Singapore Economic Policy

The Thirty-Sixth Singapore Economic Roundtable

June 2022

Jointly organised by
Institute of Policy Studies
& The Business Times

Edited by
Manu Bhaskaran
Faizal bin Yahya
R Avinash

Lee Kuan Yew School of Public Policy
National University of Singapore

Institute of Policy Studies

The Singapore Economic Roundtable

The Singapore Economic Roundtable (SER) is a forum of leading economists, policy makers and business leaders who gather twice a year to discuss important issues that affect Singapore's position in the global economy. It deliberates on the role that government agencies and the private sector in Singapore should play in meeting new challenges facing the Singapore economy.

About the Institute of Policy Studies

The Institute of Policy Studies (IPS) was established in 1988 as an independent think-tank to study and generate public policy ideas in Singapore. IPS became an autonomous research centre of the Lee Kuan Yew School of Public Policy at the National University of Singapore in 2008. Today, IPS continues to analyse public policy, build bridges between thought leaders, and communicate its findings to a wide audience. The Institute examines issues of critical national interest across a variety of fields, and studies the attitudes and aspirations of Singaporeans through surveys of public perception. It adopts a multi-disciplinary approach in its analysis and takes the long-term view in its strategic deliberation and research.

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Foreword

The Institute of Policy Studies (IPS) has been convening the Singapore Economic Roundtable (SER) since 2003, with the objective of generating diverse views on the Singapore economy and its policy options. The SER does this by bringing together policymakers, academics, private sector economists and those from business sectors to discuss a range of issues in two sessions. One session typically assesses the current position of the economy and its implications for monetary and fiscal policies. Another session takes a deep dive into a topic of longer-term or structural importance for Singapore.

The 36th SER was convened in June 2022 with 35 participants from various organisations. The first session studied the issue of sustainability and generated substantial discussion. It looked at the history of Singapore's policies on sustainability and the environment, discussed the solar power industry, and assessed the implications for the built environment. The second session focused on macro-economic policies given the turbulent global economy. This session generated a broad consensus in favour of maintaining current policy settings.

As the SER goes into its 20th year in 2023, IPS will continue to hold the SER twice a year. The contributions of government agencies, particularly the Monetary Authority of Singapore, have been instrumental in the success of the SER, and for this IPS remains very grateful.

1.
Special Session: Sustainability

Presentation by Dr Asif Iqbal Siddiqui

Senior Visiting Scholar

Economic Growth Centre

School of Humanities and Social Science

Nanyang Technological University

Discussions surrounding Singapore's sustainability goals require an awareness of the importance of history. Singapore has been cognizant of sustainability since independence. In this regard, the city-state has always had sustainability features in its economic planning. From the very beginning, the government engaged the labour force through the National Trades Union Congress (NTUC). The state also created social housing through the Housing and Development Board (HDB), conceived development banks to finance development activities, kept nature as well as water reserves intact, and saved green spaces. These measures have contributed to sustainable development in Singapore.

In this sense, the term “sustainability” is nothing new. Rather, it is a concept that has existed for quite some time. Singapore has been practising it from the beginning. Things are changing very quickly due to the technological revolution, social media, energy market dynamics around the world. Hence, Singapore needs to address those changes. However, what is required even more is a reinvention of the way Singapore tackles sustainability challenges. Singapore is definitely on the right track as Singapore’s leadership has included sustainability parameters in their policies.

In 1987, the World Commission on Environment and Development (WCED) conceptualised the term “sustainable development”. The notion of sustainable development in its initial phase was the attempt to reconcile environmental sustainability with economic development. To this, it involved balancing the preservation and conservation of environmental resources, stocks, and flows with economic growth. It was a reconciliatory approach.

However, it then became very popular with academics and practitioners who coined hundreds of definitions of sustainability over the next couple of years. This is because sustainability itself is a very ambiguous concept. Its initial definition did not give any operational ideas on how it could be achieved. The good thing was that there was a very strong interest from all stakeholders.

At the 1992 Rio Conference, it was rightly identified that the environment and economy were meant for human welfare. Human welfare should be at the centre of sustainable development and everything that is done concerning that. As a result, the three pillars of social, economic, and environmental development became more important in policies and strategies.

There are three important questions to ask when one talks about social, economic and environmental sustainability. What is sustainability? What is one looking to sustain? How long can that particular thing be sustained? These are basic questions that must be considered regarding the practice of sustainability. They also require an understanding of the boundaries of analysis in sustainability.

An article published in *Ecological Economics* in 1995 quite rightly and comprehensively defined sustainability on the basis of systems thinking. This meant that human beings were living in interconnected systems such as ecological and environmental systems. The latter is a social and political system. There are also system hierarchy and integration. The most important thing here is the need to maintain balance.

Without balance, political and social systems cannot be sustained. If there is chaos and corruption in society and politics, economic development will be interrupted. If natural resources are not used prudently, economic development will be stifled. Hence, keeping the balance is the key takeaway for understanding systemic sustainability. Furthermore, a look at GDP shows how Singapore is progressing economically and whether incomes are increasing given the limitations of GDP growth.

At the same time, the social and environmental impact of economic activities are noticeable. This was considered long before sustainability as a concept or sustainable development came into being formally. Cost-benefit analysis and other disciplines were first conceptualised in the 1930s. They became legalised in the United States in the 1960s. From the 1970s onwards, countries around the world adopted this framework. Today, countries that are involved in big projects such as dam construction conduct environmental and social impact analysis and evaluation.

Cost-benefit analysis has been around for approximately 50 years and its toolbox has gotten very big. This has been bolstered by advances in computer technology that have developed analytics and databases for environmental cost-benefit analysis. Even now, it is mostly used in public infrastructure and large projects. However, there has been a formalisation of cost-benefit analysis since the introduction of sustainable development.

The first was the Green Accounting Initiative in the early 1990s. The idea was to look at environmental and social changes, their impacts, and GDP in order to create the measures of green GDP. This gave birth to green accounting. Eventually, the mid-1990s saw plenty of piloting around the world. The initial idea promoted by the likes of the World Bank was to create integrated environmental and social accounting. However, the latter was eventually dropped as it was deemed to be too complex. After multiple revisions, the United Nations (UN) came up with a system of integrated environmental and economic accounting in 2012. This was simply a more formal version of the older green accounting model.

Hence, a proper document with a proper outline that contains a list of methods and databases that countries can use exists. Most countries have not started using it. However, it will get increasingly important as the challenge of climate change and sustainability gets more profound. In addition to this, the other area where cost-benefit analysis has actually not been used as much is the corporate sector. In terms of small investments, where the focus is on impact and environmental systematic investing, the cost-benefit model is also not being used as much.

However, people are using some of the social impact measures. There is a database both for environmental accounting at the macro level and the industry level. This is growing and will aid in the eventual creation of a primary valuation database. This can then be used by others through a benefit transfer or value transfer method. Two such examples of these databases are the Australian Social Value Bank and the Canadian Environmental Valuation Reference Inventory.

From a macro-economic perspective, sustainable development is actually driven by the UN through a bureaucratic process. This requires the government and the government's regulatory bodies to get involved. There were 17 goals, which made sustainability policy very useful and more tangible. Now, there is a lot less abstraction. People know what they can exactly do with these 17 goals.

Figure 1. The 17 Sustainable Development Goals

The first six goals are about social sustainability. The next six are about economic sustainability. After that, goals 13, 14 and 15 are about the environment while 16 and 17 are about peace and partnerships, respectively. Furthermore, the five core Sustainable Development Goals (SDGs) are people, prosperity, planet, peace, and partnership. These SDGs give very tangible measures of how one can bring about sustainable development.

Singapore, as a member and signatory of the UN, has published its own voluntary national review. It mainly shows how it is doing in terms of SDGs. In the 2021 index, Singapore ranks 76. This is fine although there are quite a few areas that Singapore can progress in. One of the most important areas of SDGs is localisation. SDGs are part of a global sustainability agenda that has got to be localised. Hence, there is a need for a multi-stakeholder and multi-ministerial task force that helps create this localisation process.

The five priorities in Singapore's case are city in nature, energy reset, green economy, resilient future, and sustainable living. These have been mostly centred around an energy reset using renewables as well as food security and recycling. Singapore has to be a bit more careful regarding recycling as plastic bottles are still being used in huge numbers by the country as a whole. Hence, a greater reduction in the usage of plastic bottles is needed.

Apart from this, the SDG strategy has an added focus on social aspects like work-life balance and other social areas. In a broader sense, Singapore is committed to climate action through its SDG mapping. In 2019, the Singapore government introduced the carbon tax and increased the rate to $25 per metric tons of CO2 in 2022. This show that carbon and climate action is a very important policy area in Singapore.

In terms of sustainability in the corporate sector, there has been significant movement. Apart from a top-down approach, there are investors and the consumers who are more aware of the goods and services they are consuming and where their money is going. They are putting more money into sustainable and impact investments. This movement is gaining momentum. In the last few years, sustainable investment funds have been growing steadily all around the world.

Among the sustainable investment strategies that are being used, one is core sustainability. This is followed by environmental thematic impact investing in social areas. Among them, thematic investing in the environment is growing steadily. Investments in shareholder engagement and ESG (Environment, Social, and Corporate Governance) integration are also growing rapidly. The 2020 Global Sustainable Investment Alliance (GSIA) Report stated that these amounted to US$35 billion dollars. In 2022, Bloomberg Market Intelligence claimed that this would grow to around US$41 billion dollars in sustainable investments.

Yet, the most important things here is that for investors who want to put their money into the sustainable investment, it is critical for them to identify values and priorities in assets which are actually sustainable. Once cannot simply operate according to fads or invest in something green because it is fashionable to do so without knowing their impacts. That is why valuation is very important. Understanding sustainability parameters is vital in this sense.

Work on sustainability reporting is still ongoing. However, one needs to know the value of something before it can be accounted for. Hence, valuation accounting has to continue growing in stature. Initially, the Singapore Exchange Limited (SGX) was promoting the Global Reporting Initiative (GRI) while most SGX companies have been using the GRI framework for the past 10 to 12 years.

Due to the carbon tax, Task Force on Climate-Related Financial Disclosures (TCFD) have been recommended. Greenhouse Gas

(GHG) Protocols are also being used by some companies. The challenge is the synchronisation and standardisation of many international standards. This involves juggling between corporate sustainability and sustainable investment. SGX is trying to come up with a common set of variables that are based on previous GRI reporting. This probably requires a bit of revision. An industry-based variable is needed so that comparisons can be made between sustainability statuses amongst industry peers.

Sustainability should not be limited only to listed companies. There must eventually be an outreach to SMEs. This is so because they can contribute a lot to sustainability by creating green jobs for the green economy. Furthermore, capacity gap is something that must be worked on. This is something that people in the public sector as well as regulators who regulate sustainable development activities need to understand. They need to comprehend how to build capacity and SDGs so that they can monitor their sustainability performance across industries. They are also required to build capacity within their industries and institutions in a meaningful way. This is something that must be focused on a lot more.

Presentation by Mr Frank Phuan

Chief Executive Officer

Co-Founder

Sunseap Group Pte Ltd

Singapore has a plan to reduce its energy mix of oil, gas and renewables. Today, 95 per cent of Singapore's energy consumption is based on gas. This is fundamentally a carbon-emitting resource. As a result, the plan is to reduce this 95 per cent value to zero by 2050. This goal was reaffirmed a couple of months ago in the Energy 2050 Committee (E50C) Report released by the Energy Market Authority (EMA).

Figure 2. The four switches

The report contained a roadmap for how Singapore could achieve this and mainly involves making four energy switches.

These are solar power, low carbon, regional power grids and natural gas.

Today, in the same vein as Singapore's success in achieving water security, the city-state wants to make its energy transition. Apart from a reduction of its dependence on natural gas, Singapore wants to tap its neighbours' resources through regional power grids. These mainly involve land that is available for hydropower generation through dams. The goal is to utilise these resources so that they may fulfil Singapore's power needs.

The goal of having low carbon falls under a very big umbrella as it covers many alternatives. These include things like energy savings, hydrogen and electric vehicles. Naturally, the final switch is solar power. This is already deemed as a no-regrets, low-hanging fruit in Singapore. If one has access to a rooftop or area in Singapore, they have a goldmine at their disposal. It then becomes a case of mining the goldmine to reap the rewards. This will not only generate economic benefits, because energy costs are so high today in Singapore, but also reap sustainability benefits.

Ultimately, the goal of having a zero-carbon landscape by 2050 can only be achieved if all four switches take place. A look at the E50C roadmap shows that there will be technology improvements in hydrogen so that it can be used as fuel instead of natural gas. Singapore is one of the densest solar cities in the world. This is because there are all forms of solar facades. These mainly take the form of land, sea and air solar infrastructure.

Figure 3. Land-based solar power

For example, Sunseap has solar farms in Vietnam. This is because there is access to land that is not available in Singapore. Right now, Sunseap is involved in a Jurong Town Corporation (JTC) solar land project which should be finished by the end of 2022. Land is scarce in Singapore. No one knows whether there will be future development in the next 20 years. The interesting thing about this project is its mobility. Whenever a solar farm is designed for the JTC land project, mobility must be considered in the sense that the farm can be moved from one location to another if necessary. This type of innovative solar land project can only be found in Singapore.

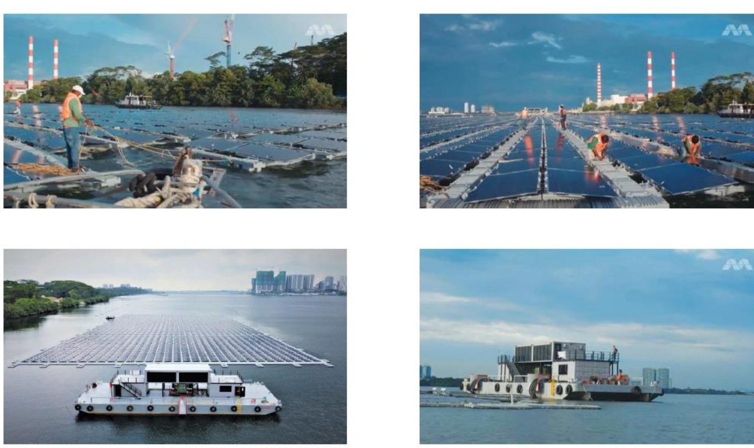

Figure 4. Sea-based solar power

The next façade involves water solar infrastructure. Singapore has propelled floating photovoltaic (PV) projects in reservoirs and out at sea. One example of this is the world's largest floating PV platform that floats off the coast of Woodlands. It generates 5 megawatts of solar power. The platform is essentially a barge that is connected to a cable that runs all the way to the mainland. In this case, the platform provides Facebook's data centre with clean energy.

Figure 5. Solar panels on rooftops

Solar power can also be generated in the air through the installation of solar panels on Housing and Development

Board (HDB) rooftops. Much of the solar equipment involved has to be hoisted up, sometimes even 20 storeys into the air onto HDB rooftops. Currently, Sunseap has executed around 3000 HDB projects. This accounts for probably about 30 per cent of the entire HDB stock. The panels themselves are high up on those rooftops and attached to cables stretching from the very top right down to the very bottom where the connection points are.

The next challenge is to make use of the facades of these rooftops to generate more power. The E50C report states that Singapore wishes to generate 8.6 gigawatts of solar power by 2050.

Figure 6. An energy storage system using lithium batteries

It is inevitable that solar penetration will increase together with energy storage capabilities. Solar power is still intermittent. To make it dispatchable, energy storage is needed. Sunseap is currently working on such projects with EMA and Singapore Polytechnic to achieve this. The results for this will be used as a reference for future Energy Storage Systems Projects in Singapore. Sunseap has also done studies with Nanyang Technological University to accelerate Singapore’s solar proliferation on a gigawatt scale.

The creation of green jobs was also started in the midst of the COVID-19 pandemic. During COVID, one-third of the floating PV in Woodlands was installed by Sunseap volunteers. This was so because during the circuit breaker, the company had zero access to foreign workers. As a result, volunteers were called up and some parts of the system was installed by Sunseap's office workers. That sparked a "Eureka" moment whereby the company realised that green infrastructure could be built in Singapore with local hands. This started the whole drive to hire local labour.

Figure 7. Sunseap's recruitment poster

The recruitment process aimed to hire 300 people to be champions of sustainability, who would pioneer the building of green infrastructure. Many of these people had no prior experience in the field and were from different career paths.

Figure 8. A Sunseap solar installer

They were not expected to be qualified solar installers from the start as many of them joined Sunseap with zero experience. However, that was fine. All that was needed was a good learning attitude.

Figure 9. Sunseap training and installation activities

It is important to recognise green jobs. These jobs are no longer about hands and legs, but knowledge as well as skillsets needed to design solar systems. A foreign worker can be told to install a solar panel in a certain location because they are told to do it. However, they have no idea why they need to do so. This is very different to hiring solar technologists who know how to design, position and calculate the amount of energy a solar panel will generate for the next 20 years. The people Sunseap trains will then be able to design and install systems in the region as well.

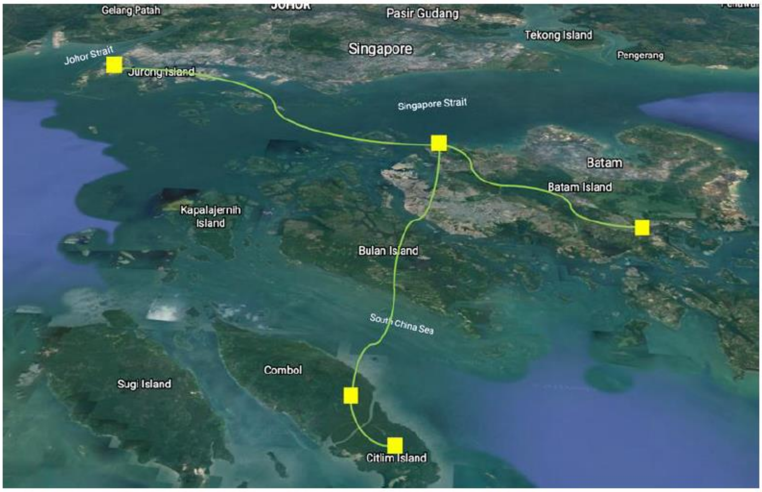

Figure 10. A regional power grid connecting Singapore to Batam

In terms of regional power grids, Sunseap has a very ambitious plan that involves Singapore tapping on its neighbours to provide solar energy for itself. It encompasses connecting a cable from either Malaysia or Indonesia to Singapore. Malaysia has ruled out providing any renewable energy to Singapore, at least for the short-term. Hence, the next option is Indonesia. The plan requires a connection spanning 26 kilometres from Singapore to one of the world's largest floating PVs in Batam's Duriangkang Reservoir. Liaisons with the Indonesian government started in 2021 to kickstart Phase 1 of the project. The main idea is to generate 10 gigawatts of solar power in the region by linking various parts of the Riau, Combol, Citlim and Sugi islands to Batam. Duriangkang will be the nerve centre or energy exchange centre where some of the energy generated will be used for domestic usage while the rest will be sent to Singapore. This single project will provide Singapore with 1 gigawatt of power and add to the 6.5 gigawatts of solar power that the city-state is already using.

This project will not only "green" Singapore but the region as well. It is also a story of a green Batam, as roughly 3,000 green jobs will be created in the first phase alone. These new workers will be trained by the 300 workers who were hired by Sunseap during COVID. The company will also invest a lot of money into the Indonesian economy as well.

Figure 11. Project Green Batam

Furthermore, it will also have a multiplier effect. On Batam island, many data centres are moving to Nongsa Digital Park. In fact, the energy that is generated in Duriangkang will flow through these centres. Sunseap projects this multiplier effect to generate approximately US$40 billion that will benefit Batam and the Riau Islands.

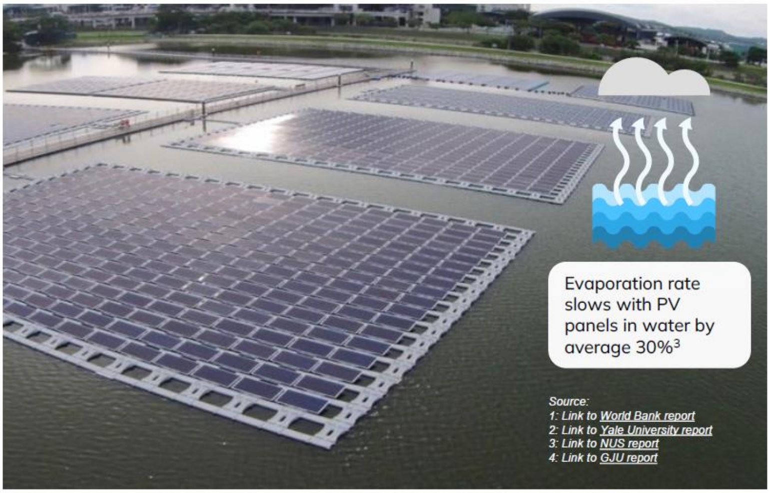

Figure 12. Water evaporation through floating PVs

Apart from the economic benefits, there are environmental and social benefits. For example, solar panels that cover a water surface area in a reservoir will retain more water due to evaporation. This will allow the reservoir to amass a greater supply of water for human consumption. At the same time, more solar power will be generated for different systems. Once Sunseap gets this project, 3,000 workers will be hired, trained and sent to the rest of Indonesia so that they can design and install solar systems. This will in turn create a domino effect of creating more renewable energy for everyone.

Presentation by Mr Tan Szue Hann

Chairman

Sustainability

Singapore Institute of Architects

The built environment industry and general economics in Singapore face a few major challenges all the way to 2050. By 2024, there will be the Ministry of the Environment and Water Resources' Resource Sustainability Plan that deals with waste management. Naturally, the Green Plan 2030 will continue to play a part. Furthermore, internal combustion vehicles are expected to be outmoded by 2040. This will be complemented by decarbonisation efforts by 2050. The trick is planning these works so that these different targets can indeed be achieved.

The role of architects and built environment professionals has extended to sustainability both by definition as well as through the purveyance of Singapore's national sustainability agenda. This includes reporting, optimising and designing for the growth of cities and the creation of new economies. This extends to rural development as well. In this sense, the built environment could be the interface for the economics of sustainability, and perhaps the justification and means for urbanisation.

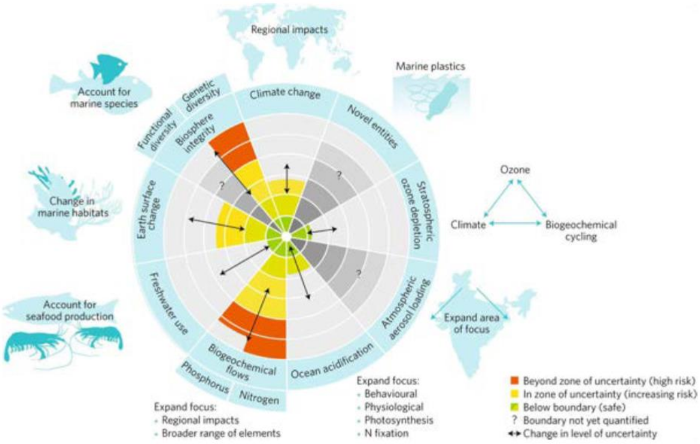

Figure 13. The Planetary Boundaries Model
Source: *Nature Ecology & Evolution*, Vol. 1, 1625–1634 (2017)

The planetary boundaries model showcases nine different sectors of how humanity is performing with regard to the impact of human activity on the environment. There are many instances where the impact of what humans are doing is currently unknown and immeasurable for a variety of reasons.

THE THIRTY-SIXTH SINGAPORE ECONOMIC ROUNDTABLE

Figure 14. The Doughnut Economy Model
Source: Kate Raworth, kateraworth.com

Mapping this according to a Donut Economy Model is contentious because it is often misinterpreted as a non-growth model. The model looks at a social foundation beneath which life becomes untenable; and an ecological ceiling beyond which life also becomes untenable for the planet. Hence, the trick is operating within this safe, green doughnut.

Figure 15. UN Sustainable Development Goals

In this context, in line with UN SDGs, architects must determine which of these goals they wish to interact with. Out of 17 environmental goals, seven have been identified by the Singapore Institute of Architects (SIA).

Figure 16. SIA Environmental Design Goals

These include education & integration, climate action, natural capital, resource management, urban harmony, health & wellbeing, and adaptability & longevity. Essentially, education & integration is fundamental to the growth of sustainable development. Climate action mainly involves the designing of buildings that use energy efficiently in a climate saving manner. Natural capital, resource management, urban harmony, health & wellbeing, and adaptability & longevity are roles that can be hardwired into the practice of the development of real estate and the built environment.

Park Royal on Pickering, Singapore

with WOHA Architects

Role: Architectural Designer

Key points: Green Mark Platinum 16-storey hotel and office development

Figure 17. The extension of a green building into a park

One such example of this is the extension of natural capital from a natural park or green park into a building.

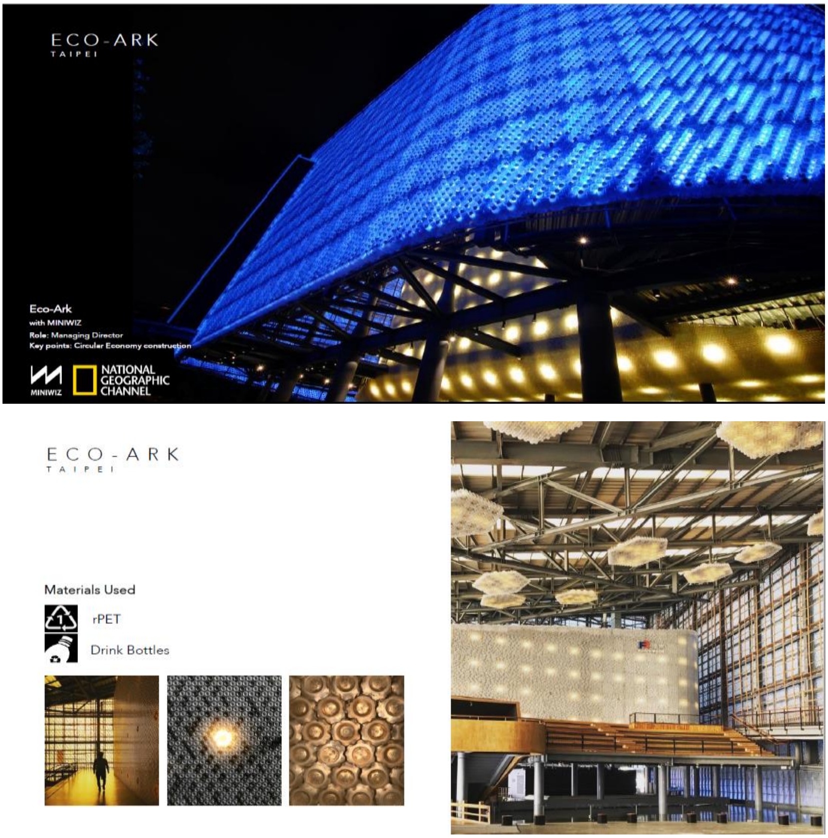

Figure 18. Recycled bottles turned into building facades

Another example includes a project that take 1.5 million recycled water bottles and turns them into building facades, interiors, chandeliers, wall finishes, and the like. This involves using materials that have been discarded.

Figure 19. Public housing with "green" areas

In the case of urban harmony for a public housing project, the building is designed in a way that functions as a permeable facade with breathable "lungs" and areas for residents to meet up.

Figure 20. A hospital layout incorporating biophilia

In another case, a proposed hospital where every ward has visual and physical access to green is intended to promote health and well-being through the concept of biophilia.

Figure 21. SPACE Asia Hub, an example of an existing building modified with new insertions through the retention of existing facade

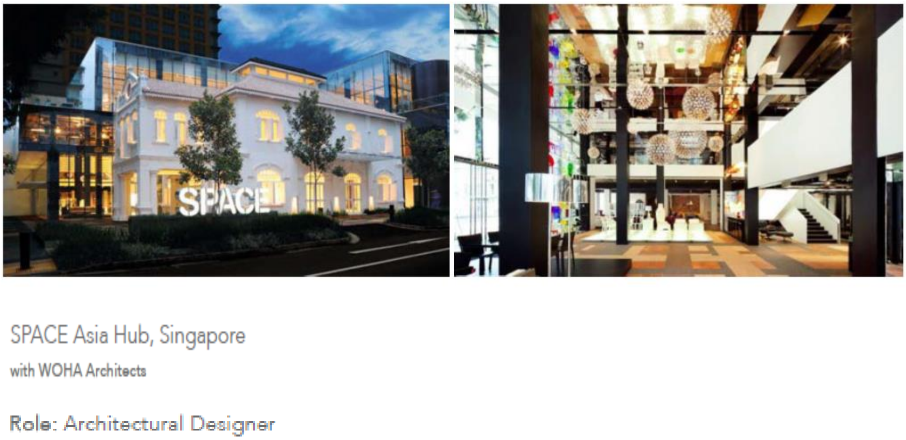

Figure 22. Another view of SPACE Asia Hub

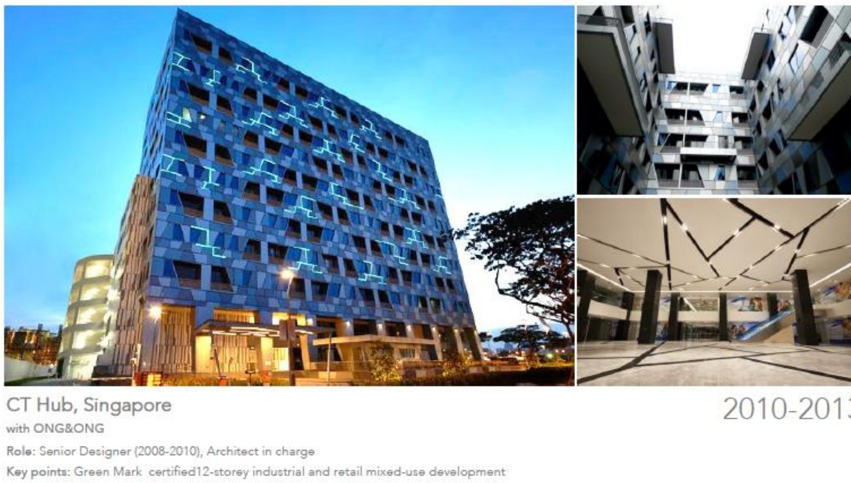

Figure 23. CT Hub, another example of an existing building modified with new insertions through the retention of existing facade

An example of adaptability & longevity involves retaining existing buildings as much as possible with new insertions. This is meant to connect and preserve the fabric and heritage of these buildings. However short Singapore's heritage, it is still heritage. Therefore, conserving existing structures and building above them — rather than pulling them down and creating something brand new, achieves this.

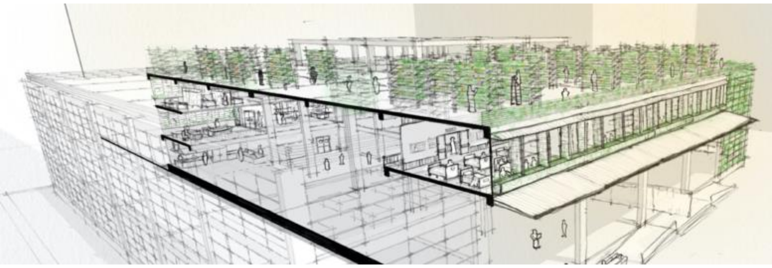

Figure 24. A building that incorporates the tenets of sustainability

Lastly, a new model for a green building for the age of the pandemic could be one that embodies all seven of these environmental design guidelines. It takes aspects of renewable energy, self-resiliency in terms of food sufficiency, and idea of expandability through a grid type of system.

How do all these lead to the Green Plan? In essence, it can be seen through a few layers. One layer is infrastructural. Another is energy. The third is economic. What does that mean for the future economics of Singapore? What does this mean for a country that has been focused on the refinement of fossil fuels for over the past half-a-century.

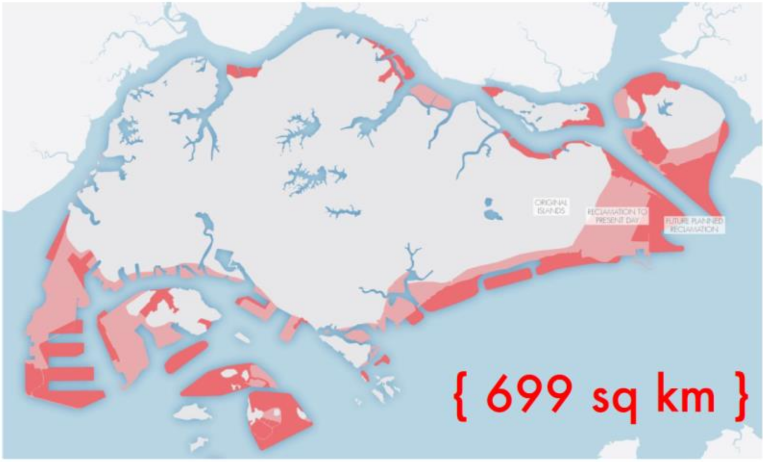

Figure 25. The extent of reclamation activities in Singapore

In essence, the field of built environment is all about leveraging space in an efficient manner that fulfils human needs and facilitates a more sustainable way of living. It is possible to expand Singapore’s net-built environment or net area by 40 per cent.

Figure 26. Colour codes for different shades of green.

Figure 27. A “green” urban setting

This involves allocating different shades of “green” to different parts of Singapore that could be used for various purposes like urban farming where renewable energy is used or open lands for green parks and all the other amenities that can be considered a part of city living. This would also create much more utility and productivity to Singapore’s environment spaces.

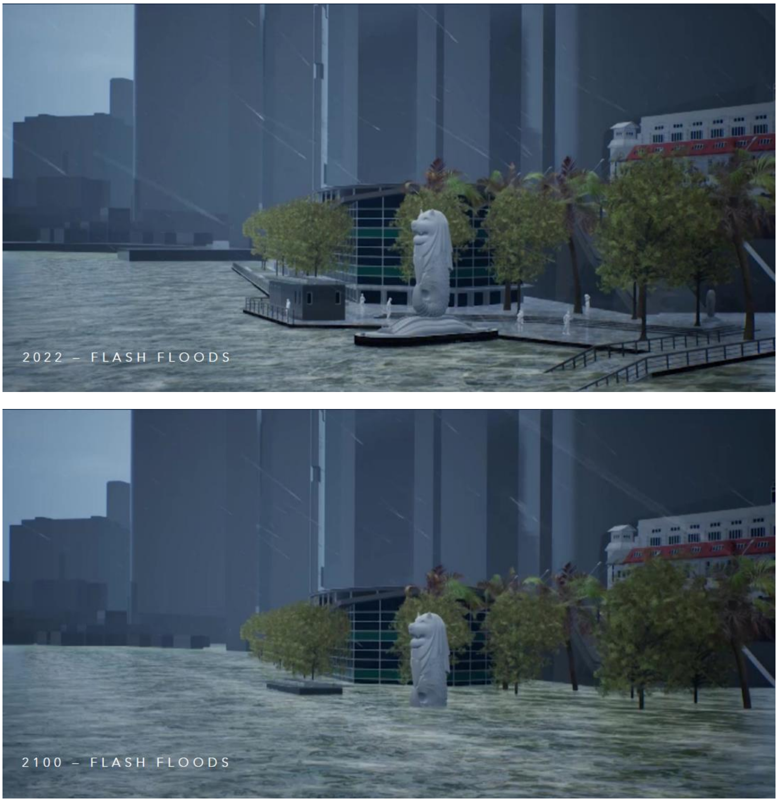

Figure 28. Rising sea levels over the course of a hundred years

Singapore will continue experiencing rising sea levels as the century progresses. However, with the right modes of management and urban resilience, this can be managed. As a result, new urban infrastructure must be resilient, sustainable, and be able to harbour new economies in sustainability. In this regard, built environment is a vehicle for sustainable economics and technology that can merge the two together in order to create healthy and climate-conscious living.

2.
Discussion

The panellists were asked a range of questions pertaining to the implications of their respective fields on policy in Singapore. More specifically, they touched on the possible need for the city-state to reinvent its approach. Specifically, the speakers were asked what sort of big changes were needed to change the policy environment in their respective fields so that Singapore could achieve the progress it desired.

2.1 Being Ahead of the Curve

Dr Asif Iqbal Siddiqui responded by noting that Singapore had always been vigilant and moved with the times. Hence, there was no need to reinvent the wheel. However, certain issues were very important globally. As a result, special attention had to be paid to those global challenges. The impact of climate change is happening a lot earlier than was predicted 20 to 30 years ago. Hence, Singapore had to be a lot more prepared for the climate emergency than it is now. Singapore is looking at areas that are consistent with what sustainable cities are doing in Europe, the US, and Australia. In the same line of literature, there is a lot of talk of an energy reset. The carbon tax is there in place and expected to grow. There is a cost-benefit side to it as well. This reality is inevitable. Hence, the only thing to do is to press ahead with these changes.

In addition to this, the issue of waste management must be considered more seriously. Singapore is a very small island. As a result, the space it uses for landfill is not too big. Hence, more work must be done to reduce the amount of plastic that Singaporeans use. Plenty of environmental awareness is needed. Dr Siddiqui observed that the younger generation had greater awareness of these issues and that this was a step in the right direction. Awareness is one of the most important things that people must start with.

Apart from this, institutional capacity building is something else that must be worked on. Singapore's policymakers, implementers and regulators have to familiarise themselves more with the latest research and education in the areas of sustainability and sustainable development within a localised context. This would help create a policy and regulatory atmosphere, which they could use to monitor how the private sector is performing.

Dr Siddiqui shared his experiences working with the Prime Minister's Office of Bangladesh over the past five years in SDG implementation. This was being done through huge private sector investments in foreign training. Dr Siddiqui would accompany hundreds of people to Australia to be trained in sustainable development practices so that they could go back to their respective companies and implement whatever they learnt.

In this vein, every development project and initiative that exist in any country can be linked to a sustainable development goal or target. It is good to have an alignment with development goals from the policy perspective. In this sense, it would be beneficial for Singapore to have an SDG mapping plan. This could contain different facets like thematic and geographic mapping that hinges on sustainable and social development as well as environmental management.

2.2 Standards, Foreign Affairs & SME Support

Mr Frank Phuan responded by outlining three key suggestions: standards, better foreign affairs, and SME support. First, Mr Phuan felt that plenty of standards had to be ironed out. There was already plenty of talk around the issue of greenwashing i.e., companies or corporations that contribute to increasing carbon emissions putting up a front that they are environmentally responsible. As a result, people had to take great care in ensuring that greenwashing was not being practised.

Mr Phuan brought up the example of Renewable Energy Certificate (RECs) standards that had been ironed out in the past two years. Singapore created these standards. Standardisation identifies the rules of the game and how it can be played. Things like the Green Mark Certification Scheme from Building and Construction Authority (BCA) are standards that can be exported to the rest of the region. They can also be used as a reference point for cross-border RECs.

As of today, plenty of standards have been sorted out. For example, Singapore is in the midst of ironing out battery standards. In this regard, safety standards regarding the installation of lithium batteries in buildings are being worked out. By extension, carbon credits and RECs trading, especially across borders, have also got to be synthesised further.

Second, Mr Phuan emphasised the need to work harder in order to build better relations with Singapore’s neighbours. Traditional sources of food and energy needed to be reconsidered. He stressed that there had to be a focus on whether these sources could be reliable in the long term. What worked for Singapore in the past may not work in the future. Hence, Singapore needed to make its supply sources resilient with multiple inlets.

This was predicated on maintaining good relations with the likes of Malaysia and Indonesia. Mr Phuan noted that the former had shut its doors to any prospect of providing Singapore with renewable energy and that it would be up to Kuala Lumpur to reconsider this. More recently, Indonesia was leaning towards moving in the same direction. However, Jakarta had not completely shut its doors to Singapore yet. Rather, it was considering whether it should actually export renewable energy to the island. Hence, Mr Phuan was of the opinion that more work had to be done in this regard.

Lastly, SMEs could be supported in their sustainability efforts through Trade Associations and Chambers (TACs). In this regard, Mr Phuan noted that each TAC had a sustainability committee. He was privileged to be a member of some of these committees. Mr Phuan suggested the creation of a “sustainability alliance” of sorts that would be formed by the various TACs. This would allow TACs to tackle common issues like tracking the carbon footprint, sustainability at workplaces, and access to green energy in a co-ordinated manner.

Mr Phuan asked if it was possible to have such an alliance where the content and solution providers could be vetted by this group. Such an arrangement could serve two purposes. The first was providing a feedback loop for policy planning whilst the second was to facilitate policy that could be directed downwards to the various companies and corporates. The TACs would provide a very good platform. In this regard, collaborations are already happening between the Sustainability Energy Association of Singapore, SG Tech, and the Singapore Chinese Chamber of Commerce & Industry. More TACs are needed to make such an alliance a reality. Furthermore, the Institute of Policy Studies can serve as an advisor to this alliance.

If these ideas are crystallised, they could contribute to the two pillars of digitalisation and sustainability. Plenty of work had been done on the former while more must be done on the latter. In particular, SMEs do not have a concept of sustainability as they are thinking of profitability above all else. The Infocomm Media Development Authority (IMDA) has come up with a diagnostic tool called Chief Technology Officer-as-a-Service to let companies know if they are digitised or far from it. It even provides the solutions required as well as possible government grants that companies can use to achieve their digitisation goals. Mr Phuan argued that having something similar in the form of an automated Chief Sustainability Officer-as-a-Service would aid SMEs in their efforts to go green.

2.3 Sustainability Engagement

Mr Tan Szue Hann agreed with Mr Phuan's point regarding the establishment of a TAC alliance. Mr Tan stated that policy already played a huge part in engendering sustainability. This was evident with the release of the Green Plan 2030 and subsequent modes of engagement with all walks of life. Mr Tan had been involved in quite a few public engagement sessions with members of the public, consumers, and industry experts in shaping how the realisation of this plan could be achieved from a tactical and executive level.

He also referred to the Urban Redevelopment Authority's Long-Term Planning Roadmap that had engaged industry experts from the private sector as well as general members of the public on multiple occasions. Of course, the exchange of these views and how they shape policies could be enhanced and defined with higher granularity. This encompasses individual stakeholder types of engagement as well as the tactical and executive policies from one statutory board to another.

Mr Tan reaffirmed Mr Phuan's point on standardisation practices on the ground. He stressed that this was crucial in establishing sustainability practice in a way that avoided greenwashing. For example, the electrification of vehicles through the TR 25, or Technical Reference guide, is one way of looking at how to establish the appropriate and correct standards pertaining to charging facilities and equipment. This prevents any risk of fires or electrical shocks. These are vital in the end user experience. As a result, it is imperative that experts come together to establish regular standards.

The BCA has released a standardised embodied carbon calculator for buildings that will be used across the board for new and existing developments in Singapore. This means that key stakeholders are aligned on the same page or assumptions on how much carbon is being expended in relation to one's neighbour. To that end, what governs green buildings in

Singapore is the BCA green mark code. Though years of revision and refinement, it has been approaching international standards. There are references to the Task Force for Climate Related Financial Disclosures (TCFD) guidelines as well. Hence, there is a consistency of practice in a fairly specific sector that goes across different sectors and geographies. However, there is still a lot of work to be done.

2.4 The Cost of Going Green

An SME owner shared their struggles going green by revealing that many SMEs were in firefighting mode with manpower being their biggest headache. More often than not, they were more concerned about survival than sustainability due to the needs of their businesses. This was reflected in this business owner's attempt to green their roof only to find out how expensive the process would be. Furthermore, the participant admitted that many SMEs were going to be caught off guard by the government's implementation of the ESG agenda. As a result, the participant asked if there was a particular organisation that SMEs could talk to regarding digitalisation and sustainability.

Mr Phuan responded to this by expressing his sympathy with the struggles of SME owners. He understood the need for businesses to break even. However, he argued that there was a misconception that going sustainable meant companies would get poorer. Business often believed that they had to pay expensive premiums to be sustainable. However, this was not true. He stressed that many solar companies for example were willing to install solar panels on rooftops at no upfront cost.

He also pointed to hefty discounts offered by Singapore Power as well as programmes like UOB's U-Solar that provided a three-year interest free solar panel payment plan. He reinforced the idea of a TAC alliance helping SMEs focus on their sustainability efforts as larger corporations were much more sophisticated. They knew what they wanted. The hope was to have an association of SMEs that could join Sunseap on this journey of sustainability.

In addition to this, Mr Tan alluded to worries SMEs had regarding return on investments (ROI) for solar power. He suggested that with an increase in traditional sources of energy, renewable energy would become cheaper. This in turn would increase the favourability of ROIs over the long-term in the face of volatile energy prices.

Dr Siddiqui added that there were plenty of opportunities for SMEs to innovate and contribute to the ESG movement. Historically, the ESG movement was driven in part by consumers in the 1960s, 1970s and 1980s. More awareness was needed amongst investors so that they knew which sustainable portfolios were ideal.

In this regard, the two most important impacts to consider were the social and environmental effects of any form of investment. This would then have to be complemented by the potential financial return. There were always trade-offs as investors balanced between financial returns and values. Hence, great vigilance had to be practised by them.

2.5 Greenwashing

Another participant raised the issue of greenwashing and how the ESG framework was still immature. Sometimes, the act of attempting to reduce one's carbon footprint could increase it elsewhere. The worry was that the process was accelerating without a realisation that there could be downsides. For example, the process of decarbonisation has revealed that there is more carbon in the water than in the air. As a result, some companies wanted to capture carbon and use it for manufacturing processes like the production of carbon instead of silicon chips.

Mr Tan argued that the fundamental principle of any ESG programme was accountability. Companies and individuals had to subscribe to acceptable standards. In the case of financial investment vehicles, particularly green bonds, loans and sustainability-based performance instruments, it was incumbent upon the owners of these institutions to determine that these standards were adhered to. As a result, any product or tool that was created had to be guided by global or localised stipulations.

3.

Recent Economic Developments

Presentation by Mr Ng Weiwen

Lead Economist

Economic Policy Group

Monetary Authority of Singapore

3.1 International Economy

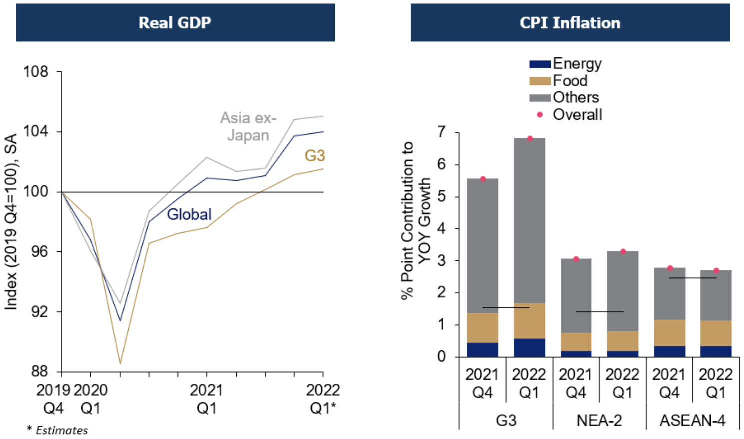

Figure 29. Pick-up in inflation

Source: MAS

The progressive easing of public health restrictions in most countries in the latter half of 2021 released pent-up demand, which was reinforced by the flow-through of previous policy support. However, further supply disruptions associated with renewed COVID outbreaks in China, as well as the Russia-Ukraine conflict, contributed to a slowdown in global growth to an estimated 0.4 per cent in the first quarter (Q1) this year. The rebound activity has been accompanied by a pickup in inflation in many economies since mid-2021.

The global headline rate actually reached close to 5 per cent in Q1 2022, which is the strongest pace since the third quarter (Q3) of 2008. Short-term supply constraints and higher commodity prices as a result of the war have actually played a part. However, tightening labour markets and rising core inflation in some countries suggest a broader inflationary process is at risk of taking hold.

Inflation is estimated more sharply in the major advanced economies, where recoveries have been much stronger, compared with Asia ex-Japan. Growth is expected to moderate from 5.4 per cent in 21 to 3.8 per cent this year as the post-pandemic recovery matures, and monetary policies are tightened to address rising inflation. Economic confidence has been undermined as higher prices start to erode real incomes although households in many economies built up substantial savings during the pandemic, giving some buffer to consumption.

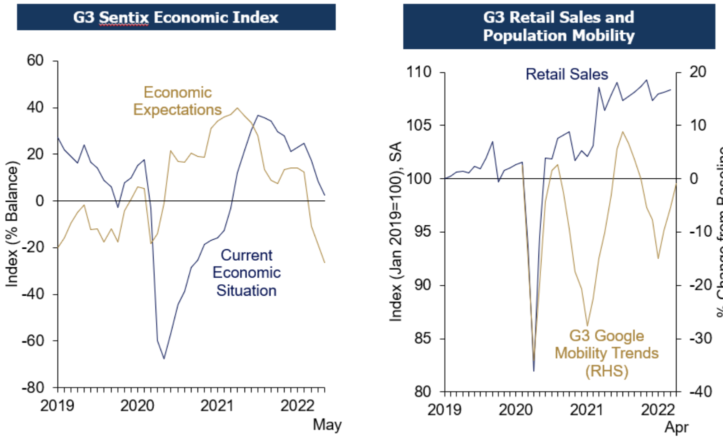

Figure 30. Moderate global growth

Source: MAS

Retail sales in the G3 have remained resilient over the past quarters despite the COVID-19 Omicron wave and the Russia-

Ukraine conflict, as mobility has normalised almost to pre-pandemic levels. Asia ex-Japan faces a headwind from the growth slowdown and near- term supply bottlenecks in China, where public health measures have weighed on domestic demand and contributed to production and logistics disruptions.

However, growth in Asia ex-Japan will be bolstered by continued recovery in domestic demand in the regional economies, which has so far lagged in the advanced economies.

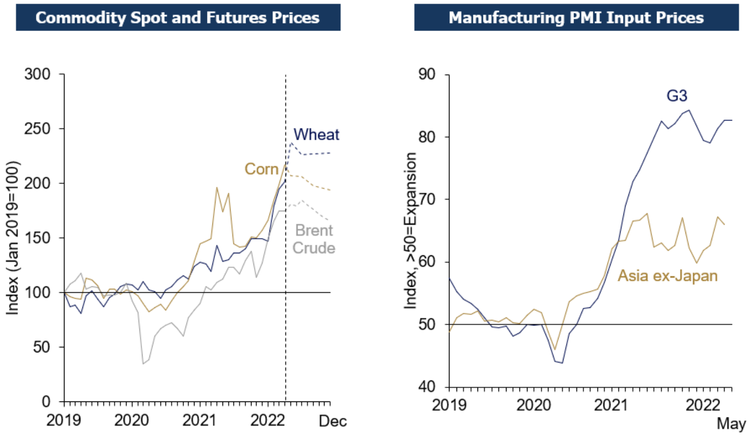

Figure 31. High global inflation

Source: MAS

The outbreak of the Russia-Ukraine conflict in February added a further powerful impulse to inflation via the impact of commodity prices, particularly food and energy. Global manufacturing PMIs indicated an intensification of input cost pressure in March compared to February. In the G3, input costs continue to rise in May. Global inflation is projected to rise to 4.5 per cent in 2022 from 2.8 per cent 2021.

The redrawing of monetary policy accommodation, progressive resolution of supply side bottlenecks and moderation of global growth should eventually help to contain inflation. Accordingly, global inflation is projected to slow to 2.6 per cent in 2023.

3.2 Singapore Economy

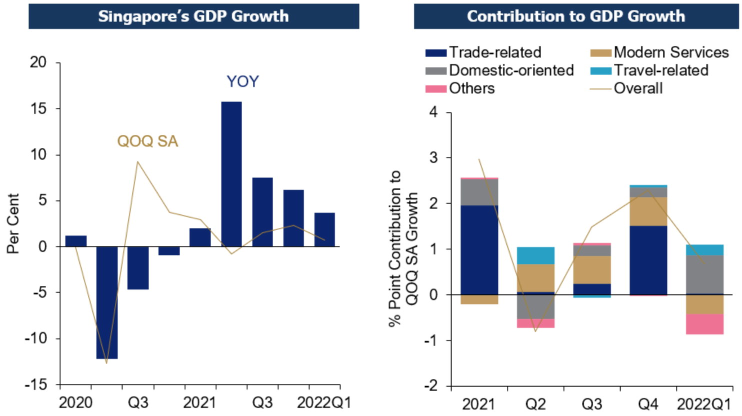

Figure 32. Slow pace of economic growth in Q1

Source: MAS

The performance of the Singapore economy came in within expectations with growth moderating to 0.7 per cent in Q1 2022 following the 2.3 per cent expansion in the fourth quarter (Q4) of 2021. Modern services contracted sequentially, while the activity and trade-related clusters were flat in Q1 2022. In comparison, domestic-oriented activities saw a broad base expansion.

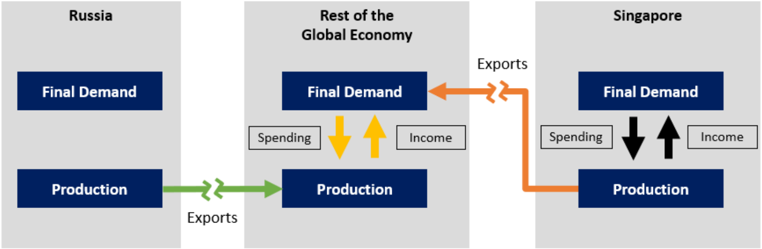

Figure 33. Small exposure to Russia

Source: MAS

The Russia-Ukraine conflict, which erupted in late February, has introduced renewed uncertainties over the outlook for the rest of the year. Although Singapore has minimal direct trade linkages with Russia, it is indirectly exposed to it via the other income and production channels. For the indirect income channel, Singapore's key export partners with significant exposures to Russia suffered income losses, which in turn reduced demand for exports. Based on the 2018 OECD Tiva (Trade in Value Added) data, the top countries with final demand originating from Russia in US dollar terms are the Eurozone, China, the US, Japan and the UK. The Eurozone is most at risk given its high dependence on Russian gas and other trade linkages. However, after normalising by these third countries' exposure to Russia, Singapore's value added in final demand is relatively small at just 0.55 per cent of its nominal GDP in aggregate.

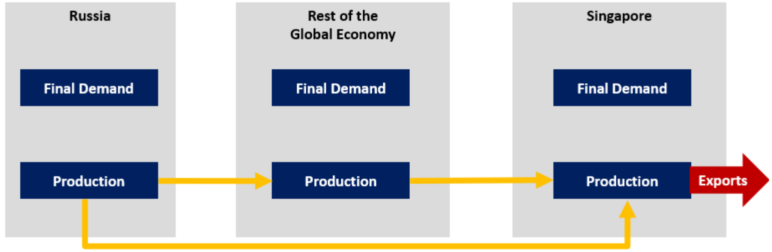

Figure 34. Confidence effects

Source: MAS

With regard to production channels, Singapore is indirectly impacted through supply chain linkages, where goods and services imported from its trading partners contain Russian components or inputs. These imports are actually intermediate inputs in the production of Singapore's exports. The bulk of Russia's value added embedded in Singapore's exports is in the refined petroleum products and water transport services industries which depend heavily on oil.

Even if the foreign value added embedded in these exports did not originate from Russia, these energy dependent industries would still be affected by the sharp increases in global oil prices. Overall, a static analysis of global trade and input-output linkages suggests that Singapore's direct and indirect exposures to Russia are relatively small. However, the impact could be amplified by confidence effects arising from high inflation, tighter financial conditions, and heightened uncertainty, which would restrain domestic consumption and investment.

The less optimistic global outlook will pose some headwinds to external-oriented sectors. The global semiconductor industry has been riding an upturn since early 2020. That is characterised by strong demand for electronic goods during a pandemic. Amid supply chain uncertainties, there was a hoarding of chips during the initial phase of the pandemic and from late 2021, which has resulted in inventory accumulation.

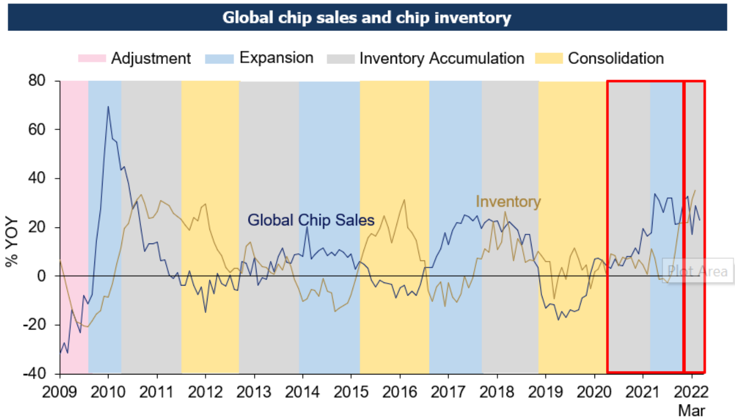

Figure 35. Accumulation of the global semiconductor industry

Source: MAS

With the outbreak of the Russia-Ukraine conflict, the semi-conductor industry is expected to maintain inventory at a higher level well into 2022. However, a normalisation of demand amidst capacity expansion could presage an eventual consolidation. Separately, the drivers of GDP growth should broaden to domestic-oriented and travel-related sectors over the course of the year, with substantial easing of domestic safe management measures and border restrictions. All in, GDP growth is projected at 3 to 5 per cent in 2022, with growth likely to come in the lower half of the forecast range, barring further disruptions caused by the Russia-Ukraine conflict or a severe worsening of the pandemic. This forecast represents a moderation from the 7.6 per cent expansion 2021. However, that would still be above the trend for a second consecutive year.

3.3 Labour Market

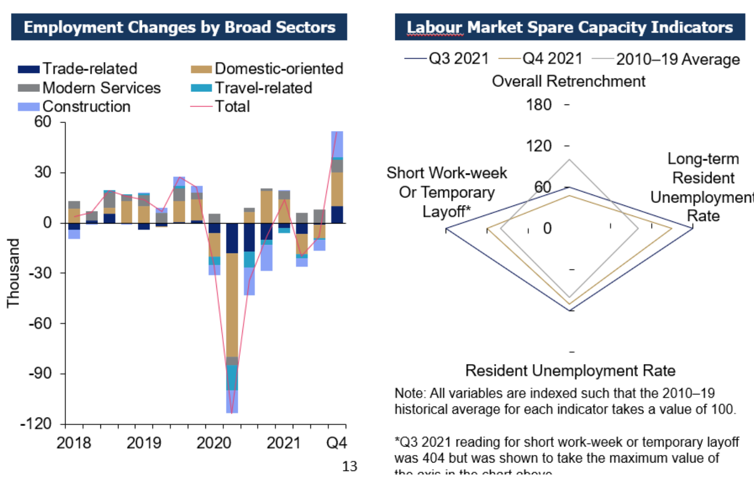

Figure 36. Labour market tightened in Q4

Source: MAS

Total employment rose across all broad sectors in Q4 2021 for the first time since the pandemic began. Employment in modern services expanded at a steady pace while all other clusters saw a turnaround in employment. The largest rebounds were in the construction and domestic-oriented sectors which reflects the impact of easing border restrictions as well as domestic safe management measures.

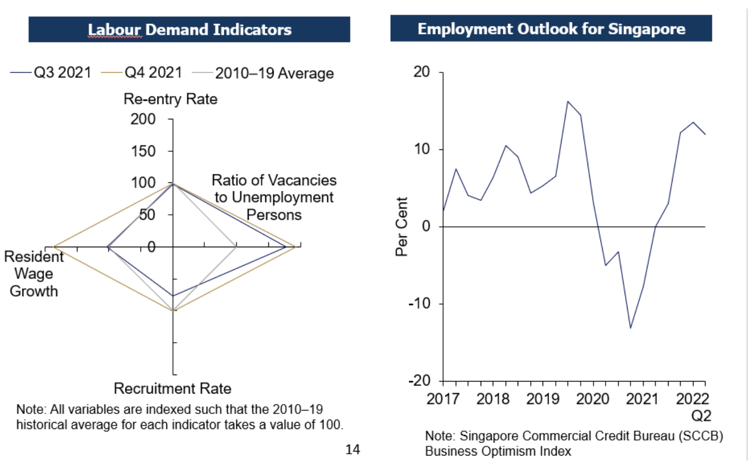

Figure 37. Nominal wage growth pick-up

Source: MAS

Consequently, most labour market indicators pointed towards the further dissipation of slack in Q4 2021. The resident unemployment rate fell from 3.5 per cent in September 2021 to 3.2 per cent by the end of the year. It declined further to 3 per cent in March 2022. This was comparable to pre-COVID levels of unemployment. The Ministry of Manpower's (MOM) preliminary estimates show that total employment continued expanding in Q1 2022. This was largely driven by the increase in non-resident employment as border restrictions were progressively lifted.

Job vacancies in Q4 2021 pointed towards continuing strong demand for workers. Seasonally adjusted job vacancy numbers rose further from September to December 2021, with almost all sectors maintaining higher vacancy numbers than pre COVID levels. Consequently, the seasonally adjusted ratio of job vacancies to unemployed persons rose from 1.95 in September 2021 to 2.11 by the end of that year. In the quarters ahead, employment growth is projected to be firm across more sectors, even as labour demand could ease somewhat in pockets of external-oriented sectors.

A survey of employment outlook conducted after the outbreak of the Russia-Ukraine conflict showed that overall, hiring is likely to remain resilient. For the year as a whole, resident employment should continue to expand, but at a slower pace as the resident labour force is largely utilised. Meanwhile, inflows of non-resident workers should increase with significant relaxation and border controls since 1 April, elevating some local manpower shortages. Nevertheless, amidst a tight labour market, nominal wage growth is anticipated to pick up in 2022. Price pressures continued to intensify in Q1 2022.

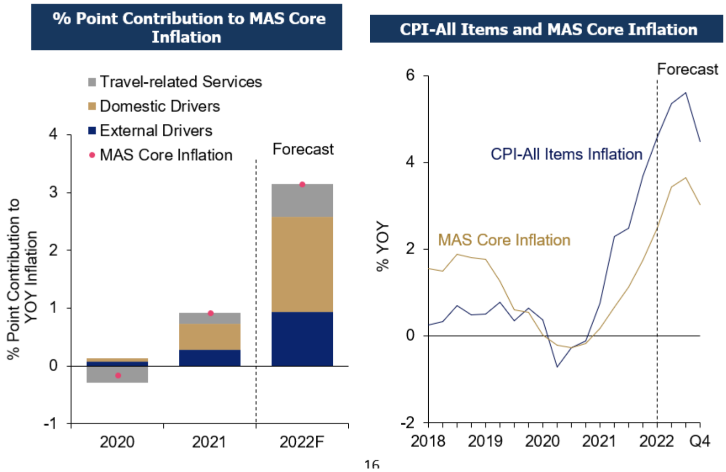

Figure 38. Core inflation at historical high

Source: MAS

MAS core inflation rose to 2.5 per cent from 1.7 per cent in Q4 2021, with stronger price increases observed across all broad core categories. The sharp rise in energy and agricultural commodity prices since the conflict has begun, have yet to fully pass through to Singapore's consumer prices. As global commodity prices are expected to stay elevated, and supply chain disruptions driven in part by the regional pandemic situation persist, external sources of inflation are likely to remain strong for the rest of 2022 and possibly, into the year beyond.

While the labour market is expected to remain tight, wages are projected to rise at a strong pace, leading to higher unit labour costs. The combination of a rise in the cost of energy, imported inputs and labour will lead to a build-up in domestic business cost pressures. There will likely pass through to consumer prices amid firm consumer demand.

In view of strong external inflationary and domestic cost pressures, MAS core inflation is expected to rise further in the coming months. It is forecast to moderate towards the end of

2022 on the premise that global commodity prices stabilise and global supply constraints loosen to some extent. All in, MAS core inflation is forecast to average 2.5 to 3.5 per cent in 2022 with public transport and accommodation inflation expected to stay firm in the near term. Headline inflation is projected to step up more than core inflation. For the whole of 2022, CPI All-Items inflation is forecast at 4.5 to 5.5 per cent.

Since the off-cycle tightening of monetary policy in January, the global economy has experienced fresh shocks to inflation. Imported cost pressures have intensified and will filter through to business costs for businesses in Singapore. While domestic cost pressures are rising in tandem with economic recovery, this will pass through to consumer prices, amidst strengthening private consumption expenditure.

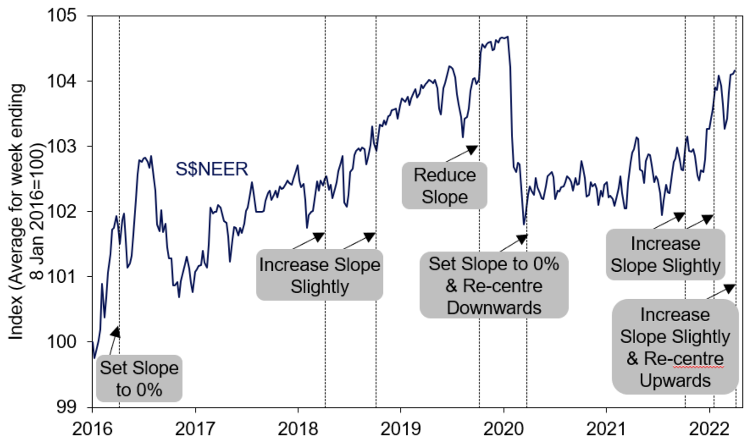

Figure 39. S$NEER re-centred

Source: MAS

Growth in the Singapore economy is projected to come in within the official 3 to 5 per cent forecast range. Although core inflation would ease in the latter half of 2022, it is projected to keep above its historical average for some time. Accordingly, MAS tightened monetary policy further in April 2022, by re-centring the midpoint of the S$NEER policy band to its prevailing level, which was near the top of the band. MAS also increased the rate of appreciation of the policy band slightly. The April move builds on previous policy tightening moves undertaken in October 2021 and January 2022. It will help to dampen inflationary pressures over the near and medium term.

4.

Macro-Economic Outlook for Singapore

Presentation by Dr Jade Vichyanond

Economist

ASEAN+3 Macroeconomic Research Office (AMRO)

Monetary Authority of Singapore

As far as outlook is concerned, growth is expected to remain relatively robust in 2022 and come in at around 4 per cent. Domestic demand is going to benefit significantly from the easing of the pandemic situation, which would allow economic activities to normalise further and lead to a pickup in domestic demand growth. In terms of external demand, the tourism and hospitality sectors are going to benefit quite a lot from the continued easing of border restrictions in both Singapore and other countries. Growth is also going to be supported by robust performances in exports, as well as financial and ICT services.

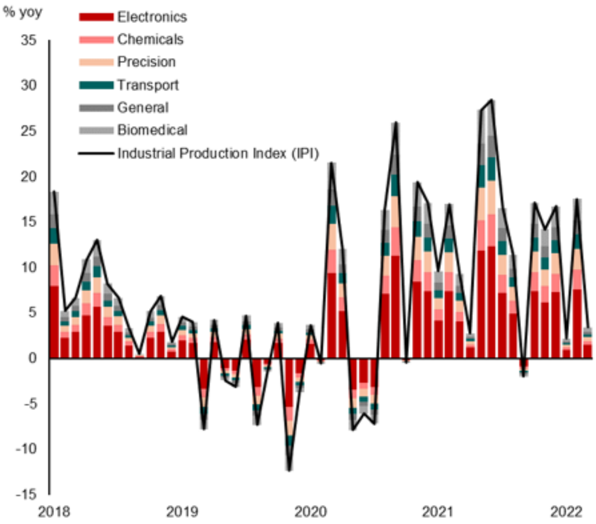

Figure 40. Industrial Production Index

Source: Singapore Department of Statistics

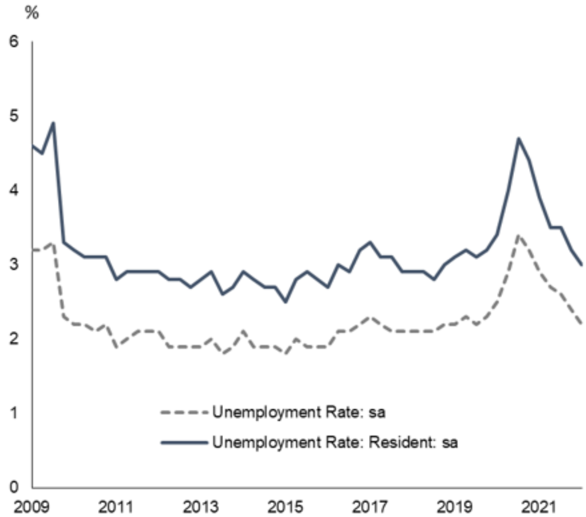

Figure 41. Unemployment rate

Source: Ministry of Manpower

The labour market will likely see continued recovery in line with GDP growth. Overall employment rose significantly in 2021 compared to 2020, while the unemployment rate has been falling steadily almost to pre-pandemic levels. Non-resident employment is improving well and will benefit the construction sector in particular.

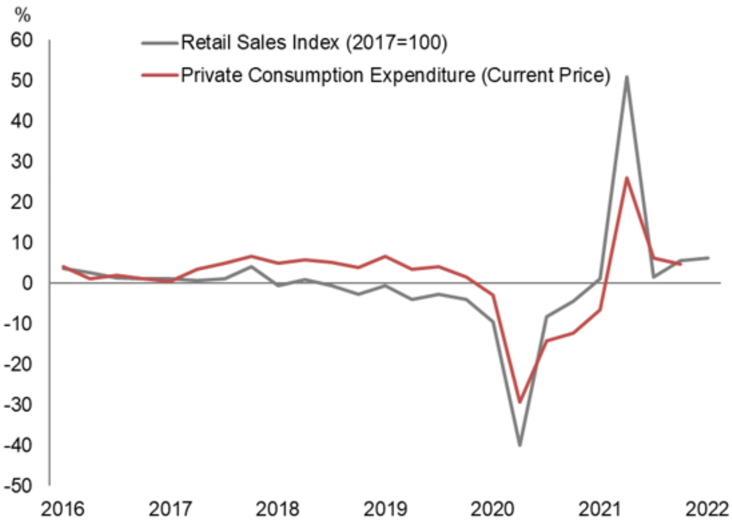

Figure 42. Retail sales and private consumption

Source: Singapore Department of Statistics

One risk that is monitored is the re-tightening of containment measures due to the emergence of more significant and virulent strains of COVID. At the moment, the household sector is improving, and private consumption has been recovering well.

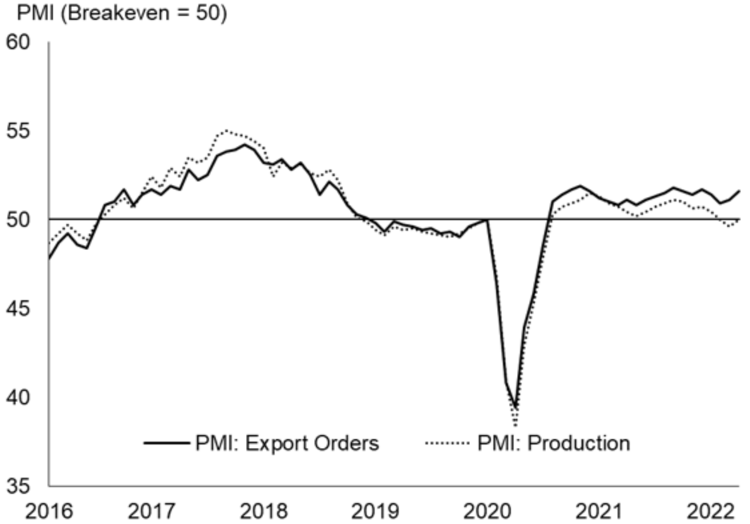

Figure 43. Purchasing Managers' Index

Source: HIS Markit

The corporate sector is also relatively optimistic as observed from improving PMI numbers. However, the emergence of more contagious and dangerous variants of COVID could really pose a risk to economic recovery.

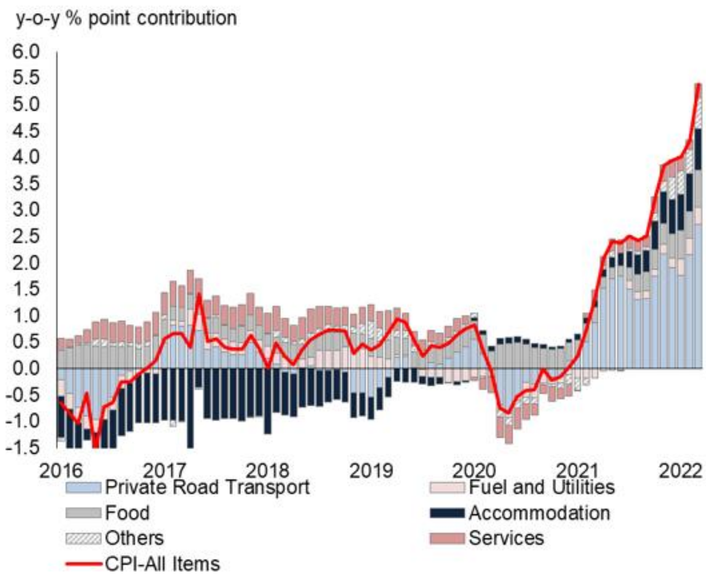

Figure 44. Inflation

Source: Singapore Department of Statistics

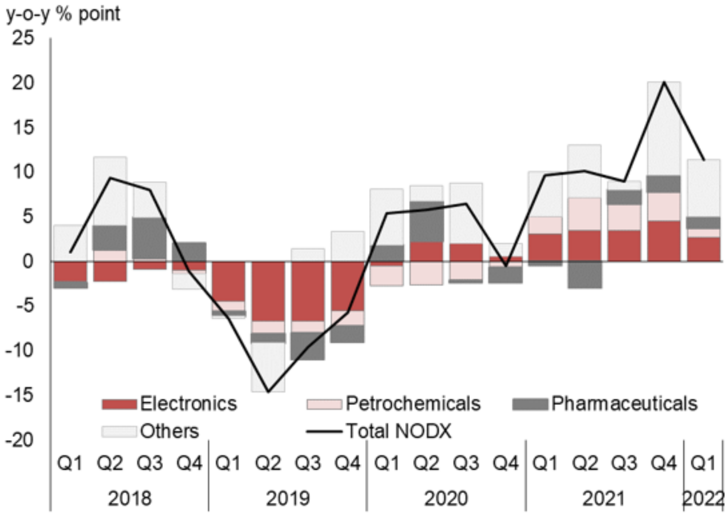

Figure 45. Exports

Source: Singapore Department of Statistics

Perhaps a greater risk comes from mobility restrictions in China and geopolitical risks, in particular, the Russia-Ukraine conflict. In addition to rising food and energy prices, shipping costs have risen as well due to logistic bottlenecks. There is also risk to external demand which Singapore relies heavily on. The outlook for Europe's growth has become dimmer as a result of the Russia-Ukraine conflict, while China's uncertain future when it comes to mobility restrictions weighs on its growth and country's demand for imports.

Presentation by Mr Justin Lim

Economist

ASEAN+3 Macroeconomic Research Office (AMRO)

Monetary Authority of Singapore

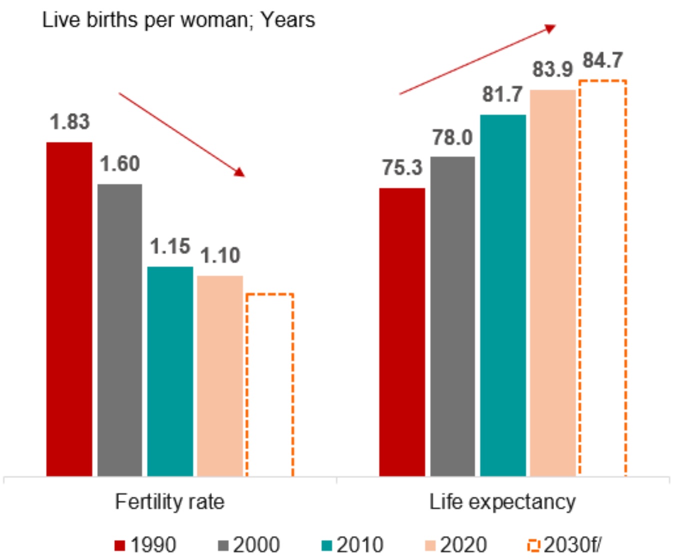

Figure 46. Singapore's birth rate and life expectancy

Source: Singapore Department of Statistics; United Nations World Population Prospects (2019)

Looking beyond the pandemic, Singapore will have to deal with the challenges that are going to arise from an ageing population as well as climate change. The fertility rate in Singapore has come down very rapidly over the past decades and is expected to go down even further.

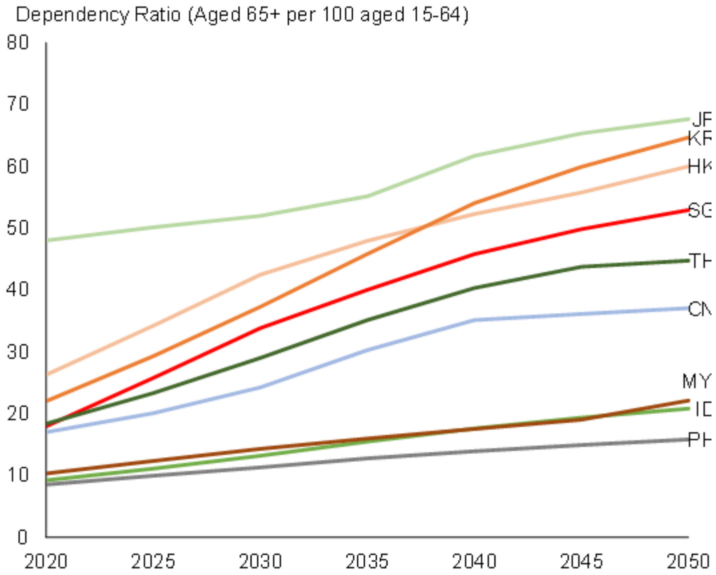

Figure 47. Old age dependency ratios

Source: United Nations World Population Prospects (2019)

Singapore's old age dependency ratio will continue increasing to be among the highest in the region. As of 2020, it stands at 18 per cent based on the world population data and will go up to as high as 50 per cent by 2050. This would put it behind Japan, Korea and Hong Kong. This will cause an issue in terms of the fiscal costs needed to support the healthcare spending needs of the elderly. It will also have implications on the workforce as it will shrink unless it is supported by very strong productivity growth or high immigration.

Singapore has emerged on very firm footing in 2022 with the output gap expected to turn positive, despite the risks and challenges that have been faced so far. Hence, it is appropriate for fiscal policy support to be fully phased out, given how well Singapore has weathered the pandemic. Things like wage support and job creation incentives are still important given the tightness of the labour market. Increasingly, attention should be paid to how these can support a higher cost of living.

In the latest budget, there have been announcements of the issuance of CDC vouchers to help consumers. There are also additional rebates such as GST and U-SAVE, and the like. However, if this inflation shock continues to persist and remains elevated for a longer period, it will have an impact on consumption. If that is the case, then perhaps there is scope for the government to do a little bit more, especially for low-income households.

Despite all these challenges and changes that have been accelerated through the pandemic, Singapore is actually in a much better position to capitalise on these trends compared to other countries in the region. The first part to this is skills training. Singapore embarked on the SkillsFuture training programme well before the pandemic. Given this head start, Singapore will continue to do well.

Beyond that, there is a move to help expand and make the economy more inclusive through the expansion of the Progressive Wage Model (PWM) to the other sectors; and also to ensure there is a sufficiently sized workforce to capture these benefits. In addition, in the post-pandemic period, there is a greater emphasis on the modern services sectors. Given

Singapore's position as a trading hub in the region, it is better able to capture the benefits of fintech, digital banking and green finance.

Last but not least, Singapore has also embarked on the shift towards climate change mitigation, which is amongst the earliest in the region. MAS came up with the Green Finance Action Plan in 2020 to help spur the creation of a green economy in Singapore as well the region. Adaptation plans include building $100 billion dollars' worth of new infrastructure to help protect the city against rising sea levels and extreme weather patterns.

In terms of policies, the recalibration of policy support is befitting and the move to accelerate monetary policy is important to ensure that Singapore can achieve a sustainable growth momentum in the medium term. Last but not least, in the post-pandemic era, attention should be focused on helping workers and businesses prepare for the green and the digital economy.

Presentation by Mr Heng Koon How

Executive Director &
Head of Markets Strategy
Global Economics and Markets Research
United Overseas Bank Limited

There are three hot button macro-economic concerns regarding SME owners, GLCs, and the like. The first is inflation. For the man in the street, inflation is basically a concern about how high business and borrowing costs will go. This also affects operating costs and commodity prices. Most of the time, people are worried about when inflation will pick. This is because if it does pick up, they will not need to hedge that much on material costs. Of course, borrowing costs from banks will be expected to go down after that because the central banks will technically stop hiking.

The question itself is very nuanced. One cannot pinpoint when exactly inflation will pick up. Hopefully, the Fed has a good handle on it. New numbers that are coming out seem to suggest that inflation is stabilising. Inflation expectation break-evens are slowly cresting in the US. Hopefully, the Fed's frontloading messaging has done the job. In Europe, the latest numbers are worrying. Inflation numbers in France, Spain and Germany are going through the roof. In this vein, Christine Lagarde basically sounded the inflation alarm.

In Asia, questions have got to be asked about inflation. More specifically, what is going to happen when China really opens its borders for tourism and production ramps up in Shenzhen and Shanghai? Is there going to be a mad rush for inventories in Asia? Is consumer inflation going to pick up again? The expectation is that the inflation wave will be moving from the US to Europe, China, and finally Singapore. This is speculated to take place at the end of 2022. It will not be going away anytime soon and will continue to be a key concern for businesses.

The second hot button topic is China's slowdown. The Chinese government has controlled the property slowdown very well. It has not really impacted the region, However, changes in capital and fund flows are starting to take place. Previously, key stakeholders were looking to repatriate their trade proxies into Renminbi. Now, every Chinese SOE (state-owned enterprise) is holding on to Euros or US dollars. No one is thinking about repatriation anymore, partly because the cost of funds for the US dollar has jumped. This is also due to geopolitics. As a result of the Russia-Ukraine war, everyone needs to hold dollars to feel secure. This means that there is financial hogging in terms of liquidity. It also affects fund flows across the region.

Naturally, export growth in China is starting to taper off. The next consequential question to ask is: Does that mean trade surpluses across the region are also going the other way? This is a significant thing to ask because Chinese trade was what held up the region for two years during the pandemic. Strong regional trade was kept afloat. If this is affected, how does that affect the rest of Asia? Is there going to be a sustained growth recovery in China? How will policy work out? These questions will affect the outlook for growth.

The third and final hot button topic is the issue of local wage concerns. The rise in wage growth in Singapore is starting to pick up momentum and broaden across all industries. The great resignation conundrum has been greatly discussed and become a cost issue. Is this a short-term dislocation as Singapore is emerging from COVID and the job market is trying to realign itself? Or is this a longer-term structural shift in the job market that one needs to worry about? Industries are changing. New talent is needed for the green industry and digitisation efforts. These things cannot be resolved overnight. Hence, the issue in question will frustrate people in the coming months.

5. Discussion

5.1 China as the Engine of Regional Growth

A participant raised a question pertaining to China's economic slowdown in the short term due to COVID. Specifically, they were of the opinion that in structural terms, a slowdown in China's economic growth was inevitable. In this sense, would China continue to be a key driver of the economy going forward in the years to come?

Mr Heng responded by stating that he believed the region was getting more multi-dimensional. If China slowed down, it was no longer a matter of course that the region would do so as well. Many investors wish that in the years to come, China's capital account will open up fully and efficiently. How does that translate into capital flows and the impact on the region? The short answer is that over the short term, there will be quite a bit of uncertainty in terms of policies and trade flows. Most pension fund managers and investors agree that China is a place to be over the long run. Once simply cannot ignore investing in China. In the near term, people are playing it safe. However, once China moves on from its zero COVID strategy and opens its borders, it will be a sign that investors can pour money into the country once again.

5.2 China Pursuing an Inward Policy

Another participant noted that China was the big swing factor in the global economy. This meant that changes in domestic policy would have wider implications for the region as a whole. The geopolitical consequences of the Russia-Ukraine war and the effects of sanctions meant that China had been looking to address its strategic vulnerabilities. This would mean that China was working towards ensuring that it was less exposed to the global economy by turning inward. Such an act would be detrimental to Singapore as the city-state was the biggest beneficiary of China's opening up.

Mr Heng responded by noting that China was concerned about being caught in the web of secondary sanctions imposed upon Russia, due to Beijing's strong ties with Moscow. Furthermore, they have observed that China had the desire to hoard US liquidity and dollars just in case Chinese firms were sanctioned.

5.3 Regional Resilience

Mr Justin Lim raised the issue of resilience pertaining to the Singapore economy. He stressed that the city-state was fairly resilient to shocks. There was a potential upside for the expected return of workers given the reopening of borders in Malaysia. However, the pace of opening was of importance given stories of bottlenecks in Malaysia and how quickly they could be resolved.

Regional demand has been growing over time in ASEAN. This could be a source of growth for Singapore and other countries in the region. Whilst there have been concerns, countries are actually more prepared and resilient. For example, Thailand has one of the lowest yielding interest rates with a great deal of vulnerability like Malaysia and Indonesia. However, the external debt of these countries has come down on both the government and corporate side.

5.4 Inflation and MAS policy

In response to questions pertaining to inflation and the requisite policy response, MAS explained its approach to policy. MAS first assessed whether the rise in inflation was demand-driven or supply-driven. For instance, many were concerned about the proposed GST hike and its impact on inflationary expectations. The approach is to anchor these expectations through pre-emptive policy measures — as MAS has been doing in the past six months. With expectations strongly anchored, the GST rate hike will pass through just as it did in the past.

In addition to MAS's monetary policy, there would also of course be other policy measures as monetary policy cannot be the only game in town.

MAS reminded participants that certain price changes were structural — these should not be resisted as they are part of the economy's adjustment to long term changes. Also, it should be pointed out that some structural adjustments are necessary in the economy such as reducing the dependence on foreign workers, even if there were consequences for costs and inflation.

Conclusion

The 36th SER addressed a number of important issues relating to sustainability and the global economic outlook.

In the first session, the panellists spoke about sustainable finance, technology and architecture. They utilised their expertise in their respective fields to paint a picture of the progress that was taking place in the sphere of climate change mitigation. The discussions that took place touched on issues such as engagement with SMEs and the providence of aid to help local businesses go green. They were also expanded to include Singapore's role in the region and the potential partnerships it could form with its neighbours to generate renewable energy. This would transform the region and help the city-state achieve its sustainability goals.

In the second session, the panellists talked about the Singapore economy, the effects of the Russia-Ukraine war on the global economy, and China's economic slowdown. They painted a picture of slight optimism as growth picked up again with an increase in demand for labour. Furthermore, they contrasted China's domestic policies against the backdrop of global events that might influence its long-term strategic calculations. This is turn would have significant ramifications for Asia as a whole.

The 36th SER took place at a time of substantial turbulence in the global environment. The interplay of conjunctural issues such as global monetary tightening, the slowdown in China, and the energy price shock were difficult enough to understand in the best of times. Given the geo-political frictions and their economic consequences and long-term developments with immense consequences such as climate change, the difficulty for economists to fully understand the changes and their implications for policy can only grow. It is hoped that the 36th SER went some way in helping participants better appreciate the environment Singapore operated in and how it needs to respond.

Appendix 1: List of Participants

Chairperson

Mr Manu Bhaskaran
Adjunct Senior Research Fellow
Institute of Policy Studies, Singapore

Speakers

Dr Asif Iqbal Siddiqui
Senior Visiting Scholar
Economic Growth Centre
School of Humanities and Social Sciences
Nanyang Technological University

Mr Frank Phuan
Chief Executive Officer
Co-Founder
Sunseap Group Pte Ltd

Mr Tan Szue Hann
Chairman
Sustainability
Singapore Institute of Architects

Discussants

Mr Ng Weiwen

Lead Economist

Economic Policy Group

Monetary Authority of Singapore

Dr Jade Vichyanond

Economist

ASEAN+3 Macroeconomic Research Office (AMRO)

Mr Justin Lim

Economist

ASEAN+3 Macroeconomic Research Office (AMRO)

Mr Heng Koon How

Executive Director &

Head of Markets Strategy

Global Economics and Markets Research

United Overseas Bank Limited

Participants

Mr Alex Loo
Macro Strategist
Global Macro
TD Securities

Mr Allen Ang
Head, Green Building and Technology Application
Sustainability
City Developments Limited

Mr Alvin Lui
Chairman
Headquarters
Strategic Capital Global

Ms Celine Sia
Assistant Managing Director
Economics & Knowledge Management
Monetary Authority of Singapore

Ms Celine Tan
Economist
Centennial Asia Advisors Pte Ltd

Mr Daniel Moss
Columnist
Opinion
Bloomberg

Mr Dinesh Singh
Chief Executive Officer
Singapore Indian Chamber of Commerce and Industry

Mr Jazlee Wee
Economist
Economic Analysis Department
Monetary Authority of Singapore

Mr Johnson Paul
Director
Group Strategy & Business Development
Meinhardt Group

Ms Jordana Palmer
Visiting Scholar
Lee Kuan Yew School of Public Policy

Ms Karen Wong
Public and Government Affairs Director
Public and Government Affairs
ExxonMobil Asia Pacific Pte Ltd

Mr Khoon Goh
Head
Asia Research
Australia and New Zealand Banking Group Limited (ANZ)

Ms Louisa Lee
Vice President
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Lead Economist
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ASEAN+3 Macroeconomic Research Office (AMRO)

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Mr Nigel Chiang
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Ms Rachel Phay
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AmCham Singapore

Ms Sherilyn Chew
Economist
Economic Surveillance & Forecasting Department
Monetary Authority of Singapore

Mr Sing Cheong Tien
Director
Santec Corporation

Mr Vernon Lim
Managing Director
Monarch Advisory

Mr Vivek Chhabra
Chief Investment Officer
Investment
Fraser and Neave, Limited

Associate Professor Walter Theseira
Associate Professor
School of Business
Singapore University of Social Sciences

Mr Liuqing Yu
Country Analyst
Country Analysis Asia
The Economist Intelligence Unit Limited

Institute of Policy Studies

Dr Faizal Bin Yahya
Senior Research Fellow

Mr R Avinash
Research Assistant

Appendix 2: Curricula Vitae of Presenters, Discussants & Chairperson

Chairperson

Manu BHASKARAN is Adjunct Senior Research Fellow at the Institute of Policy Studies (IPS). He is also concurrently Partner and Member of the Board, Centennial Group Inc, a policy advisory group based in Washington DC, where he heads the group's economic research practice. Mr Bhaskaran co-leads the IPS' work in the area of economics. His major area of research interest is the Singapore economy and the policy options it faces. Prior to his current positions, he worked for 13 years at the investment banking arm of Societe Generale as its Chief Economist for Asia. He began his professional career at Singapore's Ministry of Defence, focusing on regional security and strategic issues. Mr Bhaskaran graduated from the University of Cambridge with a Master of Arts and also has a Master in Public Administration from Harvard University.

Speakers

ASIF Iqbal Siddiqui is Senior Visiting Scholar at Economic Growth Centre, Nanyang Technological University & the Director of Circular Economics Pte Ltd. He is trained in environmental economics and has more than 20 years' experience in multi-stakeholder setup, working with universities, NGOs, industries and government agencies promoting business case for sustainable development since joining the Green Accounting Initiative of IUCN-World Bank as an environmental economist in 1997. Subsequently, he worked on economic cost of ASEAN haze, SDG localisation, corporate sustainability, ESG due diligence, sustainable finance, carbon market, and climate policy with private & public sector clients and collaborators in Singapore, Australia, Indonesia and Bangladesh.

He obtained his Bachelor of Arts (Honours) in Economics from the University of Delhi, Master of Social Science from National University of Singapore, and MBA from Murdoch University. His PhD thesis, at Curtin University Sustainability Policy Institute, was on venture capital and sustainable finance. He was a lecturer of Economics at Nanyang Technological University and University of Sydney and was a Research Fellow at the ISEAS-Yusof Ishak Institute and Lee Kuan Yew School of Public Policy.

Frank PHUAN has over 20 years of experience in the solar industry and holds an honours degree in Applied Science in Materials Engineering from Nanyang Technological University. Prior to setting up the Sunseap Group, Mr Phuan spent time in his family business of solar panels manufacturing, learning the ins-and-outs of the solar business. Mr Phuan has led numerous projects and given public speeches involving technology and operational improvement of solar systems, sustainability strategy, solar module recycling, green buildings and infrastructure, greenhouse gas emission reduction, verification, solar farm, and rooftop solar Power Purchase Agreement (PPA) projects across 12 Asia-Pacific markets where Sunseap Group has established its operation. In addition to the Sunseap group's business and corporate development, Mr Phuan also plays a key role in the engineering and reducing the levellised cost of solar energy in

Singapore to implement Sunseap Group's first 10MegaWatt-peak (MWp) of solar PPA projects, which subsequently set the foundation for its next 1.2GWp of solar PPA projects within the group's portfolio. An experienced entrepreneur, Mr Phuan also spent time delving into advertising, IT and F&B. He was awarded the distinguished Nanyang Outstanding Young Alumni Award 2014, the prestigious Entrepreneur of the Year Award (EYA) 2015, and the PVSEC Special Award in 2016 in recognition of his contribution to the growth in areas of photovoltaic industrial technology in Singapore. Mr Phuan serves as a member on the board of Enterprise Singapore.

TAN Szue Hann is an award-winning architect, strategist and thought leader in sustainability and sustainable development. Mr Tan is Chairman of Sustainability, Singapore Institute of Architects, the professional body for architects in Singapore, and leads sustainable development at a leading global hospitality chain. Mr Tan is an appointed World Cities Summit Young Leader, and BCA Built Environment Young Leader. In 2021, he co-founded IxSA (Innovation x Sustainability Alliance), a global non-profit think tank, with a group of sustainability leaders. Mr Tan was Singapore's 2015–16 BCA-SGBC Young Green Architect of the Year. His portfolio includes the award-winning PARKROYAL on Pickering with WOHA, and the BCA SkyLab with Surbana Jurong. He has spoken in numerous conferences including SWITCH, the UN Asia-Pacific Urban Forum, and COP25 in Madrid.

NG Weiwen is Lead Economist in the Economic Policy Group at the Monetary Authority of Singapore (MAS). He joined MAS in 2021 as an economist analysing international economic developments in the Economic Analysis Department, after more than a decade in a range of public and private sector roles. Mr Ng is an alumnus of the Singapore Management University where he studied Economics and Actuarial Science.

Jade VICHYANOND is an economist working on Singapore and Vietnam. Prior to joining ASEAN+3 Macroeconomic Research Office (AMRO), Dr Vichyanond worked at the International Monetary Fund, where his responsibilities included macro-economic surveillance on Malaysia, Laos, Fiji, Italy and San Marino, as well as research work on international trade and capital flows. Dr Vichyanond holds a Bachelor of Arts in Mathematics and Economics from Williams College and a PhD in Economics from Princeton University.

Justin LIM joined ASEAN+3 Macroeconomic Research Office (AMRO) in February 2018 and is currently the country economist for Singapore. He also supports surveillance activities of Thailand and Malaysia, and previously China and Hong Kong, China. Before joining AMRO, Mr Lim served in the Economics Department in the Bank Negara Malaysia, where he specialised in research on technology and labour, and trade and exchange rate issues. He was also an economic analyst at the Institute of Strategic and International Studies Malaysia, where he worked on housing issues and contributed to assessing the benefits and costs of Malaysia's participation in the Comprehensive and Progressive Agreement for Trans-Pacific Partnership. Mr Lim earned his masters from the University of Edinburgh, and an honours degree in Actuarial Science from Heriot-Watt University in Scotland.

HENG Koon How is Head of Markets Strategy in the Global Economics and Markets Research team at UOB, where he formulates forecasts and market views for foreign exchange (FX), commodities and interest rates. In addition to traditional FICC-related research, Mr Heng has increasingly focused on research and updates in the fast-evolving digital assets space, including cryptocurrencies, various tokens as well as central bank digital currencies.

He has more than 25 years of financial markets experience across the key asset classes. Fluent in English and Mandarin, Mr Heng actively participates in various investment seminars across the Asia Pacific region and is a regular commentator in key local and international print and broadcast media.

Prior to joining UOB in 2017, Mr Heng was a senior FX strategist at a Swiss private bank covering the Asia-Pacific region. He also worked in various global financial institutions in areas such as FX options sales, derivatives advisory and commodities structuring.

Mr Heng graduated from the National University of Singapore with an honours degree in Chemical Engineering. In 2009, he was awarded the Financial Sector Development Fund postgraduate scholarship from the Monetary Authority of Singapore to attend the Yale-Singapore Management University Master of Science in Wealth Management programme. Mr Heng is a certified Chartered Alternative Investment Analyst. In 2020, Mr Heng attended the Cryptocurrency online course at the Massachusetts Institute of Technology and in 2021, he completed the CFA Certificate in ESG Investing.