the Eurozone, China, and Singapore. These markets make up 74% of Temasek's underlying portfolio exposure as at 31 March 2023, and will consequently also drive higher 20-year returns for Temasek. However, the associated transition costs may slightly depress returns over the next decade or so, as a medium term trade-off.

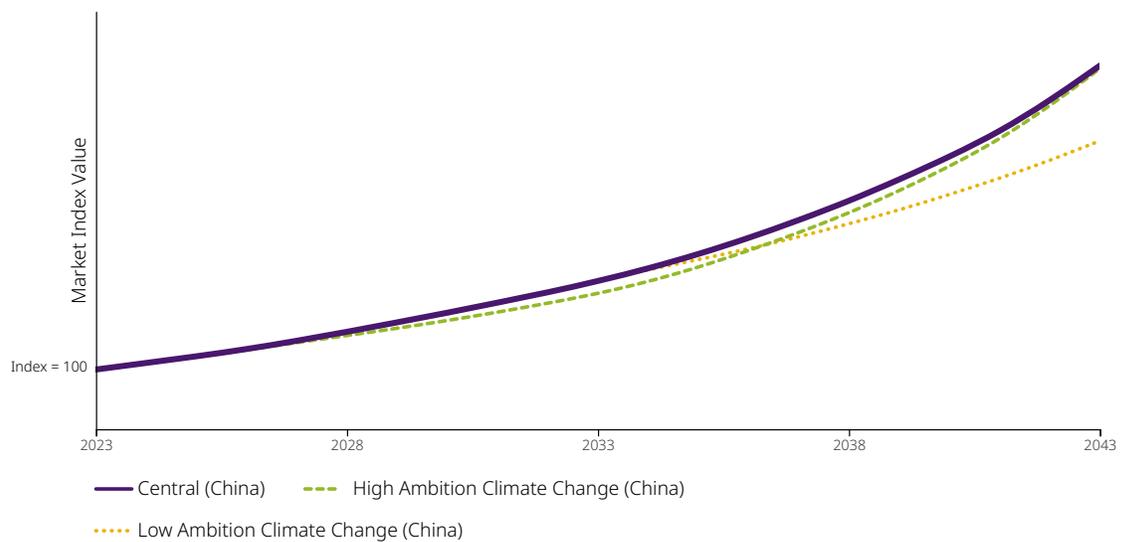
Market Index Value at the End of 20-year Period, by Potential Scenario (US)



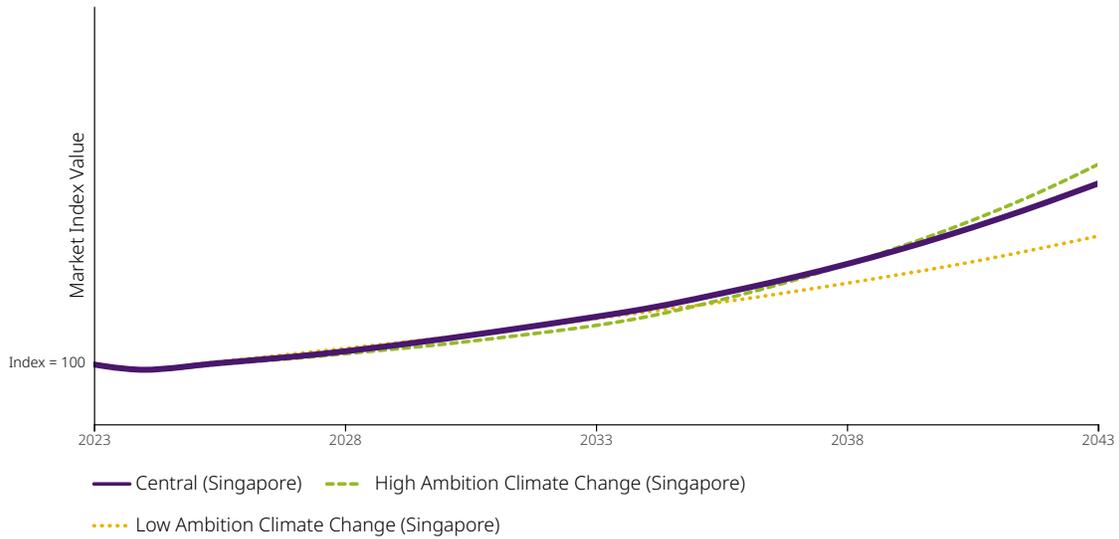
Market Index Value at the End of 20-year Period, by Potential Scenario (Eurozone)



Market Index Value at the End of 20-year Period, by Potential Scenario (China)



Market Index Value at the End of 20-year Period, by Potential Scenario (Singapore)



A High Ambition Climate Change agenda will not only deliver environmental and social benefits. Our T-GEM model highlights that the High Ambition scenario is compatible with our aim of doing well, doing right, and doing good, to deliver better and more sustainable returns over the longer term horizon even as we benefit people and planet with ambitious carbon abatement actions.

In contrast, the Low Ambition scenario of no further mitigation efforts will result in huge irreversible damages which will depress longer term returns in all markets.



Resilient & Forward Looking Portfolio

Public Markers

Our *Temasek Review*, Credit Profile, and Temasek Bonds serve as public markers for Temasek.

The *Temasek Review* is our annual scorecard.

Our Credit Profile covers our [key credit parameters](#) for leverage, interest coverage, and debt service coverage. Our credit ratios facilitate a quantitative assessment of our credit quality and demonstrate our fundamental strength as an investment company.

We are rated [Aaa/AAA by Moody's Investors Service and S&P Global Ratings respectively](#). Ratings are an outcome of credit rating agencies' independent assessment of Temasek's business and financial position in accordance with their respective methodologies.

We issue [Temasek Bonds](#) and [Euro-commercial Paper](#) periodically to a diversified investor base, including retail, institutional, and accredited investors. The credit spreads of our Temasek Bonds, adjusted for any broad macro market movements, are also living public market signals of any perceived changes in Temasek's credit quality.

Our public markers reinforce [financial discipline](#), broaden our stakeholder base, and facilitate our communications with the wider community.



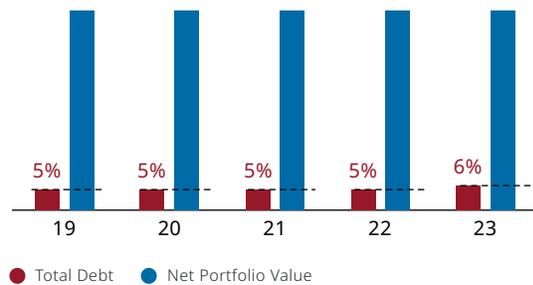
Resilient & Forward Looking Portfolio

Credit Profile

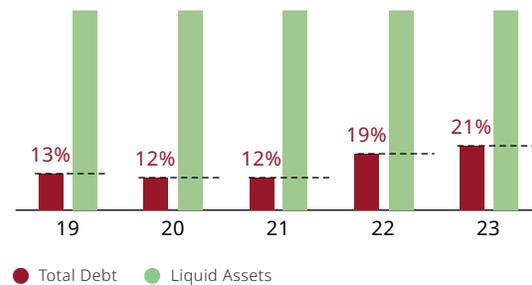
Our Temasek Credit Profile is a snapshot of our credit quality and financial strength. For these ratios, the lower the percentage, the higher the credit quality.

(for year ended 31 March)

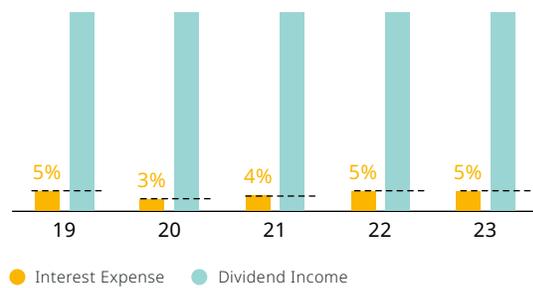
Total Debt
6% of Net Portfolio Value



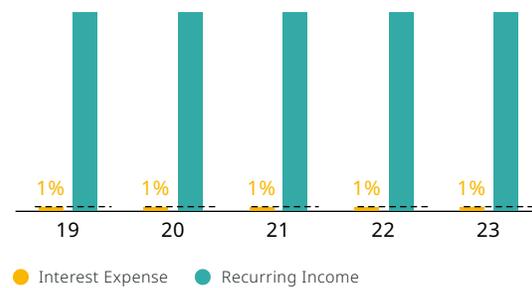
Total Debt
21% of Liquid Assets



Interest Expense
5% of Dividend Income

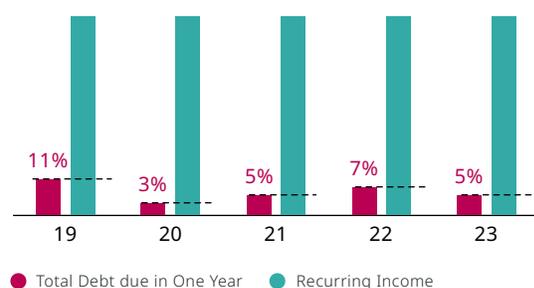


Interest Expense
1% of Recurring Income



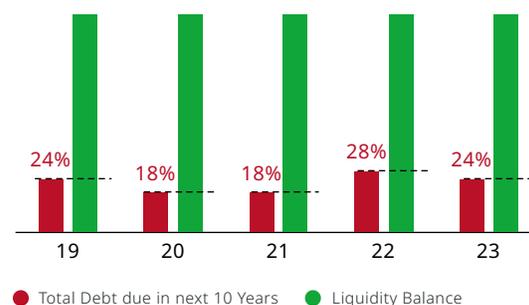
Total Debt due in One Year

5% of Recurring Income



Total Debt due in next 10 Years

24% of Liquidity Balance



As an investment company, our divestments, dividends from our portfolio and distributions from funds are used to make investments, fund business expenses, as well as pay interest and principal to bond investors, taxes to tax authorities, and dividends to our shareholder.

For the year ended 31 March 2023, Temasek made S\$27 billion of divestments, which include fund distributions, and earned S\$11 billion in dividend income. These amounts formed the bulk of our recurring income.

Temasek had S\$22 billion of debt outstanding as at 31 March 2023, representing 6% of our net portfolio value.

Our interest expense for the year ended 31 March 2023 was about 5% of our dividend income.

As part of our T2030 strategy, we aim to build a resilient and forward looking portfolio. We maintain sufficient access to liquidity to not only serve as a buffer against shocks in this uncertain environment, but also to allow us to take advantage of investment opportunities, so as to deliver sustainable returns over the long term. We invest in high-quality assets that generate recurring income to provide us with strong and stable liquidity. We also maintain the discipline of regular divestments to generate liquidity.

Our portfolio enables us to tap into liquidity in times of stress. As at 31 March 2023, our liquid and sub-20% listed assets alone were about five times our debt outstanding. In the very unlikely extreme scenario where we have no other cash inflows, aside from using our liquidity balance, divesting a small part of our liquid and sub-20% listed assets would be sufficient to cover the total debt outstanding in under two weeks.

Key Credit Parameters (in S\$ billion)

| For year ended 31 March | 2019 | 2020 | 2021 | 2022 | 2023 |
|--------------------------|-------|-------|-------|-------|--------------|
| Divestments | 28 | 26 | 39 | 37 | 27 |
| Dividend income | 8.5 | 11.9 | 8.4 | 9.4 | 11.1 |
| Income from investments | 0.4 | 0.8 | 0.7 | 1.0 | 0.9 |
| Interest income | 0.4 | 0.7 | 0.1 | 0.1 | 0.6 |
| Interest expense | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 |
| Net portfolio value | 313 | 306 | 381 | 403 | 382 |
| <u>Liquid assets</u> | 112.2 | 112.4 | 143.1 | 113.6 | 104.5 |
| <u>Liquidity balance</u> | 44.2 | 47.1 | 50.8 | 38.4 | 43.7 |
| <u>Total debt</u> | 15.1 | 13.9 | 17.6 | 22.0 | 21.7 |



Resilient & Forward Looking Portfolio

Temasek Bonds

Our Temasek Bonds and Euro-commercial Paper are part of our funding toolkit.

Temasek Bonds are issued under our two Medium Term Note programmes and our Euro-commercial Paper (ECP) is issued under our ECP programme, to raise capital for investing in attractive opportunities that are expected to deliver sustainable returns over the long term. These programmes allow us funding flexibility between long and short term debt.

Our Temasek Bonds provide financing flexibility, serve as public markers to reinforce financial discipline, and broaden our stakeholder base. We have been issuing Temasek Bonds since 2005 and have built up a diversified investor base, including retail, institutional, and accredited investors over the years.

As at 31 March 2023, we had S\$20.2 billion of Temasek Bonds and S\$1.3 billion of ECP outstanding, in equivalent Singapore dollar value. The weighted average maturity for Temasek Bonds was over 19 years, and above 3 months for ECP.

All Temasek Bonds are rated Aaa/AAA by Moody's Investors Service (Moody's) and S&P Global Ratings (S&P) respectively. Our ECP programme has been assigned top short term ratings of P-1/A-1+ by Moody's and S&P respectively.

Our Credit Profile is based on Temasek's financial position as an investment company. It is a quantitative snapshot of our credit quality. It is not a recommendation to buy or sell our Temasek Bonds or ECP.

Temasek Bonds - Maturity Profile

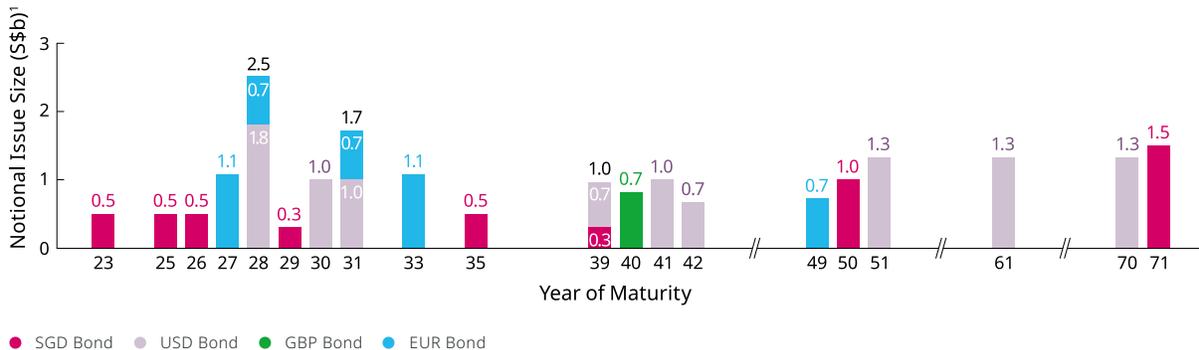


Chart Notes

→ For more details about our Temasek Bonds, please click here



Sustainability at the Core

Forging Ahead

We need to take urgent and sustained action against the climate crisis, reverse nature loss, and build a more inclusive and equitable society.

At Temasek, sustainability is an ongoing journey and resolute commitment for us. We embed it in all that we do — from our mandate to deliver sustainable value over the long term, to our strategy of how we operate as an [institution](#), [shape our portfolio](#), and [engage our portfolio companies](#) to build sustainable businesses.

We recognise the long tail effects of climate change on the resilience and commercial viability of our portfolio. The [Synthesis Report for the Intergovernmental Panel on Climate Change Sixth Assessment Report](#), released in March 2023, underscored the need to limit global warming to 1.5°C with urgent, effective, and equitable decarbonisation of global systems to reduce the negative impact on ecosystems, biodiversity, and societies. Collective awareness and collaboration between countries and businesses, including ourselves, on climate action can therefore support the development of a more liveable and sustainable future by the end of the century.

We recognise the long tail effects of climate change on the resilience and commercial viability of our portfolio.

In recent years, we have made progress and achieved several [milestones](#) in our sustainability journey. In doing so, we have moved closer to our targets and goals by advancing initiatives such as:

- Systematically building a culture of placing sustainability at the core of everything we do;
- Reshaping of portfolio based on [structural trends](#) and in particular, the Sustainable Living trend;
- Halving our [portfolio emissions](#) from 2010 levels by 2030 and achieving a net zero portfolio by 2050;
- Remaining [carbon neutral](#) as a company;
- Building an [inclusive culture](#) that encourages and celebrates diversity in perspectives, skill sets, and experiences;
- Generating [positive impact for underserved communities](#) and [catalysing the impact investing ecosystem](#), especially in Asia.

Sustainability at the Core

Advancing Sustainability through our Portfolio

We believe that we can strive for a climate positive world, where no communities are left behind in the transition, while achieving sustainable value over the long term.

Environmental sustainability, climate change mitigation, adaptation, and transition are not only critical levers towards a greener economy, but are also important in contributing towards delivering sustainable value over the long term. To remain steadfast in our resolve to accelerate decarbonisation globally, we have developed a climate strategy that is informed by science and the relevant policy and technology roadmaps.

We measure and manage our portfolio carbon emissions and integrate climate risks and opportunities into the way we originate and evaluate investments. We also pilot, invest in, and scale decarbonisation platforms and solutions.

Over the year, we accelerated our efforts along the three pathways identified to achieve our target of reducing the net carbon emissions attributable to our portfolio to half the 2010 levels by 2030 and our ambition to reach net zero by 2050:



Investing in Climate-Aligned Opportunities

We have been investing in climate-aligned opportunities, especially in early stage companies that offer disruptive ideas and business models in areas such as food, water, waste, energy, materials, clean transportation, and built environment.

Examples include our investments in [Breakthrough Energy Ventures'](#) new climate-focused fund Select, which will help late stage cleantech start-ups to scale and expand their operations; [Fairmat](#), a France-based company that recycles carbon fibre waste into a usable and light carbon fibre composite; [Hydrogenious](#), a Germany-based company that develops technologies and processes to enable safe, efficient, and cost-competitive transport and storage of hydrogen; and [RWDC Industries](#), a Singapore and US-based start-up producing sustainable plastic alternatives.

We partnered funds and companies within our global network to drive investments and efforts that achieve environmental and social impact at scale. One of our partnerships is the incubation of [Rize](#), an agri-tech start-up to accelerate rice decarbonisation in Asia, with Breakthrough Energy Ventures, [GenZero](#), and [Wavemaker Impact](#).



Enabling Carbon Negative Solutions

With growing awareness of nature's role in climate change mitigation and adaptation, we have enabled carbon negative solutions, alongside emissions reduction efforts, to support mitigation of climate change.

On this front, [GenZero](#), an investment platform company we launched in 2022, has made progress across three focus areas to accelerate decarbonisation globally: technology-based solutions, nature-based solutions, and carbon ecosystem enablers. They have been actively investing in companies such as [Bluesource Sustainable Forests Company](#), a forestland owner in the US that develops nature-based solutions through sustainable forest management practices; [CHOOOSE](#), a Norway-based company that offers a software to help companies build and manage their climate programmes; and [Lightrock's](#) inaugural [Climate Impact Fund](#) targeting European and North American growth stage companies that are innovating towards a net-zero economy.

Temasek's stake in [Climate Impact X](#), a global marketplace and exchange set up with [DBS](#), the [Singapore Exchange](#), and [Standard Chartered](#), was transferred to GenZero to enable stronger synergies across the carbon ecosystem.



Encouraging Decarbonisation Efforts in Businesses

Our long term investment horizon, which can span decades, puts us in a unique position to support companies to become more sustainable and adopt carbon abatement strategies.

Beyond deploying capital in start-ups and growth sectors, and partnering industries to pilot or scale sustainable solutions, we invest alongside portfolio companies as they transition their businesses, and [regularly engage](#) our major portfolio companies on their decarbonisation journeys including through our Climate Transition Readiness Framework, which brings together a holistic set of levers for the net zero transition and sets out a systematic approach for dialogue. This allows us to understand the challenges they face in the climate transition and opportunities to support and encourage them to decarbonise. This goes hand in hand with other ongoing efforts to ensure long term resilience and value creation within our portfolio.

In hard-to-abate sectors such as heavy industry and transportation, broader system and technology changes are required for a successful industry transition. We catalyse change and innovation by funding pilots, feasibility studies, and research programmes relating to [novel solutions](#) with potential to scale and commercialise. Such solutions include, for example, district cooling for brownfield buildings, and nature-based solutions such as blue carbon ecosystems.

We also play our part as a convenor for systems change, bringing together relevant stakeholders, including our portfolio companies, and committing capital to support R&D advancement. In July 2022, we established the [Centre for Hydrogen Innovations](#) in partnership with the [National University of Singapore](#), with the aim of pushing the boundaries of technologies in the hydrogen value chain through research. The Centre has since funded nine projects focusing on technological and infrastructural challenges across the hydrogen value chain. It also works closely with industry partners and institutes of higher learning to further develop the hydrogen industry.

As we increasingly lean into the transition of the real economy, we are prepared to selectively invest in carbon-intensive businesses to help accelerate and increase certainty of their transition to net zero in line with climate science. As the emissions trajectories of such transition investments may differ from our core portfolio, we will track the [emissions and targets](#) of these investments separately while ensuring that the real-world emissions reductions are accelerated.

For instance, we are part of a consortium led by [Brookfield Renewable Partners](#) to invest in [Origin Energy's](#) Energy Markets business, an Australian integrated power generator and energy retailer, to accelerate decarbonisation of the energy grid, retire coal generation responsibly, and enable the energy transition in Australia. This is expected to make a material contribution towards Australia's net zero targets at a crucial time in its energy transition.

Another example is our investment in Sembcorp Marine which has recently merged with Keppel Offshore & Marine to form [Seatrium](#). Their merger is expected to accelerate the group's transition towards providing renewable energy and cleaner offshore and marine solutions.



Sustainability at the Core

Engaging our Portfolio Companies

The success of our portfolio companies underpins our own success. Through engagement, we strengthen long term resilience and advance sustainable value creation.

In 2020, we shared our target to reduce the net carbon emissions attributable to our portfolio to half the 2010 levels by 2030, and our ambition to achieve net zero by 2050. These bold targets demand determined and sustained action.

We have been measuring and disclosing the carbon emissions attributable to our investment portfolio as part of our [annual reporting](#). Our reported [Total Portfolio Emissions](#) encompass 78% of the portfolio as at 31 March 2023.

Our Total Portfolio Emissions have increased slightly from 26 million tonnes of carbon dioxide equivalent ([tCO₂e](#)) for the financial year ended 31 March 2022 to 27 million tCO₂e for the financial year ended 31 March 2023. Our [Portfolio Carbon Intensity](#) has increased from 81 tCO₂e/\$M portfolio value for the financial year ended 31 March 2022 to 93 tCO₂e/\$M portfolio value for the financial year ended 31 March 2023.

These still compare favourably to our pre-COVID emissions levels reported in March 2020, which was 30 million tCO₂e in Total Portfolio Emissions and 130 tCO₂e/\$M portfolio value in Portfolio Carbon Intensity.

The increase in carbon emissions during the year was mainly attributable to our portfolio company [Singapore Airlines](#), which saw its group passenger capacity recovering to 79% of pre-COVID levels, as global air travel resumed. Other factors contributing to the increase include business resumption for various portfolio companies, as well as continuous refinements to their emissions reporting and more accuracy in capturing a broader scope of underlying entities. At the same time, these increases were moderated by reductions due to decarbonisation efforts of portfolio companies as well as changes in portfolio composition.

We have been measuring and disclosing the carbon emissions attributable to our investment portfolio.

On the other hand, our [Portfolio Weighted Average Carbon Intensity](#) has decreased from 119 tCO₂e/\$M revenue for the financial year ended 31 March 2022 to 116 tCO₂e/\$M revenue for the financial year ended 31 March 2023.

As we continue stepping up efforts to encourage decarbonisation across our portfolio and continue to invest in less carbon-intensive businesses, we expect the emissions associated with our portfolio, in absolute and intensity terms, to decrease over time.

Towards Net Zero



- Historical Total Portfolio Emissions
- Total Portfolio Emissions (Illustrative)
- Negative Emissions (Illustrative)
- Pathway for Net Portfolio Emissions (Illustrative)
- ▲ Calendar year emissions data and targets are reported in the subsequent financial year

Chart Notes

→ For a detailed breakdown, please click here to view the sustainability indicators of our portfolio

Regular Engagements with Portfolio Companies on ESG Matters

We regularly engage our portfolio companies to understand the challenges they face in climate transition, and to convey our expectations. We prioritise and target our engagement efforts with companies where we see the highest potential for impact.

Our Climate Transition Readiness Framework brings together a holistic set of levers for the net zero transition and sets out a systematic process for dialogue, including setting climate targets in line with science; establishing and advancing compelling transition plans; providing relevant disclosures in line with the recommendations of the [Task Force on Climate-related Financial Disclosures](#); and preparing for relevant disclosures in line with the [imminent International Sustainability Standards Board requirements](#).

We have developed an internal portfolio carbon analytics and reporting tool, which enables automated calculation, analysis and reporting of our portfolio emissions. This allows us to take the data into account in our investment decisions, as well as to track and manage progress towards our climate targets.

We also formulated a value creation playbook which guides our investment teams to identify and drive Environmental, Social, and Governance (ESG) value creation opportunities across our portfolio. It includes key ESG levers where a company's strategy and operations can be strengthened to increase resilience, improve competitiveness, enhance their access to capital, and position them for new growth opportunities. With our portfolio companies, we proactively promote [good governance](#), ethical business practices, and compliance with all laws, as well as support them in building capacity for sustainability leadership and carbon management.

To address physical climate risk, our ongoing partnership with a leading re-insurance provider provides portfolio companies with a better understanding of their exposure to these risks. This also enables us to have a better grasp of these risks at the portfolio level. In addition, we provide training on carbon measurement and disclosures for relevant operational teams of our portfolio companies.

An example of a portfolio company that we have been working closely with on ESG matters is [Rivulis](#), a global micro-irrigation company. They have implemented measures to reduce the environmental impact of their operations and also launched their first ESG report highlighting progress in areas such as savings for energy and water, as well as carbon emissions reduction, associated with the deployment of its micro-irrigation solutions.

We are encouraged to see the efforts of other portfolio companies in their transition journeys. One such example is [Topsoe](#), which has traditionally been a catalyst and process technology supplier to the refinery and chemicals industries. They now focus on developing decarbonisation technologies in multiple areas including clean hydrogen and chemicals, sustainable aviation fuel, and battery materials.

Targeted Engagement with Selected Portfolio Companies to Accelerate Climate Transition

Beyond engaging our major portfolio companies on their climate transition plans, we also strive to be a convener and catalyst within the broader ecosystem by collaborating with them on solutions that support decarbonisation.

For example, the next phase of a [pilot](#) between [Singapore Airlines \(SIA\)](#), [Civil Aviation Authority of Singapore](#), Temasek, and [GenZero](#) saw SIA operating its first flights with blended sustainable aviation fuel. This reflected progress in SIA's own decarbonisation journey, as well as successfully laid the foundation for the broader aviation community to operationalise uptake of sustainable aviation fuel in Singapore. We are also encouraged to see SIA making efforts on other fronts to achieve their net zero targets. This includes purchasing more fuel-efficient aircraft and operating one of the youngest fleets globally.



i Blended Sustainable Aviation Fuel is being loaded onto a Singapore Airlines (SIA) aircraft (Photo: SIA)

Temasek has also been collaborating with Singapore's national grid operator, [SP Group](#), Tampines Group Representative Constituency, and the [Ministry of Sustainability and the Environment](#) on Singapore's first brownfield district cooling system within Tampines, a residential neighbourhood in Singapore. When the solution is operational in 2025, Tampines town centre will be able to achieve energy savings of more than 2,800,000 kilowatt-hour annually, which can power more than 900 two-bedroom public housing flats for a year, and reduce 1,359 tonnes annually in carbon emissions, equivalent to removing 1,236 cars off our roads.

Dedicated Platforms for Programmatic Engagements

The Temasek Portfolio Companies Sustainability Council brings together the CEOs and Sustainability Leads of our major portfolio companies periodically to share successful sustainability strategies and forge potential collaborations on sustainability initiatives. Over the past year, the focus was on carbon markets and fostering understanding of dependencies and impact on nature against the backdrop of ecosystem degradation. We further reinforced knowledge in this area by convening a nature-focused workshop for our Temasek Portfolio Companies Sustainability Leaders Network in early 2023.



Sustainability at the Core

Fostering Sustainability in Temasek

We implement sustainable practices and develop a company culture that embraces sustainability.

At Temasek, we seek to build a sustainable institution that delivers sustainable value over the long term to all stakeholders. Part of our [corporate governance framework](#) ensures that sustainability is integrated into our operations.

Our Board sets out the direction and oversees our progress on sustainability-related issues. The Board [Risk & Sustainability Committee \(RSC\)](#) supports the Board in its oversight of our sustainability strategy, governance, policies, goals and targets, disclosures, and stakeholder management. The committee focuses on opportunities and risks arising from sustainability trends, including climate change, and other financial, reputational, operational, and cyber risks. The RSC also provides guidance on topical sustainability-related matters.

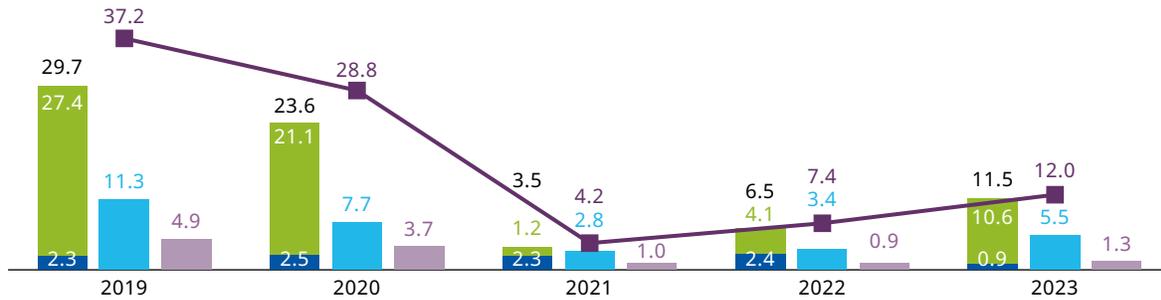
→ [More on our institutional committees and their sustainability-related responsibilities](#)

As a company, we uphold our commitment to carbon neutrality, and we are carbon neutral for the fourth year running. Over the year, we saw a moderate increase in our emissions relating to our operations, mainly due to progressive resumption of business travel activities as global travel restrictions ease.

The pandemic has transformed the way we work, including the way we organise meetings and conferences. While our emissions per employee have declined significantly since pre-COVID levels, from 28.8 tonnes of carbon dioxide equivalent (tCO₂e) per employee for year ended 31 March 2020 to 12.0 tCO₂e per employee for year ended 31 March 2023, we have experienced a pent-up demand, like many other companies, for in-person interactions post-pandemic. We continue to make efforts to keep emissions levels lower than pre-COVID levels and will closely monitor the need for business travel, which include guiding our teams to leverage technology-based solutions such as teleconferencing. This will inform our efforts as we progress to further reduce emissions from our operations.

As part of these efforts to reduce the environmental impact of our operations, we have procured electricity from renewable energy sources for our Singapore office through Renewable Energy Certificates. Temasek has also made our Green Nation Pledge, an environmental sustainability initiative by Singapore's [Ministry of Sustainability and the Environment](#), signalling our commitment to help make Singapore a sustainable, resource-efficient, and climate-resilient nation.

Five-year Environmental Footprint



- Scope 2 indirect emissions from electricity use ('000 tCO₂e)
- Scope 3 indirect emissions from business travel, corporate events, data centres, employee commute, waste generated and other sources ('000 tCO₂e)
- Water use ('000 m³)
- Paper use (million pieces)
- Carbon intensity (tCO₂e per employee)

→ For a detailed breakdown, please click here to view the sustainability indicators of our operations

To address our residual emissions, we purchased carbon credits through [Climate Impact X](#), and supported a range of carbon avoidance and removal projects that accrue various co-benefits to diverse geographical regions. We also supported the [Delta Blue Carbon](#) project, a mangroves and wetlands afforestation and restoration project located in the Indus River Delta area in Pakistan.

We recognise that our employees are critical to advancing a more sustainable organisation, and continuously upskill them with training modules on climate change and our [Environmental, Social, and Governance approach](#). Our staff can also take part in *Project GO!*, a series of sustainability-focused activities, such as immersive learning sessions or volunteering activities, which are held every month. Some activities this year included an electronic waste collection drive, as well as a litter picking competition.

Our staff also supported the tree planting efforts of partners such as the [Global Evergreening Alliance](#), an international non-profit organisation overseeing grassroots land restoration and sustainable agriculture programmes. More than 240 colleagues joined in-person tree planting activities across Singapore, China, Belgium, and the US. A portion of our [long term incentives](#) is aligned with our portfolio carbon emissions reduction targets.



i Shawn Liu, Assistant Vice President, Organisation & People planted trees in Chestnut Nature Park as part of a reforestation programme organised by Singapore's National Parks Board

Sustainability at the Core

Developing a Diverse and Inclusive Institution

Our focus on sustainability as an institution extends from planet to people.

We value diversity, equity, and inclusion. We are committed to creating an inclusive and cohesive work environment that respects and celebrates unique personalities, diverse perspectives, skill sets, and experiences.



i Temasek staff enjoying a lighthearted discussion at Temasek Shophouse's outdoor garden

Our *Inclusivity@Temasek* initiative continues to strengthen our diversity practices and reinforce our culture of belonging. These efforts include the Temasek Women's Network (TWN), which supports and inspires our female staff in their career journeys. Highlights included talks by former PepsiCo CEO Indra Nooyi and co-founder of Singapore fashion label Love, Bonito, Rachel Lim, who both shared how they overcame challenges in their respective career journeys; as well as dedicated female leadership workshops and a mentoring programme for our female staff. TWN is open to all staff members at Temasek, regardless of gender. We also invite our portfolio companies to participate in TWN initiatives, where possible.



i (From left to right) Indra Nooyi, former CEO, PepsiCo; Jessica Tan, Co-CEO, Ping An Group; Deborah Ho, Regional Head of Southeast Asia, BlackRock; and Png Chin Yee, Chief Financial Officer, Temasek during a panel discussion at TWN's keynote event "Women Rising"



i Connie Chan (right), Head of Financial Services, joins Rachel Lim, co-founder of Love, Bonito, on stage at a TWN event on International Women's Day 2023, where Rachel shared her journey as an entrepreneur

Today, our staff represents 34 nationalities with a gender mix of 54% male to 46% female. Our [senior management](#) is 75% male and 25% female. We will continue to work towards diversity while ensuring a meritocratic, inclusive workplace.

To foster an environment where we can grow and thrive individually and collectively as an institution, we are committed to ensuring a respectful workplace, with zero tolerance for harassment of any form. Our Temasek Code of Ethics and Conduct — which includes our Workplace Anti-Violence, Harassment and Victimisation Policy — outlines our responsibilities and conduct for creating an [inclusive workplace](#) that provides equal employment, as well as development and promotion opportunities.

Capabilities Building and Knowledge Sharing

We believe in [upskilling our workforce](#) and equipping them with diverse skill sets and competencies to navigate a complex world and stay relevant for the future. For the year ended 31 March 2023, each staff member underwent an average of [29.8 hours of training](#).

All staff undergo mandatory training in anti-bribery and corruption, anti-harassment and discrimination, as well as the prevention of insider trading, underscoring our commitment to a zero-tolerance approach in these areas. We have also expanded our range of learning and leadership programmes to include topics such as sustainability, diversity, and inclusivity, to increase understanding of these important areas.

Our [Temasek Sustainability Advisory Panel \(TSAP\)](#) and [Clean Energy Advisory Group \(CEAG\)](#) comprise global leaders in fields related to sustainability, climate change, and climate technologies, and provide insights to enhance our knowledge and sharpen our strategies in these areas. Over the year, the TSAP convened to discuss topics such as accelerating a just transition in Asia, carbon markets, nature conservation, and net zero commitments. The CEAG exchanged views on topics such as energy security, hydrogen, nuclear energy, and fusion.

All staff undergo mandatory training in anti-bribery and corruption, anti-harassment and discrimination, as well as the prevention of insider trading.

Health & Safety

We have [introduced resources and programmes](#) that focus on caring for the emotional, social, and physical well-being and health of our staff, such as the *Because you matter: #together* initiative. To create a safe and conducive physical workplace, we ensure compliance with local safety regulations and our workplace health and safety policies.

Sustainability at the Core

Driving Partnerships for Change

Proactive and committed collaboration can drive systemic changes required to solve sustainability challenges.

Governments, corporations, multilateral agencies, financiers, and investors must work together to define transition roadmaps and drive adoption of new solutions, due to the urgency, scale, and cross-disciplinary nature of the necessary transitions.



i At Temasek, we actively collaborate with various partners and stakeholders to develop solutions for a more sustainable world

We have a role to play and we continue to catalyse solutions and advocate change by adding our voice to international platforms and networks that share our vision of achieving an *abc World* of active and productive economies, beautiful and inclusive societies, and a clean, cool Earth.

We are a member of the [World Economic Forum](#), the [Focusing Capital on the Long Term Initiative](#), and the [Investor Advisory Group of the International Sustainability Standards Board](#). We also participate in the [Integrity Council for the Voluntary Carbon Markets](#) and continue to engage various global industry groups that drive the transformation of the financial industry towards sustainability, including the [Glasgow Financial Alliance for Net Zero](#), the [UN-convened Net-Zero Asset Owner Alliance](#), [Principles for Responsible Investment](#), and others.

We continue to catalyse solutions and advocate change by adding our voice to international platforms and networks.

As a member of the [Green Finance Industry Taskforce](#) under Singapore's [Financial Centre Advisory Panel](#) convened by the [Monetary Authority of Singapore](#), we were involved in shaping recommendations to promote green finance and transition financing in Asia. We also participated in the [Taskforce for Nature-related Financial Disclosures](#) Asset Owner pilot to better understand the methodologies to assess the portfolio dependency and impact on nature.

In support of an accelerated energy transition, we continue to participate in the [Hydrogen Council](#) alongside close to 150 multinational companies representing the entire hydrogen value chain. Our participation has enabled us to stay informed of the latest developments and industry updates, as well as to collaborate with organisations across the value chain.

Our annual [Ecosperity](#) conference, first held in 2014, promotes the twinning of ecology and prosperity for sustainable growth. It brings together key decision makers to share insights and best practices on sustainable development. Themed "Accelerating Action at Scale", [Ecosperity Week in 2022](#) drew over 3,000 delegates in-person and virtually to deep-dive into solutions and levers to accelerate the energy revolution, decarbonise transport and heavy industries, and finance Asia's green transition. The event also saw the launch

of two in-depth reports that provided insights into the green transition of Asia, namely [Southeast Asia's Green Economy Report 2022](#) and [On Thin Ice](#).

In partnership with the Singapore Government, Temasek also hosted several panel discussions at the inaugural [Singapore Pavilion at COP27](#), as part of our ongoing *Ecosperity* Conversations series. The sessions provided insights on accelerating the energy transition, effective carbon markets, solutions for carbon capture and storage, and growing healthy, sustainable food.



i (From left to right) Meg Argyriou, former Head of International & Country Context, Climateworks Centre; Tyler Christie, Managing Director, Decarbonization Partners; Ann Mettler, Vice President, Europe, Breakthrough Energy; Frederick Teo, CEO, GenZero; and Jesper Nielsen (moderator), Managing Director & Senior Partner, Boston Consulting Group, spoke at the *Ecosperity* Conversations panel at the Singapore Pavilion at COP27

We continue to contribute to efforts to catalyse the impact investing ecosystem, especially in Asia. Temasek, together with [EQI Foundation](#) and [Visa Foundation](#), committed US\$4.5 million to launch the [Global Impact Investing Network's Impact Lab](#), an industry initiative to create analytic tools for optimising the positive impact of financial investments on people and planet.

We also [partner companies](#) within our global network, such as [Brookfield Global Transition Fund](#); [Breakthrough Energy Ventures](#); [BlackRock](#) for [Decarbonization Partners](#); [HSBC](#) for [Pentagreen Capital](#); and others, to catalyse innovative sustainable solutions.



Sustainability at the Core

Sustainability Indicators

Sustainability Indicators: Our Operations

(for year ended 31 March)

| Metric | Unit | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|-----------------------------|---------------|---------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Greenhouse Gas Emissions | | | | | | | |
| Scope 1 emissions from company vehicles | tCO ₂ e | * | * | * | * | 9 | 5 |
| Scope 2 emissions from electricity | tCO ₂ e | 2,512 | 2,257 | 2,467 | 2,286 | 2,348 | 915 |
| Scope 3 emissions | tCO ₂ e | 33,728 | 27,427 | 21,090 | 1,222 | 4,125 | 10,560 |
| Business travel | tCO ₂ e | 33,257 | 26,819 | 19,929 | 323 | 2,782 | 8,473 |
| Corporate events | tCO ₂ e | 471 | 608 | 1,161 | # | 21 | 513 |
| Data centres | tCO ₂ e | * | * | * | 725 | 1,139 | 1,338 |
| Employee commute | tCO ₂ e | * | * | * | 174 | 183 | 236 |
| Waste generated and other sources | tCO ₂ e | * | * | * | # | # | # |
| Total absolute emissions (gross) | tCO₂e | 36,240 | 29,684 | 23,557 | 3,508 | 6,482 | 11,480 |
| Purchased carbon offsets | tCO ₂ e | - | - | (23,557) | (3,508) | (6,482) | (11,480) |
| Total absolute emissions (net) | tCO₂e | 36,240 | 29,684 | Carbon neutral | Carbon neutral | Carbon neutral | Carbon neutral |
| Total emission intensity (gross) | tCO ₂ e/employee | 49.6 | 37.2 | 28.8 | 4.2 | 7.4 | 12.0 |
| Scope 1 emission intensity (gross) | tCO ₂ e/employee | * | * | * | * | # | # |
| Scope 2 emission intensity (gross) | tCO ₂ e/employee | 3.4 | 2.8 | 3.0 | 2.7 | 2.7 | 1.0 |
| Scope 3 emission intensity (gross) | tCO ₂ e/employee | 46.2 | 34.4 | 25.8 | 1.5 | 4.7 | 11.0 |
| Energy Consumption | | | | | | | |
| Total energy consumption | kWh | 5,715,642 | 5,176,051 | 5,727,911 | 5,357,539 | 5,499,106 | 5,597,014 |
| From renewable sources | kWh | * | * | * | * | * | 3,717,873 |
| From non-renewable sources | kWh | * | * | * | * | * | 1,879,141 |
| Energy consumption intensity | kWh/employee | 7,830 | 6,478 | 7,011 | 6,370 | 6,249 | 5,848 |
| Water Consumption | | | | | | | |
| Total water consumption | m ³ | 9,581 | 11,313 | 7,734 | 2,782 | 3,373 | 5,547 |
| Water consumption intensity | m ³ /employee | 13.1 | 14.2 | 9.5 | 3.3 | 3.8 | 5.8 |
| Waste Generation | | | | | | | |
| Total waste generated | tonnes | * | * | * | 3.4 | 11.6 | 15.7 |
| Materials Use | | | | | | | |
| Paper consumption | million pieces | 5.3 | 4.9 | 3.7 | 1.0 | 0.9 | 1.3 |

Sustainability Indicators: Our People

(for year ended 31 March)

| Metric | Unit | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|--|----------------|------|------|------|------|------|-------------|
| Employment | | | | | | | |
| Total number of employees | number | 730 | 799 | 817 | 841 | 880 | 957 |
| Diversity | | | | | | | |
| Current employees by gender | | | | | | | |
| Female | % | 49 | 48 | 46 | 45 | 45 | 46 |
| Male | % | 51 | 52 | 54 | 55 | 55 | 54 |
| Current employees by age group | | | | | | | |
| ≤30 years old | % | 28 | 27 | 24 | 27 | 22 | 24 |
| 31-40 years old | % | 39 | 43 | 43 | 42 | 42 | 42 |
| 41-50 years old | % | 23 | 20 | 20 | 20 | 23 | 22 |
| >50 years old | % | 10 | 10 | 13 | 11 | 13 | 12 |
| Current employees by nationality | | | | | | | |
| Singaporeans | % | 59 | 59 | 60 | 60 | 58 | 62 |
| Singapore Permanent Residents (PRs) | % | 11 | 11 | 10 | 10 | 11 | 9 |
| Other nationalities | % | 30 | 30 | 30 | 30 | 31 | 29 |
| Current employees by category & gender | | | | | | | |
| Senior Management | | | | | | | |
| Female | % | * | * | * | * | 22 | 25 |
| Male | % | * | * | * | * | 78 | 75 |
| Management | | | | | | | |
| Female | % | * | * | * | * | 41 | 42 |
| Male | % | * | * | * | * | 59 | 58 |
| Support | | | | | | | |
| Female | % | * | * | * | * | 86 | 86 |
| Male | % | * | * | * | * | 14 | 14 |
| New hires by gender | | | | | | | |
| Female | % | * | * | * | * | 37 | 49 |
| Male | % | * | * | * | * | 63 | 51 |
| Turnover by gender | | | | | | | |
| Female | % | * | * | * | * | 41 | 46 |
| Male | % | * | * | * | * | 59 | 54 |
| Development & Training | | | | | | | |
| Average training hours | hours/employee | * | * | * | * | 31.8 | 29.8 |
| Average training hours by gender | | | | | | | |
| Female | hours/employee | * | * | * | * | 32.4 | 30.4 |
| Male | hours/employee | * | * | * | * | 31.3 | 29.4 |
| Average training hours by category | | | | | | | |

| | | | | | | | |
|-------------------|----------------|---|---|---|---|------|-------------|
| Senior Management | hours/employee | * | * | * | * | 31.6 | 30.2 |
| Management | hours/employee | * | * | * | * | 32.3 | 30.5 |
| Support | hours/employee | * | * | * | * | 29.1 | 24.9 |

Sustainability Indicators: Our Portfolio

(for year ended 31 March)

| Metric | Unit | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|--|------|------|------|------|------|------------|
| Greenhouse Gas Emissions | | | | | | | |
| Total portfolio emissions (Scope 1 and Scope 2) | million tCO ₂ e | * | * | 30 | 30 | 26 | 27 |
| Portfolio carbon intensity | tCO ₂ e/\$M portfolio value | * | * | 130 | 103 | 81 | 93 |
| Portfolio weighted average carbon intensity | tCO ₂ e/\$M revenue | * | * | * | * | 119 | 116 |

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Temasek Operating System

We are building future-centric capabilities and creating enablers for innovation and growth across our ecosystem.



The Temasek Operating System (T-OS) offers value to our ecosystem and the marketplace. It co-creates solutions with our partners. Some of the ventures and companies we have set up as part of the T-OS are shown below:



Artificial Intelligence

aicadium

A global technology company partnering Temasek's portfolio companies to co-innovate and scale Artificial Intelligence (AI) products, with an initial focus on industrial computer vision. Aicadium has partnered Temasek portfolio companies in industrial, manufacturing, and maintenance to apply AI-powered computer vision solutions to drive greater productivity and throughput. Use cases included workplace health and safety, asset inspection, and quality control.

minden.ai

A technology venture to redefine the engagement between brands and consumers in Southeast Asia through the use of machine learning and AI. It launched [yuu Rewards Club](#), a digital consumer rewards programme in Singapore, in strategic partnership with [DFI Retail Group](#) and its coalition partners [BreadTalk Group](#), [DBS](#), [PAssion Card](#), [Mandai Wildlife Group](#), and [Singtel](#). yuu has created tangible uplift in the engagement between its partners and consumers.



Blockchain



A technology company to improve data ownership by building new decentralised identity and data exchange solutions. It leverages multiple cutting-edge technologies in decentralised and generative AI domains to simplify managing privacy and security in an ever-connected world. It has introduced Holistic Identity, a complete solution for all aspects of owning and managing digital identities. The company's core product Affinidi Identity Vault allows people to discover, collect, store, share, and monetise their data.



A blockchain-based technology provider enabling the next generation of cross-border payments and value exchange. It has created an open, interoperable network that offers cost-efficient multi-currency clearing and settlement for financial institutions. These financial institutions include [J.P. Morgan](#), [DBS](#), and [Standard Chartered](#) who are our partners in Partior.



Cybersecurity

ISTARI

A global cybersecurity advisor and educator, supported by a comprehensive portfolio of solutions. A Cyber Resiliency Programme that saw ISTARI product and services companies providing key solutions to Temasek portfolio companies. [Sygnia](#) helped our Temasek portfolio companies in several cybersecurity maturity assessments and ongoing access to incident response services in the event of a breach. [BlueVoyant](#)'s continuous risk monitoring services improved our portfolio companies' overall cyber resilience and Mean Time to Resolution.



One of Asia's largest pure-play end-to-end cybersecurity service providers, working with ISTARI to deploy ISTARI's global portfolio of cyber solutions to clients in Asia. Ensign has developed and patented state-of-the-art machine learning and deep learning techniques which are used to develop a suite of proprietary detection models (AI-Powered Cyber Analytics). These models are based on behavioural analytics that can empower our Temasek portfolio companies to detect advanced cyber threats as part of their Managed Security Services.



Data & Digital

Temus

A company that aims to catalyse the digital transformation of the private and public sectors and was set up in partnership with [UST](#), a global digital transformation solutions provider. Temus has launched a technology talent conversion programme named "[Step IT Up](#)", which supports the conversion of non-tech talent to digital. This programme seeks to address the shortage of deep tech skills which can deliver digital transformation of leading enterprises, Temasek portfolio companies, and public sector agencies in Singapore.



Sustainable Solutions



An investment platform company that aims to accelerate decarbonisation globally and drive positive climate impact, while generating sustainable returns. It invests in technology-based solutions, nature-based solutions, and carbon ecosystem enablers. It builds capability across the ecosystem by hosting sharing sessions on decarbonisation technologies and approaches. It also catalyses sector-wide collaborations especially in hard-to-abate industries, and supports Temasek portfolio companies and other businesses with access to high-quality carbon credits, via its portfolio company, [Climate Impact X](#).



Organisation, Talent & Capabilities

A Forward Looking Institution

The character of Temasek is shaped by our Purpose, Temasek Charter, and MERITT values as we strive to do well, do right, and do good, as individuals and as a team.

Our Purpose — *So Every Generation Prospers* — guides us to be a provider of catalytic capital and to generate sustainable value over the long term. We provide financial capital to [invest in innovation and growth](#); human capital to [invest in human potential](#); social capital for social progress that will [build resilience in societies](#); and natural capital to [protect our planet](#) for future generations.

Achieving Sustainable and Inclusive Growth

We place sustainability at the core — from our mandate to deliver sustainable value over the long term, to our strategy of how we operate as an institution, shape our portfolio, and engage our portfolio companies to build sustainable businesses.

We support the [United Nations Sustainable Development Goals](#), which aim to bring about a more sustainable world by promoting inclusive prosperity while protecting our planet. We sponsor calls to action to stimulate more innovative solutions for an *abc World of active and productive economies, beautiful and inclusive societies, and a clean, cool Earth, as a common good.*

We achieved our goal of being [carbon neutral](#) as a company four years ago, and we have since maintained this. We also target to halve our portfolio's net carbon emissions by 2030 over 2010 levels, with the ambition to achieve net zero by 2050.

We continue to engage our stakeholders and partners on sustainability issues, share perspectives, forge partnerships, and catalyse solutions. A key engagement platform is our annual [Ecosperity](#) conference, held since 2014. It brings together global business leaders, policymakers, investors, and civil society members to exchange views and share best practices on sustainable development as well as accelerate action towards a carbon neutral future.

Building Resilience in Communities

We [foster community partnerships and provide gifts to Temasek Trust](#) to uplift lives and build resilience in communities. Our philanthropic gifts are structured on the twin pillars of governance and sustainability. The gifts enable [Temasek Foundation](#) and other non-profit entities to [connect people, uplift communities, protect our planet, and advance capabilities](#). Their programmes cover education, healthcare, community building, research, public service capabilities, sustainability initiatives, and more.



i Fairventures Social Forestry, winner of Temasek Foundation's The Liveability Challenge 2022, aims to sustainably manage forests and improve livelihoods in Indonesia

Promoting Stewardship

We believe that [dialogue](#) and robust exchanges of information, best practices, and ideas between stakeholders from the public and private sectors are critical enablers of sustainable solutions and growth.

We continue to promote stewardship through the [Stewardship Asia Centre \(SAC\)](#) which focuses on creating awareness and capabilities for the application of good stewardship through research, education, engagement, and advisory services. In November 2022, SAC unveiled the inaugural [Steward Leadership 25](#), an annual list of 25 initiatives by Asia Pacific organisations that demonstrated notable efforts to create a better future for society, the environment, and future generations.

We advocate good governance and uphold the [Santiago Principles](#) for sovereign investments. We had supported the [International Monetary Fund](#) initiative to frame these principles back in 2008.

We continue to engage with regulators, stakeholders, and other thought leaders in their development of principles that recognise trustworthy capital, in an environment of [heightened scrutiny towards foreign investments](#).

We advocate good governance and uphold the Santiago Principles for sovereign investments.



Organisation, Talent & Capabilities

How We Manage Costs

Disciplined cost management is key as we seek to deliver sustainable value over the long term.

We actively manage our costs to deliver value. Our Board sets an overall limit for our annual operating expense and approves our annual budget, which includes our operating expense. As a Fifth Schedule entity, Temasek submits our annual budget to the President of Singapore, together with a declaration of whether it is likely to draw on Temasek's past reserves. The President may, in consultation with the Council of Presidential Advisers, veto the budget if he/she is of the opinion that the budget is likely to draw on past reserves.

In addition, we work with independent third party consultants to develop a composite benchmark cost methodology to benchmark our operating expense. The composite benchmark cost is an estimate of the cost required to manage a portfolio like Temasek's. It is determined using operating expense data of comparable peers for the various investment strategies we employ. The composite benchmark methodology and cost are reviewed and updated periodically.

Organisation, Talent & Capabilities

Wealth Added

In 2003, we adopted the discipline of measuring our returns against our risk-adjusted cost of capital, to account for the capital deployed and the associated risks taken.

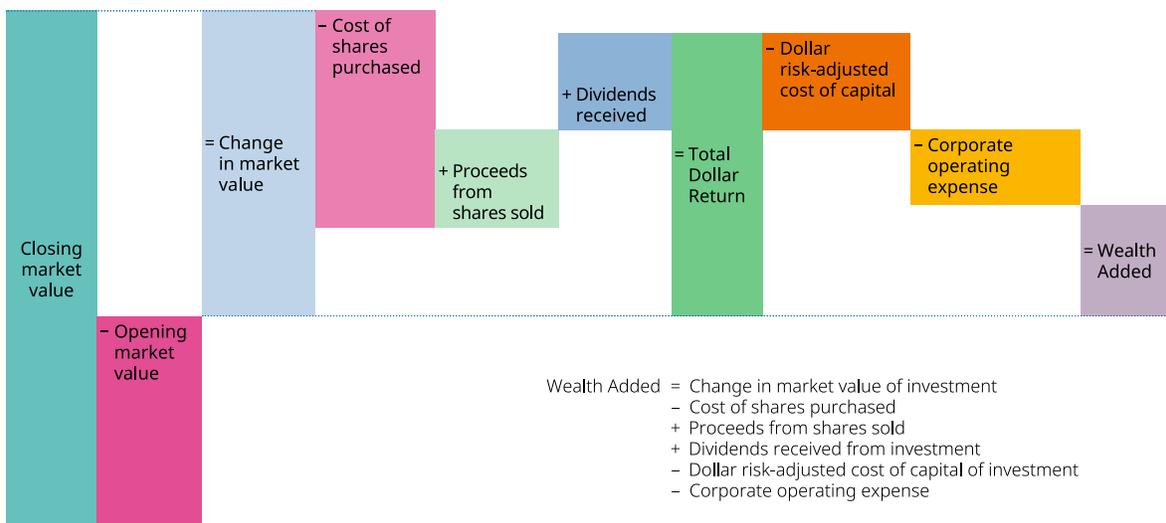
Wealth Added (WA) is our total dollar return above our risk-adjusted cost of capital. Investments in riskier sectors or markets have higher costs of capital.

The use of WA instils the discipline of ensuring that we continue to assess returns against the capital deployed and the financial risks taken. This normalises returns against risks.

Total WA is the sum of all our individual investment WA, less corporate operating expense.

Our WA for the year was negative S\$54.7 billion.

Illustration of Wealth Added





Organisation, Talent & Capabilities

Instilling Ownership

Our ownership ethos places the institution above the individual, emphasises long term over short term, and aligns employee and shareholder interests over economic cycles.

Our compensation framework aims to foster a high performing and responsible culture, where our employees think and act as owners with a strong sense of intergenerational duty, sharing gains and pains alongside our shareholder. It balances rewards for short term performance and long term value creation.

Our base salaries are benchmarked against relevant global, regional, and local markets, primarily in the financial sector, where we compete for talent. Short term bonuses are driven by financial and non-financial targets. Medium and long term incentives which form a major proportion of our annual total compensation are driven by our portfolio returns.

Deferred incentives and clawbacks are integral to our remuneration.

Returns above our overall risk-adjusted cost of capital determine our Wealth Added (WA) incentive pool, while negative portfolio returns determine our clawback pool.

Deferred incentives and clawbacks are integral to our remuneration. Longer term incentives can be deferred up to 12 years, and are subject to market risks and clawbacks, to account for the sustainability of returns over market cycles.

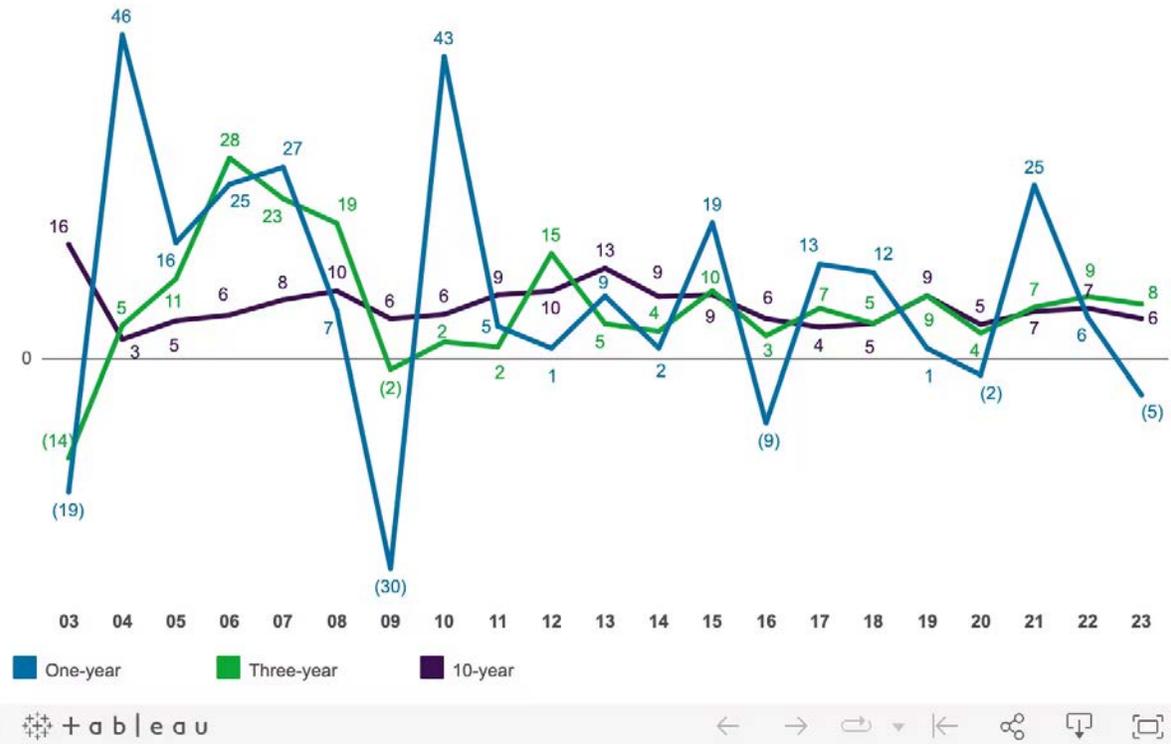
Incentives can be deferred up to 12 years, and are subject to market risks and clawbacks.

For the year ended 31 March 2023, our one-year Total Shareholder Return (TSR) was -5.07% and three-year TSR was 7.74%. WA was S\$54.7 billion below our risk-adjusted cost of capital of 9% aggregated across our portfolio.

Annual Cash Bonuses — Our Short Term Incentives

Annual cash bonuses are driven by company-wide, team, and individual performances, and capped within budgeted limits. One of our annual performance targets requires our three-year average TSR to exceed our three-year average cost of long term debt.

Rolling S\$ Total Shareholder Return (%) i



Apart from financial targets, our ["Make-A-Difference" \(MAD\) Programme](#) rewards employees for achieving non-financial goals targeted at strengthening the institution, contributing to their communities, and taking care of their families and themselves.

WA Bonus Bank — Our Medium Term Incentives

A portion of our WA incentive pool, whether positive or negative, is distributed into each employee's notional WA bonus bank account, based on the individual's performance and contributions over four years.

If WA bonus bank balances are positive, senior management staff receive one third payout from their balances. The corresponding payout ratios are half for mid-level management and two thirds for junior management and support staff. Thus, senior management have more of their incentives deferred.

Part of the retained balances are deferred as co-investment grants which vest over the following three years. These units increase or decrease in value based on portfolio performance or market risk. The remaining WA bonus bank balances are subject to clawbacks in the future should portfolio returns be negative.

Co-investment Grants — Our Long Term Incentives

Our employees may be awarded co-investment grants with performance or time-based vesting conditions. These units grow or decline in value with our yearly TSR, reinforcing the ownership culture of our company. Co-investment units lapse after 12 years.

Part of our positive WA incentive pool funds the Temasek co-investment grants, which are subject to further stringent multi-year Temasek portfolio performance conditions to trigger a five-year vesting. Another portion is held for three to seven years, as a company-wide reserve to be released progressively for time-based co-investment grants. Clawbacks, if any, will first be taken from this company-wide reserve, before being deducted from employees' WA bonus bank accounts.

Our annual operating budget funds limited time-based co-investment grants, which vest over 7 or 12 years.

To reinforce commitment to our [carbon emission goals](#), we have a carbon charge against our portfolio performance. This reduces our incentive pool for distribution in years with positive WA, and increases the clawback when WA and portfolio returns are negative. A portion of our long term incentives is aligned with our portfolio carbon emissions reduction targets. Vesting is subject to us achieving these targets, and each co-investment grant tranche will have a life cycle of up to 12 years. This drives us to collectively work towards our institutional commitment to halve the net carbon emissions of our portfolio over 2010 levels by 2030, and achieve net zero carbon emissions by 2050.

To reinforce commitment to our carbon emission goals, we have a carbon charge against our portfolio performance.

These co-investment grants reinforce our long term alignment with shareholder interest and the sustainability of our business performance over different market cycles.

Co-ownership in Practice

As part of co-ownership alignment, clawbacks are made to our employees' retained bonus banks when WA and portfolio returns are negative.

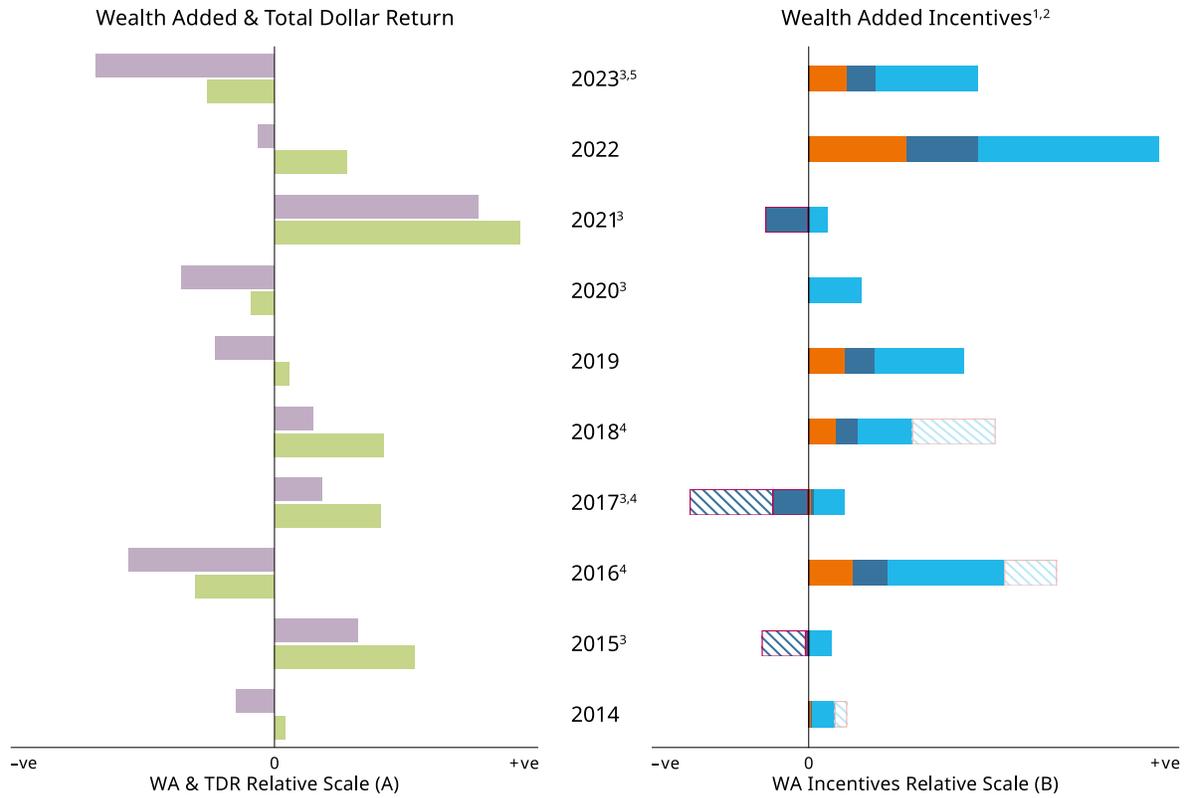
In the last decade, we had three clawback pools. Of these, two were clawback balances carried forward when the deferred WA incentives were not enough to clear the clawback pools from prior years. Clawback balances were then made good from future years' positive WA.

The negative one-year TSR for the year ended 31 March 2023 will result in a clawback pool, with deductions to be made from employees' WA bonus bank balances and prior years' undistributed WA incentives pool.

Effective 1 April 2023, we have instituted a policy to recover paid-out incentives in the event of financial misstatements and/or misconduct by staff that have material impact on the performance or reputation of the firm.

This demanding framework for sharing gains and the associated risks and pains through market cycles has been tested and reaffirms our ownership ethos.

WA Incentives of Key Team



- Wealth Added (WA) in dollars
- Total Shareholder Return in dollars (Total Dollar Return or TDR)
- Paid-out portion of WA Bonus earned for prior year's performance
- Deferred portion of WA Bonus earned for prior year's performance, with future clawback risks
- Co-investment units which grow or shrink with total returns to shareholder, and are subject to performance and time-based conditions
- Clawback of deferred WA Bonus from prior years
- Clawback balances carried forward for future bonus offset
- Part of earned WA Bonus used to offset the clawback balances brought forward from prior year

Chart Notes



Organisation, Talent & Capabilities

Our MERITT Values

We are guided by our MERITT values and strive to do well, do right, and do good. These goals are aligned with our three roles in the Temasek Charter: an active investor, a forward looking institution, and a trusted steward.



Meritocracy

We are fair and objective in recognising contributions and performance

Excellence

We are passionately committed to learning, improving, and delivering outstanding results

Respect

We treat others as we would like others to treat us

Integrity

We are honest to ourselves, our profession, our institution, and our stakeholders

Teamwork

We value each other and work together to benefit from our complementary strengths

Trust

We foster a culture of mutual support and confidence



Organisation, Talent & Capabilities

Our Temasek Heartbeat

We are guided by our Purpose, Temasek Charter, and MERITT values to work and grow together to build a better tomorrow.

We strive to do well, do right, and do good, to build a [brighter, kinder, and more inclusive tomorrow](#) for this and [future generations](#).

At the core of this ambition is our people — their values, passions, capabilities, and their willingness to learn, contribute, lead, and take on new ideas and responsibilities.



i Temasek staff having a discussion. Our people are at the centre of our ambition to do well, do right and do good, for current and future generations.

Rooted in Meritocracy

Temasek has its roots in Singapore, a country founded on the ideals of meritocracy, regardless of race, language, or religion. Our character is shaped by the values, the integrity, and the capability of our people.

We value diversity, the cross-fertilisation of experiences and ideas across geographies and cultures, and the ability to connect dots in a complex world. Over the years, we have established our presence around the world, [expanding beyond Asia](#) to the Americas and Europe.

We value diversity and the cross-fertilisation of experiences and ideas across geographies and cultures.

Supporting Our People

Our "Make-a-Difference" (MAD) Programme has been an integral part of our life in Temasek since 2008. MAD promotes a culture of personal ownership and responsibility. Individual and company-wide MAD targets go beyond financial and performance targets to cover self-development, institution, and community goals, and to foster lifelong skills and healthy habits.

Our annual CEO Challenge encourages staff to acquire new skills in areas such as coding and data science, language, music, and dance. Since the launch of this programme eight years ago, around 85% of our staff have learnt a new skill or enhanced their proficiencies. Over 60% of our staff have completed courses in programming, data science, analytics, or cybersecurity.

To support the well-being of our employees, we have curated a suite of programmes that focus on mindfulness, personal resilience, and crisis support. For example, we continue to extend our Employee Assistance Programme as a support service that offers practical information on a variety of topics and counselling to staff and their family members. Our staff also have access to digital applications that offer classes on meditation, stress management, and fitness activities to support them in managing their well-being.

We have also expanded our parental and family planning benefits, such as maternity leave of at least 26 weeks, paternity and adoption leave of at least 20 weeks, as well as fertility and family planning subsidies.

We continue to offer hybrid and flexible work arrangements to our staff to help them manage their professional and personal obligations.

Growing Our Talent

As part of our institutional focus to build a future-ready team, we anchor our talent framework on the 4Es of Experience, Exposure, Education, and Enrichment.



Experience and Exposure

We encourage and facilitate mobility with transfer, secondment, or project opportunities as a way of developing our talent across geographies, functions, and our ecosystem. This allows our people to broaden their horizons, build new skill sets, as well as gain multicultural exposure and new experiences.



Education and Enrichment

Over the past year, we expanded our range of leadership and learning programmes to include topics such as sustainability, automation, and diversity and inclusion, to ensure our staff are equipped with skills to remain relevant.

Our OneTemasek Team

We are committed to making Temasek a great place to work, by building an inclusive culture that encourages and celebrates diversity in perspectives, skill sets, and experiences.

We embed a mindset and culture of inclusivity through programmes and initiatives in recruitment, talent management, learning and development, benefits, and staff engagement.

Our Temasek Women's Network (TWN) plays an important role in supporting and inspiring our female colleagues in their career journeys. TWN organises leadership sharing sessions, keynote speaker events, workshops as well as a mentoring programme, to raise awareness of how we can collectively create a more inclusive environment for our staff.





We have about 950 people, representing 34 nationalities across 13 offices in 9 countries. About 62% of our staff are Singaporeans. The next 5 largest nationality groups are Chinese (11%), American (7%), Indian (6%), British (3%), and Malaysian (2%). We have grown over the last two decades, from less than 200 to over 700 strong in Singapore.

Doing Good Together

Temasek's founding date on 25 June is designated as our annual [Community Day](#). Staff in our various offices work with beneficiaries on each anniversary, and throughout the year, and are given dedicated volunteer leave to participate in their personal or group volunteering activities.

Our offices also support local communities through donations and our staff actively participate in outreach programmes with non-profit groups and other organisations, as part of [T-Touch](#), Temasek's staff volunteer initiative.



i Dave Kwek (left), Director, Internal Audit, and Jake Tee, Director, Emerging Technologies, distributing COVID-19 care items and household essentials to seniors living in one-room flats in Singapore

Fighting Hunger and Food Waste

Staff from our office in London, UK volunteered with [The Felix Project](#) to redistribute surplus food to food banks and charities. These efforts help to provide meals for those in need, as well as reduce food wastage.



i See Ming You, Director, Investment, London office, preparing fresh food at The Felix Project's kitchen depot

Reaching Out to the Needy

Staff from our office in New York, US volunteered with non-profit organisation [City Relief](#) to offer hot meals to the homeless.



i Nadine Russell (left), Executive Assistant at our New York office, serving coffee and hot chocolate to the needy

Enhancing Greenery

Our team in San Francisco, US volunteered with [Friends of the Urban Forest](#) in support of urban tree planning efforts. They planted over 20 trees in the Mission District of San Francisco.



i Jeff Johnson, Managing Director at our San Francisco office, securing the support post for a newly planted tree

Supporting Inclusion

In Mumbai, India, our colleagues supported [Jai Vakeel Foundation and Research Centre](#) which serves children and adults with intellectual and development disabilities. They interacted with beneficiaries while doing craftwork together, such as flower arrangements and candle making. They also shared knowledge about retail operations to help beneficiaries seeking employment.



i Amanvir Rana (left), Assistant Vice President, and Aayush Agarwal (third from left), Associate, both from our Mumbai office, explaining mathematical calculations

Uplifting Youth

Our team in Hanoi, Vietnam supported [VietSeeds](#) which offered scholarships for college education to 50 students from underprivileged backgrounds. Staff also participated in the selection interviews and attended the annual opening and graduation ceremonies.



i Bui Thu Nguyet (left), Office Manager from our Vietnam office, presenting a plaque at a VietSeeds graduation ceremony

Promoting Youth Literacy

Our team in Shanghai, China volunteered with [HandsOn Shanghai](#) and recorded audiobooks that were distributed to rural primary schools to promote literacy and reading among students.



i Our Shanghai team receiving training on pronunciation techniques to record selected audiobooks

Appreciating Community Volunteers and Workers

In Beijing, China, as part of the Chinese Lantern Festival celebrations, our colleagues made dumplings by hand and delivered them to local community volunteers and cleaners in appreciation of their hard work.



i Staff from Temasek's Beijing office working together to make Chinese dumplings by hand

Bringing Cheer to the Elderly

Last year, our Singapore office adopted [Lions Befrienders](#) as one of its new charities. On Community Day 2022, our staff sponsored care packs, which included essential household items, for over 6,000 at-risk seniors. They also organised a retro-themed carnival where seniors participated in vintage game booths and were greeted by colleagues dressed as characters from past local TV dramas.



i Tan Yuxuan (background), Assistant Vice President, Macro Strategy, and Koh Zhi Yi (right), Vice President, Emerging Technologies, dressed up as characters from a local TV show that aired in the 1980s

Organisation, Talent & Capabilities

Board of Directors

Our Board provides overall guidance and policy directions to management.

As at 31 March 2023, our Board comprises 13 members from across the world, each with diverse skills, experiences, and knowledge, and the majority of whom (85%) are non-executive independent private sector business leaders. Teo Ming Kian retired from the Board on 30 September 2022. Ajay Banga stepped down on 30 April 2023 following his nomination to the role of World Bank Group President. Robert Zoellick retired from the Board on 30 June 2023. He assumed the roles of non-executive Chairman, Americas of Temasek International and Chairman of the Temasek Americas Advisory Panel from 1 July 2023.

Our Board operates on a commercial basis, with the added constitutional responsibility, together with our CEO, of protecting the Company's [past reserves](#), given Temasek's status as a [Fifth Schedule entity](#) under the [Singapore Constitution](#). There are no nominees of the Government on our Board.

There are no nominees of the Government on our Board.

The annual Board schedule includes quarterly two-day meetings, and additional meetings as needed, such as for significant large investments. Seven Board meetings were held in the last financial year.

The Board has reserved the following matters for its decision:

- overall long term strategic objectives
- annual budget
- annual audited statutory accounts
- major investment and divestment proposals
- major funding proposals
- CEO appointment and succession planning
- Board changes
- portfolio risk appetite and profile

The following Board committees, each chaired by a non-executive Director who is independent of management, have been set up with specific delegated authorities:

- Executive Committee
- Audit Committee
- Leadership Development & Compensation Committee
- Risk & Sustainability Committee

The Board has separate and independent access to information to assist it with its deliberations, including the opportunity to request supplementary or explanatory information from management. Management provides information to the Board on an ongoing basis, including minutes of key management committee meetings, to allow the Board to effectively discharge its responsibilities.

Executive Committee (ExCo)

The ExCo has been delegated the authority to approve new investment and divestment decisions up to a defined threshold, beyond which, transactions will be considered by the Board. The minutes of ExCo meetings are circulated to the Board. The ExCo met nine times during the year.

Audit Committee (AC)

Comprising only independent directors, the AC supports the Board in its oversight responsibilities by reviewing, among other things, our system of internal controls, and processes used for financial reporting, audit, and monitoring compliance with laws and regulations. The AC also reviews the scope and results of the external audit, and the independence of the external auditors.

The AC is supported by Internal Audit (IA). To ensure its independence, IA reports functionally to the AC and administratively to the office of the CEO of Temasek Holdings.

IA has full and unrestricted access to all records, properties, and personnel to effectively perform its functions. IA performs planned reviews of key control processes for all offices.

To maintain confidentiality, the key controls over financial reporting relating to central payroll processes are reviewed by external auditors as part of the statutory audit of our group financial statements. IA may also undertake special reviews requested by our Board, AC, or senior management. The minutes of AC meetings are circulated to the Board.

The AC met four times during the year. The AC also has separate sessions, without management, with the external auditors and with IA.

Leadership Development & Compensation Committee (LDCC)

The LDCC is responsible for recommending Board and management leadership plans to the Temasek Board. These include Board and CEO succession, as well as guidelines and policies on performance measurement and compensation plans. The LDCC met four times during the year.

Risk & Sustainability Committee (RSC)

We operate in a [complex global environment](#) influenced by multiple geopolitical and socio-economic forces. The RSC was established to enhance focus on opportunities and risks arising from sustainability trends, including climate change, and other financial, reputational, operational, and cyber risks.

The RSC supports the Board in its oversight responsibilities by reviewing, among other things, our portfolio risk appetite and profile, material Environmental, Social, and Governance (ESG) matters, risk management and sustainability frameworks and policies, as well as key public statements relating to risk, sustainability, and ESG. The RSC coordinates with other standing Committees of the Board, such as the AC and the LDCC, in its oversight of risk and sustainability matters, where relevant. The RSC met six times during the year.

The RSC was established to enhance focus on opportunities and risks arising from sustainability trends, including climate change, and other financial, reputational, operational, and cyber risks.

Board Governance

Decisions at Board and Committee meetings are based on a simple majority of the votes, including those via telephone and/or video conference. Where a Board resolution is obtained via circulation, the resolution becomes effective upon approval by at least two thirds of the Board.

Board members with interests that may conflict with specific Temasek interests are recused from the relevant information flow, deliberations, and decisions on the matter on which they are conflicted.

Quarterly Board meetings include Executive Sessions for non-executive Directors to meet without management presence. The discipline of our annual CEO succession review is a part of these deliberations.

Board members with interests that may conflict with specific Temasek interests are recused.

Board and Committee Memberships

as at 31 March 2023

| | Board | ExCo | AC | LDCC | RSC |
|------------------------------|-----------------|----------|----------|----------|----------|
| Lim Boon Heng | Chairman | Chairman | | Chairman | |
| Cheng Wai Keung | Deputy Chairman | Member | | Member | |
| Ajay Banga | Member | | | | |
| Bobby Chin YC | Member | | Chairman | | |
| Fu Chengyu | Member | | | | |
| Jenny Lee | Member | | | | Member |
| Stephen Lee CY | Member | Member | Member | Member | |
| Lee Theng Kiat | Member | Member | | Member | Member |
| Dilhan Pillay Sandrasegara | ED & CEO | Member | | | |
| Tan Chee Meng | Member | | Member | | Member |
| Peter R Voser | Member | | | Member | Chairman |
| Jaime Augusto Zobel de Ayala | Member | | | | Member |
| Robert B Zoellick | Member | | | | |

Full profiles of our Board members are available on our [corporate website](#).



Organisation, Talent & Capabilities

Senior Management

Senior management sets the tone and culture of our institution, leading the delivery of Temasek's vision and mission.

In line with global best practices of international investment companies, Temasek International (TI) was set up in 2011 as the management arm of Temasek. Today, TI houses all our management and staff, except the Temasek CEO who continues to be employed under Temasek Holdings (TH).

Operating as *One Temasek*, our [management team](#) implements the strategy and policy directions set by the Temasek Board to fulfil our three roles as [investor](#), [institution](#), and [steward](#). Levels of authority for investment, divestment, and other operational matters are defined according to our Board's delegation.

Our [Global Executive Council \(GEC\)](#) has the institutional accountability to oversee Temasek's key business strategies and organisational initiatives. The GEC comprises a group of senior executives and is led by the Temasek CEO.

Our leadership oversees our team and portfolio with the support of the following committees, chaired by our CEO and comprise members of our GEC:

- Senior Divestment and Investment Committee (SDIC)
- Senior Management Committee (SMC)
- Strategy, Portfolio and Risk Committee (SPRC)

The SDIC manages and shapes our portfolio on an ongoing basis and decides on investments and divestments up to the authority limits as delegated by our Board. Investment proposals beyond these authorisation limits are escalated to the ExCo and/or the Board as warranted. Meeting minutes are circulated to the Board.

The SMC reviews and sets overall management and organisational policies. These include internal controls, the implementation of our Derivatives Framework, and the Valuation Policy approved by the Board Audit Committee. The SMC has developed the Temasek Code of Ethics and Conduct (T-Code) and constituted the Ethics Committee to assist in its implementation. All employees are required to observe and comply with the T-Code.

All employees are required to observe and comply with the T-Code.

The SPRC reviews [macroeconomic, political, industry, technological, and social trends](#) that provide the context in which new opportunities and risks may arise, in both existing and new markets. It also reviews our overall portfolio construction efforts and investment strategies.

Our list of senior management is available on our [corporate website](#).

Stewardship and Community

A Trusted Steward

We do things today with tomorrow clearly in our minds, always aspiring to do well, do right, and do good, for today's and future generations.

Our [Temasek Charter](#) defines who we are and what we do as an investor, institution, and steward.

We are governed by the [Singapore Companies Act](#) and the [Singapore Constitution](#).

Temasek is an [exempt private company](#) under the Singapore Companies Act which is exempted from disclosing its financial information publicly. We have nonetheless published our [Group Financial Summary](#), and portfolio performance in our annual *Temasek Review* since 2004. Our annual statutory financial statements are audited by a major international audit firm.

Our Board has a fiduciary duty towards Temasek as a Company, with full discretion and flexibility to guide the management of our portfolio as an active investor and owner, a forward looking institution, and a trusted steward.

Under the Singapore Constitution, Temasek is a [Fifth Schedule entity](#) with a constitutional responsibility to safeguard our Company's past reserves. Temasek's reserves form part of the [nation's reserves](#).

Temasek owns its assets — we are not a fund manager. We do not manage Singapore's Central Provident Fund savings, or the Singapore Government assets, or the foreign exchange reserves of Singapore. Neither does Temasek manage the assets of any other Fifth Schedule entity: these are independently managed by the respective Fifth Schedule entities themselves.

Temasek's past reserves are those accumulated by the Company before the current term of [Government](#).

Temasek is wholly owned by the [Singapore Minister for Finance](#) but not state-directed. Neither the [President of Singapore](#) nor the Singapore Government is involved in or directs our investment strategies, investment decisions, or other business decisions, except in relation to the protection of our past reserves.

Temasek has a constitutional responsibility to safeguard our Company's past reserves.

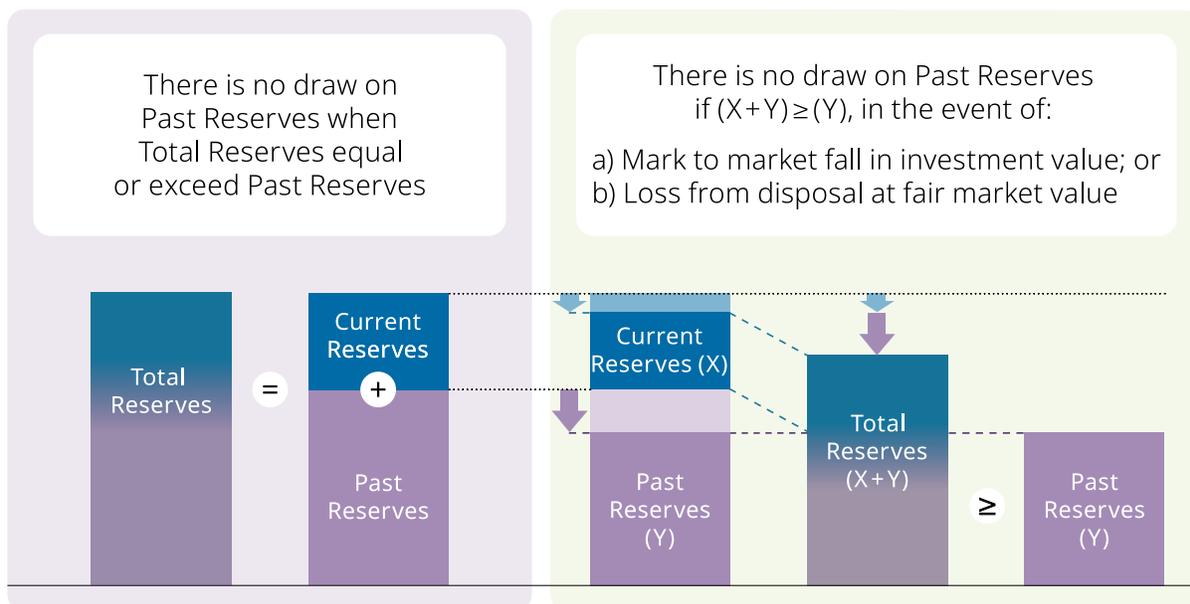
Temasek does not manage Singapore's Central Provident Fund savings.

Relating to the President of Singapore

The Board and CEO of Temasek have the responsibility under the Singapore Constitution to protect our Company's past reserves.

The Board and CEO of Temasek have a duty to seek the President's approval before any draw occurs on our past reserves. There is no draw on our past reserves if our total reserves equal or exceed our past reserves. Mark to market declines on existing investments are not a draw on past reserves. We have a duty to ensure every disposal of investment is transacted at [fair market value](#). A realised loss arising from such disposals at fair market value is not a draw on past reserves.

We have a duty to ensure every disposal of investment is transacted at fair market value.



Under the Singapore Constitution, Temasek's past reserves are those Temasek accumulated before the current term of Government. Temasek's current reserves are those Temasek accumulates during the current term of Government.

Every year, the Temasek Board and senior management brief the President and the Council of Presidential Advisers on Temasek's portfolio and financial performance, global economic outlook, and investment strategies.

Relating to Our Shareholder

Incorporated on 25 June 1974, Temasek is wholly owned by the [Singapore Minister for Finance](#). As Temasek is a commercial investment company, the Government does not direct our investment or other business decisions. Instead, the Government holds the [Board](#) accountable for our overall performance by assessing Temasek's long term returns. In turn, the Board delegates the day-to-day management of Temasek to Temasek's [senior management](#).

While the [Board Leadership Development & Compensation Committee](#) is responsible for recommending Board and management leadership plans, our shareholder has the right under the Singapore Companies Act to appoint, reappoint, or remove our Board members, subject to the [President's concurrence](#). The Board's appointment or removal of the CEO is also subject to the President's concurrence. These constraints are part of the "second key" concept, to safeguard the integrity of our Board and CEO in protecting Temasek's past reserves.

The Government does not direct Temasek's investment or other business decisions.

Temasek declares dividends annually in accordance with our dividend policy. Our Board sets our dividend policy, balancing the sustainable distribution of profits as dividends to our shareholder with the retention of profits for reinvestment to generate future returns. The policy also takes into account our constitutional responsibility to protect Temasek's past reserves. Our Board recommends the dividend payout for our shareholder's acceptance at the annual general meeting.

Under the [Net Investment Returns \(NIR\)](#) framework, the Government is permitted to spend up to 50% of the expected long term real rates of return of GIC, the Monetary Authority of Singapore, and Temasek. The NIR framework does not affect, change, or impact Temasek's dividend policy, strategies and operations as a long term investor, and our responsibility to protect Temasek's past reserves.

Every year, the Temasek Board and senior management meet with the Minister for Finance and officials from the Ministry of Finance to review Temasek's portfolio and financial performance, global economic outlook, and investment strategies.

Relating to Our Portfolio Companies

We manage our portfolio as an active investor and asset owner. We increase, decrease, or hold our investment positions based on our views on intrinsic values, to enhance our [risk-adjusted returns](#) over the long term.

As an engaged shareholder, we also seek to add value to our portfolio companies by exchanging ideas and sharing best practices in areas such as [sustainability](#), [governance](#), industry and technology trends, and [cybersecurity](#).

We keep abreast of industry developments that impact our portfolio companies, and track their performance. Through our engagements with their boards and management, we gain a better understanding of their changing operating environments and

longer term trends.

We also encourage them to be nimble and innovative, and to be prepared to face disruptions and take on new opportunities. This is with the view of building a resilient and forward looking portfolio as part of our [T2030 strategy](#), and ultimately, to deliver sustainable value over the long term.

Our governance model with our portfolio companies is similar to that which our shareholder has with us. The day-to-day management and business decisions of companies in our portfolio are the responsibility of their respective boards and management. Temasek does not direct their business decisions or operations. Just as the Singapore Government does not provide any financial guarantees for our obligations, we do not provide any financial guarantees for the obligations of our portfolio companies.

Temasek does not direct the business decisions or operations of our portfolio companies.

We expect companies to abide by sound corporate governance and codes of conduct and ethics. We do not condone any form of misconduct and malfeasance. We engage the boards and management of our portfolio companies regularly and hold them accountable for the activities of their companies. Boards should set the tone — to effectively oversee management in the development and implementation of strategies and ensure robust governance, compliance systems, and processes are in place. These must be constantly reviewed and refreshed to ensure relevance.

We comply with our obligations under Singapore laws and regulations, as well as those of the jurisdictions where we have investments or operations. Likewise, we expect our portfolio companies to comply with their obligations under the laws and regulations of jurisdictions in which they have investments or operations.

We expect our portfolio companies to comply with their obligations under the laws and regulations of jurisdictions in which they have investments or operations.

We support the formation of high calibre, experienced, and diverse boards to guide and complement management leadership. This includes encouraging the boards of portfolio companies to identify and consider potential directors with relevant backgrounds and experience, and to conduct annual reviews of their succession plans.

Board directors have a fiduciary duty to safeguard the interests of their respective companies.

Accordingly, we advocate that boards be independent of management in order to provide effective oversight and supervision of management. This includes having mostly non-executive board members with the independence and experience to oversee management.

We advocate that the Chairman and CEO roles be held by separate persons, independent of each other. This is to ensure a healthy balance of power for independent decision making, and a greater capacity for management supervision by the board.

We protect our interests by exercising our shareholder rights, including voting at shareholders' meetings.

Relating to Our Communities

As an owner of our assets, Temasek has a wider group of stakeholders beyond our shareholder — employees, investee companies, partners, and communities. As a responsible company, we operate with respect to the considerations of this wider group. Since 2003, we have been setting aside a portion of our net positive returns above our risk-adjusted cost of capital for [community gifts](#). Through our community gifts, Temasek seeks to contribute to the progress, cohesion, and resilience of our communities, enhancing our social licence to operate.

We gift philanthropic funds to [Temasek Trust \(TT\)](#) to support community initiatives based on the principles of sustainability and good governance. These are funded by a share of our net positive returns above our [overall risk-adjusted cost of capital](#) and approved by the Temasek Board.

We gift philanthropic funds to Temasek Trust to support community initiatives based on the principles of sustainability and good governance.

These philanthropic gifts are disbursed from TT to [Temasek Foundation \(TF\)](#) and other non-profit entities to support programmes on a sustainable basis, delivering on our community objectives to [connect people](#), [uplift communities](#), [protect our planet](#), and [advance capabilities](#).

The skills required for the financial management of endowment funds are very different from those for developing and delivering community and social programmes. This was why TT was established in 2007 — to oversee the financial management and sustainable disbursements of philanthropic gifts from Temasek. These donations and gifts have been earmarked for social and community programmes to be developed or delivered by Temasek's non-profit ecosystem which includes TF, [Temasek Life Sciences Laboratory](#), [Stewardship Asia Centre](#), and [Mandai Nature](#).

This governance model separates the financial management of philanthropic assets by TT, from the programme design and delivery by Temasek's non-profit ecosystem, and enables the respective entities to develop clear focus and capabilities. TT, TF, and other non-profit entities are separate, independent entities from Temasek, each with their respective boards and management teams. Temasek does not direct their day-to-day operations.

TT's role is evolving beyond managing philanthropic financial assets to driving societal good as an advocate of sustainability and governance in philanthropy, a catalyst in creating shared value, and an investor for impact.

Alongside the work of Temasek's non-profit ecosystem, our staff volunteers play an active role in [contributing to their communities around the world](#). Through our staff-driven volunteer *T-Touch* initiative, our employees commit ideas, time, and money to support their chosen charities and community projects, and pursue philanthropic and public good causes.

From time to time, we may seed institutions to develop capabilities which [promote good governance](#) and community stewardship. In addition, we collaborate with like-minded partners, such as universities and multilateral agencies, to build these institutions.

Stewardship and Community

Fostering Stewardship and Governance

Institutions guided by the principles of good governance and sound stewardship are key to achieving sustainable development. Temasek has established independent public institutions and worked with multilateral agencies to promote these principles and share best practices that enable societies to thrive and prosper.



Wealth Management Institute (WMI)

Established in 2003, [WMI](#) is committed to building capabilities for investing in a better tomorrow. Founded by GIC and Temasek, WMI strives to become Asia's Centre of Excellence for wealth and asset management education and research. WMI also helps the Global-Asia Family Office Circle, a network platform that fosters a trusted environment to build capabilities and community in the family office sector.



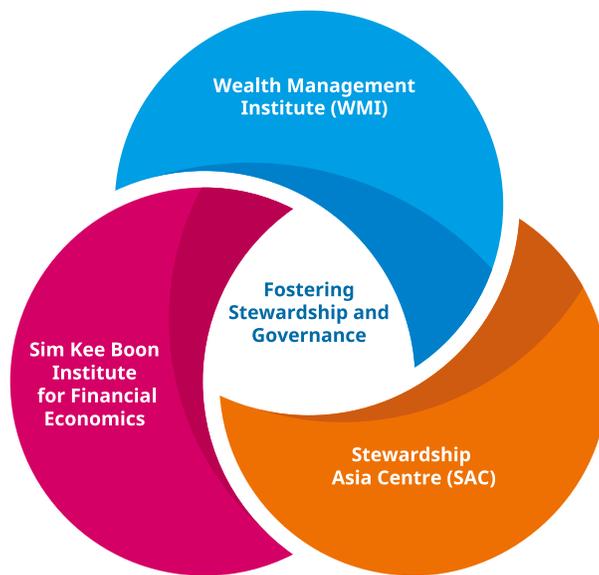
Stewardship Asia Centre (SAC)

Established in 2011, [SAC](#) is a thought leadership centre dedicated to helping business and government leaders, investors, and individuals activate stewardship through research, education, and engagement. It advocates that everyone should step forward as a steward leader to create sustainable value by integrating the needs of stakeholders, society, future generations, and the environment.



Sim Kee Boon Institute for Financial Economics

Established in 2008 within the Singapore Management University, [the institute](#) conducts applied financial research that is driven by industry and societal needs. The institute also focuses on financial education and inclusion, sustainable finance, financial technology, and macro markets.





Stewardship and Community

Sharing Perspectives

Temasek regularly engages distinguished industry, policy, and thought leaders through our advisory panels and our network of corporate advisors for insights on business, financial markets, and global affairs. We also exchange ideas and share knowledge on a variety of topics with our partners and portfolio companies.

Temasek International Panel

Our International Panel meets annually in Singapore. Formed in 2004, it comprises prominent global leaders whose knowledge and insights on geostrategic issues have helped sharpen Temasek's strategies in a rapidly changing global business landscape.

Temasek Regional Advisory Panels

As we deepen our reach globally, our regional advisory panels help us stay in touch with eminent business and thought leaders on issues relevant to our investment activities in our key markets. They also facilitate closer collaboration with business stakeholders in the respective regions.

Temasek has two regional panels — the Temasek Americas Advisory Panel and the Temasek European Advisory Panel. Our Temasek Regional Advisory Panels meet at least twice a year.

Temasek Sustainability Advisory Panel

This panel supports the sustainability strategy development of Temasek by bringing together eminent leaders with relevant policy, academic, and industry expertise. The advisors provide market insights, foster strong linkages with global sustainability networks, and engage with members of the Temasek ecosystem on sustainability-related challenges, such as climate change, nature conservation, social inclusion, and responsible technology.

Clean Energy Advisory Group

This group, which comprises eminent leaders in the clean energy space, engages members of the Temasek ecosystem on topics such as Carbon Capture, Utilisation and Storage; hydrogen; nuclear energy; fusion; and next-generation grids. Their discussions also focus on building an ecosystem centred around technology, policy, operations, safety regulations, and human capital development.

Temasek Roundtables

We organise roundtable forums which bring together our portfolio companies, partners, and members of our wider ecosystem to exchange viewpoints and perspectives. This includes specialist forums and events for leaders from various functions such as community stewardship, cybersecurity, finance, human capital management, sustainability, and technology.

More details on our global advisory network can be found on our [corporate website](#).

Stewardship and Community

Enabling a Better World

Our not-for-profit gifts to Temasek Trust enable Temasek Foundation and other non-profit entities to connect people, uplift communities, protect our planet, and advance capabilities, in Singapore, Asia, and beyond.

Companies today must be driven by a purpose that goes beyond profit. As a global investor, our social licence to operate depends on our ability to create value for all stakeholders, including our communities across the world.

We believe in seeding social capital to promote a more inclusive and resilient world, so every generation prospers. Since 2003, we have been setting aside a portion of our net positive returns above our risk-adjusted cost of capital for community gifts.

Our social licence to operate depends on our ability to create value for all stakeholders, including our communities across the world.

These are approved by the Temasek Board before being gifted, mainly to Temasek Trust (TT), which then disburses the gifts via grants and endowments to our non-profit ecosystem including Temasek Foundation (TF), Temasek Life Sciences Laboratory, Stewardship Asia Centre, and Mandai Nature. To date, Temasek's gifts to TT have enabled programmes which have impacted about 2.5 million lives across Singapore and beyond.

Beyond our non-profit ecosystem, we leverage the collective strengths and capabilities of Temasek's public-private-people partner networks to overcome complex challenges — this was exemplified by our collective efforts to fight the COVID-19 pandemic. We are also cognisant of the urgent need to address poverty and inequality that have been exacerbated by the pandemic.

Our philanthropic gifts promote social resilience, progress, and cohesion through evidence-based programmes that aim to deliver sustainable long term solutions. These programmes amplify our social goals of promoting accessibility and affordability, developing future-ready talent and skills, and enhancing diversity, equity, and inclusion.

We are committed to do our part as a trusted steward, and TT plays a central and pivotal role in our journey to do good.

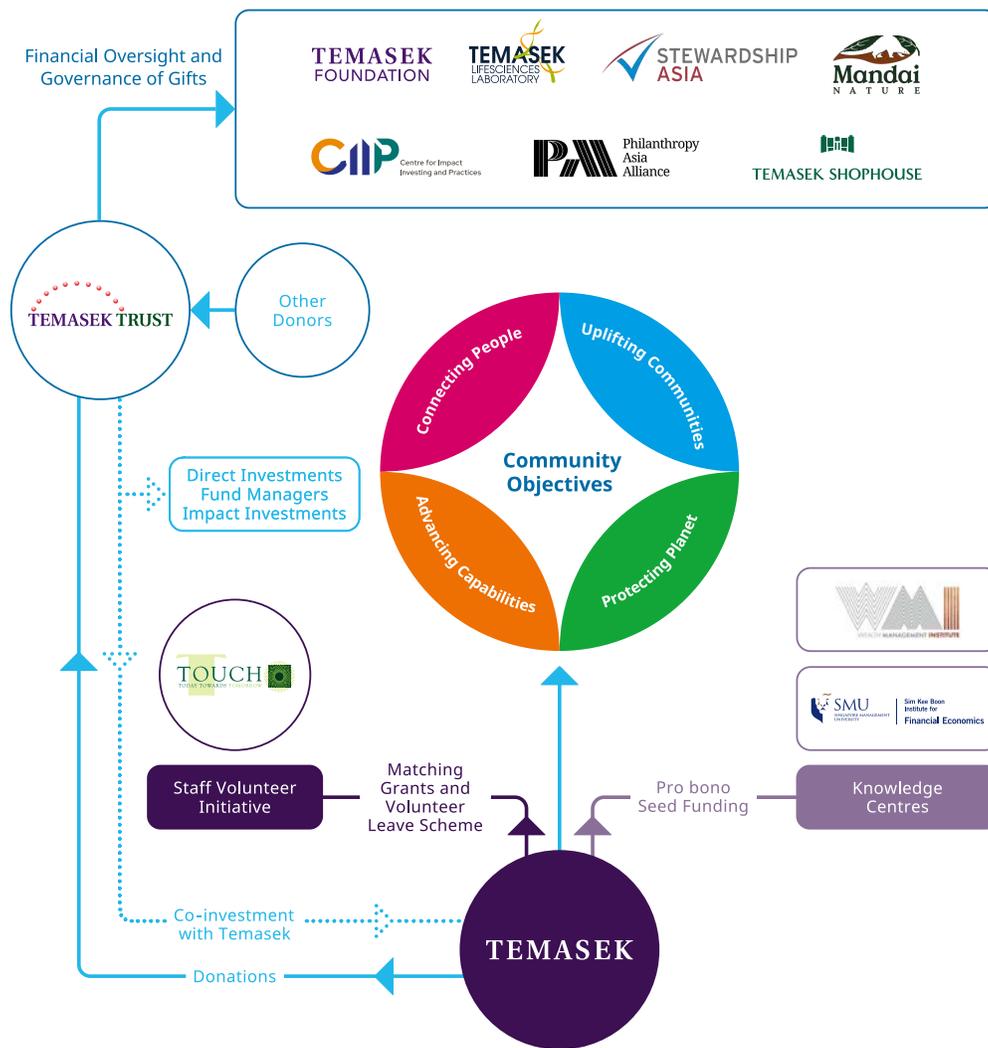
TT's role has evolved since its inception in 2007 when it was set up primarily to manage philanthropic financial assets. Today, TT also strives to be a leading advocate of sustainability and governance in philanthropy, a catalyst in creating shared value, and an investor for impact.

In September 2022, TT launched the Philanthropy Asia Alliance (PAA) to develop thought and action leadership, as well as mobilise philanthropic capital and multi-sector partnerships to scale impact. PAA's three focus areas are climate action, inclusive education, and resilient healthcare. This was announced at the second edition of Philanthropy Asia Summit, which was jointly organised by TF and TT, and supported by Temasek. The Summit aims to catalyse multi-stakeholder networks for action around these focus areas.

Impact investing forms a major pillar of TT's asset management activities, which includes ABC Impact, a dedicated Asia-focused private equity fund for impact investing. To advance knowledge, communities, and practices in this area, TT also launched the Centre for Impact Investing and Practices in June 2022.

Innovative giving models to amplify philanthropy are becoming more critical in a world where funding is insufficient to provide essential social services for all. In May 2022, Temasek joined hands with other donors to pilot a Pay for Success (PFS) programme called Growing Autistic Talent for Engineering Sector, focusing on enhancing the employment and retention of individuals with autism in skilled engineering jobs. PFS is an innovative approach where private funders provide upfront capital and capacity building to fund social programmes. Other funders repay the upfront funders if the programmes achieve pre-determined outcomes. This allows funds to be recycled for other worthwhile causes, empowering more beneficiaries and charities.

Globally, we also support communities in the markets we operate in. Our offices donate to local charities and work with partners to deliver sustainable impact, underscoring our commitment as a responsible corporate citizen.



Financial Oversight and Governance

Established by Temasek Holdings, Temasek Trust (TT) is a steward of philanthropic assets, advocate of sustainability, and catalyst of positive impact. As a Company Limited by Guarantee, TT provides governance and financial oversight of non-profit endowments and gifts from Temasek and other donors. It provides steady and sustainable multi-year funding to support capacity building and capability development for an ecosystem of entities, with the shared purpose of building better for every generation — by connecting people, uplifting communities, protecting the planet, and advancing capabilities. TT aims to also forge new pathways for philanthropy and impact investing through collaborations with like-minded partners, as a force for good.

Temasek Foundation (TF)

TF, a Company Limited by Guarantee, supports a diverse range of programmes that uplift lives and communities in Singapore and beyond. TF's programmes are made possible through philanthropic endowments gifted by Temasek, as well as gifts and other contributions from other donors. These programmes strive towards achieving positive outcomes for individuals and communities now, and for generations to come. Collectively, TF's programmes strengthen social resilience, foster international exchange and regional capabilities, advance science, and protect the planet.

Temasek Life Sciences Laboratory (TLL)

In 2002, TLL was established as a research institute, in partnership with the [National University of Singapore](#) and the [Nanyang Technological University](#), to harness the power of life sciences to improve lives. With close to 200 researchers, TLL undertakes biomolecular science research and applications to benefit people in Asia and beyond.

Stewardship Asia Centre (SAC)

Established in 2011, SAC is a thought leadership centre dedicated to helping business and government leaders, investors, and individuals activate stewardship through research, education, and engagement. It advocates that everyone should step forward as a steward leader to create sustainable value by integrating the needs of stakeholders, society, future generations, and the environment.

Mandai Nature

Mandai Nature was jointly established by Temasek and [Mandai Wildlife Group](#). It is dedicated to advancing efforts on biodiversity conservation in Asia, with a focus on averting species extinction especially in Southeast Asia, by delivering conservation programmes at scale with partners, as well as convening partnerships and collaborative alliances to address critical conservation outcomes. As the conservation arm of Mandai Wildlife Group, it also works closely with the Group to apply holistic and integrated conservation action.

Centre for Impact Investing and Practices (CIIP)

CIIP fosters the growth of impact investing and practices in Asia and beyond by building and sharing knowledge, bringing together stakeholders in the community, and bringing about positive action that accelerates the adoption of impact investing. Based in Singapore, CIIP was established by TT in 2022 as a non-profit centre, with Temasek and ABC Impact as strategic partners.

Philanthropy Asia Alliance (PAA)

PAA is a TT initiative dedicated to catalysing collaborative philanthropy in Asia through dynamic multi-sector partnerships. By harnessing collective strengths, PAA amplifies positive impact and accelerates action to address the pressing environmental and social challenges of our time. PAA's flagship programme is the annual *Philanthropy Asia Summit*, which features calls to action to foster innovation, drive momentum, and scale impact for a better world.

Temasek Shophouse

[Temasek Shophouse](#) is a social impact hub and home of the TT philanthropy and impact ecosystem, and like-minded co-working partners. Located in the heart of Singapore, Temasek Shophouse works closely with partners from the Public, Private, and People sectors to convene change-makers, foster collaborations, and catalyse solutions to positively impact Planet, People, Peace, and Progress. Over the year, Temasek Shophouse supported more than 70 programmes including community engagement events, and dialogues and workshops on a range of social and environmental issues.

Stewardship and Community

Making a Difference

We supported two Pay For Success (PFS) programmes that ensure funding achieves sustainable outcomes for those in need.



i See Chun Shan (right) learning from his colleague Bob Ho, who mentors him in his job as an electrical engineer at ST Engineering

Empowering Talents with Autism

After graduating from the [National University of Singapore](#) in July 2022, See Chun Shan started viewing job postings. The 24-year-old, who has a Bachelor's degree in Electrical Engineering, found several openings in engineering companies that he could be a good fit for but did not apply for a single one.

"I was afraid of the job interview process. I kept worrying about not saying the correct things or even not being able to answer the questions," he said.

Chun Shan was diagnosed at nine years old with autism — a developmental disorder that affects a person's ability to communicate and interact. He gets anxious in social interactions and even more so when he meets strangers.

Four months went by, and Chun Shan was still jobless. However, things took a positive turn when he learnt about the *Growing Autistic Talent for Engineering Sector* (GATES) programme at his university's career fair in November 2022. The programme trains and places tertiary-level graduates with full-time jobs in the engineering sector.

Through GATES, Chun Shan found a job in March 2023 as an electrical engineer at [ST Engineering's](#) Commercial Aerospace business.

The programme is supported by Temasek and others under a Pay for Success (PFS) model. Upfront funders, including Temasek, have collectively donated S\$340,000. PFS is an innovative approach where private funders provide upfront capital and capacity building to fund social programmes. Other funders repay the upfront funders if the programmes achieve pre-determined outcomes — in GATES' case, upfront funders will be repaid if trainees stay in a job for nine months and other outcomes of job training and placement are achieved. This allows funds to be recycled for other worthwhile causes, empowering more beneficiaries and charities.

Developing Inclusive Workplaces

GATES was launched by [Trampoline](#), a research and technology non-profit organisation. They recognised the challenges individuals with autism face in finding jobs, and identified engineering companies as potential employers, as the sector has been facing a

shortage of workers with technical skills in recent years.

Since the GATES programme was launched in May 2022, 42 participants have been trained and 18 have secured jobs in fields such as aerospace engineering, precision engineering, and consumer product manufacturing.

“People with invisible special needs, such as autism, are often overlooked in the hiring process. We are trying to address this problem through GATES by enhancing their employment prospects. For the employer, they are able to tap on a valuable resource pool. For the individual, their lives will be transformed. For the community, we engender a more inclusive and kinder society.”

Shaun Seow

Head, Community Stewardship
Temasek

Learning through Mentorship

Upon joining the GATES programme, participants are assessed to identify suitable work environments and jobs based on their abilities. Job coaches are assigned to prepare participants for interviews and provide feedback on areas such as resume writing. These coaches continue to track their career development for up to a year, even after participants have secured a job.



i Chun Shan meets regularly with his GATES job coach Chek Xue Ting to discuss how he is adapting at work

Chun Shan's coach Chek Xue Ting, Chief Operating Officer of Trampoline, encouraged him to take up a part-time job to gain more work experience as he applied for jobs. She also guided him to make a video resume to showcase his technical skills and help potential employers to better understand him.

To manage his anxiety, she coached him on practical job skills such as making complex tasks manageable by breaking them down into smaller steps.

“With some support and guidance, people with autism can excel in high-skilled jobs. Ultimately, the goal is to empower and help these young adults to succeed.”

Cheok Xue Ting

Chief Operating Officer of Trampoline

Today, Chun Shan is adapting to his new workplace well, and learning from other colleagues about the work of converting passenger aircraft to freighters which are used for cargo transport.

“He learns quickly and is able to keep up with our fast pace of work,” said Tay Kim Seng, Chun Shan’s supervisor and a principal engineer at ST Engineering.

Trampoline plans to expand the GATES programme, and train 70 young adults by the end of 2024.

Chun Shan says programmes like GATES can help to change society’s mindset of people with autism. “I hope that through GATES, more people will understand that autism is a spectrum, and not a label that defines what we are capable of,” said Chun Shan.

Building Resilient Families



i *Family Empowerment Programme (FEP) beneficiary Irawati is empowered to plan for her family’s future*

For the last few years, Irawati, 37, has struggled to pay for the living expenses of her five children aged between 1 and 15 years old. She is unable to work as she has to take care of three of her children who are aged between 1 and 3 years old. Her husband does not earn a stable income as a parcel delivery driver.

“When I picked things up in the supermarket, I would immediately put them back because money was tight,” said Irawati.

Thankfully, her financial pressures have eased since May 2022, when her family started receiving monthly stipends of S\$550 through the *Family Empowerment Programme (FEP)*. The programme, run by social service agency [AWWA](#), is a research study to assess if providing low income families with more income stability would help them shift their focus to longer term goals, in education, skills training, and employment. Currently, 75 households are participating in the programme and each receives a monthly average of S\$500 in stipends.

The FEP, which was launched in 2022, is funded through a PFS model. Upfront donor [Standard Chartered Singapore](#) donated S\$750,000 to support the first 18 months of the programme. If the pre-determined outcome targets are achieved, [Temasek Trust](#) will act as the outcomes funder and contribute further funding through its [oscar@sg fund](#) to refine and extend the FEP to positively impact more beneficiaries.

“We appreciate the rigour placed on outcomes in this project, and hope it will galvanise others — across private, philanthropic, and public sectors — to collaborate on solving complex issues, especially social issues which tend to be multi-dimensional and difficult to attribute impact. The data and insights on how such interventions have helped the families participating in FEP will provide a proof point for public and private institutional funders to consider taking on the role of outcomes funders, thereby creating a pathway for effective social innovation to be sustained at scale.”

Desmond Kuek
CEO, Temasek Trust

Lending a Helping Hand

The idea of FEP was developed by AWWA and [Tri-Sector Associates](#), a social enterprise, at the beginning of the COVID-19 pandemic in 2020. AWWA works with low income individuals and saw that many were in urgent need of financial assistance as they had lost their jobs. The programme also aims to determine the effectiveness of providing monthly stipends to improve the long term financial stability of low income families. Beneficiaries participate in surveys conducted twice a year by their case workers who ask them questions about their finances, employment status, job stability, and the mental health of their families.

“As financial security is a pivotal lever of social mobility, we felt it was important to be innovative and explore the long term impact of the provision of cash stipends, which is a less common approach. It is encouraging to see how the lives of so many participants, like Irawati, have been impacted. I believe we will be able to glean many valuable insights from the programme as we work towards better outcomes.”

See Toh Huixia
AWWA's Director of Family Services



i Irawati shares with her AWWA case worker Lau Chor Eng how the monthly stipends she receives benefit her family

Planning for a Brighter Future

Beneficiaries said the monthly stipends have improved their families' overall well-being and helps them to set aside money to upgrade their skills.

Irawati uses the stipends to buy healthier food and textbooks for her children. She also uses the stipends to pay for the cost of getting a motorcycle licence. She aims to take up a job as a food delivery rider which allows her to work flexible hours and look after her children.

"I feel blessed and am thankful for the FEP. I hope that the programme will reach out to more people and brighten more lives," said Irawati.



Stewardship and Community

Touching Lives

Temasek's non-profit entities identify community needs and spearhead programmes to connect people, uplift communities, protect the planet, and advance capabilities, in Singapore and beyond.

Connecting People



→ Youth Ecosperity Dialogue (YED) 2022



→ 10-year Anniversary of the Programme for Leadership in University Management (PLUM)

Uplifting Communities



→ Tele-Dentistry Oral Care for Seniors (T-DOCS)



→ Aqualita

Protecting the Planet



→ *Protecting Singapore's Rarest Primate*



→ *The Liveability Challenge 2022 Winner — Fairventures Social Forestry*

Advancing Capabilities



→ *Automated External Defibrillator (AED)-on-Wheels Programme*



→ *Harmony Champions*



→ *Personalised Transcranial Magnetic Stimulation (TMS) Treatment for Depression*

Connecting People



i Participants of the *Youth Ecosperity Dialogue* discuss how youths can accelerate change and move from commitment to action

Youth Ecosperity Dialogue (YED) 2022

The YED, held in partnership with [Ecosperity Week](#), is an annual platform for student leaders to discuss pressing challenges in sustainability. Last year's YED was organised by [Singapore Management University's College of Integrative Studies](#). It saw the participation of 78 youths aged 18 to 25, from 36 institutes of higher learning. Through industry engagements, workshops, and conversations with global thought and business leaders, participants gained new insights on tackling sustainability issues, and explored ways to accelerate real impact through sustainable business practices.



i NUS President Professor Tan Eng Chye (leftmost) moderating a plenary session with key ASEAN university leaders on the role of regional cooperation in the transformation of higher education in ASEAN

10-year Anniversary of the Programme for Leadership in University Management (PLUM)

PLUM is a collaboration by [Temasek Foundation](#) and the [National University of Singapore](#) to create a platform for university leaders to bolster ties; exchange insights and best practices; and advance ideas on the governance and management of universities in Southeast Asia, as well as the development of the region as a whole. Since it began in 2012, about 300 participants from over 30 universities have attended the programme.

To mark its 10-year anniversary, a three-day summit was held in November 2022, to discuss transformation in higher education, innovation and entrepreneurship, and sustainability efforts in the ASEAN region. This saw the participation of 50 delegates from 24 universities across Southeast Asia, and they were joined by the President of the Republic of Singapore Halimah Jacob and Singapore's Minister for Education Chan Chun Sing.



i A healthcare worker demonstrating the use of intraoral cameras as part of the dental screening process

Tele-Dentistry Oral Care for Seniors (T-DOCS)

The [National Dental Centre Singapore \(NDCS\)](#) and [Temasek Foundation](#) are jointly piloting the *T-DOCS* programme, to improve access to preventive oral care for vulnerable seniors who are enrolled in home care programmes or staying in nursing homes. Free dental screenings are conducted once every six months, with healthcare workers using intraoral cameras to capture images for remote assessment by NDCS' dentists. Treatment plans would then be conveyed to care staff, the seniors, and their families for follow up. The *T-DOCS* team is concurrently developing an Artificial Intelligence software to analyse captured images, which reduces the time taken to assess them, and alerts dentists sooner to areas of concern. So far, about 200 seniors from [St Andrew's Community Hospital](#) and [Vanguard Healthcare](#) have benefitted from *T-DOCS*.

Uplifting Communities



i Affordable fresh fish bred with Aqualita's modular and scalable farming innovations

Aqualita

“Real fresh fish. Affordable, anywhere, anytime” — this is the motto of [Aqualita](#), a Singapore-based aquaculture start-up that is a beneficiary of the Liveability & Sustainability Innovation grant from [Temasek Foundation](#) in 2021. Aqualita aims to contribute not only to the long term security of food supply, but also to the transformation of the aquaculture industry.

Aqualita has developed innovative fish farming solutions in the form of modular, scalable, and stackable mini-farms. By combining biology and engineering expertise, as well as tapping on fish nutrition, water management, and husbandry capabilities, Aqualita is able to deliver more sustainable and higher fish yields in a clean and safe environment. Aqualita's solutions support farmers, communities, and the environment, and the company is committed to training and equipping the next generation of aquaculture enthusiasts and specialists alike.



i Raffles' Banded Langur mother and child

Protecting Singapore's Rarest Primate

The Raffles' Banded Langur (RBL) is one of only three native primates in Singapore, and was considered to be on the verge of extinction in the 1990s. Today, conservation work for this species is actively managed and funded by [Mandai Nature](#). Efforts to protect this Critically Endangered primate began in 2016 and was spearheaded by the now defunct Wildlife Reserves Singapore Conservation Fund. One of the key objectives was to re-establish canopy connectivity for the safe movement of these arboreal monkeys. Two rope bridges between fragmented forests in Singapore were installed in 2019 to facilitate the safe crossing of the RBLs and other wildlife. Surveillance footage showed at least 293 successful crossings by the RBLs between April 2020 and August 2021. Today, there are an estimated 70 RBLs in Singapore.

Protecting the Planet



- i** Fairventures Social Forestry works with local community members in Kalimantan, Indonesia to plant timber seedlings and cash crops to restore degraded land

The Liveability Challenge 2022 Winner — Fairventures Social Forestry

Fairventures Social Forestry, a Germany-based start-up and winner of Temasek Foundation's The Liveability Challenge (TLC) 2022, aims to sustainably manage forests and improve livelihoods in Indonesia using a scalable social forestry model that incorporates blended finance. Fairventures restores degraded land impacted by slash-and-burn agriculture, illegal logging, illegal mining, or large-scale monocultures, and creates sustainable income opportunities from timber and cash crops for local community members. The prize money of TLC 2022 will be used by Fairventures to scale its business model through the development of new community-based agroforestry and conservation projects in Sumatra and Java.



i SingPost drivers demonstrating cardiopulmonary resuscitation assisted by the AED and first aid kits provided by Temasek Foundation

Automated External Defibrillator (AED)-on-Wheels Programme

In a collaboration between [Temasek Foundation](#), SMRT Taxis, and [Singapore Heart Foundation](#), the *AED-on-Wheels* programme was first piloted in 2015 to equip taxi drivers with an AED, and to train them to be community first responders. It has progressively expanded to more drivers, including [SingPost](#) couriers in 2023. By increasing the availability of roving AEDs within the community, the programme improves response time and the victim's chances of survival. As of February 2023, 152 cases of suspected cardiac arrest and minor fires were attended to by drivers under the programme.



i Youth leaders with the President of the Republic of Singapore Halimah Yacob after being appointed as the 2023 cohort of Harmony Champions

Harmony Champions

In February 2023, close to 80 Singaporean youths from local institutes of higher learning were appointed as Harmony Champions by the President of the Republic of Singapore Halimah Yacob, under a new programme by [Temasek Foundation](#) and [Roses of Peace](#). The programme nurtures youth leaders to become advocates of interracial and interreligious harmony by facilitating dialogues on racial and religious cohesion, as well as championing peace-building initiatives.



i A demonstration of personalised and non-invasive brain stimulation to treat depression

Personalised Transcranial Magnetic Stimulation (TMS) Treatment for Depression

[Temasek Foundation](#) is supporting a team led by Dr Tor Phern Chern, Head of Neurostimulation Service at the [Institute of Mental Health](#), and Thomas Yeo, Associate Professor at the [Yong Loo Lin School of Medicine](#) and [College of Design & Engineering](#) at the [National University of Singapore](#), who are working on an innovative treatment of personalised and non-invasive brain stimulation for patients with Major Depressive Disorder. Compared to the conventional TMS which targets the same location across patients, their solution uses functional Magnetic Resonance Imaging and algorithms to determine and map out the precise relevant brain networks and locations in each patient's brain, so as to personalise the TMS to be used on them.

This solution improves patient outcomes by increasing the percentage of patients who respond well to treatment from 40% to 80%. It can also shorten the time spent in active treatment and is more cost-effective compared to standard care options.



Our Stories

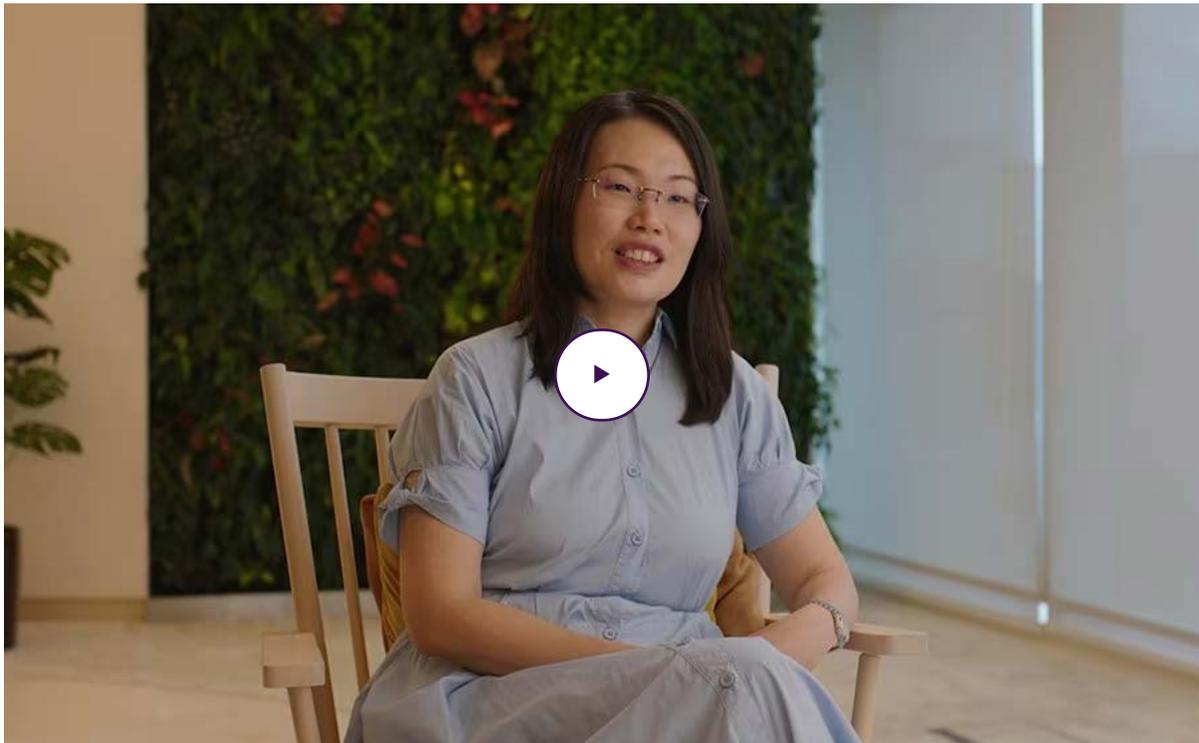
Building a Portfolio for Generations

At a time of heightened volatility, our response has been to ensure that with each disruption, we don't just recover, we emerge stronger.

Across our markets, we not only fortify our portfolio companies to withstand shocks, but position ourselves for growth by looking ahead. We stay on top of trends that impact business models and consumption patterns, anticipate the innovations tomorrow's challenges demand, and address gaps to drive inclusive growth.

Temasek empowers resilient and sustainable growth — today, and for generations to come.

Soaring Above Adversity



When COVID-19 grounded the international aviation industry, Temasek's S\$15 billion rights issue to [Singapore Airlines \(SIA\)](#) not only allowed it to weather the turbulence but demonstrated the confidence our national carrier needed to raise additional funding.

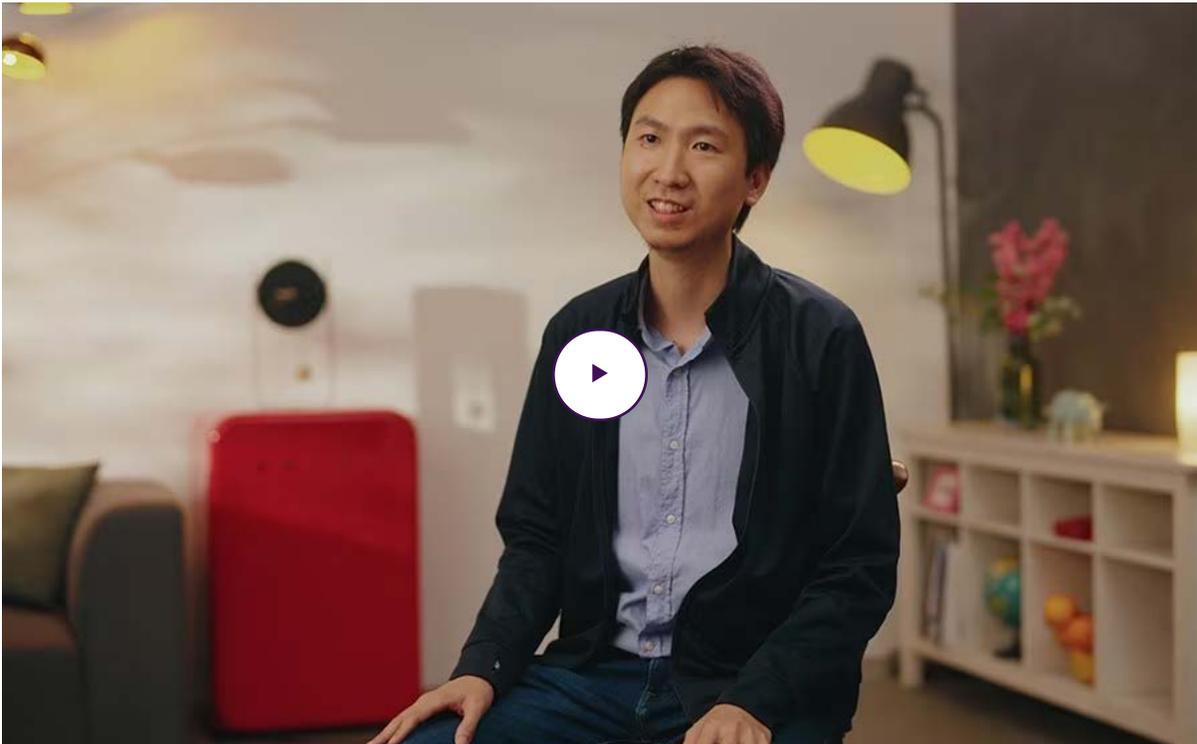
SIA could keep its fleet operational, retain staff, and focus on the future. It also underwent a major digital transformation. This ensured that post-crisis, SIA would be ready to soar. By March this year, the airline saw passenger capacity climb back to almost 80% of pre-pandemic levels.

“Our capital enabled SIA to navigate the pandemic, and allowed it to stay the course on its transformation journey. We continue to work with SIA to strengthen its long term competitiveness, benefitting not just SIA passengers, but all Singaporeans and businesses that rely on the air connectivity that the aviation industry brings.”

Loy Kiet Ying

Director, Portfolio Development
Temasek

Bridging the Healthcare Gap



Economic success in China has brought with it longer lifespans, rising levels of affluence, and growing demand for quality healthcare. But these have come up against a scarcity of medical resources, and mounting pressure to bring healthcare costs down.

Guided by long term structural trends, Temasek is supporting the growth of Carebridge Holdings, which owns and operates an international tertiary general hospital in Shanghai, and is rapidly expanding. In addition to building a sister hospital in Beijing, it is growing its network of community clinics and digital reach.

Temasek also supports innovation in areas like medical devices and biotech, creating synergies between its portfolio companies to accelerate development.

“Healthcare is something every generation needs, whether the elderly, children, or those in between. Investments in these areas have the potential to deliver stable returns over the long term... and also allow us to do good while doing well.”

Andy Zeng

Director, Investment (Shanghai)
Temasek

Going Deep Into Decarbonisation



While steel is a key element of urban infrastructure, iron and steel making are among the biggest emitters of carbon globally, responsible for around 10% of emissions each year. Our partnership with [Electra](#) supports the development of a novel process that significantly reduces carbon emissions by refining iron ore at low temperature using intermittent renewable energy.

The deep science solutions we support through the work of our Emerging Technologies team require an investment of both capital as well as patience to mature and scale, but the potential returns are immense — including for people and planet.

“If you think about how much time we have left to mitigate the impact of climate change, it is clear that we need to move now. Heavy industries such as iron and steel will take time to change, and require investors who are able to make the longer term investments that allow novel technologies to grow and reach their full potential.”

Aubrey Keller

Vice President, Emerging Technologies
Temasek



Temasek's Financial Services team identified payments as a key driver of digital transformation. Encouraged by its sound fundamentals and early success, Temasek made an initial investment in 2014 and later scaled its interest in [Adyen](#), now a leading global payment services company.

Adyen's unified commerce offering, which integrates online, mobile, and in-store payments, has eased digital adoption for merchants to deliver a seamless payment experience to their customers.

"Financial services permeate our everyday lives, from how we shop to how we pay, as well as how we save and invest. We have the ability to invest in the growth and innovation of financial services, which catalyses financial solutions that have widespread impact on people's everyday lives."

Connie Chan

Head, Financial Services
Temasek



Our Stories

Bridging the Healthcare Gap

At [Jiahui International Hospital](#), cancer does not meet a doctor. It meets an entire team. Medical, surgical and radiation oncologists, along with other specialists, discuss the best battle plans, placing the patient — not the disease — at the centre of care.



i Jiahui differentiates itself through a patient-centric model of care, and helps alleviate some of the strain on Shanghai's stretched medical resources (Photo: Jiahui International Hospital)

Cancer care is among more than 35 specialities that have rapidly evolved at Jiahui, Shanghai's international tertiary general hospital to keep pace with longer lifespans and rising demand for quality health care.

In the six years since it opened its doors in late 2017, Jiahui, co-branded with the Harvard affiliated [Massachusetts General Hospital](#), has established teams of leading international and local doctors, cutting-edge facilities, research collaborations and clinical trials. In that time, it has also created centres of excellence for [Jiahui International Cancer Centre](#), women's health, orthopaedics and sports medicine, and cardiology.

"Temasek's investment has been critical in getting us to where we are today, and it will continue to be important as we expand further, not just in integrated care delivery, but building up an innovative healthcare ecosystem in China that spans care, research, and education," says Ge Feng, founding CEO of Carebridge Holdings, which owns and operates the hospital and its ancillary network.

Doing Good, and Doing Well

Temasek's investments in China are guided by the long term [structural trends](#) playing out in the world's second largest economy, says Andy Zeng, Director of Investments (Shanghai) at Temasek.

Three decades of economic boom have brought with them longer lifespans, rising levels of affluence, and growing demand for quality healthcare. However, this comes at a time when there is a scarcity of medical resources, and mounting pressure to bring healthcare costs down.

“Investments in these areas have the potential to deliver stable returns over the long term, in line with Temasek’s strategy to build a forward looking and resilient portfolio, and also allow us to do good while doing well,” says Andy.

→ Learn more about our investments across key sectors and geographies, guided by our structural trends

Temasek’s investments are focused on two main areas: meeting underserved needs, and healthcare innovations that enhance efficiency and lower costs.

“Healthcare is something every generation needs, whether the elderly, children, or those in between. With good quality of care, they live better,” he says.

“Healthcare is something every generation needs, whether the elderly, children, or those in between. With good quality of care, they live better.”

Andy Zeng

Director, Investments (Shanghai)

Temasek



i The 500-bed Jiahui International Hospital has seen patient numbers quadruple since 2019. Carebridge hopes to replicate its success at an even larger medical facility that opens in Beijing in 2027. (Photo: Jiahui International Hospital)

In Shanghai, close to one in five residents is aged over 60. As such, major hospitals like Jiahui consistently operate at full capacity to tackle the often-complex health conditions faced by the elderly. For example, during Shanghai’s COVID waves in 2022, Jiahui’s 500-bed facility helped ease the strain on the healthcare system. On the other end of the spectrum, Temasek’s investments are securing better futures for the young.

Its investment in [Orient Speech Therapy](#) strives to provide autistic children with speech intervention therapies soon after speaking and before they reach school-going age, after which treatment is far less effective. “You only have two to four years to maximise the efficacy of the treatment. But if you get in during the window, you can have a major impact,” says Andy.

With increasing government pressure to lower healthcare costs, Temasek is also backing homegrown innovations, from medical devices to biotech, to help rein in costs. “This potentially benefits the entire population, so it is an important trend for us to capture and build our strategy on,” he says. Connecting capabilities within its ecosystem could create further value — for instance, with its capabilities to conduct clinical trials, Jiahui is well placed to help accelerate drug development.

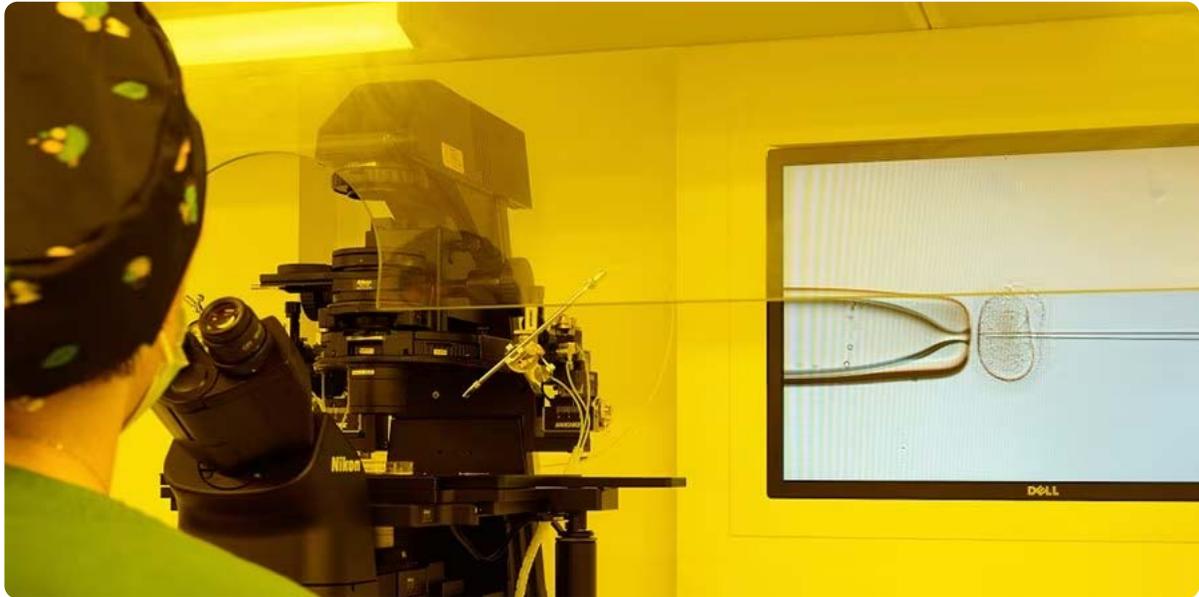
“Healthcare is not a business where you can accelerate growth by aggressive marketing. You need to ensure quality of care, build up good teams, and put in place the right standard operating procedures,” Andy says. “When you build it up, there will be good returns for both companies and communities.”

Pushing Out Further, and Faster

Beyond capital, Temasek has also lent its strategic and network strength to Jiahui's operational and growth strategy, allowing it to push closer to its vision for a population-focused healthcare, catering to unmet needs for China's rising middle income population. Since 2019, Jiahui has seen the number of outpatient visits more than quadruple as its capabilities grow.

By year end, construction is expected to start on a second Jiahui flagship hospital in Beijing. The vision for it is even more ambitious — rather than a standalone tertiary hospital, the facility will be an international health complex, integrating centres of excellence, wellness and health management, rehabilitation, and translational research.

“Our tertiary hospitals serve as the anchor, but eventually we want to build a vertical healthcare ecosystem, from tertiary care to digital care,” says Ge Feng. Jiahui already operates satellite and community clinics, and offers home care in towns around Beijing and Shanghai. It is also growing its reach through telehealth consultations. “What we are doing is laying the foundation for an integrated, innovative ecosystem,” he says.



i Jiahui's commitment to lifelong care starts even before birth, at its IVF centre (Photo: Jiahui International Hospital)

A second focus is further building up medical education and research to strengthen its talent pipeline and keep practitioners up to date, including through information sharing. “We aim to serve as a bridge between the Chinese and international medical communities, both in terms of knowledge and in adopting international best practices,” he says. “Medicine is continually evolving, and requires constant education, as well as research — that's very important for the long term sustainability of our business. Since 2016 we have been the strategic partner of the New England Journal of Medicine and exclusively run its China operations.”

As China steps up its response to healthcare, there is significant headroom to help it push further, and faster, says Andy.

“Our capital can enable companies to respond more effectively to healthcare gaps and meet pressing demands with best-in-class services and innovations. Together, we can have a positive impact — for every generation, and for years to come.”



Our Stories

Enabling Generational Impact



By 7am, Kamal Khumbar has mucked out the buffalo shed, had her morning tea, and cleaned and stocked the family's modest provision store, ready for the day's business. "I enjoy running the business," says the woman known as "nani" (grandma) in the village. "Had I not had this, I would have sat gossiping with the other women," she says. Instead, the family's growing business, which also includes a small dairy farm, an onion and potato plot, and a handful of tea stalls, now employs 15 other women and pays for her grandchildren's education.



i Kamal's loan has not only benefitted her business and family, but also allowed her to employ 15 other women

The Khumbar family in Maharashtra's Parinche village is among more than 20,000 rural households that have received loans between US\$2,000 and US\$5,000 from financial services startup [SarvaGram](#) since 2019, aimed at improving their livelihoods, and directed to where it can have the greatest impact.

A Match for Rural Realities



i Beyond loans, SarvaGram's farm equipment rental service allows efficient equipment use, while helping smallholder farmers raise productivity

"Over the last 15 to 20 years, we've seen huge changes in rural middle-income households in India, primarily in terms of aspirations," says Co-founder Utpal Isser, who set up SarvaGram with former ICICI Bank colleague Sameer Mishra. "They want to invest in their productive capacities. They want to invest in their future, in the education of their children, or to build a house, and secure a much better quality of life."

Yet, the formal financial services sector has not quite caught up with rebalancing the real and perceived risks — and opportunities — these rural households represent.

"We believe they are at an inflection point in terms of income, digital literacy, and opportunity for growth," he says. "Interventions now will lead to non-linear growth in their capacity. We have the ability to create impact at scale."

The potential is massive: India has a population of 1.4 billion, and an estimated 80 million rural households with the capacity to absorb “growth capital”. SarvaGram’s vision is to serve 1 million households and impact 5 million lives in the next five years.

With Temasek’s 2022 investment, the company will more than double the number of its outlets in rural India to 125 by 2024, broadening and deepening its reach, and bringing it closer to its vision.

“Access to capital is having an immense social and economic impact on this group, which aligns closely with Temasek’s view that capital cannot only be financial in nature, but have multiple outcomes for communities. For businesses to be successful, communities must thrive,” says Benoit Valentin, Head of Impact Investing at Temasek.

“Access to capital is having an immense social and economic impact on this group, which aligns closely with Temasek’s view that capital cannot only be financial in nature, but have multiple outcomes for communities. For businesses to be successful, communities must thrive.”

Benoit Valentin

Head, Impact Investing

Temasek

For Temasek, impact investing helps ensure sustainable returns for people and planet. While investments directed at mitigating climate change have been in the spotlight, building community resilience is as important, and that is where companies like SarvaGram come in, he says.

Although Temasek has channelled capital into impact-led investments through funds such as [ABC Impact](#) and [LeapFrog Investments](#), SarvaGram is its first direct investment in helping communities meet social [Sustainable Development Goals](#).

“What SarvaGram does is provide a pathway for these rural households to break from their daily cycles and low-income ceilings so that their children and grandchildren can live better lives,” says Eliza Foo, Director of Impact Investing at Temasek, who led the investment. “It’s a clear example of how social capital can uplift communities so that every generation prospers, which is very much in line with Temasek’s purpose.”

Temasek’s impact investing strategy seeks to create a positive impact on underserved communities while generating financial returns, she says. It aims to address pressing challenges in areas such as financial services, healthcare services, education, agriculture, and climate, in emerging markets across Asia, Africa, and Latin America.

→ Sustainability is at the core of all that we do. [Learn about the other ways we are investing to drive sustainable and inclusive growth](#)

Human-Centric Solutions

What stood out with SarvaGram was its unique, differentiated approach, says Eliza.

The company takes a personalised approach, enabled by technology. Relationship officers on the ground reach villagers at their homes, building trust while getting a “360 degree view” of a household’s needs. This information becomes the data that allows them to not just understand the household’s potential and risks, but to provide a customised solution. This could take the form of loans, support for farm mechanisation, or other investments products aimed at increasing productivity and resilience.

For Kamal, it translated into more value from the 40 dairy cows she managed alongside her provision store. She used to milk them herself, spending one to one-and-a-half hours each morning and evening on the task, says Utpal. “Milking infrastructure could help her do it in 15 to 20 minutes, without touching the milk, so that would result in better quality as well,” he says. “Since she had the cash flow, she was able to do that.”

Sparking Positive Chain Reactions



i From credit to farm mechanisation equipment, SarvaGram provides solutions that serve the most pressing needs of rural households

For rural communities, the right kind of financing solutions uplift not just households, but whole communities. It also creates better opportunities for more formal financial players to then leverage the deep local knowledge and reach of partners like SarvaGram, says Utpal, who plans to further grow SarvaGram's reach through partnerships.

"Eventually, we see ourselves partnering with banks and formal financial players. Their strength is their capital, and ours is our deep understanding of the customer, ability to appraise the potential risks, and our distribution network. By combining these strengths, we will be able to achieve more and produce better results, with rural households the biggest winner."

Ultimately, this is what catalytic capital is about, says Eliza. "It is about creating a chain reaction, one that brings all stakeholders together to create a system level change."



Our Stories

Programming a Digital Career Transformation

The class looks more like one on city planning than programming — groups of three or four gathered around large white squares with Lego buildings, animatedly debating the best placement for a city mall. The task being tackled, however, is not one of urban development, but rather problem-solving, logic and organisation — the building blocks of programming.



i For SIU graduates like Christopher (centre) and his younger brother Eric, Temus has not only enabled a step into the digital economy, but a brighter future, says Delaine (left)

“We train for very specific job scopes,” says Delaine Cheong, Director of Enterprise Development at Temasek, which set up digital transformation agency [Temus](#) in partnership with [UST](#) in 2021. Its intense bootcamp-styled [Step IT Up \(SIU\)](#) programme, now training its second batch of 21, equips those without a technology background with the skills to pursue a career in the field. Presently, SIU graduates are working on digitalisation projects for Temus’ customers across a range of sectors, from insurance to financial services and healthcare.

“It’s different from other bootcamps, where you still need to learn the specific skills for a particular job role after that,” says former optometrist, Christopher Tan, 38, who graduated from the programme in March. The skills he learnt with SIU, he says, can be immediately applied to the insurtech product he is currently developing with Temus.

“SIU trains for a specific technical specialisation such as .Net as well as low-code, and the content delivered would be on par with what a computer science graduate would have learnt in these areas over the course of the degree. We focus on the aspects that are directly relevant to the job scope we are training them for,” says Delaine, who is currently seconded to Temus as Director of Special Projects.

Temasek has established Centres of Excellence to build specialised capabilities in Artificial Intelligence, Blockchain, Cybersecurity, Data & Digital, and Sustainable Solutions — the [Temasek Operating System \(T-OS\)](#). These Centres of Excellence create next-generation capabilities and offer value to Temasek’s ecosystem as well as the broader marketplace. Temus “sits in the centre” of Data & Digital, says Delaine.

→ Learn about how we are building future-centric capabilities across our ecosystem to capture value from the trends of tomorrow

Temasek's portfolio companies and ecosystem partners have digital transformation needs. Through the SIU programme, Temus looks into non-tech local talent pools and provides the necessary training to create digital talent with skill sets to meet market demands.

Since its November launch, interest in the SIU programme has been overwhelming, she says, with 900 applicants for the approximately 20 available places in each run, the majority being mid-career professionals. "They see SIU as the entry point into the technology industry that would open up possibilities in various technology career tracks going forward."

A critical differentiator of the SIU programme is that it guarantees placement upon successful graduation. "We talk about the talent scarcity, but there are many people in other fields who want to move into tech. What we need to do is make that possible," she says. "We set this up as a place-and-train (PnT) programme, meaning that if you graduate from the programme, you've already secured a job."

"We talk about the talent scarcity, but there are many people in other fields who want to move into tech. What we need to do is make that possible."

Delaine Cheong
Director, Enterprise Development
Temasek

As prepared as Christopher was, the course turned out to be much more challenging than he anticipated.

"I expected to be drinking from a firehose, but even then, it was a lot more intense. I made up for it by spending more time first thing in the morning, and then revising a couple more hours after training ended, and I am glad I stuck it out," he says. He has continued to acquire knowledge since graduating in March because "there are always things to learn, and problems to solve".

This level of motivation is a key criterion in the rigorous recruitment process.

Those who score in motivation are more likely to stay the course, put their best foot forward, and appreciate the job, says Delaine.

Going forward, Temus aims to run the SIU programme two to three times a year, at the optimal batch size of around 20 students. While the first two batches focused on software development, future batches may focus on other areas, including data analytics. "We will look at what's in demand, and train entry level tech roles in these spaces," says Delaine.

As well as building the capabilities to meet the digital needs of Temasek and its ecosystem partners, the PnT model will allow Temus to continue to offer opportunities to those like Christopher, who are keen to pivot their careers.

"If we give the opportunity to the right people — to those who really, really want this — we can have a lot of impact with this programme, 20 people at a time."



Our Stories

Opening the GATES to the Workforce



When used well, capital has the power to create a better world for everyone, including See Chun Shan, who was diagnosed with autism when he was nine. A potential employer wouldn't have guessed it from his resume — the [National University of Singapore \(NUS\)](#) Electrical Engineering graduate had all the right skills on paper, just not the confidence to apply.

Through *Growing Autistic Talent for Engineering Sector*, or GATES, a talent-matching programme run by research and technology non-profit [Trampoline](#), he got a needed lift. They helped prepare him for the initial interviews, and continue to coach him through his role at [ST Engineering](#)'s Commercial Aerospace division, where he landed a position as an electrical engineer in March 2023.

The Temasek-supported programme does not just create entry points to employment in the engineering sector for those on the autism spectrum, but puts in place the structures that will help them succeed. Through GATES, Trampoline aims to train, place, and continuously support the workplace development of 70 young adults by the end of 2024.

As Temasek directs capital towards programmes that promote social progress and build resilience, it is helping to create a more inclusive future, one in which prosperity is realised across multiple dimensions, says Adam Ng, Director of Community Stewardship at Temasek.

"It's important to think not just about ourselves but also about the generations ahead. Temasek identifies gaps that aren't addressed and finds ways to help. We want to [enable a better world](#) so that communities thrive."

→ We are also supporting families through initiatives like the Family Empowerment Programme (FEP). [Learn about Irawati's story](#)

Our Major Investments

Transportation & Industrials

| Name | Shareholding (%) as at 31 March 2023 | Currency | TSR (%) | | | Market Capitalisation or Shareholder Equity | | Dividends to Shareholders | | Key Company Figures | | | | |
|--------------------|---|----------|---------|--------|---------|--|---------|------------------------------|--------|---------------------|---------|---------|--------|---------|
| | | | Years | | | | | | | Revenue | | PATMI | | |
| | | | 1 | 3 | 5 | 2023 | 2022 | FY2022 | FY2021 | FY2022 | FY2021 | FY2022 | FY2021 | |
| element | EM Topco Limited (Element Materials Technology) | 88 | USD'm | NA | NA | NA | 3,187 | - | - | - | 607 | - | (727) | - |
| Keppel Corporation | Keppel Corporation Limited | 21 | SGD'm | 41.7 | 22.2 | 6.0 | 9,900 | 11,559 | 643 | 346 | 6,620 | 6,611 | 927 | 1,023 |
| PSA | PSA International Pte Ltd | 100 | SGD'm | 7.5 | 11.7 | 9.9 | 14,317 | 13,922 | 650 | 400 | 7,994 | 4,670 | 1,562 | 1,381 |
| Seatrium | Seatrium Limited | 35 | SGD'm | 21.4 | (32.1) | (37.5) | 8,188 | 3,076 | - | - | 1,947 | 1,862 | (261) | (1,171) |
| sembcorp | Sembcorp Industries Ltd | 49 | SGD'm | 67.9 | 81.9 | 25.3 | 7,792 | 4,755 | 125 | 107 | 7,825 | 6,408 | 848 | 279 |
| ST Engineering | Singapore Technologies Engineering Ltd | 51 | SGD'm | (6.0) | 10.5 | 4.9 | 11,413 | 12,846 | 686 | 468 | 9,035 | 7,693 | 535 | 571 |
| TOPSOE | Topsoe A/S | 30 | DKK'm | 22.7 | NA | NA | 3,204 | 2,929 | 445 | 240 | 6,845 | 6,225 | 567 | 887 |
| PAVILION ENERGY | Pavilion Energy Pte Ltd | 100 | USD'm | 496.2 | (327.8) | (253.8) | 3,627 | 608 | - | - | 9,090 | 6,587 | 438 | (666) |
| sats | SATS Ltd. | 40 | SGD'm | (32.0) | (2.3) | (9.1) | 4,150 | 4,870 | - | - | 1,758 | 1,177 | (27) | 20 |
| Schneider Electric | Schneider Electric India Pvt. Ltd. | 35 | INR'm | 13.4 | NA | NA | 103,806 | 91,537 | - | - | 123,493 | 103,606 | 11,895 | 5,709 |
| SINGAPORE AIRLINES | Singapore Airlines Limited | 55 | SGD'm | 6.1 | 13.0 | (3.9) | 17,021 | 16,321 | 297 | - | 17,775 | 7,615 | 2,157 | (962) |
| SPgroup | Singapore Power Limited | 100 | SGD'm | 5.9 | 13.5 | 10.6 | 12,317 | 13,959 | 2,470 | 390 | 7,251 | 5,214 | 1,033 | 2,003 |
| SMRT CORPORATION | SMRT Corporation Ltd | 100 | SGD'm | 6.7 | 10.0 | 3.2 | 972 | 910 | - | - | 1,381 | 1,217 | 72 | 75 |

● For year ended December 2022/2021.

● For year ended March 2023/2022.

Sources

1. Financials for the companies are based on their respective annual filings.
2. Market relevant information is sourced from Bloomberg, Stock Exchanges, and public filings by companies.

Glossary

| | | |
|---------------------------|---|---|
| Market Capitalisation | = | Market value as at 31 March 2023 and 31 March 2022 |
| Shareholder Equity | = | Shareholder equity reported by the respective companies based on their annual filings |
| PATMI | = | Profit/(loss) after tax and non-controlling interests |
| Dividends to Shareholders | = | Dividends to Shareholders as presented in the Statement of Changes in Equity of the companies |
| TSR | = | Total Shareholder Return |
| NA | = | Not applicable |

Our Major Investments

Financial Services

| Name | Shareholding (%) as at 31 March 2023 | Currency | TSR (%) | | | Market Capitalisation or Shareholder Equity | | Dividends to Shareholders | | Key Company Figures | | | |
|--|---|----------|---------|-------|-------|--|-----------|------------------------------|--------|---------------------|-----------|---------|---------|
| | | | Years | | | 2023 | 2022 | FY2022 | FY2021 | Revenue | | PATMI | |
| | | | 1 | 3 | 5 | | | | | FY2022 | FY2021 | FY2022 | FY2021 |
| BILL Holdings, Inc. | 5 | USD'm | (64.2) | 33.4 | NA | 8,657 | 23,628 | - | - | 642 | 238 | (326) | (99) |
| Visa Inc. | <1 | USD'm | 2.5 | 12.6 | 14.3 | 468,280 | 472,148 | 3,203 | 2,798 | 29,310 | 24,105 | 14,957 | 12,311 |
| Adyen N.V. | 7 | EUR'm | (19.3) | 23.7 | NA | 45,237 | 56,024 | - | - | 8,936 | 5,995 | 564 | 470 |
| AIA Group Limited | 3 | HKD'm | 2.2 | 7.4 | 6.2 | 964,512 | 997,428 | 2,259 | 2,147 | 19,110 | 47,525 | 282 | 7,427 |
| BlackRock, Inc. | 3 | USD'm | (9.9) | 17.8 | 7.1 | 100,304 | 115,944 | 2,990 | 2,547 | 17,873 | 19,374 | 5,178 | 5,901 |
| China Construction Bank Corporation | 1 | HKD'm | (6.5) | (0.6) | (3.1) | 1,288,808 | 1,490,607 | 91,004 | 81,504 | 758,155 | 764,706 | 323,861 | 302,513 |
| DBS Group Holdings Ltd | 29 | SGD'm | (3.9) | 26.3 | 8.8 | 85,102 | 92,203 | 3,789 | 2,392 | 16,502 | 14,188 | 8,193 | 6,805 |
| Industrial and Commercial Bank of China Limited | 2 | HKD'm | (6.2) | (1.3) | (3.5) | 1,736,141 | 2,006,266 | 104,534 | 94,804 | 841,441 | 860,880 | 360,483 | 348,338 |
| Mastercard Incorporated | <1 | USD'm | 2.3 | 15.2 | 16.3 | 342,114 | 345,408 | 1,968 | 1,781 | 22,237 | 18,884 | 9,930 | 8,687 |
| PayPal Holdings, Inc. | <1 | USD'm | (34.3) | (7.4) | 0.0 | 85,205 | 134,270 | - | - | 27,518 | 25,371 | 2,419 | 4,169 |
| Ping An Insurance (Group) Company of China, Ltd. | 2 | HKD'm | (2.6) | (8.7) | (5.2) | 935,745 | 1,054,003 | 43,820 | 41,469 | 1,221,351 | 1,287,675 | 83,774 | 101,618 |
| Prudential public limited company | 2 | GBP'm | (1.4) | 3.4 | (4.4) | 30,340 | 31,177 | 474 | 2,156 | (8,219) | 26,500 | 998 | (2,042) |
| Standard Chartered PLC | 16 | GBP'm | 22.9 | 13.2 | (1.2) | 17,422 | 15,384 | 393 | 374 | 16,318 | 14,701 | 2,948 | 2,315 |
| HDFC Bank Limited | <1 | INR'm | 10.8 | 23.8 | 12.0 | 8,980,875 | 8,153,886 | 86,045 | 35,924 | 1,268,862 | 1,091,111 | 459,971 | 380,528 |
| ICICI Bank Limited | 2 | INR'm | 20.8 | 39.8 | 26.2 | 6,125,675 | 5,074,688 | 34,795 | 13,852 | 1,356,354 | 1,163,697 | 340,366 | 251,101 |

- For year ended June 2022/2021.
- For year ended September 2022/2021.
- For year ended December 2022/2021.
- For year ended March 2023/2022.

Sources

1. Financials for the companies are based on their respective annual filings.
2. Market relevant information is sourced from Bloomberg, Stock Exchanges, and public filings by companies.

Glossary

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| Market Capitalisation | = | Market value as at 31 March 2023 and 31 March 2022 |
| Shareholder Equity | = | Shareholder equity reported by the respective companies based on their annual filings |
| PATMI | = | Profit/(loss) after tax and non-controlling interests |
| Dividends to Shareholders | = | Dividends to Shareholders as presented in the Statement of Changes in Equity of the companies |
| TSR | = | Total Shareholder Return |
| NA | = | Not applicable |

Our Major Investments

Telecommunications, Media & Technology

| Name ↕ | Shareholding (%) as at 31 March 2023 ↕ | Currency ↕ | TSR (%) | | | Market Capitalisation or Shareholder Equity | | Dividends to Shareholders | | Key Company Figures | | | |
|---|---|------------|---------|--------|--------|--|-----------|------------------------------|---------|---------------------|---------|----------|----------|
| | | | 1 ↕ | 3 ↕ | 5 ↕ | 2023 | 2022 | FY2022 | FY2021 | Revenue | | PATMI | |
| | | | | | | | | | | FY2022 | FY2021 | FY2022 | FY2021 |
|  Intapp, Inc. | 34 | USD'm | 86.8 | NA | NA | 2,925 | 1,492 | – | – | 272,071 | 214,633 | (99,678) | (62,348) |
|  Global Healthcare Exchange, LLC | 70 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
|  Meituan | <1 | HKD'm | (7.8) | 15.3 | NA | 895,647 | 961,962 | – | – | 219,955 | 179,128 | (6,686) | (23,538) |
|  Roblox Corporation | 2 | USD'm | (2.7) | NA | NA | 27,460 | 27,383 | – | – | 2,225 | 1,919 | (924) | (492) |
|  Singapore Technologies Telemedia Pte Ltd | 100 | SGD'm | 4.9 | 1.5 | (1.6) | 5,035 | 4,877 | 27 | 6 | 4,727 | 4,204 | (365) | (89) |
|  Tencent 腾讯 | <1 | HKD'm | 9.0 | 3.6 | 0.7 | 3,689,755 | 3,595,447 | 143,106 | 115,134 | 554,552 | 560,118 | 188,243 | 224,822 |
|  Alibaba Group Holding Limited | <1 | USD'm | (6.1) | (19.3) | (11.0) | 261,836 | 291,040 | – | – | 868,687 | 853,062 | 72,509 | 61,959 |
|  Mediacorp Pte Ltd | 100 | SGD'm | (4.3) | 14.3 | 4.0 | 662 | 689 | – | – | 622 | 627 | (27) | 16 |
|  Singtel Singapore Telecommunications Limited | 51 | SGD'm | (2.6) | 2.9 | (1.8) | 40,600 | 43,575 | 2,377 | 1,139 | 14,624 | 15,339 | 2,225 | 1,949 |

- For year ended June 2022/2021.
- For year ended December 2022/2021.
- For year ended March 2023/2022.

Sources

1. Financials for the companies are based on their respective annual filings.
2. Market relevant information is sourced from Bloomberg, Stock Exchanges, and public filings by companies.

Glossary

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| Market Capitalisation | = | Market value as at 31 March 2023 and 31 March 2022 |
| Shareholder Equity | = | Shareholder equity reported by the respective companies based on their annual filings |
| PATMI | = | Profit/(loss) after tax and non-controlling interests |
| Dividends to Shareholders | = | Dividends to Shareholders as presented in the Statement of Changes in Equity of the companies |
| TSR | = | Total Shareholder Return |
| NA | = | Not applicable |

Our Major Investments

Consumer & Real Estate

| Name ↕ | Shareholding (%) as at 31 March 2023 ↕ | Currency ↕ | TSR (%) | | | Market Capitalisation or Shareholder Equity | | Dividends to Shareholders | | Key Company Figures | | | |
|---|---|------------|---------|-------|-------|--|--------|------------------------------|--------|---------------------|---------|--------|--------|
| | | | Years | | | 2023 | 2022 | FY2022 | FY2021 | Revenue | | PATMI | |
| | | | 1 ↕ | 3 ↕ | 5 ↕ | | | | | FY2022 | FY2021 | FY2022 | FY2021 |
|  A.S. Watson Holdings Limited | 25 | HKD'm | 17.7 | 23.5 | 24.9 | 33,555 | 33,660 | 6,058 | 9,793 | 127,454 | 130,919 | 8,131 | 9,139 |
|  CapitaLand Group Pte. Ltd. | 100 | SGD'm | (1.3) | NA | NA | 14,444 | 15,088 | 452 | 468 | 5,193 | 5,494 | 862 | 1,289 |
|  M+S Pte. Ltd. | 40 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
|  Surbana Jurong Private Limited | 100 | SGD'm | 1.9 | 5.3 | 3.2 | 719 | 705 | – | – | 1,968 | 1,839 | 49 | 51 |
|  Mandai Park Holdings Pte. Ltd. | 100 | SGD'm | (6.9) | (9.8) | (7.8) | 779 | 674 | – | – | 104 | 59 | (47) | (54) |
|  Mapletree Investments Pte Ltd | 100 | SGD'm | 3.6 | 8.9 | 10.9 | 19,908 | 19,520 | 323 | 239 | 2,881 | 2,878 | 1,143 | 1,876 |

● For year ended December 2022/2021.

● For year ended March 2023/2022.

Sources

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Glossary

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| PATMI | = | Profit/(loss) after tax and non-controlling interests |
| Dividends to Shareholders | = | Dividends to Shareholders as presented in the Statement of Changes in Equity of the companies |
| TSR | = | Total Shareholder Return |
| NA | = | Not applicable |

Our Major Investments

Life Sciences & Agri-Food

| Name | Shareholding (%) as at 31 March 2023 | Currency | TSR (%) | | | Market Capitalisation or Shareholder Equity | | Dividends to Shareholders | | Key Company Figures | | | |
|---|---|----------|---------|--------|--------|--|---------|------------------------------|--------|---------------------|--------|---------|---------|
| | | | Years | | | | | | | Revenue | | PATMI | |
| | | | 1 | 3 | 5 | 2023 | 2022 | FY2022 | FY2021 | FY2022 | FY2021 | FY2022 | FY2021 |
|  Bayer Aktiengesellschaft | 3 | EUR'm | (2.3) | 7.8 | (4.9) | 57,540 | 60,881 | 1,965 | 1,965 | 50,739 | 44,081 | 4,150 | 1,000 |
|  BeiGene, Ltd. | 3 | USD'm | 14.3 | 20.5 | 5.1 | 22,838 | 20,014 | - | - | 1,416 | 1,176 | (2,004) | (1,458) |
|  BioNTech SE | 2 | USD'm | (26.0) | 29.4 | NA | 30,020 | 41,449 | 484 | - | 17,311 | 18,977 | 9,434 | 10,293 |
|  Celltrion, Inc. | 4 | KRW'b | (9.0) | (10.7) | (10.8) | 21,348 | 23,697 | 105 | 3 | 2,284 | 1,893 | 538 | 579 |
|  Innovent Biologics, Inc. | 8 | HKD'm | 30.4 | 2.4 | NA | 53,959 | 39,516 | - | - | 4,556 | 4,270 | (2,179) | (2,729) |
|  Olam Group Limited | 51 | SGD'm | (7.9) | 9.9 | (2.7) | 6,033 | 6,725 | 326 | 268 | 54,901 | 47,002 | 629 | 686 |
|  Rivulis Pte. Ltd. | 82 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
|  Thermo Fisher Scientific Inc. | <1 | USD'm | (2.2) | 26.9 | 23.1 | 222,318 | 231,217 | 471 | 410 | 44,915 | 39,211 | 6,950 | 7,725 |
|  WuXi AppTec Co., Ltd. | 6 | HKD'm | (33.6) | 13.6 | NA | 265,964 | 404,747 | 1,529 | 890 | 39,355 | 22,902 | 8,814 | 5,097 |
|  WuXi Biologics (Cayman) Inc. | 1 | HKD'm | (25.3) | 13.2 | 14.1 | 205,531 | 274,338 | - | - | 15,269 | 10,290 | 4,420 | 3,388 |

● For year ended December 2022/2021.

Sources

- Financials for the companies are based on their respective annual filings.
- Market relevant information is sourced from Bloomberg, Stock Exchanges, and public filings by companies.

Glossary

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| TSR | = | Total Shareholder Return |
| NA | = | Not applicable |

Group Financials

Adopting International Accounting Standards

In 2018, Temasek adopted the International Financial Reporting Standards (IFRS), in line with Singapore's convergence with IFRS. This included the adoption of IFRS 9: *Financial Instruments* in 2018 and IFRS 16: *Leases* in 2019.

Adoption of IFRS 16 *Leases* in 2019

The [IFRS 16 accounting standard](#) requires lessees to record all lease liabilities and right-of-use assets on the [balance sheet](#). Prior to IFRS 16, operating leases were only required to be disclosed as off-balance sheet lease commitments.

Adoption of IFRS 9 *Financial Instruments* in 2018

The [IFRS 9 accounting standard](#) affects investments where we hold stakes of less than 20%.

Prior to IFRS 9, our [income statements](#) accounted for any realised gains or losses over the life cycle of our investments whenever we sold any of them. Year-to-year changes in market values of our sub-20% investments were captured in our balance sheet and had no impact on the reported profits or losses in our income statements.

With IFRS 9, year-to-year changes in the market value of all our sub-20% investments are now accounted as profits or losses in our income statements, even when no sale has occurred.

Sub-20% stakes comprise more than 40% of our portfolio. Thus, the adoption of IFRS 9 has led to material fluctuations in our reported profits or losses in our income statements due to the year-to-year paper gains or losses. Such market fluctuations do not reflect the potential gains or losses upon a sale.



With IFRS 9, Temasek's Group net profit now includes:

All Realised Gains or Losses



Unrealised Gains or Losses of sub-20% Investments

Did you know?



Unrealised Gains or Losses

Share price movements in the market can result in changes in value. These are also known as paper gains or losses, or mark to market gains or losses.



Sub-20% Investments

These are minority investments where we have less than 20% shareholding.

Impact on Temasek's Group Financials

The solid blue line in the chart below provides the audited Group net profit, under the Singapore Financial Reporting Standards which does not include mark to market (MTM) gains or losses.

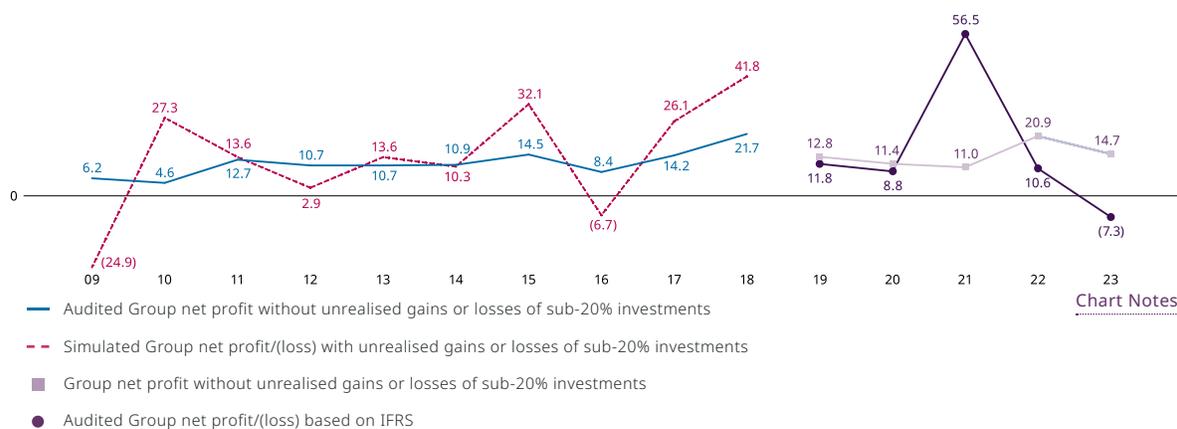
The dotted pink line provides the simulated Group net profit to include unrealised gains or losses of our sub-20% investments in a simple way.

The dark purple dots of 2023, 2022, 2021, 2020, and 2019 audited data include unrealised gains or losses of our sub-20% investments, based on the IFRS 9 accounting standard.

For the year ended 31 March 2023, Temasek Group recorded a Group net loss of S\$7.3 billion, due to unrealised MTM losses of sub-20% investments of S\$22.0 billion. Excluding the unrealised MTM losses, Temasek Group's operating profits was S\$14.7 billion, which reflects the profitability of Temasek and our portfolio companies.

(for year ended 31 March)

Group Net Profit/(Loss) (S\$b) with and without Unrealised Gains or Losses of Sub-20% Investments



Providing Additional Disclosures

To facilitate comparisons with past years' Group net profits before the adoption of IFRS 9, we have provided additional disclosures in our [Group Financial Summary](#):

- Unrealised gains or losses of sub-20% investments; and
- Group net profit, without unrealised gains or losses of sub-20% investments

No Impact on Other Measures

IFRS 9 does not impact the following:

- [Net Portfolio Value](#)
- [Total Shareholder Return](#)
- [Credit Profile](#)

As an investor, we aim to deliver sustainable returns over the long term. Hence, we focus on the performance of our portfolio over the longer time horizon, and the corresponding overall risk-adjusted cost of capital. We do not manage for year-to-year accounting profitability.

Adopting Accounting Standards Over the Years

Temasek adopts and complies with all applicable accounting standards in the preparation of group financials each year. The table below provides a snapshot of key accounting standards that we have adopted in our group financials since our inaugural issue of *Temasek Review* 2004:

| International Financial Reporting Standards (IFRS) or Singapore Financial Reporting Standards (SFRS) | | How it impacts Temasek Group financials | Sectors in our portfolio impacted | Adoption by Temasek Group for financial year ended |
|--|--|--|--|--|
| IFRS 16 | Leases | Requires lessees to record all lease liabilities and right-of-use assets on the balance sheet | All sectors | 31 Mar 2020 |
| IFRS 9 | Financial Instruments | Requires unrealised mark to market gains or losses of sub-20% investments to be included in the income statements | Financial services | 31 Mar 2019 |
| IFRS 1 | First-time Adoption of IFRS | Adopted IFRS, in line with Singapore's convergence with IFRS to align with international accounting standards | Singapore-incorporated listed companies. Available for adoption by unlisted companies. | 31 Mar 2019 |
| IFRS 15 | Revenue from Contracts with Customers | Requires revenue to be recognised either over time or upon completion, according to when various promises in the sales contract are fulfilled. Impacts mainly long term construction and bundled contracts | Telecommunications, Industrials | 31 Mar 2019 |
| SFRS 41 | Agriculture | Upon acquisition of an agri-food subsidiary, the Group adopted fair value accounting for biological assets (e.g. cattle and fruit trees), with changes in fair value included in the income statements | Agri-Food | 31 Mar 2015 |
| SFRS 40 | Investment Property | Adopted fair value accounting for investment properties, with changes in fair value included in the income statements | Real estate | 31 Mar 2008 |
| SFRS 39 | Financial Instruments: Recognition and Measurement | Introduced fair value accounting for sub-20% investments | Financial services | 31 Mar 2006 |



Group Financials

Group Financial Summary

Temasek Group Financials are a consolidation of financial information of Temasek and its operating subsidiaries, such as Singtel, Singapore Airlines, PSA, and ST Engineering.

In 2018, Temasek adopted the International Financial Reporting Standards (IFRS), in line with Singapore's convergence with IFRS. This included the adoption of IFRS 9: *Financial Instruments* in 2018 and IFRS 16: *Leases* in 2019. You can find out more information [here](#).

Statement by Auditors

→ [Read More](#)

Statement by Directors

→ [Read More](#)

Group Income Statements

→ [Read More](#)

Group Balance Sheets

→ [Read More](#)

Group Cash Flow Statements

→ [Read More](#)

Group Statements of Changes in Equity

→ [Read More](#)



Report of the Independent Auditors on the Group Financial Summary

We are the auditors of Temasek Holdings (Private) Limited (“Temasek”). We have audited the statutory consolidated financial statements of Temasek and its subsidiaries (the “Group”) for the financial years ended 31 March 2008 to 2023 and have issued unmodified audit reports. The statutory consolidated financial statements for the financial years ended 31 March 2002 to 2007 were audited by PricewaterhouseCoopers LLP whose auditors’ reports were also unmodified.

Under the Singapore Companies Act 1967, Temasek is an exempt private company and is not required to publish its statutory consolidated financial statements.

Management is responsible for the preparation and presentation of the Group Financial Summary for the financial years ended 31 March 2002 to 2023. The Group Financial Summary consists of the Group Income Statements, Group Balance Sheets and Group Cash Flow Statements as at and for the financial years ended 31 March 2002 to 2023 and Group Statements of Changes in Equity for the financial years ended 31 March 2022 and 2023, which is derived from the statutory consolidated financial statements that were prepared in accordance with applicable financial reporting standards, for inclusion in the *Temasek Review*. The Group Financial Summary does not contain all the disclosures required by the applicable financial reporting standards applied in the preparation of the statutory consolidated financial statements. Reading the Group Financial Summary, therefore, is not a substitute for reading the statutory consolidated financial statements.

Our responsibility is to express an opinion on whether the Group Financial Summary for the financial years ended 31 March 2004 to 2023 is consistent, in all material respects, with the statutory consolidated financial statements based on our procedures, which were conducted in accordance with Singapore Standard on Auditing (SSA) 810 (Revised) - *Engagements to Report on Summary Financial Statements*.

In our opinion, the accompanying Group Financial Summary for the financial years ended 31 March 2004 to 2023 is consistent, in all material respects, with the statutory consolidated financial statements for the financial years ended 31 March 2004 to 2023.

The Group Financial Summary for the financial years ended 31 March 2002 to 2003 were extracted from the statutory consolidated financial statements for each of the respective years.

KPMG LLP
Public Accountants and Chartered Accountants
Singapore

3 July 2023



Statement by Directors

Our auditors, KPMG LLP, have expressed unmodified opinions on the statutory consolidated financial statements of Temasek Holdings (Private) Limited and its subsidiary companies (the “Group”) for the financial years ended 31 March 2008 to 2023. PricewaterhouseCoopers LLP, expressed unmodified opinions on the statutory consolidated financial statements of the Group for the financial years ended 31 March 2002 to 2007.

On behalf of the directors

LIM BOON HENG
Chairman

3 July 2023

DILHAN PILLAY SANDRASEGARA
Executive Director & Chief Executive Officer

3 July 2023

Group Financials

Group Income Statements

In 2018, Temasek adopted the International Financial Reporting Standards (IFRS), in line with Singapore's convergence with IFRS. This included the adoption of IFRS 9: *Financial Instruments* in 2018 and IFRS 16: *Leases* in 2019. You can find out more information [here](#).

For the year ended 31 March 2023, Temasek Group recorded a Group net loss of S\$7.3 billion, due to unrealised mark to market (MTM) losses of sub-20% investments of S\$22.0 billion. Excluding the unrealised MTM losses, Temasek Group's operating profit was S\$14.7 billion, which reflects the profitability of Temasek and our portfolio companies.

(From 2002 to 2023)

In S\$ billion

| For year ended 31 March | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|----------------|--|
| Revenue | 42.6 | 49.6 | 56.5 | 67.5 | 79.8 | 74.6 | 83.3 | 79.6 | 76.7 | 83.5 | 83.5 | 94.3 | 92.4 | 101.6 | 101.5 | 97.0 | 107.4 | 114.6 | 118.6 | 110.9 | 134.9 | 167.4 | |
| Cost of sales | (29.3) | (34.6) | (37.7) | (43.8) | (53.3) | (49.3) | (53.3) | (57.5) | (50.7) | (53.0) | (56.3) | (64.5) | (63.7) | (70.4) | (73.3) | (68.6) | (74.7) | (85.0) | (87.4) | (80.5) | (104.2) | (130.4) | |
| Gross profit | 13.3 | 15.0 | 18.8 | 23.7 | 26.5 | 25.3 | 30.0 | 22.1 | 26.0 | 30.5 | 27.2 | 29.8 | 28.7 | 31.2 | 28.2 | 28.4 | 32.7 | 29.6 | 31.2 | 30.4 | 30.7 | 37.0 | |
| Other income, net | 5.5 | 2.7 | 5.9 | 4.1 | 9.4 | 8.3 | 15.8 | 16.2 | 4.5 | 4.9 | 6.3 | 5.5 | 6.0 | 9.2 | 11.0 | 10.0 | 13.3 | 7.2 | 7.3 | 56.4 | 5.2 | (10.6) | |
| Expenses: | | | | | | | | | | | | | | | | | | | | | | | |
| Selling & Distribution | (2.6) | (3.3) | (3.6) | (3.9) | (4.1) | (4.3) | (5.2) | (5.0) | (5.3) | (5.8) | (5.6) | (5.2) | (4.7) | (5.0) | (4.4) | (3.7) | (3.3) | (3.4) | (3.5) | (2.4) | (2.7) | (3.4) | |
| Administrative | (4.4) | (5.2) | (5.7) | (7.0) | (8.0) | (8.1) | (8.6) | (8.1) | (8.7) | (7.3) | (8.0) | (8.7) | (8.9) | (9.6) | (8.0) | (8.4) | (8.7) | (8.4) | (8.4) | (11.3) | (9.3) | (10.4) | |
| Finance | (1.5) | (1.7) | (1.7) | (2.1) | (2.4) | (2.6) | (3.2) | (2.7) | (2.4) | (2.6) | (2.6) | (2.6) | (2.3) | (2.1) | (2.7) | (2.8) | (3.2) | (3.7) | (4.7) | (4.7) | (4.8) | (6.2) | |
| Other expenses | (3.2) | (7.6) | (4.2) | (5.0) | (4.9) | (5.1) | (8.7) | (15.3) | (10.0) | (6.2) | (7.1) | (6.7) | (7.5) | (8.1) | (16.0) | (8.9) | (9.5) | (7.4) | (10.5) | (18.8) | (10.9) | (14.1) | |
| Profit/(loss) before share of results of associates, partnerships and joint ventures | 7.1 | (0.1) | 9.5 | 9.8 | 16.5 | 13.5 | 20.1 | 7.2 | 4.1 | 13.5 | 10.2 | 12.1 | 11.3 | 15.6 | 8.1 | 14.6 | 21.3 | 13.9 | 11.4 | 49.6 | 8.2 | (7.7) | |
| Share of results of associates and partnerships | 0.4 | 0.7 | 1.5 | 1.4 | 1.2 | (0.8) | 3.2 | 1.3 | 2.4 | 2.6 | 3.0 | 2.5 | 4.3 | 3.5 | 4.4 | 3.3 | 6.8 | 2.6 | 3.5 | 5.9 | 6.7 | 4.7 | |

| For year ended 31 March | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Share of results of joint ventures | - | 0.5 | 0.8 | 1.0 | 1.3 | 1.6 | 2.2 | 1.9 | 2.0 | 1.7 | 1.6 | 1.9 | 1.9 | 2.1 | 2.2 | 2.4 | 2.3 | 2.2 | 0.3 | 1.0 | 3.0 | 2.8 |
| Profit/(loss) before income tax | 7.5 | 1.1 | 11.8 | 12.2 | 19.0 | 14.3 | 25.5 | 10.4 | 8.5 | 17.8 | 14.8 | 16.5 | 17.5 | 21.2 | 14.7 | 20.3 | 30.4 | 18.7 | 15.2 | 56.5 | 17.9 | (0.2) |
| Tax expense | (2.0) | (0.3) | (2.1) | (1.8) | (2.5) | (1.3) | (3.0) | (1.3) | (1.7) | (2.0) | (1.4) | (2.0) | (2.3) | (2.5) | (2.1) | (2.6) | (2.8) | (2.8) | (2.9) | (2.3) | (4.2) | (3.3) |
| Profit/(loss) for the year | 5.5 | 0.8 | 9.7 | 10.4 | 16.5 | 13.0 | 22.5 | 9.1 | 6.8 | 15.8 | 13.4 | 14.5 | 15.2 | 18.7 | 12.6 | 17.7 | 27.6 | 15.9 | 12.3 | 54.2 | 13.7 | (3.5) |
| (Profit)/loss attributable to non-controlling interests | (0.6) | (0.6) | (2.3) | (2.9) | (3.7) | (3.9) | (4.3) | (2.9) | (2.2) | (3.1) | (2.7) | (3.8) | (4.3) | (4.2) | (4.2) | (3.5) | (5.9) | (4.1) | (3.5) | 2.3 | (3.1) | (3.8) |
| Group net profit/(loss) | 4.9 | 0.2 | 7.4 | 7.5 | 12.8 | 9.1 | 18.2 | 6.2 | 4.6 | 12.7 | 10.7 | 10.7 | 10.9 | 14.5 | 8.4 | 14.2 | 21.7 | 11.8 | 8.8 | 56.5 | 10.6 | (7.3) |

Additional Information:

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-----|-----|-----|-----|------|-----|------|-----|-----|------|------|------|------|------|-----|------|------|------|------|------|------|------|------|-----|------|------|-------|-----|-----|--------|------|------|--|
| Group net profit/(loss), including unrealised mark to market losses/(gains) of sub-20% investments | | | | | | | | | | | | | | | | | | | | | | | 11.8 | 8.8 | 56.5 | 10.6 | (7.3) | | | | | | |
| Unrealised mark to market losses/(gains) of sub-20% investments | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1.0 | 2.6 | (45.5) | 10.3 | 22.0 | |
| Group net profit, excluding unrealised mark to market losses/(gains) of sub-20% investments | 4.9 | 0.2 | 7.4 | 7.5 | 12.8 | 9.1 | 18.2 | 6.2 | 4.6 | 12.7 | 10.7 | 10.7 | 10.9 | 14.5 | 8.4 | 14.2 | 21.7 | 12.8 | 11.4 | 11.0 | 20.9 | 14.7 | | | | | | | | | | | |

Group Financials

Group Balance Sheets

In 2018, Temasek adopted the International Financial Reporting Standards (IFRS), in line with Singapore's convergence with IFRS. This included the adoption of IFRS 9: *Financial Instruments* in 2018 and IFRS 16: *Leases* in 2019. You can find out more information [here](#).

(From 2002 to 2023)

In S\$ billion

| As at 31 March | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|--|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Shareholder equity excluding cumulative mark to market gains/(losses) of sub-20% investments | 54.5 | 64.5 | 70.9 | 83.6 | 92.9 | 120.2 | 119.9 | 127.8 | 134.6 | 146.4 | 156.0 | 172.5 | 188.0 | 198.2 | 210.7 | 227.4 | 246.3 | 257.7 | 272.9 | 300.8 | 316.0 |
| Cumulative mark to market gains/(losses) of sub-20% investments | - | - | - | 7.0 | 21.1 | 23.9 | (1.5) | 21.9 | 20.9 | 11.8 | 13.2 | 14.9 | 30.6 | 19.9 | 28.2 | 44.7 | 37.2 | 32.8 | 74.6 | 56.5 | 30.5 |
| Shareholder equity | 54.5 | 64.5 | 70.9 | 90.6 | 114.0 | 144.1 | 118.4 | 149.7 | 155.5 | 158.2 | 169.2 | 187.4 | 218.6 | 218.1 | 238.9 | 272.1 | 283.5 | 290.5 | 347.5 | 357.3 | 346.5 |
| Non-controlling interests | 19.2 | 23.9 | 25.3 | 25.4 | 24.4 | 25.7 | 22.6 | 23.5 | 24.0 | 23.5 | 35.2 | 34.8 | 37.8 | 40.6 | 43.1 | 47.1 | 47.7 | 72.6 | 67.7 | 56.4 | 53.7 |
| | 73.7 | 88.4 | 96.2 | 116.0 | 138.4 | 169.8 | 141.0 | 173.2 | 179.5 | 181.7 | 204.4 | 222.2 | 256.4 | 258.7 | 282.0 | 319.2 | 331.2 | 363.1 | 415.2 | 413.7 | 400.2 |
| Property, plant and equipment | 57.0 | 61.6 | 69.3 | 65.6 | 65.5 | 75.3 | 68.2 | 68.0 | 66.8 | 67.8 | 73.8 | 59.5 | 67.5 | 69.9 | 70.8 | 73.2 | 78.5 | 82.1 | 77.1 | 81.8 | 78.4 |
| Right-of-use assets | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 9.4 | 10.8 | 14.0 | 14.3 |
| Intangible assets | 12.7 | 13.5 | 14.7 | 14.5 | 14.8 | 21.4 | 19.9 | 19.1 | 18.9 | 17.9 | 18.2 | 16.4 | 20.0 | 20.5 | 22.6 | 27.9 | 27.7 | 28.8 | 27.7 | 32.1 | 41.5 |
| Biological assets | - | - | - | - | - | - | - | - | - | - | - | - | 1.3 | 1.4 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.4 | 0.5 |
| Investments in associates, partnerships and joint ventures | 12.0 | 15.7 | 17.0 | 27.1 | 35.0 | 39.5 | 41.1 | 44.6 | 42.1 | 49.5 | 50.3 | 56.7 | 70.2 | 80.1 | 83.5 | 84.8 | 85.0 | 87.2 | 94.1 | 99.6 | 101.6 |

| <u>As at 31 March</u> | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|----------------|
| Financial assets | 5.7 | 11.7 | 13.8 | 27.5 | 52.3 | 73.9 | 40.2 | 64.2 | 65.3 | 60.7 | 70.3 | 81.4 | 101.3 | 88.4 | 98.3 | 132.0 | 134.0 | 137.3 | 184.8 | 194.1 | 174.2 |
| Investment properties | 8.5 | 8.6 | 8.3 | 2.3 | 3.8 | 5.6 | 6.1 | 6.7 | 7.3 | 8.3 | 19.9 | 22.4 | 25.5 | 36.3 | 40.0 | 46.3 | 56.3 | 98.1 | 94.3 | 71.4 | 67.8 |
| Deferred tax assets | 1.5 | 1.6 | 2.1 | 1.7 | 1.6 | 1.8 | 2.0 | 1.8 | 1.7 | 1.5 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.0 | 0.8 | 1.3 | 1.9 | 2.2 | 2.1 |
| Other non-current assets | 3.0 | 6.5 | 8.3 | 10.0 | 10.4 | 9.4 | 9.5 | 10.2 | 11.3 | 10.7 | 12.4 | 10.9 | 13.0 | 13.1 | 12.8 | 11.8 | 7.4 | 8.8 | 7.7 | 6.8 | 4.6 |
| Net current assets/ (liabilities) | 9.7 | 15.8 | 14.7 | 12.6 | 8.4 | (3.1) | 11.8 | 22.0 | 27.6 | 32.8 | 34.0 | 35.9 | 31.8 | 31.5 | 41.3 | 38.2 | 44.0 | 48.7 | 68.6 | 62.4 | 71.8 |
| Current assets | 39.5 | 61.6 | 65.6 | 65.0 | 59.0 | 68.6 | 60.9 | 70.2 | 84.5 | 86.2 | 95.2 | 95.3 | 105.6 | 104.7 | 117.7 | 113.1 | 118.8 | 141.5 | 154.1 | 169.9 | 169.0 |
| Current liabilities | (29.8) | (45.8) | (50.9) | (52.4) | (50.6) | (71.7) | (49.1) | (48.2) | (56.9) | (53.4) | (61.2) | (59.4) | (73.8) | (73.2) | (76.4) | (74.9) | (74.8) | (92.8) | (85.5) | (107.5) | (97.2) |
| | 110.1 | 135.0 | 148.2 | 161.3 | 191.8 | 223.8 | 198.8 | 236.6 | 241.0 | 249.2 | 280.3 | 284.6 | 332.0 | 342.6 | 371.2 | 415.7 | 434.2 | 502.2 | 567.5 | 564.8 | 556.8 |
| Non-current liabilities | (36.4) | (46.6) | (52.0) | (45.3) | (53.4) | (54.0) | (57.8) | (63.4) | (61.5) | (67.5) | (75.9) | (62.4) | (75.6) | (83.9) | (89.2) | (96.5) | (103.0) | (139.1) | (152.3) | (151.1) | (156.6) |
| | 73.7 | 88.4 | 96.2 | 116.0 | 138.4 | 169.8 | 141.0 | 173.2 | 179.5 | 181.7 | 204.4 | 222.2 | 256.4 | 258.7 | 282.0 | 319.2 | 331.2 | 363.1 | 415.2 | 413.7 | 400.2 |
| Net debt | 22.1 | 21.9 | 26.9 | 16.7 | 23.6 | 33.8 | 22.1 | 17.8 | 9.5 | 16.1 | 19.6 | 9.0 | 32.6 | 44.4 | 39.3 | 49.7 | 51.9 | 83.3 | 91.5 | 90.0 | 78.5 |



Group Financials

Group Cash Flow Statements

In 2018, Temasek adopted the International Financial Reporting Standards (IFRS), in line with Singapore's convergence with IFRS. This included the adoption of IFRS 9: *Financial Instruments* in 2018 and IFRS 16: *Leases* in 2019. You can find out more information [here](#).

(From 2002 to 2023)

In S\$ billion

| For year ended 31 March | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|--------|-------|-------|-------|--------|--------|--------|-------|-------|-------|--------|--------|--------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| Operating cash flow before working capital changes | 9.5 | 11.2 | 13.9 | 16.9 | 18.6 | 17.6 | 21.2 | 14.0 | 16.4 | 20.2 | 16.8 | 20.1 | 20.0 | 20.3 | 18.4 | 18.7 | 20.8 | 19.7 | 23.1 | 17.9 | 23.3 | 27.2 |
| Change in working capital | 6.2 | 0.3 | (2.5) | (4.4) | 2.6 | 2.5 | (0.3) | 1.5 | (4.1) | (2.9) | (1.6) | (4.0) | (1.5) | (3.2) | (5.1) | (2.3) | (3.8) | (1.7) | (3.7) | (8.5) | (4.8) | 3.2 |
| Cash generated from operations | 15.7 | 11.5 | 11.4 | 12.5 | 21.2 | 20.1 | 20.9 | 15.5 | 12.3 | 17.3 | 15.2 | 16.1 | 18.5 | 17.1 | 13.3 | 16.4 | 17.0 | 18.0 | 19.4 | 9.4 | 18.5 | 30.4 |
| Income tax paid | (1.3) | (1.3) | (1.2) | (1.5) | (1.6) | (1.6) | (2.0) | (1.8) | (1.3) | (1.3) | (2.0) | (1.8) | (2.3) | (2.0) | (2.1) | (2.4) | (2.2) | (2.2) | (2.0) | (1.9) | (2.9) | (2.4) |
| Net cash inflow from operating activities | 14.4 | 10.2 | 10.2 | 11.0 | 19.6 | 18.5 | 18.9 | 13.7 | 11.0 | 16.0 | 13.2 | 14.3 | 16.2 | 15.1 | 11.2 | 14.0 | 14.8 | 15.8 | 17.4 | 7.5 | 15.6 | 28.0 |
| Net cash inflow/(outflow) from investing activities | (16.4) | (6.4) | (7.7) | (4.7) | (16.5) | (23.3) | (30.4) | 0.1 | (5.3) | (4.9) | (14.8) | (15.3) | (19.2) | (22.6) | (14.7) | (7.2) | (23.0) | (13.5) | (9.8) | (16.4) | (16.4) | (9.0) |
| Net cash inflow/(outflow) from financing activities | 4.2 | (7.9) | 6.8 | (4.8) | (0.2) | 2.2 | 13.3 | (6.4) | (0.2) | (1.7) | (1.4) | 4.0 | 1.0 | 1.1 | 2.4 | 2.7 | 2.5 | 11.0 | 2.0 | 7.9 | 7.9 | (9.6) |
| Net increase/(decrease) in cash and cash equivalents held | 2.2 | (4.1) | 9.3 | 1.5 | 2.9 | (2.6) | 1.8 | 7.4 | 5.5 | 9.4 | (3.0) | 3.0 | (2.0) | (6.4) | (1.1) | 9.5 | (5.7) | 13.3 | 9.6 | (1.0) | 7.1 | 9.4 |



Group Financials

Group Statements of Changes in Equity

In 2018, Temasek adopted the International Financial Reporting Standards (IFRS), in line with Singapore's convergence with IFRS. This included the adoption of IFRS 9: *Financial Instruments* in 2018 and IFRS 16: *Leases* in 2019. You can find out more information [here](#).

In S\$ billion

| | Attributable to Equity Holder of the Company | | | | Total |
|----------------------------|--|-----------------|------------------------------|---------------------------|--------|
| | Share Capital and Other Reserves | Revenue Reserve | Currency Translation Reserve | Non-controlling Interests | |
| Balance at 31 March 2021 | 88.7 | 265.1 | (6.3) | 67.7 | 415.2 |
| Profit for the year | - | 10.6 | - | 3.1 | 13.7 |
| Others, net | 1.2 | (2.7) | 0.7 | (14.4) | (15.2) |
| Balance at 31 March 2022 | 89.9 | 273.0 | (5.6) | 56.4 | 413.7 |
| Profit/(loss) for the year | - | (7.3) | - | 3.8 | (3.5) |
| Others, net | 5.6 | (3.3) | (5.8) | (6.5) | (10.0) |
| Balance at 31 March 2023 | 95.5 | 262.4 | (11.4) | 53.7 | 400.2 |

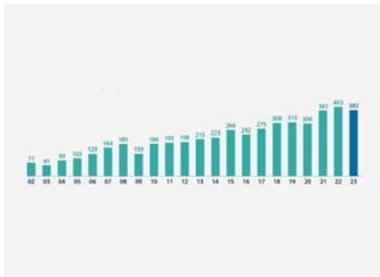


Media Centre

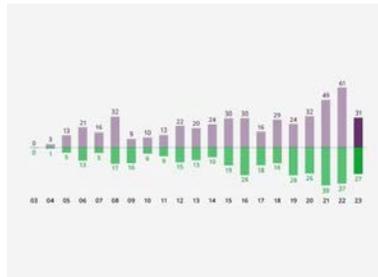
Chart Centre

See our key financial metrics and diagrams.

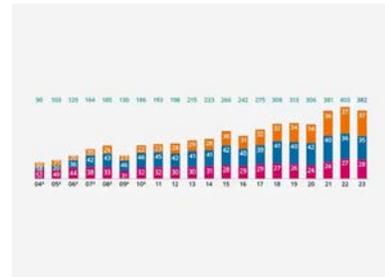
Performance Overview



Net Portfolio Value (S\$b)



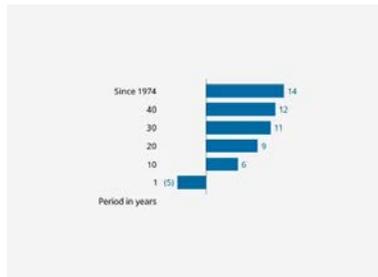
Investments & Divestments (S\$b)



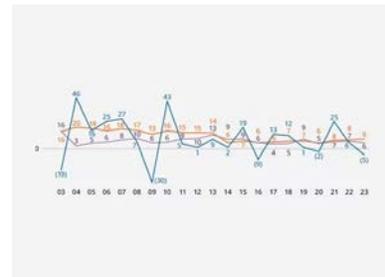
Portfolio by Geography (%)



Portfolio by Liquidity (%)



S\$ Total Shareholder Return (%)

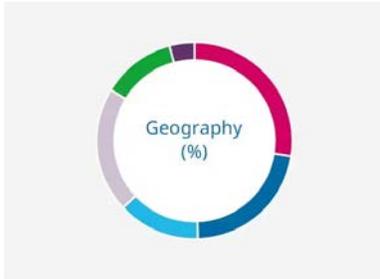


Rolling S\$ Total Shareholder Return (%)



Dividend Income (S\$b)

Portfolio Highlights



Geography (%)



Sector (%)



Liquidity (%)

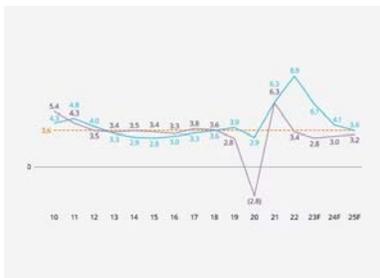


Currency (%)



Single Name (%)

Navigating a Complex World



Global Real GDP Growth and Global Inflation Rate (%)

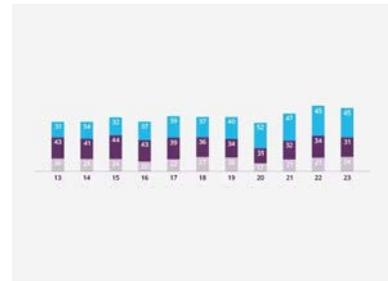
Pillars and Foundational Enablers



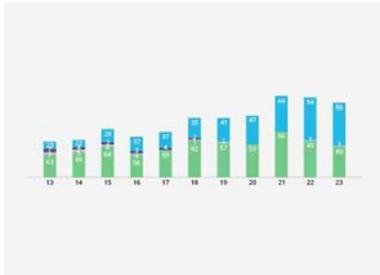
Our Four Key Pillars



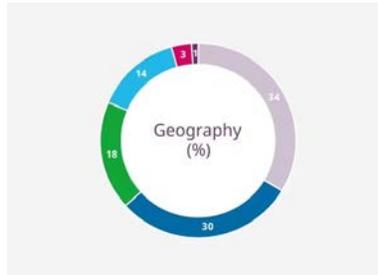
Three Growth Engines



Singapore Portfolio Companies by Liquidity (%)



Global Direct Investments by Liquidity (%)



Global Direct Investments by Geography (%)



Global Direct Investments by Sector (%)



Global Direct Investments by Asset Class (%)

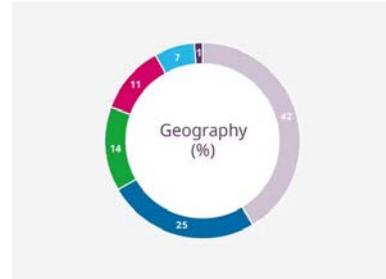
How We Invest



Four Structural Trends



Unlisted Portfolio (%)



Early Stage Portfolio by Geography (%)

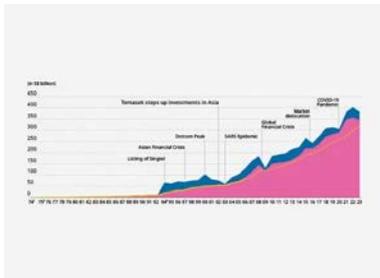


Early Stage Portfolio by Sector (%)

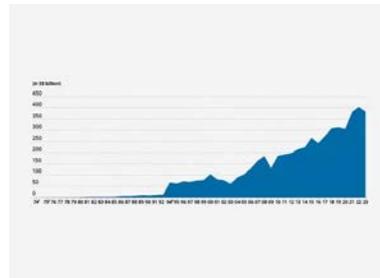


Early Stage Portfolio by Asset Class (%)

How We Grew

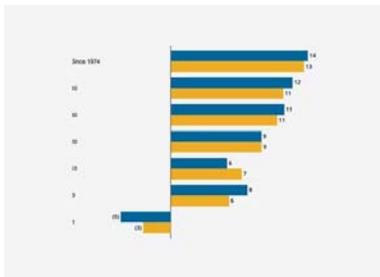


Temasek Net Portfolio Value since Inception



Relation between Net Portfolio Value and Total Shareholder Return

Total Shareholder Return

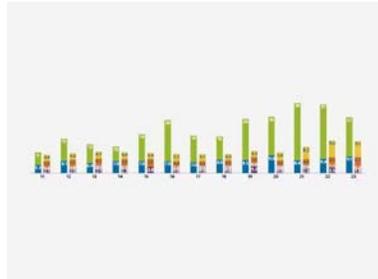


S\$ Total Shareholder Return (%)

How We Manage Risks



Organisational Risk Management Framework



Key Recurring Income vs Debt Maturity Profile (S\$b)

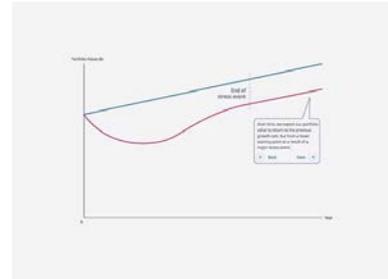
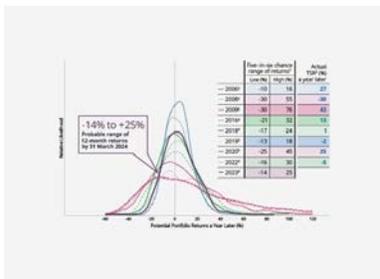
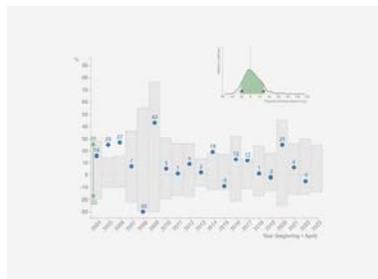


Illustration of Fundamental Earnings Impact

12-month Returns Simulation

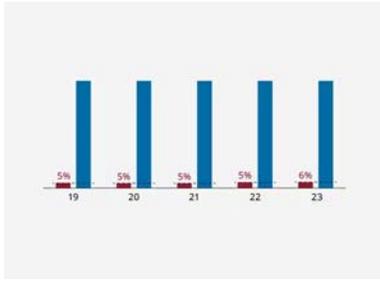


Simulation of 12-month Forward Portfolio Returns

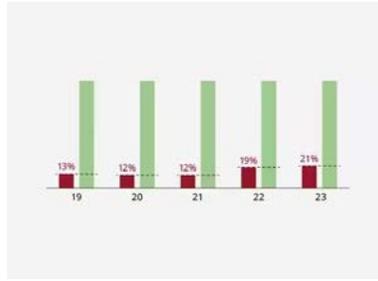


Volatility of Returns

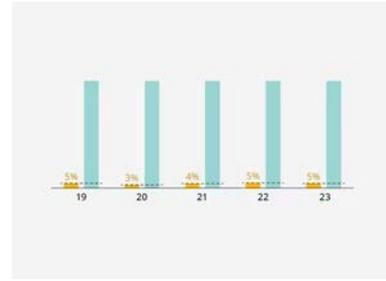
Credit Profile



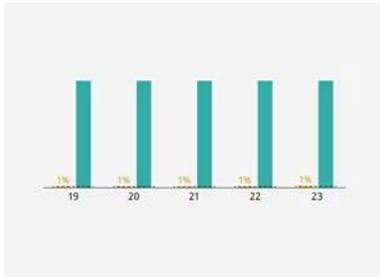
Total Debt 6% of Net Portfolio Value



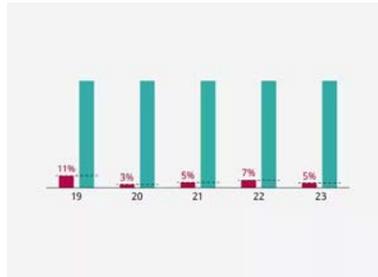
Total Debt 21% of Liquid Assets



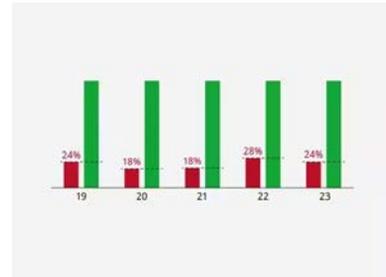
Interest Expense 5% of Dividend Income



Interest Expense 1% of Recurring Income



Total Debt due in One Year 5% of Recurring Income

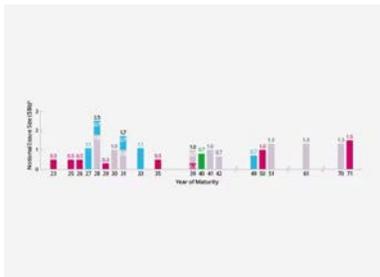


Total Debt due in next 10 Years 24% of Liquidity Balance

| Key Credit Parameters (in S\$ billion) | | | | | |
|--|-------|-------|-------|-------|-------|
| For year ended 31 March | 2019 | 2020 | 2021 | 2022 | 2023 |
| Dividends | 28 | 26 | 39 | 37 | 27 |
| Dividend income | 8.5 | 11.9 | 8.4 | 8.4 | 11.1 |
| Income from investments | 0.4 | 0.8 | 0.7 | 1.0 | 0.9 |
| Interest income | 0.4 | 0.7 | 0.1 | 0.1 | 0.6 |
| Interest expense | 0.4 | 0.4 | 0.4 | 0.5 | 0.8 |
| Net portfolio value | 313 | 306 | 381 | 403 | 382 |
| Liquid assets ¹ | 112.2 | 112.4 | 143.1 | 139.4 | 104.9 |
| Liquidity balance ² | 14.2 | 27.1 | 50.8 | 38.4 | 18.5 |
| Total debt ³ | 15.1 | 13.9 | 17.6 | 22.0 | 21.7 |

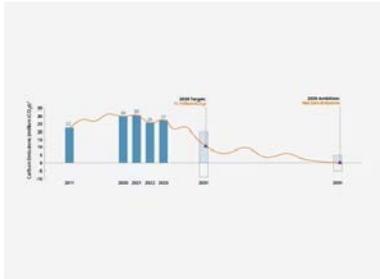
Key Credit Parameters (in S\$ billion)

Temasek Bonds



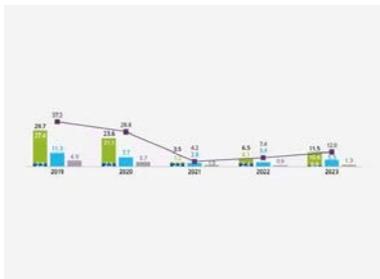
Temasek Bonds - Maturity Profile

Engaging our Portfolio Companies



Towards Net Zero

Fostering Sustainability in Temasek



Five-year Environmental Footprint

Sustainability Indicators

| Indicator | 2019 | 2020 | 2021 | 2022 | 2023 |
|--------------------------------|------|------|------|------|------|
| Carbon emissions (Scope 1 & 2) | 2.1 | 1.8 | 1.5 | 1.2 | 1.0 |
| Water consumption | 1.2 | 1.1 | 1.0 | 0.9 | 0.8 |
| Waste generated | 0.5 | 0.4 | 0.3 | 0.2 | 0.2 |
| Employee satisfaction | 85% | 86% | 87% | 88% | 89% |
| Customer satisfaction | 90% | 91% | 92% | 93% | 94% |
| Shareholder satisfaction | 88% | 89% | 90% | 91% | 92% |
| Community satisfaction | 82% | 83% | 84% | 85% | 86% |
| Supplier satisfaction | 80% | 81% | 82% | 83% | 84% |
| Overall sustainability score | 85 | 86 | 87 | 88 | 89 |

Sustainability Indicators: Our Operations

| Indicator | 2019 | 2020 | 2021 | 2022 | 2023 |
|-----------------------|------|------|------|------|------|
| Employee turnover | 10% | 9% | 8% | 7% | 6% |
| Employee engagement | 85% | 86% | 87% | 88% | 89% |
| Employee satisfaction | 85% | 86% | 87% | 88% | 89% |
| Employee safety | 0% | 0% | 0% | 0% | 0% |
| Employee diversity | 15% | 16% | 17% | 18% | 19% |
| Employee training | 10% | 11% | 12% | 13% | 14% |
| Employee development | 10% | 11% | 12% | 13% | 14% |
| Employee well-being | 10% | 11% | 12% | 13% | 14% |
| Employee satisfaction | 85% | 86% | 87% | 88% | 89% |
| Employee engagement | 85% | 86% | 87% | 88% | 89% |
| Employee safety | 0% | 0% | 0% | 0% | 0% |
| Employee diversity | 15% | 16% | 17% | 18% | 19% |
| Employee training | 10% | 11% | 12% | 13% | 14% |
| Employee development | 10% | 11% | 12% | 13% | 14% |
| Employee well-being | 10% | 11% | 12% | 13% | 14% |

Sustainability Indicators: Our People

| Indicator | 2019 | 2020 | 2021 | 2022 | 2023 |
|--------------------------------|------|------|------|------|------|
| Carbon emissions (Scope 1 & 2) | 2.1 | 1.8 | 1.5 | 1.2 | 1.0 |
| Water consumption | 1.2 | 1.1 | 1.0 | 0.9 | 0.8 |
| Waste generated | 0.5 | 0.4 | 0.3 | 0.2 | 0.2 |
| Employee satisfaction | 85% | 86% | 87% | 88% | 89% |
| Customer satisfaction | 90% | 91% | 92% | 93% | 94% |
| Shareholder satisfaction | 88% | 89% | 90% | 91% | 92% |
| Community satisfaction | 82% | 83% | 84% | 85% | 86% |
| Supplier satisfaction | 80% | 81% | 82% | 83% | 84% |
| Overall sustainability score | 85 | 86 | 87 | 88 | 89 |

Sustainability Indicators: Our Portfolio

Wealth Added

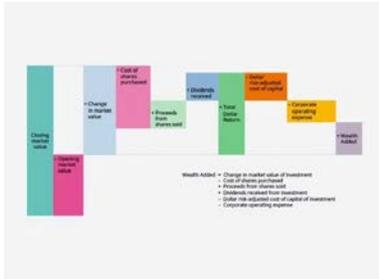
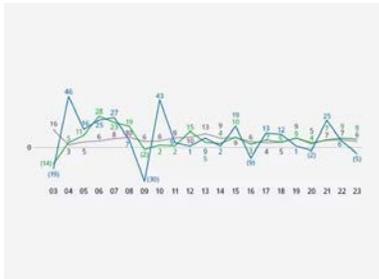


Illustration of Wealth Added

Instilling Ownership



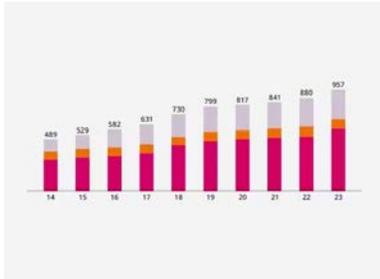
Rolling 55 Total Shareholder Return (%) WA Incentives of Key Team

Our MERITT Values

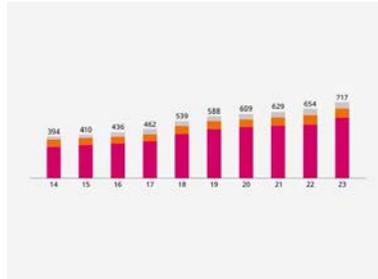


Our MERITT Values

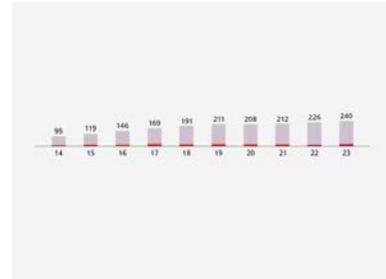
Our Temasek Heartbeat



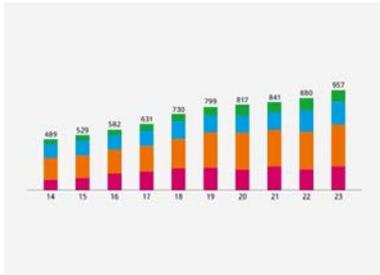
Our Staff by Nationality - Global



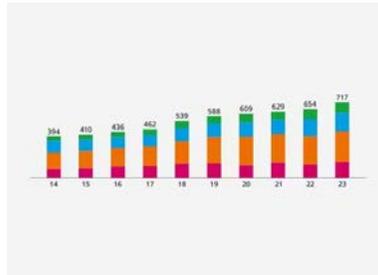
Our Staff by Nationality - Singapore



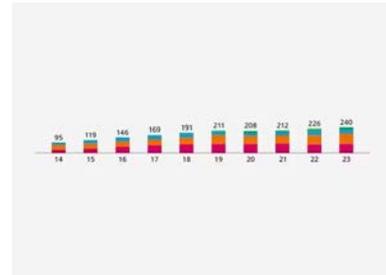
Our Staff by Nationality - Outside of Singapore



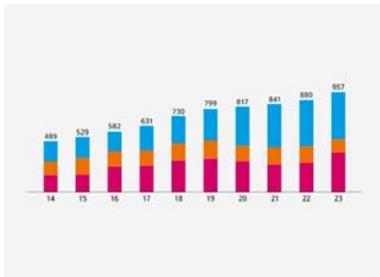
Our Staff by Age - Global



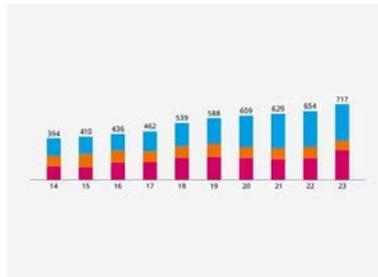
Our Staff by Age - Singapore



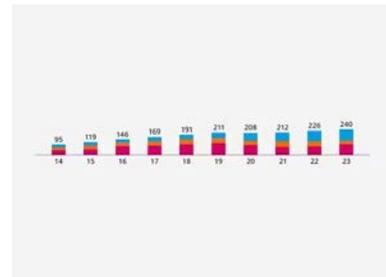
Our Staff by Age - Outside of Singapore



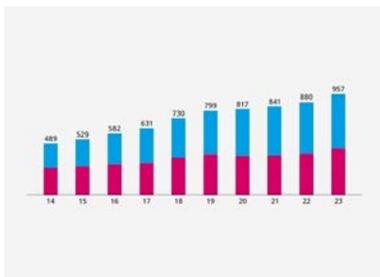
Our Staff by Tenure - Global



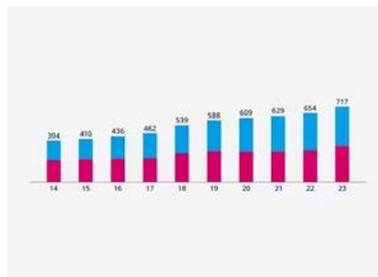
Our Staff by Tenure - Singapore



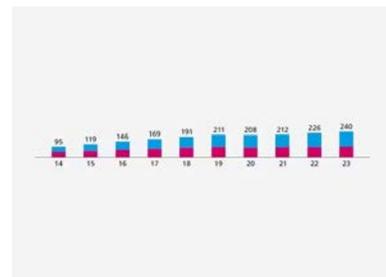
Our Staff by Tenure - Outside of Singapore



Our Staff by Gender - Global



Our Staff by Gender - Singapore



Our Staff by Gender - Outside of Singapore

A Trusted Steward



Protection of Temasek's Past Reserves

Fostering Stewardship and Governance



Fostering Stewardship and Governance

Enabling a Better World



Enabling a Better World

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- Performing office and operational administrative matters following your request; or
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- managing and customising your experience on the website/platform;
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- delivering content tailored to your interests and the manner in which you browse our websites and platforms.

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We use cookies: (i) to track your activities on our website; and (ii) the purposes described in this Privacy Statement, but they will not generally allow us to obtain information of a personal nature such as your name and address. We will only be aware of such information if you provide the information to us or you have set the preferences in your browser to provide this information automatically.

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| Cookie Domain | Name | More information |
|----------------------|----------------------|---|
| temasekreview.com.sg | cookieconsent_2020 | The cookie is a "first party" cookie. This cookie is necessary for the website to function and cannot be switched off. It is only set in response to actions made by the visitor whenever they set their privacy preferences. |
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| temasekreview.com.sg | JSESSIONID | The cookie is a "session cookie". It is stored in temporary memory and is not retained after the browser is closed. |
| temasekreview.com.sg | Wd-browser-id | The cookie is a "session cookie" and is strictly necessary as part of the SaaS application in order to access Workday. These cookies are not directly identifiable to a user name, IP address, mobile device, computer identification number etc. Instead, unique session ID numbers are generated and used to maintain a session between the browser and the service. |
| temasekreview.com.sg | WorkdayLB-UI-Apache | The cookie is a "session cookie" and is strictly necessary as part of the SaaS application in order to access Workday. These cookies are not directly identifiable to a user name, IP address, mobile device, computer identification number etc. Instead, unique session ID numbers are generated and used to maintain a session between the browser and the service. |

| | | |
|----------------------|------------------|--|
| temasekreview.com.sg | wd-alt-sessionid | This cookie is strictly necessary as part of the SaaS application in order to access Workday. If a user disables the Web browser's ability to accept the cookies, the user will not be able to successfully use Workday's service. |
|----------------------|------------------|--|

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These cookies allow us to count visits and traffic sources so we can measure and improve the performance of our site. They help us know which pages are the most and least popular and see how visitors move around the site. All information these cookies collect is aggregated and therefore anonymised. If you do not allow these cookies, we will not know when you have visited our site and will not be able to monitor its performance.

| Cookie Domain | Name | More information |
|----------------------|--------------------------------|--|
| temasekreview.com.sg | akaalb_temasekreviewalb | The cookie is a "first party" cookie. This cookie is necessary for the website to function and cannot be switched off. It is only set in response to actions made by the visitor whenever they set their privacy preferences. |
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| Cookie Domain | Name | More information |
|----------------------|--|---------------------------------------|
| temasekreview.com.sg | _fbp | The cookie is a "third party" cookie. |
| temasekreview.com.sg | _ttp, _tt_enable_cookie | The cookie is a "third party" cookie. |
| temasekreview.com.sg | _gcl_aud | The cookie is a "third party" cookie. |
| nr-data.net | JSESSIONID | The cookie is a "third party" cookie. |
| public.tableau.com | tableau_public_negotiated_locale, tableau_locale | The cookie is a "third party" cookie. |
| facebook.com | wd, sb, fr, datr | The cookie is a "third party" cookie. |
| linkedin.com | lang, lidc, li_gc, bcookie, AnalyticsSynchHistory, UserMatchHistory, liap, lms_analytics, li_mc, lms_ads | The cookie is a "third party" cookie. |
| twitter.com | personalization_id | The cookie is a "third party" cookie. |
| tiktok.com | _ttp | The cookie is a "third party" cookie. |
| google.com | __Secure-xxxxxxx, 1P_JAR, AEC, APISID, CONSENT, HSID, NID, PREF, S, SAPISID, SEARCH_SAMESITE, SID, SIDCC, SSID | The cookie is a "third party" cookie. |
| doubleclick.net | test_cookie, IDE | The cookie is a "third party" cookie. |
| ipinyou.com | PYID, sessionId, CMBMP | The cookie is a "third party" cookie. |
| mookie1.com | ov, id, mdata, syncdata_xx, lbDebug | The cookie is a "third party" cookie. |
| -serving-sys.com | t1, ActivityInfo2, OT2, OT_1073743404, u2, eyeblaster | The cookie is a "third party" cookie. |
| yahoo.com | A3, B | The cookie is a "third party" cookie. |
| qq.com | cm_cookie | The cookie is a "third party" cookie. |

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Temasek International Pte Ltd
60B Orchard Road #06-18 Tower 2
The Atrium@Orchard
Singapore 238891

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Navigation

We have provided 'skip to main content' links to allow direct access past the navigation menu to the page's main content.

Text size

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All headings have been used to represent page structure, supporting assistive technologies that facilitate page navigation.

Link text

All hyperlinks should make sense when read out of context, and hyperlinks are clearly presented in a different text style from normal body text.

Colour contrast

We have checked text and background colour combinations to ensure that the contrast is sufficient and we have also ensured that information is not represented by colour alone.

Style sheets

We have used Cascading Style Sheets (CSS) to control the presentation of pages and have used properly structured markup for content. If style sheets are not supported or are turned off, information on the site can still be accessed and read.

Further information

For further information regarding accessibility on the internet the following link may be of some use:

World Wide Web consortium - Web Accessibility Initiative (WAI) <https://www.w3.org/WAI/>

Adobe Acrobat

If you do not have the Adobe Acrobat Reader on your system it can be automatically downloaded and installed by visiting the following address: <https://get.adobe.com/reader/>

Some browsers may open Adobe Acrobat documents directly into the browser window. If you wish to save documents to your computer simply right click on the link to the document and choose the 'Save Target As...' option.



Site Map

Here is the Temasek Review 2023 site map.

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- Telecommunications, Media & Technology
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Media Centre

- Chart Centre
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Acknowledgements

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They are a subset of the full *Temasek Review*, which is entirely online, at www.temasekreview.com.sg.

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Independent Practitioner's Report

Independent Practitioner's Limited Assurance Report on the Selected Portfolio Emissions Metrics of Temasek Holdings (Private) Limited ("Temasek") for the financial year ended 31 March 2023

We have undertaken a limited assurance engagement in respect of the Selected Portfolio Emissions Metrics contained in the Temasek Review 2023 (the "TR 2023") for the financial year ended 31 March 2023.

Selected Portfolio Emissions Metrics

| Metric | 2023 Result |
|--|-------------|
| Total Portfolio Emissions (in tCO ₂ e) | 27 million |
| Portfolio Carbon Intensity (in tCO ₂ e/\$M portfolio value) | 93 |
| Portfolio Weighted Average Carbon Intensity (in tCO ₂ e/\$M revenue) | 116 |

The basis of preparation for the above Selected Portfolio Emissions Metrics can be found [here](#) (the "Reporting Criteria").

Our assurance engagement was with respect to the financial year ended 31 March 2023 information only and we have not performed any procedures with respect to other periods or elements included in the TR 2023 and, therefore, do not express any conclusion thereon.

Management's Responsibility

Management is responsible for establishing suitable criteria for preparing the Portfolio Emissions Metrics and for the preparation of the Portfolio Emissions Metrics in accordance with the Reporting Criteria.

Management is also responsible for designing, implementing and maintaining internal control over information relevant to the preparation of the Portfolio Emissions Metrics that is free from material misstatement, whether due to fraud or error.

The Selected Portfolio Emissions Metrics has been prepared to assist management to report the Selected Portfolio Emissions Metrics to Temasek's Board of Directors and for inclusion in the TR 2023 using the Reporting Criteria designed for this purpose. As a result, the Selected Portfolio Emissions Metrics may not be suitable for another purpose.

Practitioner's Independence and Quality Control

We have complied with the independence and other ethical requirements of the Accounting and Corporate Regulatory Authority (ACRA) Code of Professional Conduct and Ethics for Public Accountants and Accounting Entities (ACRA Code), which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Our firm applies Singapore Standard on Quality Management 1 which requires the firm to design, implement and operate a system of quality management including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Practitioner's Responsibility

Our responsibility is to express a limited assurance conclusion on the Selected Portfolio Emissions Metrics based on our work. We performed our limited assurance engagement in accordance with Singapore Standard on Assurance Engagements 3000 (Revised) – *Assurance Engagements other than Audits or Reviews of Historical Financial Information* and, in respect of greenhouse gas emissions included in the Selected Portfolio Emissions Metrics, Singapore Standard on Assurance Engagements 3410 – *Assurance Engagements on Greenhouse Gas Statements* (collectively the “Standards”). These Standards require that we plan and perform our work to form the conclusion about whether the Selected Portfolio Emissions Metrics is free from material misstatement, whether due to fraud or error. The extent of our procedures depends on our professional judgement and our assessment of the engagement risk.

The procedures we performed included inquiries, inspection of documents, analytical procedures, evaluating the appropriateness of quantification methods and reporting policies, and agreeing or reconciling with underlying records. Given the circumstances of the engagement, in performing the procedures listed above we:

- Evaluated the suitability of the Reporting Criteria as a basis to prepare the Selected Portfolio Emissions Metrics;
- Through inquiries, obtained an understanding of Temasek's control environment and the information systems relevant to the preparation of Selected Portfolio Emissions Metrics. However, we did not evaluate the design of control activities, obtain evidence about their implementation or test their operating effectiveness;
- Evaluated whether Temasek's methods for developing estimates are appropriate and had been consistently applied. However, our procedures did not include testing the data on which the estimates are based or separately developing our own estimates against which to evaluate Temasek's estimates;
- For a limited sample of assets, reconciled the emissions data back to the underlying records. However, our procedures did not include the corroboration of the underlying greenhouse gas emissions and financial data; and
- Considered the presentation and disclosure of the Selected Portfolio Emissions Metrics.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

Inherent Limitations

The absence of a commonly used generally accepted reporting framework or a significant body of established practice on which to draw to evaluate and measure subject matter allows for different, but acceptable, measurement techniques that can affect comparability between entities and over time. As there are currently no legislative requirements or regulation prescribing the preparation, disclosure and verification of the Temasek's portfolio emissions, the Selected Portfolio Emissions Metrics needs to be read and understood together with the Reporting Criteria.

The quantification of the greenhouse gas emissions data underlying the Selected Portfolio Emissions Metrics is subject to inherent uncertainty because of incomplete scientific knowledge used to determine emissions factors and the values needed to combine emissions of different gases, and the estimation uncertainty from the measurement and calculation processes used to quantify emissions within the bounds of existing scientific knowledge. This can affect the ability to draw meaningful comparison of Temasek's portfolio emissions over time.

Conclusion

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the Selected Portfolio Emissions Metrics for the financial year ended 31 March 2023 is not prepared, in all material respects, in accordance with the Reporting Criteria.

Restriction on Distribution and Use

This report, including our conclusion, has been prepared solely for Temasek in accordance with the agreement between us. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than Temasek for our work or this report.

Yours faithfully

PricewaterhouseCoopers LLP

PricewaterhouseCoopers LLP

Public Accountants and Chartered Accountants
Singapore

16 June 2023

Portfolio Emissions Metrics: Explanatory Notes on Definitions and Methodology Used

We use the following portfolio emission metrics in line with international standards, such as the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD) for Asset Owners as well as the Greenhouse Gas (GHG) Protocols:

| Metric | Description |
|---|---|
| <u>Total Portfolio Emissions</u> (in tCO ₂ e) | The absolute GHG emissions (Scope 1 and Scope 2) associated with our portfolio, expressed in tCO ₂ e |
| <u>Portfolio Carbon Intensity</u> (in tCO ₂ e/\$M portfolio value) | The GHG emissions associated with our portfolio normalised by the market value of the portfolio, expressed in tCO ₂ e/\$M portfolio value |
| <u>Portfolio Weighted Average Carbon Intensity</u> (in tCO ₂ e/\$M revenue) | The sum of each asset's carbon intensity (tCO ₂ e/\$M revenue) multiplied by the weight of that asset in the portfolio (the market value of that asset relative to the market value of the portfolio), expressed in tCO ₂ e/\$M revenue |

Our portfolio emissions encompass Temasek's direct investments in public and private equities. Our investment positions in private equity funds, credit and other assets are excluded.

The portfolio emissions reported include Scope 1 and Scope 2 emissions of the underlying companies based on the latest available data sets.

We use a combination of company reported emissions data and modelling approaches to establish our portfolio emissions based on our proportionate shares (i.e., ownership interests) in the assets.

We adopt the following hierarchy in data sources as we establish our portfolio emissions. The hierarchy takes into account data availability and timeliness of reported data, using company reported data where available:

- 1. Company reported data:** GHG emissions data that is reported by the company, either directly to Temasek or made available through [S&P Global Sustainable1](#).
- 2. Company-specific estimates:** GHG emissions for each company modelled or estimated by Temasek or S&P Global Sustainable1 using relevant industry level carbon intensity or carbon efficiency averages as proxies (GHG emissions normalised by revenue/ market capitalisation/ other relevant operational unit of measurement). In case industry averages do not provide a meaningful proxy for the company, carbon intensity or efficiency data of the company or its comparable peers may be used instead.