

Globalisation in a small open economy: the Singapore experience

Edward Robinson¹

Abstract

This note reviews Singapore's experience with globalisation, including policy measures taken to mitigate its effects on the income distribution and labour market. While the benefits have been enormous, the forces of globalisation in recent decades, together with skill-biased technological change, have necessitated a more proactive policy response to counter the rise in income inequality. A retreat from globalisation, however, is not the solution, especially for small open economies. Rather, policymakers need to better manage the globalisation process by being strategically interventionist, in order to ensure that the gains are more uniformly and equitably shared, and the costs alleviated. In addition to redistributive programmes, Singapore is stepping up efforts to promote equality of opportunity and inclusive growth through various government schemes aimed at rematching, retraining and retooling workers.

Keywords: Globalisation, trade, skill-biased technological change, Singapore.

JEL classification: F16, F62, I38, J08.

¹ Assistant Managing Director (Economic Policy) and Chief Economist, Monetary Authority of Singapore. I am grateful to Ian Chung, Aileen Phang, Choy Keen Meng and Celine Sia for assistance in preparing this note.

The views expressed here are solely those of the author and should not be attributed to the Monetary Authority of Singapore.

Introduction

This note explores the challenges associated with globalisation, and argues for a fresh policy approach to better manage the process. The note begins by noting the benefits of globalisation for small open economies such as Singapore. It then takes stock of the current tensions arising from the uneven distributional effects of globalisation, and the potential dislocations posed by new technology. Drawing from Singapore's experience, the note discusses practical policy measures that can be taken to mitigate the side effects of globalisation and achieve inclusive growth.

Benefits of globalisation for small open economies

Globalisation, broadly defined as the cross-border mobility of goods and services, people, capital and knowledge, has long been a key enabler of economic growth for many countries. It allows countries to produce and consume at more optimal levels through increased specialisation, improved capital allocation and greater competition. Producers can enjoy economies of scale and reduce costs through the enlargement of markets. Consumers benefit from lower prices, and access to a wider variety of goods and services. International trade also helps to foster healthy competition, thus spurring technological progress and productivity growth.

In the post-WWII era, emerging economies have been major beneficiaries of economic openness. While the benefits from the first wave of globalisation (ie 1870–1913) accrued mainly to owners of capital in the industrialised world, the gains from the latest wave of globalisation have been more evenly distributed, resulting in a dramatic reduction in global poverty levels. In Asia, the erstwhile newly industrialised economies of Korea, Chinese Taipei, Hong Kong SAR and Singapore and more recently, China and Malaysia, have reaped substantial dividends from pursuing an export-oriented development strategy. By opening up their economies and participating in global value chains, they were able to industrialise and grow rapidly for long periods, and in the process transform themselves into middle- or high-income countries.

Being a small open economy, Singapore provides a good if somewhat unique illustration of this transformation. A lack of natural resources and indigenous entrepreneurship at the outset of the industrialisation drive in the 1960s meant that the country had to depend on foreign direct investment (FDI) from multinationals in labour-intensive manufacturing industries to secure the requisite markets, technical know-how and management expertise. Openness to trade and investment has allowed Singapore to continuously raise its productive and technological capabilities over the years as it evolved into a high value-added manufacturing node in the regional production networks that sprang up during the 1990s and 2000s. As a result, Singapore's industrial structure and export product mix have changed considerably, and multinationals have not only increased their presence but also diversified their operations towards R&D, logistics and distribution, fund management and technical support. Singapore also stands out for its heavy dependence on the free flow of capital, which is vital for performing its role as the entrepôt and financial centre for the Southeast Asian region.

Throughout its history, Singapore has remained tightly integrated with the global trading and financial systems: for example, trade openness (as measured by the ratio of exports plus imports to GDP) has been consistently high, staying well above 200% of GDP and reaching a peak of 440% prior to the Global Financial Crisis (GFC). Singapore's financial openness, measured as the ratio of external liabilities and assets to GDP, expanded rapidly from an average of 560% in the 1990s to 1,600% in the 2000s as it evolved into an international financial centre, amid increasing global financial integration.² The country's strong outward orientation has arguably been instrumental in raising its real per capita income (in constant 2010 dollars) from USD 3,905 in 1965 to USD 52,600 in 2016.³

For small and open economies, continued engagement with world markets is not a choice but an economic imperative. With little in the way of resource endowments and the absence of a natural economic hinterland, small economies must depend on global markets, free trade and unfettered capital flows to sustain their livelihood. In addition, a willingness to embrace and adopt new technologies is key to helping these economies capture opportunities. In Singapore, technological adoption is even more urgent in view of the country's ageing population and compositional shifts in the labour force over the next decade – the working-age population is set to peak in 2018, and the resident labour force growth will slow to 0.7% p.a. over the next decade, from 1.6% p.a. on average between 2011 and 2016. For Singapore to sustain healthy growth and living standards to continue rising, it must keep leveraging technology to drive productivity growth.

Globalisation at a crossroads

International trade theory posits that economic openness and the resulting higher growth would lead to a generalised rise in incomes, while reducing income inequality across and within countries.⁴ However, actual country experiences have been mixed, with the gains and losses from globalisation being unevenly spread out at the international and national levels. In recent years, these outcomes have given rise to concerns about the negative side effects and distributional consequences of globalisation. In particular, the benign view of globalisation has been challenged by the post-GFC surge in populist and inward-looking sentiments, particularly in the United States and Europe.

With respect to the gains from international trade, these have accrued mainly to regions with a high concentration of export-oriented industries while the wage gap between skilled and unskilled workers has widened alongside the introduction of new technologies.⁵ A recent World Bank study found that within-country inequality has

² See IMF (2017a).

³ Source: World Bank.

⁴ In particular, the Stolper-Samuelson theorem asserts that countries with an abundance of low-skilled labour will see inequality reduced as a result of falling tariffs, since the wages of low-skilled workers would rise with increasing demand, and the price of high-skilled labour would fall.

⁵ See Pavcnik (2017).

remained at elevated levels – the population-weighted average Gini index rose steadily between 1988 and 1998, from 0.34 to 0.40, declining only slightly to 0.39 in 2013.⁶

Some economists believe that technology – on its own, or in tandem with globalisation – is the main cause of rising inequality.⁷ One possible rationalisation of this view is that novel digital technologies generate large revenues from a low employment base, thereby eliminating middle-class (manufacturing) jobs and enriching a small group of “superstar” firms and individuals. At the same time, “job routinisation” is taking place as technology replaces tasks that are codifiable across a wide spectrum of occupations.⁸ The routinisation hypothesis provides a further explanation for why income inequality only began to rise in the 1980s: the advent of computerisation in the 1970s brought about a qualitative change to machine capabilities – machines were now capable of storing, retrieving and responding in simple ways to information, thus replacing workers in routine tasks.

In terms of losses, the structural shifts brought about by globalisation (and technological change) have resulted in major dislocations and adjustment costs that have not dissipated over time. Globalisation has not been an unmitigated good, ie it has not always created win-win outcomes for all. Indeed, the efficiency gains from globalisation tend to grow progressively smaller as trade barriers come down, while the redistributive cost increases.⁹ As countries become increasingly open to international trade, the impact on affected communities and households, through job retrenchments or lower wages, has been sizeable. At the same time, low or imperfect inter-regional mobility has hindered adjustments and in certain instances, the negative effects either fail to dissipate or are even magnified over time.¹⁰

Singapore’s experience with globalisation was probably more benign in the earlier periods, although like other countries, it has not been fully insulated from the impact of technological developments. In the early years of industrialisation (ie the 1960s–1970s), robust job creation, complemented by large investments in social and physical infrastructure, brought about a substantial rise in income for most of the population. Accordingly, the Gini index fell from 0.50 in 1966 to 0.42 in 1978.¹¹ However, as the economy moved up the production value chain (ie in the 1980s–1990s), the corresponding increase in wages benefited higher-skilled workers more than low-skilled ones. As a result, inequality increased over the period, with the Gini index hovering at 0.46–0.47. In the 2000s, Singapore continued to leverage the possibilities of external-oriented growth, restructuring its economy towards capital- and skills-intensive sectors in order to remain fully engaged in global production networks. These government-facilitated efforts sustained growth, created new jobs and made possible the fiscal resources needed for redistributing the gains from trade. Accordingly, real household income from work continued to rise across all income

⁶ See World Bank (2016).

⁷ See Rotman (2017).

⁸ See Autor et al (2003).

⁹ See Rodrik (2017).

¹⁰ See Pavcnik (2017).

¹¹ World Institute of Development Economics Research (WIDER).

groups while at the same time, expanded redistributive programmes and wage subsidies helped to soften the increase in inequality. In recent years, median wage growth for low-skilled workers has accelerated to a compound annual rate of 7.2% since 2013.¹² The Gini index, after accounting for transfers and taxes, declined correspondingly to 0.40 in 2016, the lowest in over a decade.¹³ Indeed, Singapore also maintains a relatively high level of inter-generational income mobility, with 14.3% of children born to parents in the bottom income quintile reaching the top income quintile.¹⁴

Looking ahead, the impact of technological change will likely intensify and compound the other side effects of globalisation. Forces of progress (and disruption), globalisation, and technological advancement go hand-in-hand, and are often mutually reinforcing. If predictions of the next wave of globalisation are accurate, the world may possibly be on the cusp of a new phase – one involving data and propelled by rapid advances in information processing and transmission.¹⁵ The implications could be far-reaching, especially for advanced economies, as this wave of disruption will also affect jobs that have so far been shielded from the effects of globalisation and automation. Whilst the impact of previous waves of globalisation has been confined largely to manufacturing jobs, advances in artificial intelligence, robotics, and data processing and transmission capabilities are likely to affect jobs at both ends of the skills spectrum. At the lower end, as robots gain the dexterity to do more complex tasks, more manufacturing jobs will be automated. At the higher end, advances in computing power will allow machines to process and analyse large amounts of data while “virtual presence” technology will vastly improve human interaction and communication over the internet. Taken together, these developments may result in a significant disruption of professional, white-collar, service sector jobs, which could accentuate the current backlash against globalisation and technological change.

Making globalisation work: the Singapore experience

Despite the challenges facing globalisation, a retreat from open policies is not the solution. The appropriate response is to manage the process so that the gains from trade are more uniformly and equitably shared, and the costs alleviated. In particular, governments need to offer greater support to adversely affected constituencies, as well as the more vulnerable members of society, through targeted and well-implemented policies.

The Singapore government has stepped up efforts to promote equality of opportunity and inclusive growth as more constructive responses to globalisation and rapid technological advancement. The measures taken have focused on three main thrusts: (i) supporting firm’s innovation and productivity drive; (ii) investing in workers’

¹² See IMF (2017b).

¹³ Department of Statistics Singapore, *Key Household Income Trends 2016*.

¹⁴ See Shanmugaratnam (2015).

¹⁵ See Baldwin (2017).

skills development; and (iii) strengthening inclusivity through fiscal transfers and redistributive policies.

Encouraging firms to innovate

New programmes have been launched to help firms restructure to succeed in a more competitive global environment. This involves accelerating automation to build capacity, helping firms to scale up their operations and internationalise, and shifting support towards small- and medium-sized enterprises, which are poised to become key drivers in the next phase of innovation. The main goal is to help firms raise productivity and move into higher-value industries that capitalise on Singapore's evolving comparative advantages, and in the process create higher-quality jobs for the domestic workforce.

Given the unique challenges facing different industries, the government has adopted a sector-specific and more micro-oriented approach. Specifically, a SGD 4.5 billion Industry Transformation Programme (ITP) has been launched to integrate various government restructuring efforts and to develop tailored industry strategies in a more systematic and coordinated manner. Under this strategic growth programme, roadmaps will be developed for 23 industries. The specific measures will be implemented through partnerships between the government, firms, trade associations and business chambers.¹⁶ Each roadmap will consist of a suite of measures to raise productivity, develop skills, drive innovation and promote internationalisation. A key part of building capabilities at the firm level will be through digitisation and other IT solutions.

To provide further support as firms undergo restructuring, the government has offered time-bound financial assistance to companies, including grants to support investment as well as targeted relief measures to ease the adjustment process, eg Productivity and Innovation Credits and corporate tax rebates.¹⁷

Supporting workers in skills development

To help the workforce adapt to structural shifts, various initiatives have been introduced to support life-long learning, skills adaptation and increase occupational mobility. Under the "SkillsFuture" initiative, the government seeks to foster a culture of life-long learning as well as to help workers develop and master skills in the new growth clusters. SkillsFuture aims to promote industry support for individuals to progress based on skills upgrading, and involves developing an integrated system of education, training and career progression.

For instance, more structured internship programmes have been introduced in institutes of higher learning, cash credits have been made available to all Singaporeans for work-skills related courses, and cash subsidies and training support have been increased for mid-career workers. Additionally, the government has piloted new approaches to job-matching and re-skilling of mid-career professionals. Through

¹⁶ The 23 industries account for nearly 80% of Singapore's GDP.

¹⁷ Under the Productivity and Innovation Credits scheme, businesses can convert expenditure on various items, such as acquisition of automation equipment, employee training or R&D, into non-taxable cash pay-outs or tax deductions.

a new National Jobs Bank and a “Professional Conversion Programme”, the government has sought to alleviate structural mismatches in the domestic labour market by helping to better match (and retrain if necessary) dislocated workers with new jobs in future growth sectors.

To prepare newer generations of Singaporeans for the workplace of the future, there have also been fundamental changes in the education system to cultivate curiosity from a young age and to place greater emphasis on skills development. For example, schools in Singapore have recently introduced an Applied Learning Programme, which includes subjects as diverse as computing, drama and sports science, to help students appreciate the relevance of what they are learning and develop stronger motivation to acquire knowledge and skills. Institutes of higher learning have also expanded aptitude-based admission schemes, so that admission is no longer based purely on academic grades.

Strengthening inclusivity

The Singapore government has increased the progressivity of the fiscal system by enhancing direct support to lower-skilled workers and low-income households. Recognising that lower-skilled workers have been more vulnerable to disruptions caused by structural changes, the authorities have introduced policies to mitigate inequality and arrest widening wage disparities. Importantly, while allowing for society to play a bigger role in uplifting vulnerable groups, the focus remains on personal responsibility. The approach has been to create opportunities for low-wage workers to upgrade their skills so they are able to take on higher-quality jobs. Notably, the Workfare Income Supplement, a form of wage subsidy, tops up salaries of those earning less than SGD 2,000 per month by up to SGD 3,600 annually. These benefits, however, are linked to work, mitigating the potential moral hazard problems associated with unconditional transfers.

The building blocks of Singapore’s approach towards ensuring economic and social inclusivity remain firmly anchored in the country’s education, housing and healthcare policies. Apart from allocating higher expenditures to these areas, policies have been refocused to devote greater attention to the disadvantaged. For instance, the government has enhanced financial assistance to lower-income households to support their children’s early childhood development in order to minimise inequality of opportunity, while also strengthening support for the elderly through generous healthcare subsidies in the form of a “Pioneer Generation Package”.¹⁸

Conclusion

Globalisation and technology have acquired something of a bad reputation in recent times. This is unfortunate as they remain the principal drivers of sustained growth in the global economy. Concerns over the negative effects of free trade and technology are not new and have emerged in various forms throughout economic history. Yet

¹⁸ The Pioneer Generation Package provides lifetime healthcare benefits for Singaporeans born before 1950. It recognises the contributions of the pioneering generations of Singaporeans by assuring them of affordable healthcare. The package is expected to benefit 450,000 elderly Singaporeans.

countries by and large have continued to engage with the global economy, and new, innovative ideas have flourished. From a policy perspective, pro- and anti-globalisation are not sensible positions to take, as there is no single orthodoxy that can effectively tackle the deep-seated societal issues that have become conflated with the ill effects of economic progress.

A fresh narrative and policy approach is needed. Policymakers need to regain the ground lost to the sceptics, who often exaggerate the downsides of openness to trade and ideas, and choose to play down the benefits. At the same time, governments need to be ready to be strategically interventionist, to facilitate and manage the market forces behind globalisation and technology, as these do not lift all boats in the first instance. There will be increasing contradictions and distributional consequences that governments need to be alert to. We therefore need to prepare as many of our workers as we can to be carried along with the waves of progress and provide for those who might be left behind. In this regard, the first-best policy response is almost always never to stifle innovation nor opportunities for exchange, but to recognise that the preconditions for partaking in their benefits are becoming more onerous for specific segments of businesses and households.

In Singapore's case, globalisation has allowed the island to overcome its natural constraints of limited land, labour and market size to achieve rapid economic growth since independence. In the earlier years, foreign direct investment accelerated the accumulation of capital and know-how, and powered the rapid development of Singapore's manufacturing capabilities. More recently, the advent of information technology enabled services to become more exportable and for Singapore to focus on increasingly specialised parts of global value chains. Looking ahead, a greater exchange of ideas and higher mobility of human capital will be essential in Singapore's transformation into a knowledge- and skills-based economy.

Singapore's engagement with world markets is therefore deeply etched into our economic and political history. Like many countries, we too need to redouble efforts so that what has clearly proven to be welfare-enhancing for the country as a whole does not become a destabilising force that divides different segments of society. Singapore's approach towards globalisation and technology inclusivity is anchored on intensive efforts to prepare our workers for change through the SkillsFuture and other programmes, as well as measures to promote the accessibility of new technologies. We will need to commit ourselves to more and smarter investments for the future, combining training as an essential tool with various forms of targeted income support and redistribution.

References

- Autor, D, F Levy and R Murnane (2003): "The skill content of recent technological change: an empirical exploration", *Quarterly Journal of Economics*, vol 118, pp 1279–333.
- Haddad, M (2007): "Trade integration in East Asia: the role of China and production networks", *World Bank Research Paper*, no 4160, March.
- IMF (2017a): "Capital flows to Singapore: macroeconomic implications and policy responses", *IMF Country Report*, no 17/241.
- (2017b): *Staff Report for Singapore 2017 Article IV Consultation, IMF Country Report*, no 17/240.
- Baldwin, R (2017): "Old, new and future globalisation: understanding the changes from a broader perspective", Monetary Authority of Singapore, *Macroeconomic Review*, October.
- Pavcnik, N (2017): "The impact of trade on inequality in developing countries", paper presented at the Federal Reserve Bank of Kansas City 2017 Jackson Hole Symposium.
- Rodrik, D (2017): "Populism and the economics of globalization", manuscript, Harvard University, August.
- Rotman, D (2017): "The relentless pace of automation", *MIT Technology Review*, vol 120, pp 92–5.
- Shanmugaratnam, T (2015): "Singapore's social policies: past, present, future", speech delivered at the SG50 Distinguished Lecture of the Economic Society of Singapore, 14 August.
- World Bank (2016): *Poverty and shared prosperity 2016: taking on inequality*.