OXFORD ECONOMICS

LESSONS FROM SINGAPORE FOR SCOTLAND'S ECONOMY

A PAPER FOR THE HUNTER FOUNDATION

APRIL 2025

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FOREWORD FROM SIR TOM HUNTER

BOLD ACTION REQUIRED FOR SCOTLAND'S FUTURE

Scotland invented the modern world, so says Professor Arthur Herman of Georgetown University…

We once led the world in almost all key areas from education to invention, commerce to philanthropy… phones, TV, and penicillin all came from here, and Glasgow was the second city of the Empire.

Where are we today and what is the state of our nation? In education, we have had falling standards for the past 20 years and in 2022, according to PISA, we were 30th in maths, 14th in reading, and 32nd in science across OECD countries.

We are now behind England, not that England is the benchmark by any means…

Our health outcomes are the worst in Europe and amongst some of the worst in the world.

And we are sitting on a demographic ticking time bomb–the number of people over 85 years old will double in the next 20 years, while the number of working-age citizens will decline.

How can Scotland pay for this? The answer is we can't, unless we do something truly radical.

Our economy has been lacklustre in terms of growth, and over the past 10 years, there has been no acknowledgment that it is business and wealth creators who pay the tax that funds our education, our health and social care and our civil society.

In our opinion, Scotland has been in managed decline for decades.

So, what do we do about it? Where are the big ideas to transform Scotland?

We have an election in 2026, so we have time to discuss, debate, and put forward a plan for Scotland.

The Hunter Foundation doesn't claim to have all the answers, but we passionately believe Scotland deserves better.

We publish today some lessons from Singapore by Oxford Economics following on from our Lessons from Ireland.

And here are some truly compelling facts from Singapore juxtaposed to our once-great nation:

- Productivity per worker was £100,000 compared with Scotland's £57,000;
- Public administration, education, and healthcare account for 25% of Scotland's output and 30% of its workforce juxtaposed to a mere 7% of output and 12% of employment, respectively, in Singapore;
- Permission to build a warehouse in Singapore is 35.5 days. Here, at best 152.3 days; and
- The highest tax band in Singapore, 24%, and in Scotland, double that to 48%.

We have so much to learn with so many opportunities for Scotland, but we need to be bold and ambitious; tinkering will only yield further decline.

Scotland needs an immigration policy fit for our demographics, different to the rest of the UK. The companies with best talent win and the countries with best talent win—it's as simple as that.

We need to set out a 20-year economic plan around renewable energy, carbon capture, housing, and life sciences.

Our businesses and inward investors should have a one-stop-shop for support, with one enterprise agency and a singular focus on growth.

As Singapore shows us, we need to have a radical rethink on delivering health and social care. The focus must shift to prevention, using AI to deliver, and we must redefine how we pay for this—those of us who can pay, should. Singapore and Ireland tell us low tax regimes work; no economy has ever taxed its way to growth.

Finally, as the UK and Scottish Governments continue to punish the entrepreneurial community—the value creators—with yet more tax, a different tack needs to be taken. Nothing is free in Singapore, but here everything seems to be, and the Pound printing machine can't keep up.

To build Scotland's economy and the future for the next generation of Scots we need a low tax regime, a new model for health and social care, and a housing and planning policy that works in an accelerated manner.

Let's make Scotland a low tax economy where we welcome entrepreneurs and wealth creators. They will innovate, create new jobs, and our tax take will go up allowing Scotland to spend more on education and health care.

I love Scotland and owe it a lot. I am ambitious for my country, and the status quo is completely unacceptable. Let's come together as one and debate and define a 20-year plan to see us once again lead the modern world and let Scotland flourish once more.

Tom

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EXECUTIVE SUMMARY

Singapore provides a remarkable example of rapid economic development, based on a unique approach that largely differs from most western economies. Over the past 60 years, Singapore has transformed from a country with a GDP per capita lower than South Africa—and just a quarter of the UK's—to one of the world's most prosperous nations. Today, it boasts the eighth highest GDP per capita globally, surpassing the UK. Delving into Singapore's various strategies, there are several key takeaways that Scotland could use to further its own development.

Singapore's growth has been driven by clear, strategic policies that capitalise on its strengths and comparative advantages, enabling its economy to move up the value chain. In the 1960s, it took advantage of its relatively cheap labour force and geographical location as a trading spot to attract labour-intensive and exporting industries, such as textiles. It later shifted its focus to higher-value manufacturing, including electronics and precision engineering. By the 1990s and 2000s, it had transitioned into a knowledge-based economy, investing heavily in its own R&D and high-tech services, which it continues to do today.

Several key points define Singapore's growth model. First, it is a trade and pro-business driven economy. Singapore takes advantage of its favourable geographical location on trading routes and imposes virtually no tariffs on imports, while also being particularly attractive to multinational companies through a series of pro-business policies. Singapore offers a stable governance structure, a transparent legal system, low red tape, and low taxation.

As a result, government revenues account for under 16% of GDP in Singapore, and expenditure 21%, compared to 37% and 43%, respectively, in the UK. An explanation for lower expenditure can be found in the unique welfare system that Singapore has designed. Access to public services is typically based on a principle of co-payment (individuals paying up to a set amount, and government topping up), which is designed to emphasise individual responsibility. Healthcare is a good example of Singapore's approach to public services: patients directly contribute to paying for treatment, but personal contributions are capped, and the residual is covered by the state. Housing is another interesting example: as the main housebuilder, the state controls the supply and provides subsidised homeownership (rather than rental), allowing for over 80% of the resident population to own their home. However, access to public services is restricted to only citizens and long-term residents, whereas most foreign workers—who make up close to 30% of the population—are excluded from any welfare benefits.

Singapore has also built a strong innovation ecosystem, enabling the country to become a leading hub for R&D investment. It has leveraged the expertise of multinational corporations to develop its own capabilities, through strategic partnerships with universities, training centres, and public R&D facilities. Clear and consistent industrial and innovation strategies enable the country to set five-year plans, focusing on high-growth sectors. Significant investment in education and lifelong learning, including direct financial incentives for upskilling and reskilling, has helped build a highly skilled and employable workforce.

Overall, Singapore is an example of long-term, integrated strategic planning, identifying key high potential industries, and coordinating a suite of policies on skills, education, innovation, infrastructure, and housing that support their growth, while developing incentives to achieve economic targets. Such success is largely enabled by the nature of governance in Singapore—a small state, allowing a close-knit relationship between different ministries and agencies, and a very stable governance structure.

Singapore's institutional and economic context is pointedly different to Scotland, however, Scotland can still draw valuable lessons from Singapore's approach and adapt them within its own framework.

In particular, some important lessons emerge:

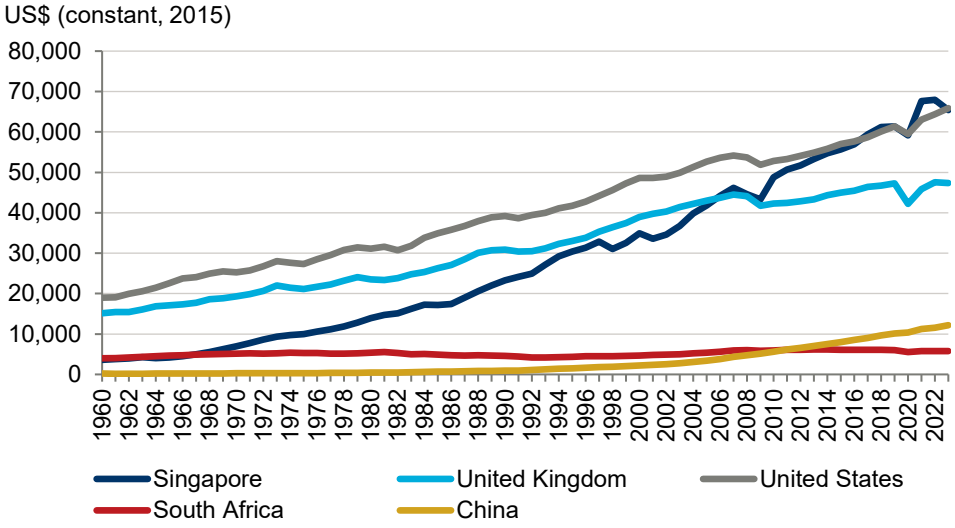
- Just like Singapore, Scotland should **develop long-term, proactive, and integrated growth strategies** that coordinate industrial, skills, and innovation efforts.
- Scotland should also focus on a **short list of high potential sectors**. In our previous report, *Lessons from Ireland for Scotland's Economy* (2023), we identified three such sectors, which we think are still relevant: renewable energy and the low carbon economy; life sciences and medical tech; and software, big data and AI.
- It should also **continue to foster a business-friendly environment**, to make it attractive for inward investment. Some thoughts for consideration drawn from the Singapore example include streamlining administrative processes; financially supporting high potential industries; further coordinating public and private R&D effort through collaboration programmes and joint university-industry training; addressing skills shortages in key sectors; and attracting high-skilled international researchers and workers.
- Finally, Scotland can take inspiration from Singapore to **improve public service delivery**. While their housing systems differ, Singapore highlights the importance of ensuring a diverse and sufficient housing supply to support economic growth and offers valuable lessons in land-use planning. Additionally, its use of digital technologies, such as telemedicine and health sensors, could be particularly beneficial for Scotland's large rural population, with health sensors playing a key role in early intervention and preventive care, helping to ease some of the pressure on the healthcare system.

1. SINGAPORE'S ECONOMIC SUCCESS

1.1 BRIEF HISTORY OF SINGAPORE'S GROWTH

Over a 60-year period, Singapore transformed from a low-income, high-unemployment economy to a high-income, diverse economy. When it gained independence in 1965, Singapore's GDP per capita was below that of South Africa, and about four times smaller than the UK. Fast forward to today, Singapore has the eighth highest GDP per capita in the world—1.4 times higher than the UK.

Fig. 1. GDP per capita, Singapore and comparator countries, 1960–2023



Source: World Bank

For many years, Singapore's growth strategy focused on attracting and supporting labour intensive industries. Singapore initially adopted protectionist policies under the Malaysian Federation, which helped kickstart its industrialisation process. However, after gaining independence in 1965, it shifted its focus towards creating export-oriented firms to drive economic growth. Import quotas and tariffs came down, while manufacturers engaged in exports were offered lower corporate tax rates or tax holidays. A pivotal institution was the Economic Development Board (EDB), which directly participated in Singapore's industrialisation by attracting businesses, granting incentives, and building the necessary industrial infrastructure—such as the Jurong Industrial Estate in the South West of the island. A cheap labour force coupled with tax incentives and low barriers to trade, located in a particularly favourable geographical region for trade, allowed Singapore's industrial sector to grow rapidly and to diversify, with key specialisation in petrochemicals, ship repair, and textiles.

By 1970, Singapore had reached full employment, to the point that it required temporary foreign workers. It therefore shifted its industrial strategy from a labour-intensive approach, in favour of more capital and skill-intensive industries. New tax reliefs were introduced to specifically target technology-intensive sectors such as computer, electronics, and pharmaceuticals. Meanwhile, the EDB offered grants to encourage firms to upskill, and opened industrial training centres. In the 1980s, Singapore was able to diversify its economy to export services, such as finance, medical, and information

technology. [1] And while this shift towards knowledge-based industries initially relied on attracting multinational firms, in the 1990s and 2000s, Singapore began to focus more on developing its own research and development (R&D) and innovation capability, strengthening its position as an international innovation hub.[2]

Today, Singapore's economy remains a large manufacturer with specialisation in advanced manufacturing, as well as a regional and global centre for services.

1.2 SINGAPORE'S ECONOMY TODAY AND COMPARISONS TO SCOTLAND

In 2024, Singapore's Gross Value Added (GVA) amounted to £400.5 billion compared to £167.0 billion for Scotland.[3] The Singaporean economy has also grown at a particularly rapid rate. Between 2009 and 2019, it experienced an average growth rate of 7.6% per year, while Scotland's economy grew by just 1.5% per year on average over the same period. Singapore's economy also showed significant resilience during the Covid-19 pandemic, mainly due to the government's ample fiscal reserves. This allowed for substantial spending on fiscal support and public health measures.

In 2024, Singapore's economy was reliant on a small number of sectors that reflect its historical growth pattern and current position in the global economy as a hub of international trade, high-tech manufacturing, and financial services:

- **Trade and logistics** represent a third of Singapore's output, including wholesale & retail trade (the largest single sector in output terms) and transportation & storage. The vast majority of trade (95%) is wholesale, which is likely related to imports and exports, considering the relatively small size of the local demand and the importance of Singapore as a trading hub.
- **Manufacturing** is also significant, accounting for almost 20% of Singapore's output. Singapore's manufacturing strength largely lies in its capabilities in high-value, advanced manufacturing activities. Indeed, the sector has a specialisation in electronics, led by semiconductors, which made up over 30% of manufacturing output in 2023.[4] Precision engineering, which plays a critical role in the semiconductor supply chain, employed almost a quarter of Singapore's manufacturing workforce in 2023. Meanwhile, biomedical manufacturing constitutes roughly 10% of Singapore's manufacturing output. Overall manufacturing activities are largely targeted for exports: according to the EDB, in 2022, 70% of manufacturing output resulted in direct exports.
- **Financial & insurance activities** is another major sector, accounting for close to 13% of GVA in 2024. Similar to manufacturing, the sector is largely internationally led, with 77% of the assets under management in Singapore coming from abroad.[5]

[1] Philip Yeo, International Monetary Fund, "Chapter 3. Going Beyond Comparative Advantage: How Singapore Did It". In Breaking the Oil Spell, 2016. Accessed March 2025

[2] Hank Lim, Economic Research Institute for ASEAN and East Asia, "Chapter 7. Innovation Policy in Singapore". In Innovation Policy in ASEAN, 2018. Accessed March 2025

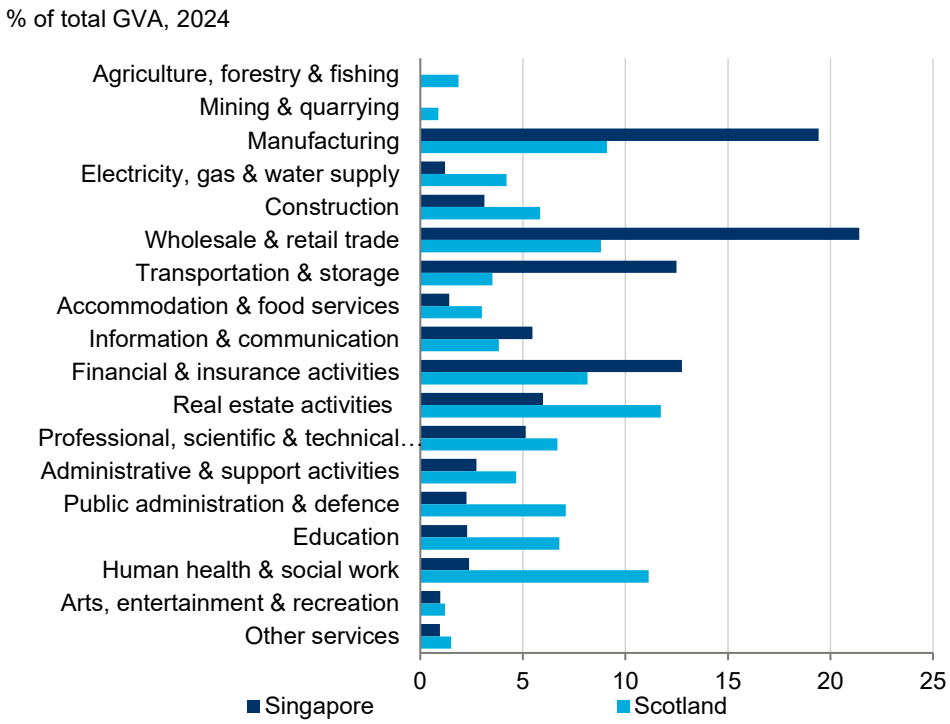
[3] Gross Value Added (GVA) is a measure of the value of goods and services produced in an economy.

[4] Singapore Department of Statistics

[5] Monetary Authority of Singapore, "Singapore Asset Management Survey 2023", 2023

- **Information & communication**, although more limited in size (accounting for 6% of output) has consistently outpaced overall economic growth since 2018. Singapore has a strong tech sector, and the country is now focusing on developing research in Artificial Intelligence (AI).

Fig. 2. GVA by industry, Singapore and Scotland, 2024



Source: Oxford Economics

In contrast, Scotland's economy is more diverse and less reliant on a handful of sectors. Manufacturing is a large sector in Scotland, accounting for 9% of total output. However, Scotland has less of a focus on advanced manufacturing activities such as electronics. Instead, it specialises in more traditional manufacturing sectors such as food and beverages; this includes whisky distilleries, which comprise 27% of manufacturing output. That said, one similarity between Scotland and Singapore's manufacturing industries is the growth of basic pharmaceutical activity. In Scotland, basic pharmaceuticals recorded average GVA growth of 5.8% per year between 2015 and 2024, exceeding the 3.6% growth recorded by the UK as a whole, and largely contrasting the overall decline in the manufacturing industry (-0.3% per year on average).

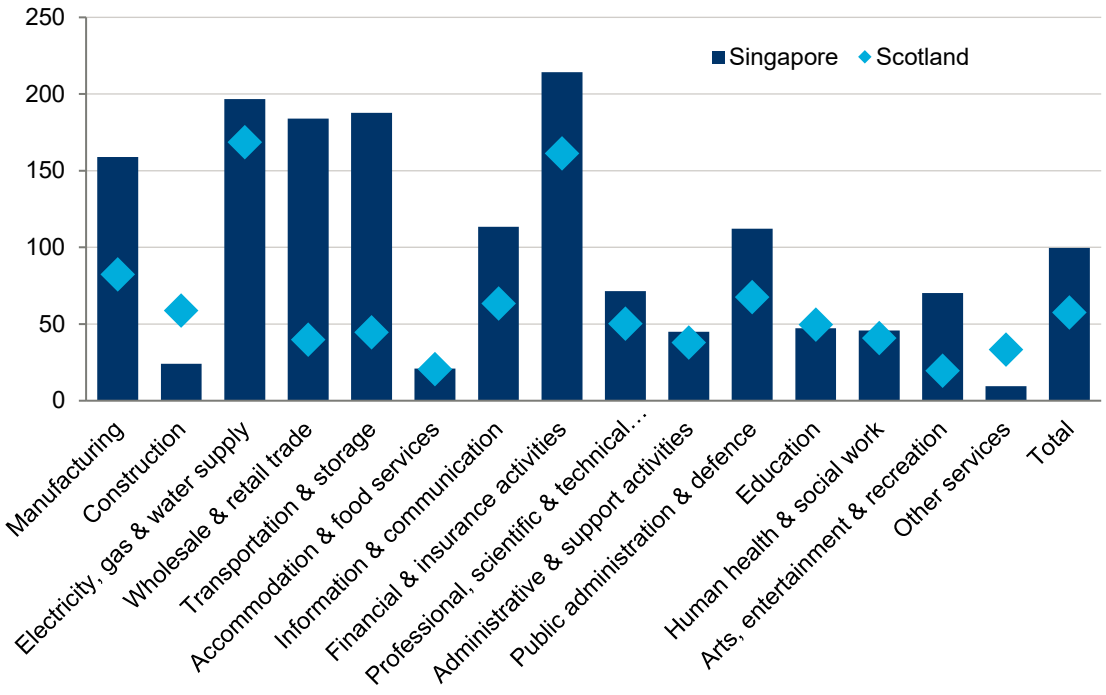
There are also comparisons to be drawn between the two countries' service sectors. Wholesale & retail trade is one of the largest sectors in Scotland, but contrary to Singapore, it is mainly focused on retail (51%) rather than wholesale. The share of professional, scientific & technical services is larger in Scotland than in Singapore, however, the sector has been growing at a faster pace in Singapore over the 2015–2024 period (3.3% per year on average, compared to 0.8% in Scotland). Moreover, Scotland has a stronger presence in public services compared to Singapore. Public administration, education, and healthcare altogether account for 25% of Scotland's output, and 30% of its workforce. In Singapore, these three sectors represent just 7% of GVA and 12% of employment.

Productivity is another area where the Singapore economy performs particularly well. In 2024, Singapore's productivity (measured as GVA per worker) was approximately £100,000, exceeding Scotland's (£57,000) by nearly 75%. Lower productivity levels can partly be attributed to Scotland's industrial specialisation, which relies less on high-value activities such as financial & insurance and information & communication. However, the productivity gap is not solely due to specialisation and is also reflected *within* most sectors. For instance, Scotland's manufacturing sector is only half as productive as Singapore's, while Scotland's information & communication sector is 44% less productive.

Specifically, subsector specialisation is likely to play an important role in productivity outcomes. For example, as mentioned earlier, Scotland's manufacturing sector is largely driven by food and drink, whereas Singapore's is centred on advanced electronics and biomedical.

Fig. 3. Productivity by selected industry, Singapore and Scotland, 2024

GVA per worker, 2024 (£ thousands, 2022 prices)



Source: Oxford Economics

Singapore's unemployment rate at 2.0% in 2024 is below pre-Covid-19 levels and compares well to other advanced economies, including that of the other "Asian Tigers" (South Korea, Hong Kong, and Taiwan) and the G7 average (5.0%). It has not returned to the 4.0% peak recorded in 2003, and the spike in unemployment during the global financial crisis was relatively contained. In contrast, Scotland's unemployment rate soared in 2008–2009, although it has trended downwards since then and at 3.9% in 2024, is marginally lower than the UK average (4.3%). Fig. 4 below provides a summary comparison of key indicators for Scotland and Singapore in 2024.

Fig. 4. Summary indicators, Scotland and Singapore, 2024

Indicator	Scotland	Singapore
Population (total)	5,554,080	6,003,270
Working-age population (total)	3,525,700	4,274,130
GVA (£ million)	166,982	400,471
Employment (total)	2,909,060	4,021,180
Productivity (£)*	57,401	99,590
Unemployment rate (%)	3.9	2.0

Source: Oxford Economics. * Productivity here refers to GVA per worker

2. KEY FEATURES OF THE SINGAPORE MODEL

2.1 BUSINESS FRIENDLY ENVIRONMENT CENTERED ON TRADE

Singapore built its economy around trade, taking advantage of its geographical position in between East Asia (through the South China Sea), and South Asia, the Middle East and Europe (through the Malacca Strait, the Indian Ocean and the Suez Canal). To enhance this trading position, the Singapore model relies on: (1) attracting inward investment through pro-business policies and a favourable business environment; and (2) trade-oriented policies, involving low tariffs and barriers to trade.

This model has enabled Singapore to become an important manufacturing hub, initially attracting investment in labour-intensive industries before moving on to technology-intensive production, which then took advantage of favourable trade policies to export elsewhere in the world. In the last 40 years, Singapore has diversified its economy towards services, including financial services.

2.1.1 Attracting inward investment with pro-business policies

Attracting inward investment has been central to the country's growth strategy. In 2023, the stock of foreign direct investments (FDI) accounted for more than four times the size of Singapore's economy. Investments were largely focused on finance & insurance, wholesale & retail trade, and manufacturing, particularly in computer and electronics. [6,7]

To attract FDI, Singapore developed an environment particularly suitable for businesses, including low tax rates (Section 2.1), world-class infrastructure (Section 2.5), and a skilled workforce (Section 2.6). It also offers a stable governance structure, with relatively predictable and consistent policymaking that is based on a strong and transparent legal system. In 2024, Singapore ranked third worldwide in the Corruption Perceptions Index, just behind Denmark and Finland. The country also encourages entrepreneurship, as evidenced by its high ranking on ease of doing business.[8] According to the World Bank, it required just two procedures, taking on average 1.5 days to complete, for someone to register a company in Singapore, compared to an average of five procedures and over 9 days in OECD high-income countries. Building a warehouse, including dealing with construction permit, took 35.5 days compared to 152.3 across OECD high-income countries.[9]

The combination of these factors—such as taxation, infrastructure, skilled workforce, stable governance, strong legal protection, and low corruption—makes Singapore one of the most

[6] Singapore Department of Statistics, "Foreign Direct Investment in Singapore 2023", 2025. Accessed March 2025
[7] Singapore Department of Statistics, "Foreign Direct Investment in Singapore Dashboard", Data downloaded March 2025
[8] See the latest World Bank Business Ready report, in which Singapore ranks first in operational efficiency: World Bank, "B-Ready 2024", Accessed March 2025
[9] World Bank, "Doing Business Archive", 2021. Accessed March 2025. Note that the World Bank discontinued the Doing Business Indicators in 2021 and data has therefore not been updated since. These should be used indicatively.

competitive places to do business in the world. In 2024, the country ranked first in the IMD World Competitiveness ranking. For comparison, the UK ranked 18th.

2.1.2 Trade-oriented policies

The total value of trade in Singapore, including both imports and exports of goods and services, reached almost $US 1,800 billion in 2024, equivalent to over three times the country's GDP. Even after accounting for re-exports (goods that are imported and re-exported with little or no processing, and which are estimated to account for 60% of exports), total trade is still high.

In contrast, total UK trade was worth $US 2,200 billion in 2024 equivalent to only 60% of the country's GDP. In Scotland, total trade was valued at £107.9 billion, representing 66% of Scottish GVA.

Tariffs are almost non-existent in Singapore. The country applies zero tariffs to almost all imported products, with only a few exceptions, such as certain alcoholic beverages (which also face additional excise taxes). By comparison, in the UK, standard tariff rates that are applied under Most-Favoured-Nation (MFN) rules have a trade-weighted average of 3.5%, and 53% of all product types can enter the UK duty-free.[10]

Fig. 5. Summary of tariffs on imports, Singapore and comparator markets, 2024

	Trade-weighted MFN average	Share of MFN duty-free	Best preference trade-weighted average
Singapore	0.0%	100.0%	0.0%
United Kingdom	3.5%	53.0%	0.9%
European Union	3.0%	29.4%	1.3%
United States	2.2%	47.5%	1.2%

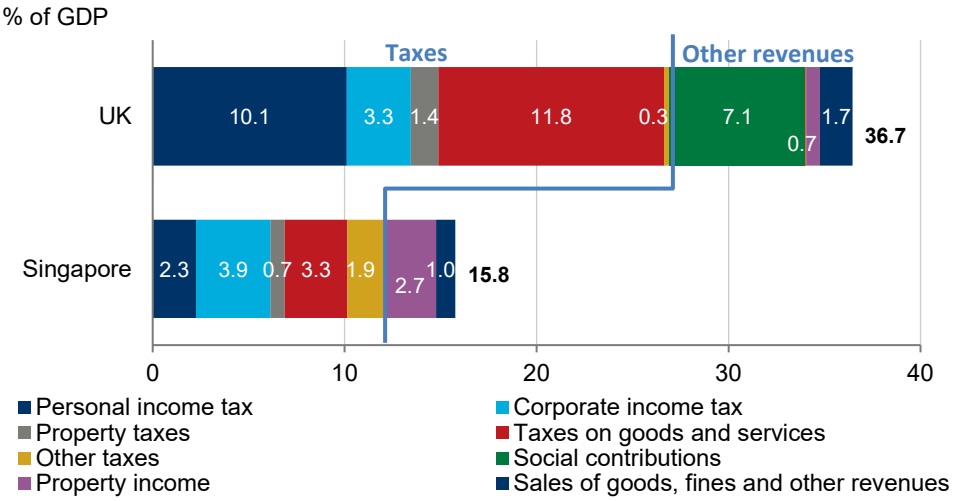
Source: World Trade Organization.

2.2 LOW LEVEL OF TAXATION

Singapore's level of taxation is also low relative to other countries. Total government revenues account for under 16% of GDP, including 12% from taxes. The UK equivalent is about 37%, with taxes specifically accounting for 27%. The largest source of revenue in Singapore comes from corporation tax, which is equivalent to about a quarter of the country's revenue. There are also important gains from taxation on goods and services, as well as property income (a result of Singapore's unique housing delivery system, as explained in Section 2.5). In contrast, the UK relies more significantly on revenues from personal income and goods and services. A large share of revenue also comes from social contribution—which, as explained in Section 2.3, is not accounted the same way in Singapore.

[10] Most-favoured-nation (MFN) tariffs refer to the standard, non-discriminatory tariffs that a country applies to imports from other World Trade Organization (WTO) members. Under WTO rules, countries must treat all trading partners equally, granting them the same "most-favoured-nation" status. This means any tariff reduction or trade advantage given to one WTO member must be extended to all other members.

Fig. 6. Government revenues as a share of GDP by category, 2022



Source: IMF. Note: Other taxes include stamp duty, as well as gambling duty and casino tax (for Singapore)

Tax rates tend to be lower in Singapore, although comparisons are complicated by varying rates, exemptions, and tax structures. As a purely indicative example, Singapore's Goods and Services Tax (GST), a consumption tax roughly equivalent to VAT, is currently set at 9%, whereas the standard VAT rate in the UK is 20%.[11] Meanwhile, the highest tax band on personal income has a rate of 24% (for revenues over SGD $1 million) in Singapore, compared to 45% in the UK and 48% in Scotland (for revenues over £125,140). Comparing company taxation is more complex. In Singapore, companies are taxed a flat rate of 17% on their chargeable income, whereas in the UK, the rates for corporation tax are set at 19% and 25% of profits. There are many exemptions and reliefs in both countries, and a thorough analysis would be beyond the scope of this report—however, data suggest a roughly similar proportion of gains in both countries (Fig. 6).

2.3 SMALL PUBLIC SECTOR AND A UNIQUE WELFARE SYSTEM

Singapore has a relatively small government compared to most western countries. The IMF estimates that government expenditures accounted for 20.5% of GDP in 2022, compared to 42.8% in the UK. Meanwhile, government expenditure in OECD countries average 48% of GDP. Importantly, government expenditure statistics are difficult to compare across countries, and the specific Singaporean model of public finance might not compare perfectly.[12, 13]

For comparison purposes, Fig. 7 looks at government expenditure by category in Singapore and in the UK, as a share of GDP. The chart shows higher relative expenditure on economic affairs in Singapore—which includes industrial policies, energy, transport, R&D, and environment. Economic development is indeed an important priority for the government, with the Economic Development Board (EDB) playing a central role in developing strategies to attract investment and support industries. The UK

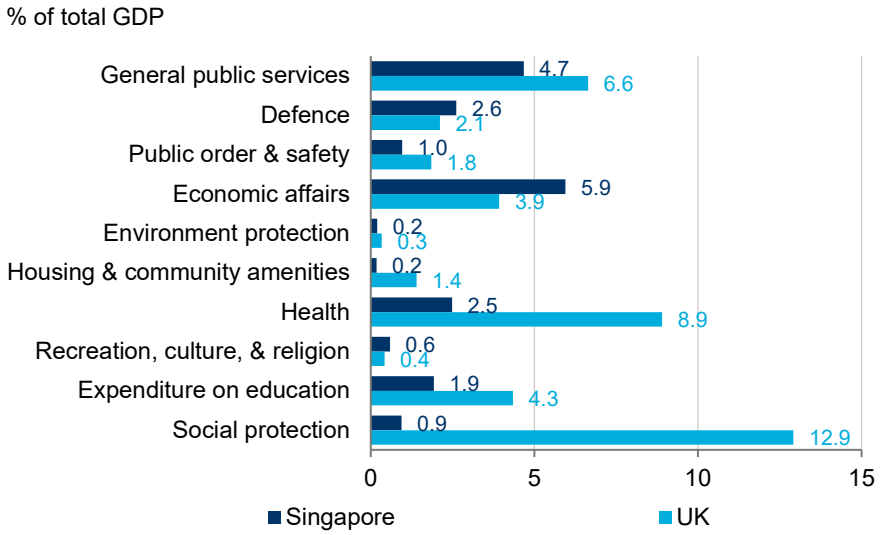
[11] Inland Revenue Authority of Singapore, "Prevailing GST rate". Accessed March 2025

[12] For instance, public expenditure typically excludes the Central Provident Fund (CPF), which is Singapore's mandatory social security scheme.

[13] International Monetary Fund, "Government Finance Statistics Manual 2014", 2014. Accessed March 2025

stands out for its significantly higher spending on health and social protection, however, as noted above, expenditure in Singapore might be somewhat underestimated.

Fig. 7. Government expenditure by category as a share of GDP, 2022



Source: IMF

Singapore's welfare system partly explains this outcome. The system emphasises individual responsibility and requires people to pay into a personal saving account called the Central Provident Fund (CPF).[14] The funds are invested and offer a return at a favourable rate, however, they can only be used for three purposes: healthcare, housing, and retirement. While access to services typically requires personal expenditure (through their CPF account or out-of-pocket), the government often steps in—for instance, in the case of large healthcare bills, or access to housing grants for public housing. Subsidies are also available on top of CPF contributions, further lowering the cost of healthcare, housing, and education. We describe in further detail how Singapore's healthcare, housing and education systems work in Sections 2.4, 2.5, and 2.6, respectively.

The welfare system is also policy targeted rather than universalist (like in most European countries). For instance, there are no unemployment benefits or minimum wage. Instead, individuals are encouraged to find a job and can then benefit from upskilling programmes (such as the Progressive Wage Model, which incentivises employers in certain sectors to provide training), or revenue supplements to boost their CPF scheme.[15] While tying welfare policies to employment has kept labour participation high, some economists argue that transfers remain small and may be inadequate to support the most vulnerable residents.[16, 17]

[14] Ron Haskins, Brookings, "Social Policy in Singapore: A Crucible of Individual Responsibility". 2011. Accessed March 2025
[15] Arabella Woo, LSE International Development Review, "Inequality in Singapore", 2022. Accessed March 2025
[16] National University of Singapore, "Self-Reliant Wealth and Trickle-Down Welfare: The Singapore Story in 200 Years?", 2022. Accessed March 2025
[17] Global Is Asian (Lee Kuan Yew School of Public Policy), "Social Welfare Policies in Singapore: Are They Working?", 2018. Accessed March 2025

Importantly, social support is largely targeting Singaporean citizens, who account for 60.3% of the total population. Permanent Residents (8.9% of total population) have access to most features of the welfare system, such as the CPF account, but the level of subsidies they have access to is lower. Non-residents (30.7% of the population), who typically work on a temporary visa tied to a job, do not have access to most social policies and have to pay the full price. Although Singapore remains a country with exceptionally low public expenditure and revenues relative to its economic success, several reforms have been introduced in the past decade, in anticipation of slower economic growth and an ageing population, with government expenditure likely to rise in response to these pressures.[18]

2.4 A MARKET DRIVEN HEALTHCARE SYSTEM

Singapore's health standards rank among the highest in the world. In 2021, Singapore had life expectancy at birth of 86.3 years for females and 81.6 years for males, according to the World Health Organisation (WHO). In Scotland, the ONS estimates life expectancy at birth of 80.8 years for females and 76.8 years for males. However, the gap is wider when looking at healthy life expectancy, which is the average number of years a person can expect to live in "full health", with females in Singapore enjoying 14 more years of healthy life and males 12 years more than Scottish residents, as shown in Fig. 8. Singapore also ranks well on many other health indicators. For instance, obesity is low at 10.5% in 2020, whereas the latest results from the Scottish Health Survey points to almost a third of adults living with obesity in 2024. [19,20]

Fig. 8. Life expectancy and healthy life expectancy, Singapore and Scotland

Life expectancy at birth		Healthy life expectancy	
Singapore (2021)	Scotland (2019-21)	Singapore (2021)	Scotland (2019-21)
86.3 years (Female)	80.8 years (Female)	75 years (Female)	61.1 years (Female)
81.6 years (Male)	76.8 years (Male)	72.4 years (Male)	60.3 (Male)

Source: WHO, ONS

But along with excellent health outcomes, Singapore also spends significantly less on healthcare. In 2022, health expenditure per capita reached US$4,321 in Singapore, compared to US$5,036 in the UK.[21] Total expenditure on health represented 4.9% of GDP, in contrast to 11.1% in the UK. This figure includes both public and private expenditure, with a system that is widely different between the two countries: in Singapore, government intervention accounts for 57% of total health expenditure, whereas in the UK, the government covers up to 83% of the total.[22] Indeed, the Singapore system relies on a shared responsibility between individuals and the government, blending market

[18] OECD, "Budgeting in Singapore in 2025", 2025. Accessed March 2025
[19] Cabinet Secretary for Health and Social Care, "The Scottish Health Survey 2023 – volume 1: main report", 2024. Accessed March 2025
[20] Obesity Policy Engagement Network, "Obesity in Singapore – an overview". Accessed March 2025
[21] World Health Organisation, "Global Health Expenditure database". Accessed March 2025
[22] As previous footnote

mechanisms with public health support, which makes it difficult to compare with a universal system like the NHS.

The main features of the Singapore system are the following:

- **A system of co-payment, with a safety net:** residents contribute monthly to a saving scheme called Medisave. The scheme is tax free and pays interest. Patients use their Medisave account to pay for less expensive healthcare, up to a certain threshold. Beyond the threshold, MediShield Life (the national health insurance scheme) kicks in. MediShield is also based on co-payment: patients must pay a deductible—an amount of money that has to be paid out-of-pocket by the patient. How much an individual pays depends on their age and income, and there is also an annual threshold on total spending. Finally, there is a safety net called MediFund, which is unlocked when individuals struggle to pay even after the other funding mechanisms have been used.
- **Patient individual responsibility in healthcare:** The system is said to allow patients to take personal responsibility of their healthcare, as they directly contribute to paying for treatment. In contrast, in the Beveridge (UK) and Bismarck (Germany, France) healthcare models, the link between treatment costs and individual payment is weakened, as the recipient of care is not directly responsible for the cost. This separation can create an agency problem, where patients have little incentive to consider the financial implications of their care.
- **Competition among providers:** healthcare provision is largely decentralised. Public and private hospitals compete between one another for patients. Competition helps to regulate price growth and encourage healthcare providers to be more efficient. The system also allows for a large array of services at varying prices. Patients can choose their place of treatment, at the level of service they prefer (luxury private hospital, higher class of amenities in a public hospital, or basic shared ward at a lower cost but higher level of subsidy).[23] This in turns allows cross-subsidisation, where patients who pay for higher amenities indirectly subsidise care for lower-income patients.
- **A system limited to the resident population:** the system described above is only available to Singapore's resident population, which includes citizens and permanent residents, and represent 69.2% of the total population. The sizeable non-resident population, which includes foreign workers on a visa and foreign students, do not have access to the system and rely fully on private insurance.

2.5 QUALITY HOUSING AND INFRASTRUCTURE

Singapore is the third-most densely populated country in the world. As of 2023, it had 8,500 people per square kilometre compared to 283 in the UK, and just 70 in Scotland. As a result, land for housing is at a premium in the city state, and hence the government has historically taken an active role in homebuilding. The national Housing and Development Board (HDB) is the public housing authority that has been responsible for building much of the country's housing stock over the past 60 years. As of 2020, 79% of all resident households (households in which the head is a citizen or permanent

[23] Martin Vlachunsky, Matej Barta, European Policy Information Centre, "Why Singapore's Healthcare System is Unique", 2023. Accessed March 2025

resident) lived in a HDB flat.[24] Benefitting from the economies of scale that come with large scale construction, as well as political will and state resources (the state is estimated to control over 80% of the landmass), the agency has been an effective home builder since independence.[25] Between 2023 and 2025, around 100,000 homes are expected to be built in Singapore by both public and private sources.[26]

This trend has meant housebuilding has kept pace with Singapore's growing population over the past few decades. Between 2005 and 2023, Singapore's population grew by over 37%, while the number of dwellings climbed 40%.[27]

A key feature of Singapore's public housing model is that it provides subsidised homeownership, rather than rented property. As a result, owner-occupiers account for 88% of the resident household whereas in Scotland owner-occupiers account for 61% of total dwellings.[28] First-time buyers have access to Build to Order (BTO), which are subsidised new flats. Residents can apply for a flat before they are constructed, with waiting times sometimes taking several years. Certain restrictions apply to the use of the new flat, including a mandatory five-year waiting period before resale, to prevent speculation and limit price inflation. Resale flats are more expensive, but grants are also available, mainly for first-time buyers. HBD develops Executive Condominiums (EC), which specifically target middle-income households who do not qualify for traditional public housing but still struggle to buy in the private sector. These are built by private developers but come at a lower purchasing price due to government subsidies. They also tend to be located further away from amenities and public transport, where land value is lower.

Another important feature of the HBD estates is that they are aimed at fostering a social mix of residents. Flats are designed to accommodate a variety of household types, including young families, elderly citizens, and single persons, with varying income levels.

A source of financial assistance available for Singaporeans is to borrow against the savings in their Central Provident Fund (CPF). Data show that nearly 80% of first-time buyers use their CPF to cover mortgage payments, helping to make accessing the property ladder more achievable.[29]

Singapore's approach extends beyond the supply of public housing and includes the development of new towns, with a mix of residential and commercial spaces. This is increasingly being done with the environmental footprint in mind. Around 20% of the country's carbon emissions are accounted for by its buildings.[30] The aim is to reduce this footprint through the Green Building Masterplan, which aims for 80% of all buildings to be eco-friendly by 2030. Indications are that in 2022 over half of all

[24] Department of Statistics Singapore "Population Trends 2021", 2021. Accessed March 2025
[25] Edwin Loo, the Financial Times, "The Secret of Singapore's Development Masterplan", Accessed March 2025.
[26] Michelle Ng, The Straits Times, 'We will turn the corner soon': Desmond Lee says nearly 100,000 homes slated to be ready by 2025", 2024. Accessed March 2025
[27] Scotland Ministry of Housing "Housing statistics for Scotland quarterly update", 2024. Accessed March 2025
[28] However, the Singapore figures exclude non-resident households, with many short-term migrants living in rented accommodation.
[29] Singapore Government, "5 Things to know about public housing in Singapore", 2024. Accessed March 2025
[30] Singapore Building and Construction Authority, "Green Buildings". Accessed March 2025

buildings had hit this target.[31] Singapore is also known for the quality of its infrastructure. It scored fourth for this pillar in the latest World Competitiveness Rankings while the UK ranked 22nd.[32] In 2022, transport projects accounted for 45% of the government's total development budget. The country has invested heavily in infrastructure, in part to maintain the city's attractiveness to outside investors and foreign talent. Long-term planning forms a central pillar of the government's infrastructure vision to ensure that the limited land available is used efficiently.[33]

2.6 A HIGHLY EDUCATED WORKFORCE

Singapore has a highly educated workforce. Since independence, the country has invested heavily in educating its workforce; acknowledging that the lack of natural resources meant that investing in human capital was key to long-term economic success. Today, the country's school students routinely top the global PISA rankings for academic performance. In 2022, Singapore students averaged the highest score across all three components, as seen below.

Fig. 9. PISA student assessment scores, Singapore, Scotland, and UK, 2022

	Overall Score	Mathematics	Science	Reading
Singapore	1679	575	561	543
Scotland	1447	471	483	493
United Kingdom	1483	489	500	494

Source: OECD

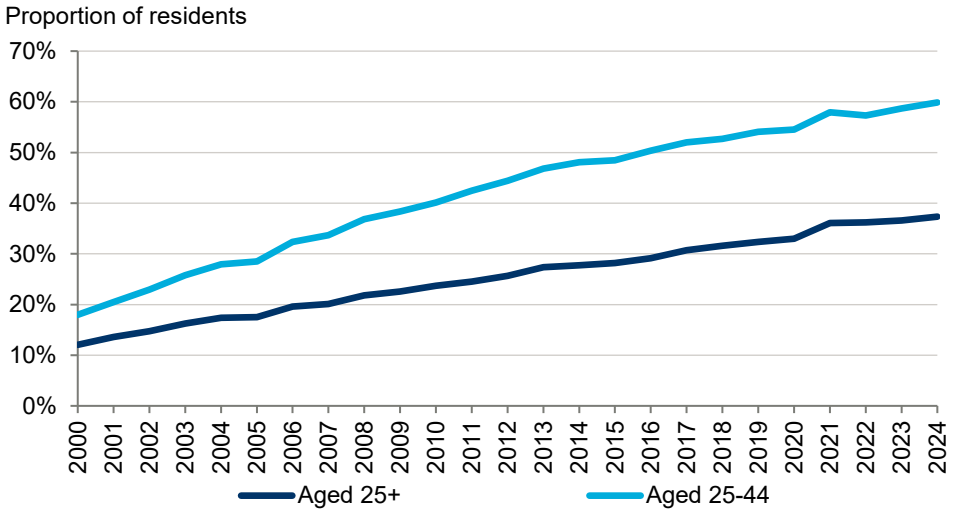
By contrast the performance of students in Scotland ranks below the UK average and the scores in maths and science have been declining over the past 20 years. From a high of 515 in 2006, Scotland's science score has fallen to 483 in the latest tests, while Singaporean student performance has been improving (Fig. 9). Notably, Scotland's falling performance comes despite increased spending on education. IFS analysis shows that total real terms spending on schools in Scotland increased by 27% between FY 2015–2016 and FY 2023–2024,[34] and per pupil spending has increased considerably over the period.

Singapore's educational performance is further reflected in the increasing number of Singapore's youth who are studying for longer. The average duration of schooling for adults aged 15–64 stood at 13.1 years in 2020, according to the World Bank, placing Singapore in the top 10 countries globally (and ahead of the UK average).[35] Meanwhile, uptake of tertiary education has also soared since the start of the century. The proportion of resident adults aged 25 to 64 who have been educated to university level grew from 13% in 2000, to 47% in 2024. And among residents aged 25–44, 60% held a

[31] World Future Energy Summit, "Singapore: Transforming the built environment", 2016. Accessed March 2025
[32] IMD, "World Competitiveness Ranking 2024", 2024. Accessed March 2025
[33] ICE, "How Singapore uses data to deliver its infrastructure vision", 2024. Accessed March 2025
[34] Luke Sibieta, Darcey Snape, Institute for Fiscal Studies, "Scottish school spending, teachers and pupil numbers", 2025. Accessed March 2025
[35] Our World In Data, Average years of schooling. Accessed March 2025

university degree in 2024. Scotland also has a well-educated population, and OECD data indicate 56% of adults aged 25 to 64 had tertiary level education in 2023.[36]

Fig. 10. Singapore residents with university education, 2000–2024



Source: Singapore Department of Statistics

Singapore's improving outcomes follow the significant investment made in its education system. In 2022, spending on education (across all levels, from primary through to tertiary and technical) accounted for 12.5% of total government expenditure.[37] This compares to 9.4% in Scotland.[38] The government has put in place a wide array of grants and subsidies to incentivise education:

- Every primary and secondary student has an Edusave account, in which they receive between S$230 and S$290 per year to be spent on extra-curricular programmes, school-related fees, or learning devices.[39] Additional Edusave awards and scholarships can be attributed based on academic results, progress, or other qualities such as leadership.
- Post-secondary education is mainly supported via the tuition grant scheme, which provides significant subsidies on tuition fees. Many awards and scholarships are also available.
- Lifelong learning is highly encouraged. Every Singaporean aged 25 and above receives a S$500 credit (about £290) to be used on upskilling or reskilling, as part of the SkillsFuture Singapore (SSG) programme. Singaporeans above 40 years old receive a top-up of S$4,000 credits (about £2,300), supporting more substantive training. SkillsFuture credits can be used on top of other grants or government subsidies. Singapore has an important network of Continuing Education and Training (CET) centres, which provide lifelong learning education.

As with other public services, access is restricted to residents (citizens and permanent residents), whereas migrants on a working visa and foreign students pay full price for education services.

[36] OECD Data Explorer, "Educational attainment - Regions". Accessed March 2025
[37] Department of Statistics Singapore, "Public Finance". Accessed March 2025
[38] Scottish Government, Government Expenditure and Revenue Scotland 2022-23, Table 3.1". Accessed March 2025
[39] Singapore Ministry of Education, "Edusave Account". Accessed March 2025

There is also a cultural ethos around the importance of education; academic success is highly valued, and a recent survey showed the high regard in which Singaporeans hold their education system.[40] Indeed, the share of household expenditure on education-related goods and services is much higher in Singapore (4%) than Scotland (1.6%), with private tuition a growing industry.[41]

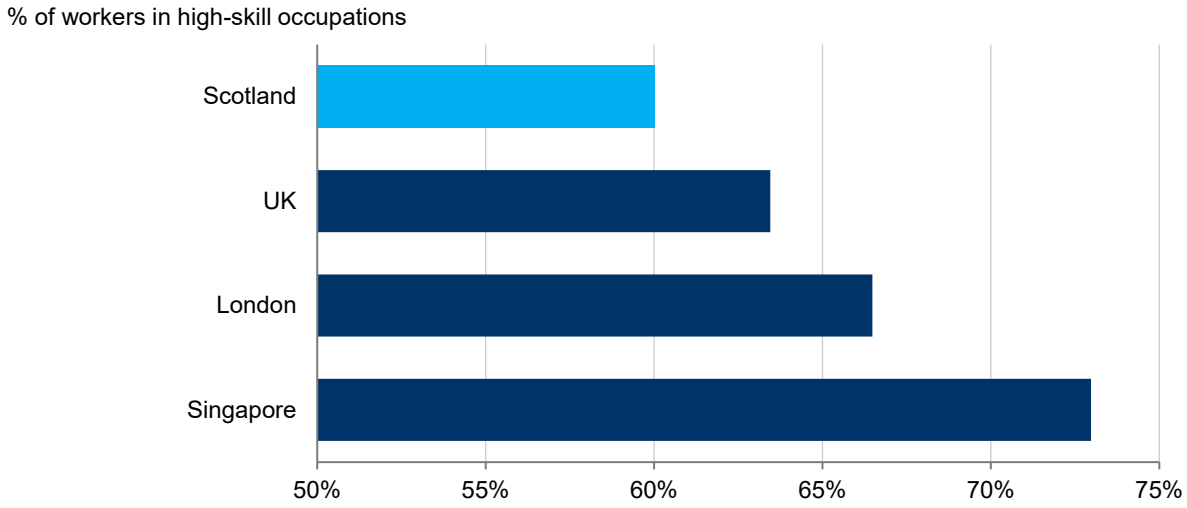
Besides financial expenditure, Singapore's strategy has also been to focus education and skills training in strategic areas. Manufacturing remains a huge part of the Singapore economy, and as such, technical and vocational training opportunities are plentiful. Data show Singapore produces more graduates with diplomas than bachelor's degrees.[42] Furthermore, students studying engineering, IT, maths, and science accounted for 41% of first degree/diploma graduates in 2023. A focus on science, technology, engineering, and maths (STEM) subjects helps foster a well-educated workforce to support the high-value, high-growth sectors of the economy. The government's Applied Learning Program (ALP) contains a STEM strand, with the intention to help students develop real world skills through the classroom from a young age.

Singapore's attitude to migration also plays a crucial role in its skills base. Data from the World Bank show that international migrants comprised 45% of Singapore's population in 2025. This compares to 13% for the UK.[43] Singapore has been successful at attracting talented people from around the world. Lifestyle factors, high quality housing, and employment and business opportunities have all helped attract migrants to Singapore. The country's reputation as a business hub has seen global businesses set up regional offices there, with young, cosmopolitan and educated migrants following. By contrast, Scotland has seen its working-age population fall since the financial crisis highlighting its need for increased inward-migration. The international migrants Scotland does attract are typically highly educated, with many young and university educated people moving there. However, migration of graduates to other parts of the UK is an ongoing risk to Scotland's human capital stock.

Overall, while Scotland has a well-educated workforce, with proportionately more holders of tertiary education than the UK, fewer high-skilled people are employed in the private sector. Fig. 11 below shows 60% of workers in high-skill occupations (managerial and professional roles) are employed in the private sector in Scotland, as compared to 66% in London, and 72% in Singapore. This represents a potential challenge for Scotland in the utilisation of its skills base.

[40] IPSOS, "Singaporeans hold high opinion of teachers and the local education system", 2023. Accessed March 2025
[41] National University of Singapore, "Tuition has ballooned to an S$1.4b industry in Singapore. Should we be concerned?", 2019. Accessed March 2025
[42] Singapore Department of Statistics. Data downloaded March 2025
[43] World Bank, "International migrant stock, % - Singapore and UK". Data downloaded March 2025

Fig. 11. Share of workers in high-skill occupations employed in private sector, 2024



Source: ONS, Singapore Department of Statistics

2.7 A STRATEGIC FOCUS ON RESEARCH AND INNOVATION

Innovation is integral to the success of the Singapore economy. It has consistently ranked among the top 10 nations of the Global Innovation Index since 2020, and in 2024 was ranked fourth worldwide.[44] The country leads the rankings for 14 indicators, including regulatory quality, policy stability for doing business, ICT access, logistic performance, and high-tech manufacturing.[45]

Singapore's focus on skill- and capital-intensive industries only started in the 1980s, as it reached full employment and needed to turn from an extensive growth model, which relied on expanding inputs like labour, to an intensive growth model, which focuses on increasing productivity to produce more with the same inputs. The country started to attract multinational companies producing higher-value goods—particularly in electronics, computers, and pharmaceuticals—by offering attractive tax incentives. It also invested significantly in education and upskilling the workforce. The presence of multinational companies allowed for knowledge to transfer and diffuse along the supply chain, strengthening local capabilities.[46] However, in the 1990s Singapore began implementing an organised and proactive strategy to foster homegrown innovation, rather than relying solely on foreign innovation.

And although R&D spending has risen sharply since the 1980s, more crucial is how this investment has been directed to build innovation clusters in sectors like electronics, logistics, finance, marine engineering, and healthcare. Indeed, some of the key features of the Singapore model include:

[44] World Intellectual Property Organisation, "Singapore Ranking in the Global Innovation Index 2024"., 2024. Accessed March 2025
[45] World Intellectual Property Organisation, "Global Innovation Index 2024 results", 2024. Accessed March 2025
[46] Hank Lim, Economic Research Institute for ASEAN and East Asia, "Chapter 7. Innovation Policy in Singapore". In Innovation Policy in ASEAN, 2018. Accessed March 2025

- **Clear strategic targets and ambitions:** since its first National Technology Plan in 1991, Singapore has maintained a clear, long-term innovation strategy, updated every five years. The latest plan—Research, Innovation and Enterprise 2025 (RIE2025)—was launched in 2021. The RIE framework forms a core part of the country's development agenda, and its long-term orientation ensures policy stability and investment focus in areas of interest. Singapore has also developed other targeted plans, such as an intellectual property strategy (SIPS 2030) and a National AI Strategy.
- **Innovation for economic growth:** The RIE targets specific sectors where Singapore has competitive capabilities, as well as where research can translate into solutions for the national economy. As such, RIE investments are closely aligned with broader national development goals. For example, the government has prioritised and invested in areas like smart city solutions and healthcare technology—not only to stimulate innovation and attract private investment, but also to enhance infrastructure and services in these sectors.[47] The current RIE2025 looks at four sectors: manufacturing, trade and connectivity; human health and potential; urban solutions and sustainability; and smart nation and digital economy.[48]
- **Significant coordination from the public sector:** the Agency for Science, Technology and Research (A*STAR) is in charge of undertaking and supporting research in its innovation campuses, investing in projects and infrastructure that align with the RIE strategy, and supporting technological adoption by businesses.[49]

2.8 SMART GOVERNANCE

Singapore is widely known for being a "smart city"—which the IMD defines as "an urban area that has become more efficient and/or more environmentally friendly and/or more socially inclusive through the use of digital technologies." Indeed, Singapore ranks sixth in the 2024 IMD Smart City Index.[50] Meanwhile, the Singaporean government has launched its Smart Nation initiative, setting up goals to integrate digital technologies across all aspect of life, to improve quality of life and enhance public services efficiency. The first strategy was published in 2014 and was subsequently updated in 2024. Importantly, these efforts are supported by R&D investments and aligned with innovation policies, as mentioned in Section 2.5.

Some fields where digital technology is improving efficiency and wellbeing in the city include:

- **Governance:** government services have largely been digitalised, and 99% of all transactions between citizens and government can be completed online. New services have been introduced thanks to the development of AI, such as OneService, a chatbot that enables citizens to lodge complaints through social media apps such as WhatsApp or Telegram. The system can classify complaints in the right category, extract relevant details, and identify the appropriate department to tackle the case.

[47] World Intellectual Property Organisation, "Innovation Hotspots: The Singaporean Recipe for Development". Accessed March 2025
[48] Singapore Government, Research, Innovation and Enterprise 2025 Plan, 2020. Accessed March 2025
[49] Agency for Science, Technology and Research Singapore, "Impact through innovation - Annual Report", 2024. Accessed March 2025
[50] IMD, "Smart City Observatory 2024", 2024. Accessed March 2025

- **Transport:** AI-powered monitoring tools are able to detect potential faults in the transport system before they even occur, making them easier to fix and limit passenger disruption. On the road network, various road sensors, traffic cameras and GPS monitor real time traffic, predict traffic patterns, and optimise traffic light timings in real-time. Singapore also implements a road pricing system that adjusts fees based on real-time traffic conditions, to disincentivise drivers at peak times.
- **Housing:** many public-run housing buildings are equipped with sensors that inform managers of faults in the estate service, such as water pumps and lifts, with the ability to anticipate future breakages.
- **Productivity:** the government encourages businesses to make use of smart technologies and AI. It offers tools that enterprises can use to evaluate their readiness to adopt AI, and it helps businesses identify the capabilities and infrastructure they need. More tailored tools are also available for businesses that are already using AI. In government, civil servants have access to Pair, a Large Language Model (LLM)-powered suite of tools for government officers, that, similar to ChatGPT, can help in drafting text, coding, and data analysis.
- **Healthcare:** various initiatives exist, including HealthHub, a platform that allows patients to access and manage their health records. Telemedicine is also widely popular, allowing remote consultation with medical professionals. Many tools are developed for the growing ageing population, including the provision of wireless alert alarm systems for older residents.

3. WHAT CAN SCOTLAND LEARN FROM SINGAPORE'S SUCCESS?

Singapore's institutional and economic context is pointedly different to Scotland. Scotland's economic profile is also the result of a different development model, which gained momentum during the industrial revolution but had to transition from heavy industry to a service-based economy in the 1970s, in contrast to Singapore's export-based growth. But Scotland has control over important policy areas relating to its economic growth—such as skills, R&D investment, infrastructure, housing—giving scope to learn and adapt elements of the Singapore model. Scotland already has a range of policies in place across these areas, and it is beyond the scope of this report to provide a comprehensive assessment of what is currently being done, what is lacking compared to Singapore, and how these policies are performing. However, by looking at examples from Singapore, we can identify broader trends and successful strategies that could, realistically, be further emphasised, or potentially introduced, within Scotland's policy framework.

3.1 A LONG-TERM AND PROACTIVE APPROACH TO DEVELOPMENT STRATEGY

The example of Singapore illustrates a consistent focus on long-term, targeted specialisation in high-potential sectors that align with its economic needs—from a focus on labour-intensive sectors when its workforce was relatively cheap and unemployment was high, to knowledge and capital-intensive activities as it reached full-employment and developed local capabilities. Over the past few decades, the Singapore government has been largely involved in the economic development of the country through industry targets, business subsidies, infrastructure investment, and skills development.

There are important and replicable learnings from Singapore in terms of implementing a coordinated approach to economic development. Scotland introduced its Green Industrial Strategy in September 2024, just a month before the UK government's Invest 2035 consultation. However, there could be scope for a vision that involves higher intervention and coordination from the public sector.[51] Box 1 gives a concrete example of how Singapore proactively developed a biomedical cluster, largely from the ground up.

Box 1: How Singapore developed specialisation clusters: Biomedical sciences

Singapore made a strategic push to develop biomedical sciences in the late 1990s to diversify its economy and reduce reliance on traditional manufacturing industries. As there was no biomedical cluster in Singapore at the time, the government framed a clear Biomedical Sciences (BMS) initiative that focused on various levers[52]:

- **Attract major foreign pharmaceutical groups:** the EDB encouraged foreign companies to set up R&D and clinical research facilities (rather than manufacturing operations) in Singapore. Part of this was delivered through targeted tax exemptions, and tax allowances

[51] Oxford Economics (2021), Raising Scotland's economic growth rate.

[52] Hank Lim (2018), Economic Research Institute for ASEAN and East Asia, Innovation Policy in Singapore.

on capital expenditure for R&D. The country also created a clear regulatory environment for biomedical sciences (specifically around stem cells) while respecting international guidelines, making it an attractive destination for R&D in that segment. The EDB made it easier to attract related support services, such as specialised lawyers, patent agents, etc.

- **Develop physical infrastructure:** Singapore developed an integrated campus called Biopolis, encouraging collaboration between the National University of Singapore, research institutes, pharmaceutical businesses, and support services.
- **Attract foreign talents:** an important part of the strategy was to attract world-known scientists to head biomedical sciences research in public research institutions. These, in turn, would attract young talents, who benefitted from favourable visa policies.
- **Develop a skilled workforce:** Along with attracting foreign talents, Singapore worked to build a local bioscience workforce, providing funding for targeted training programmes as well as lifelong learning. The government provided scholarships to study biomedical sciences abroad, as well as various apprenticeship programmes for students to work in bioscience companies.
- **Support biotechnology firms:** the government set up life sciences related funds to support technology commercialisation activities.
- **Actively foster collaboration between R&D agencies, universities and the healthcare sector:** the government (mainly through EDB) actively created linkages between research and the private sector, which was essential not just to encourage innovation, but also to guarantee strategic alignment between innovation and commercialisation, with the goal of achieving high returns on investment.

A key part of Singapore's strategy relies on tax incentives and large-scale investments, which, due to financial and institutional constraints, may only be replicated on a smaller scale in Scotland. However, the strategy also highlights several components that are within Scotland's scope of action, and the nation could adopt a similarly proactive approach to growth. As Box 1 shows, the Singaporean government plays an active role in executing its growth plans—not only by providing tax reliefs and building infrastructure, but also by implementing targeted, concrete policies at every level of action.

3.2 SUPPORT A BUSINESS-FRIENDLY ENVIRONMENT

As the Scottish government notes, Scotland's economy is largely integrated with the UK, and the Scottish government has limited influence over macro factors, the legal environment, taxation, and trade.[53] But Scotland does have significant control over microeconomic factors, such as business investment, R&D, skills, and access to finance, leaving scope for improving its economic attractiveness. Some of the lessons to be learnt from Singapore are as follows.

[53] Scottish Government, "International competitiveness: overview", 2024. Accessed March 2025

Continue to support inward investment: inward investments were on the decline in Scotland between 2019 and 2021. In 2021 (the latest available datapoint), inward investments were valued at £57.7 billion, just under 3% of the UK total. Scotland has put a strong emphasis on developing international trade and attracting foreign businesses, through a set of recent strategies: A Trading Nation (2019), Scotland's inward investment plan (2022), and Scotland International Strategy (2024). These strategies identify priority sectors and growth opportunities, and they set out actions to increase Scotland's visibility as an investment destination. Singapore's business and regulatory environment has been designed to cater for international firms investing in the country. Simplified regulations, easy investment, and swift permit approvals make the process of setting up a business very streamlined. Similar potential red tape cuts could be explored to further strengthen Scotland's attractiveness. Another crucial element to Singapore's inward investment strategy has been about reducing or cutting taxation for targeted industries. However, this might be more challenging to apply in Scotland considering the current regulatory environment. Finally, Singapore's strategy relies largely on the EDB work to attract businesses through reputation and influence, which aligns with the approach that was defined in Scotland's International Strategy.[54]

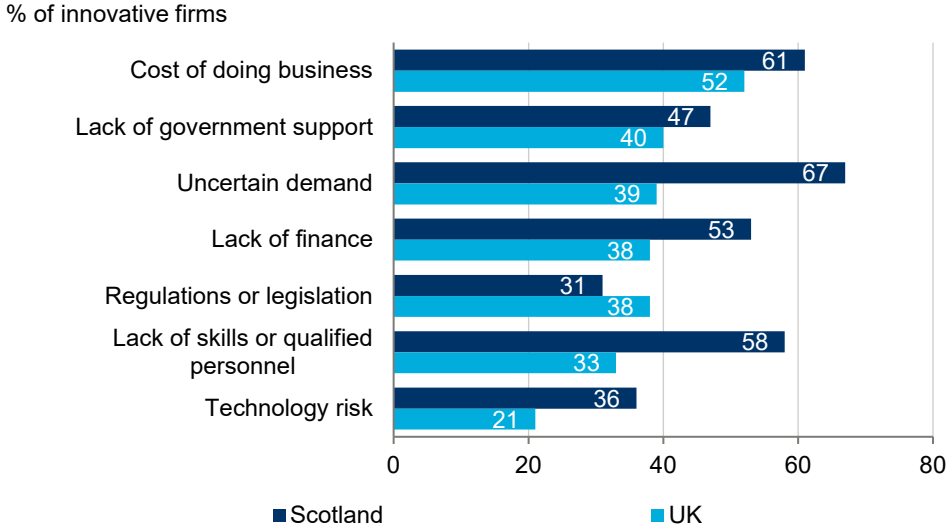
Further coordinate public and private R&D effort: Scotland has a strong innovation framework, with £4.9 billion in R&D spending in 2022 (2.6% of GDP, just below the OECD average of 2.7%), but absolute investment levels remain low compared to Singapore (£7.3 billion). [55] And while Scotland had the highest spending on higher education R&D relative to its size among all UK nations and regions, it also recorded among the lowest spending on business R&D, suggesting a potential disconnect between public and private innovation.[56] Recent data show that business innovation has stagnated, with the percentage of innovation-active businesses declining since 2010 and consistently lagging the UK average.[57] At the same time, the most recent UKRI's State of Innovation Survey (2024) found that the percentage of firms who reported collaborating with government or public research institutes (19%) was higher than the UK average (9%).[58] Considering these data are survey-based and could include a relatively small sample in Scotland, the results are difficult to interpret. Still, even if policies are already in place in Scotland to coordinate public and private innovation, the Singapore example suggests that there is scope for improvement, by further deepening collaboration programmes and funding, and joint training and curriculums.

Improve the overall innovation ecosystem: Singapore's approach to fostering innovation has largely focused on building a strong ecosystem for R&D—which includes access to funding, but also world-class infrastructure, dedicated R&D hubs, business parks, a skilled workforce, and regulatory frameworks. In Scotland, skills accessibility is likely to be an important issue. The latest UKRI survey on innovative firms suggests a significant shortage in skills, with 58% of Scottish businesses reported it as a barrier compared to 33% across the UK. Access to finance was also reported as an important issue (53%), significantly above the UK average (38%). Given the Singapore example, there might be scope

[54] Scottish Government, "Scotland's International Strategy: Delivering for Scotland", 2024. Accessed March 2025
[55] Scottish Government, "Gross expenditure on research and development Scotland 2022", 2024. Accessed March 2025
[56] Scottish Government, "National Innovation strategy: scorecard -2024 update", 2024. Accessed March 2025
[57] Scottish Government, "UK innovation survey 2023 – results for Scotland", 2024. Accessed March 2025
[58] UKRI, "The State of Innovation 2024", 2024. Accessed March 2025

for Scotland to strengthen its physical infrastructure for innovation, based on local reported needs and demand.

Fig. 12. Percentage of innovating firms reporting specific barriers, 2024



Source: UKRI

Continue to focus skills effort on sectors with high potential: Scotland has for a long time recognised the importance of STEM education and has set up specific targets for improving STEM learning. However, the large shortage of skilled personnel reported by Scottish businesses (Fig. 12) suggests a mismatch between the education system and needs on the ground—whether in terms of industry or level of qualification. The education system in Singapore encourages STEM-related degrees and degrees related to strategic sectors (legal, finance, etc.). There are scholarships and grants that are designed as strategic incentives to encourage future students to specialise in a particular field of study. The strong interrelationship between academia and the private sectors means that there are also significant opportunities for business-funded grants and apprenticeship programmes in large companies. For Scotland, delivering a strategy that is both coordinated with the needs of targeted businesses and incentivises education in a small number of high-potential degrees—ideally through financial incentives—could help address skills shortages in targeted areas.

Further support upskilling of existing workers: Scotland has already made significant progress in workforce development through initiatives like Skills Development Scotland (SDS). As mentioned, Singapore's SkillsFuture programme takes a direct approach by automatically granting financial support for training, which is likely to encourage uptake. Available courses from various training centres are all gathered on a single portal to streamline the process. There are also incentives to encourage training in high-demand sectors. A similar approach could be applied in Scotland by aligning upskilling efforts with strategic economic priorities, improving access to courses, and encouraging participation. This would help address skill shortages and enhance workforce adaptability.

Attract high-skilled international researchers and workers: Singapore built up its knowledge capability through attracting world-known academics to lead public R&D facilities, as well as highly specialised international workers. Since Brexit, the UK has had the ambition to take a similar route,

creating an opportunity for Scotland to position itself as a key destination for top-tier researchers and skilled professionals. By identifying one or two key research streams for competitive research funding, Scotland could attract and retain high-level expertise, as well as strengthen cluster building in competitive sectors.

3.3 TARGET HIGH-POTENTIAL SECTORS AND TECHNOLOGIES

A key lesson from Singapore is that it has proactively targeted industries that aligned with its competitive advantages and needs, and it continues to do so today. In our previous report, *Lessons from Ireland for Scotland's Economy* (2023), we suggested that Scotland should focus its growth strategy on a small number of high-growth sectors: (i) renewable energy and low carbon economy; (ii) life sciences and medtech; and (iii) software, big data, and AI. We think focusing on these sectors is still relevant for Scotland given its existing strengths, and the significant opportunities for growth.

Renewable energy and the low carbon economy remains a key growth sector. In 2023, 70.3% of the electricity generated in Scotland was renewable, accounting for a quarter of the UK production.[59] The ONS estimates the sector accounted for 25,700 jobs in 2022, which we calculate is equivalent to roughly 0.9% of Scotland's total employment.[60] Between 2015 and 2022, the number of renewable energy and low carbon businesses increased by an average of 2% per year in Scotland, four times faster than the UK overall. Meanwhile, Scotland's turnover in the sector grew at nearly twice the UK's average annual rate over this period. Scotland and the UK's commitment to reach net zero in 2045 and 2050, respectively, indicates a growing demand for skilled workers in the sector, in a range of occupations.

Life sciences and medical tech continues to be a fast-growing sector, driven by an ageing population and a rise in chronic diseases. Globally, we estimate that the pharmaceuticals sector grew by 2.8% in 2024 and will likely expand by a further 3.5% this year, outpacing the overall manufacturing sector.[61] The Scottish government has identified life sciences as a growth sector, underpinned by its strong existing university research base. In recent years, turnover in the sector has expanded by 8.5% per year on average in 2015–2022, surpassing the UK's 3.9% growth rate. This was driven by the biopharmaceuticals sector, which grew by 15.5% per year on average. Life sciences employment also grew at a faster rate in Scotland compared to the UK over this period, again fuelled by robust growth in biopharmaceuticals (7.1% a year on average).[62]

Software, big data, and AI: the digital economy is a key, growing sector worldwide, and Scotland is already well-positioned to reap the benefits. The information & communication has been the fastest-growing sector in Scotland in the past five years (an average 4.5% per year in terms of GVA), above the UK average (3.6%), but it remains small in size. Scotland has fast-growing tech clusters, specifically in Glasgow, Edinburgh, and Dundee. Given its existing specialism in financial services, Scotland is also developing a specialisation in fintech, a sector that is expected to continue to expand rapidly.[63]

[59] Department for Energy Security and Net Zero, "Regional electricity generation and supply", 2024. Downloaded March 2025
[60] ONS, "Low carbon and Renewable Energy Economy Survey estimates", 2024. Downloaded March 2025
[61] Oxford Economics, Pharmaceuticals: Tariffs could weigh on sector output in the near-term, March 2025
[62] Office for Life Sciences, "Bioscience and health technology sector statistics", 2023. Downloaded March 2025
[63] McKinsey, "Fintechs: A new paradigm of growth", 2023. Accessed March 2025

However, within this there are known barriers to expansion, particularly around skills availability and digital infrastructure.[64]

3.4 INVESTMENTS TO ENHANCE PUBLIC SECTOR DELIVERY

Link housing with economic growth: One problem Scotland has faced is ensuring homes are built where they are most demanded, and delivery of total new homes has been below the national target.[65] The provision of affordable homes in Scotland has also been slow, with completions in 2024 down 22%. Singapore's proactive housebuilding strategy has ensured the supply of housing in the country to broadly match population growth. The conditions in which this was done are unique, because Singapore was and is the main landowner, and subsequently became the main provider of housing. While this model may not be directly replicable in Scotland, it highlights the critical role of housing delivery in supporting economic growth. In the UK and Scotland, where the housing crisis is a key factor in lagging productivity growth, there is a strong case for more ambitious, coordinated housing policies.[66]

Expand public housing beyond low-income groups: Scotland's social housing is mainly for lower income groups, but the housing crisis experienced in Scotland and soaring house prices suggest that a larger share of the population could benefit from housing policies and access to homeownership. Singapore's HDB model offers high-quality public housing built to accommodate a mix of income groups, thanks to varying tiers of public housing flats as well as Executive Condominiums (ECs), which target households with higher incomes. More detailed research would be needed, but there might be scope for Scotland to deliver a similar model of cheaper mixed-income housing through land-based financing mechanisms (e.g. acquiring land at cheaper location and gain from land value capture), direct financial support to buyers, and long-term occupancy rules to prevent speculation (such as the five-to-10-years-minimum rule before resale applied in Singapore).

Integrated land planning and zoning system: Due to its geographical constraints and high density, Singapore has adopted a very integrated approach to planning, from the higher-scale level (e.g. design of new towns) to the lower scale (e.g. housing estates with various amenities). Singapore favours mix-used developments, ensuring that housing is placed near offices, retail, and public spaces within neighbourhoods, and with access to public transportation. The planning system is based on zoning, meaning it clearly designates land use, ensuring efficient and transparent planning and development. This contrasts sharply with Scotland, where the discretionary planning system requires most applications to be individually assessed and negotiated with developers—a lengthy and costly process. Various researchers have advocated for a zoning-based approach in the UK, citing benefits in efficiency, clarity, and cost reduction.[67,68] The Office for Budget Responsibility (OBR) recently estimated

[64] TechUK, "Local Digital Index 2023", 2024. Accessed March 2025
[65] Competition & Markets Authority, "Summary of CMA market study final report into housebuilding", 2024. Accessed March 2025
[66] Duncan MacLennan, Jinqiao Long, Economic Observatory, "How does the housing market affect UK productivity?", 2023. Accessed March 2025
[67] Anthony Breach, Centre for Cities "Why English planning reform should encourage changes in the devolved nations", 2020. Accessed March 2025
[68] Paul Cheshire, LSE, "Broken market or broken policy? The unintended consequences of restrictive planning", 2018. Accessed March 2025.

that the UK government's plan to reclassify land as greybelt—which would simplify the planning process, although it does not introduce zoning—could increase GDP by 0.2% by 2029 and over 0.4% by 2035.[69]

Continue to deploy digital health technologies: Singapore's healthcare system is very different to Scotland, and it is difficult to disentangle elements that could be adaptable to the Scottish system. One area that Singapore has been at the forefront is the use of new technology to streamline healthcare and social care delivery. For instance, telemedicine is widely used in Singapore, allowing patients to see a GP through a videocall for minor issues. Singapore is also heavily investing in sensors and monitoring devices, with a strong focus on prevention. One government initiative is the installation of smart sensors in homes of residents over 60 years old, which help monitor health and detect signs of potential issues. Similar measures are now spreading across the UK and in Scotland. For instance, under the 5G innovation Programme, Glasgow City Council has been able to install smart sensors in social housing to support care and wellbeing services for vulnerable people.[70] Remote services such as telemedicine and health sensors could be adapted in Scotland, considering its large rural population.

3.5 CONCLUDING REMARKS

Overall, Singapore is an example of the benefits that come with long-term, integrated strategic planning. The country has successfully identified key, high-potential industries; coordinated a suite of policies on skills, education, innovation, infrastructure, and housing; and introduced incentives to achieve economic targets. Altogether, this has provided Singapore with sustained growth. Such success has largely enabled by the nature of governance in Singapore—a small state, allowing a close-knit relationship between different ministries and agencies, and a very stable governance structure.

The current international trading environment is highly uncertain, particularly given the US introduction of blanket tariffs to all countries, likely leading to disruption of international investment flows and supply chains, at least in the short-term. History has demonstrated that markets dislike uncertainty and being able to provide clear and consistent policy direction could become an increasingly important element of international competitiveness, and an opportunity to foster Scotland's prospects.

[69] Ryan Bourne, The Times, "Planning reform is the tax cut that pays for itself", 2025. Accessed March 2025
[70] Department for Science, Innovation & Technology, "5G Innovation Regions: successful regions", 2025. Accessed March 2025

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