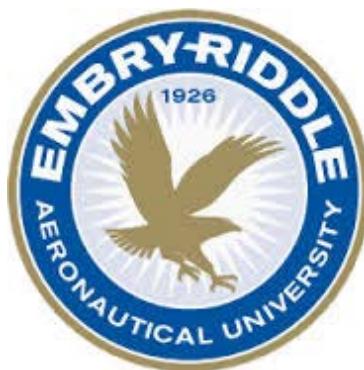


ECON 210 – Microeconomics

Research Paper

Topic: Ageing population and its effect on Singapore

Embry-Riddle Aeronautical University



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Background and Information

Ageing population is an issue of serious concern for Singapore, as it is a small country very dependent on its work force to keep its economy going.

However since 2005, the population growth has been declining ever since. In 2020, over 25% of Singapore's population would be over 65 years old and Singapore has the fastest ageing population in the world.

With our advanced healthcare, life expectancy of the populations has been increasing and when coupled with declining birth rates, it could be a recipe for disaster of Singapore's economy if the government does not take any early measures.

Additionally, ageing population has many other negative effects on Singapore such as the decreasing work force population, difficulty for employers to get skilled labor (shortage of skilled workers) and increasing spending on healthcare and upgrading projects for houses.

This would eventually have to lead to the increasing of taxes as a source for the extra funding required for the increased spending, which ultimately would have to be borne by the smaller working population.

In this paper, I would also be talking about the current ageing population situation and actions currently taken by the government to boost the economy, and why it is unfair for Singaporeans.

Additionally, I would be suggesting some possible and more effective solutions to curb the negative effects of ageing population that should be carried out by the government to ensure the happiness of everybody while also ensuring that the economy remains running productively and efficiently to keep a balance

Rationale

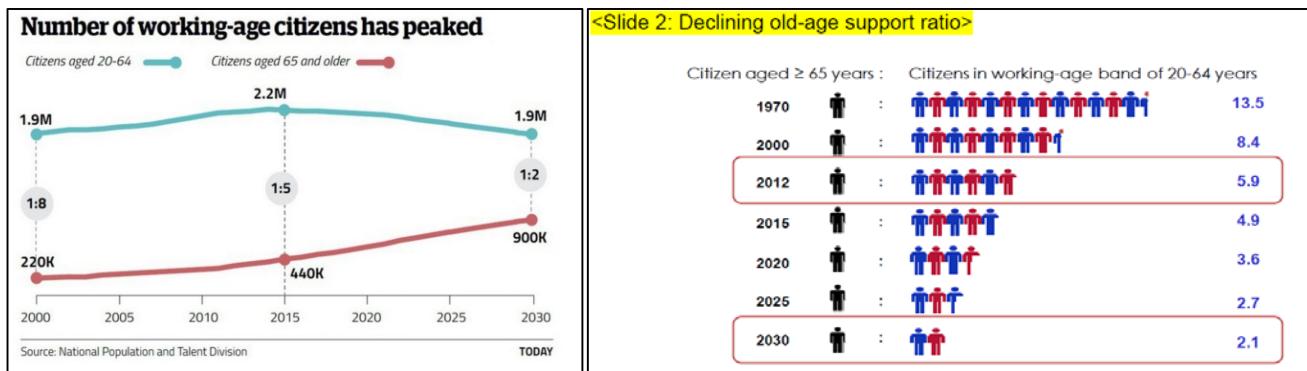
The issue of ageing populations is not an uncommon issue in the world, as it is also happening in many other developed countries such as Japan, Germany, Italy, South Korea and even France and Switzerland. (Article Source: <https://fbkfinanzwirtschaft.wordpress.com/2014/08/12/world-will-have-13-super-aged-nations-by-2020/>)

With an aged population, the governments of these countries have to think out of the box in order to find ways to maximize the productivity of the smaller group of working age adults. This helps to ensure that this group is not over depended upon which would cause much resentment and unhappiness, while also ensuring their economy would be able to grow.

This might not be a big issue for countries with large populations, however for Singapore it is something of interest because it is a small country with a small population and ageing population affects us significantly.

Singapore depends on many countries for trade such as having our shipping port, which is the busiest in the world, our third largest oil-refining center in the world, and many large MNCs such as Rolls Royce, Seagate, Hitachi and many others, which based branches of their operations here to tap into our workforce that has world-renowned quality standards. The world is particularly concerned whether Singapore would be able to cope with a smaller local workforce since ageing population would also affect their business directly.

Current Ageing Population Situation in Singapore



The birthrate of Singapore has been decreasing steadily since the 1970s, and has already reached its peak number of working-aged citizens this year as shown on the line graph on the left. With Singapore's retirement age currently already at 65, and retirees being urged to continue working as long as they are healthy and fit to do so, there would still be a rapid decrease of working aged citizens from 2.2 million in 2015 to 1.9 million by 2030, and an increase in elderly citizens (65 and above), from 440,000 to 900,000.

With that projected large increase in elderly and a decrease in working aged population, it would place an increasingly greater strain on the working class group where in 2015 this year, there is already a mere ratio of 5.9 working persons supporting a retiree, down from 13.5 working persons per retiree. This number is estimated to decrease to a ratio of 2.1 working persons per retiree in 2030 as indicated on the chart on the right.

With that alarming, rapid decrease in the working class population, there are many negative implications it would soon bring to Singaporeans such as a decrease in country's productivity bringing about a decrease in GDP, increased strain on the working class population's spending needs, and increased strain on healthcare resources and eventually increasing taxes that the shrinking workforce have to bear in order to support development of the country.

Singapore will also eventually require a greater number of medical care facilities and medical personnel such as doctors and nurses in order to be able to cope with such a large number of elderly people.

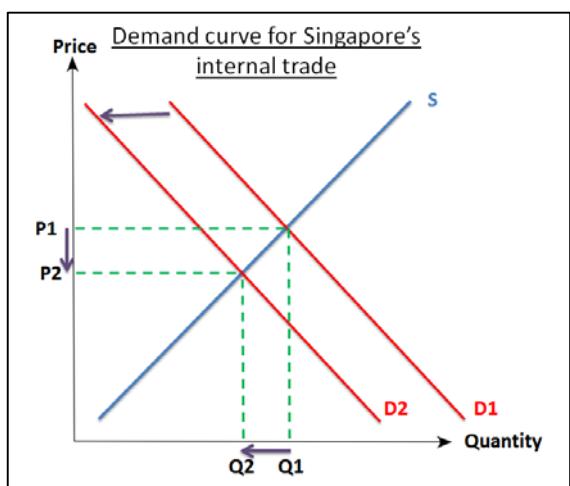
There are already a lack of doctors and nurses and the ageing population situation is making things worst, making waiting times longer at clinics and hospitals, as well as less attention to patients that doctors and nurses can give their patients due to a lack of labor.

What if Singapore did not import foreign labor

This is a possible scenario of the negative effects of an ageing population if the Singapore government did not import foreign labor to supplement our declining workforce.

With a decreasing amount of working population and the increasing financial burden on placed them, not only will Singapore's economy suffer, but internal trade in Singapore will suffer too.

With the people's reduced purchasing power, this makes the demand curve shift left and causes suppliers of products to supply less quantity due to less demand as indicated on the demand graph below. The equilibrium quantity will drop from $Q_1 \rightarrow Q_2$, as well as the equilibrium price, which will fall from $P_1 \rightarrow P_2$, making the same good or service cost less, because of the lack of demand that requires a price reduction in order to clear stock.

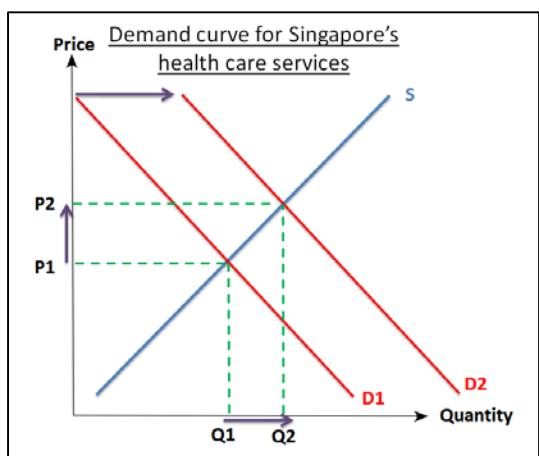


Suppliers will have to resort to lowering prices in order to sell a greater quantity. This is an issue especially for the perishable goods industry supplying food, where these goods have short shelf lives and cannot be stored for such a long time. This is detrimental for the local business, where many small shops such as convenience stores would eventually have to close down due to the lack of customers and profits.

Most food products in Singapore are imported from its neighbors, and there is already an initial cost that suppliers have to pay, thus these products are normally more expensive due to the suppliers having to make profits here.

Many foreign businesses offering luxury goods or services will also be forced to pull out of Singapore because of fewer customers with large purchasing power, where many people would spend most of their money caring for their elderly parent's needs and have lesser surplus money to spend on luxury goods or services, affecting foreign trade.

Additionally, due to an increase in number of elderly who are living longer due to higher life expectancy in Singapore, the number of age-related illnesses would be on the rise as well. This would cause the demand curve for healthcare and elderly care services to shift right as there is greater demand for these services.



Already with insufficient doctors and nurses, this would increase the waiting time required for each visit to the clinic or hospital and with the supply for healthcare services being limited and not increasing with proportion to the population increase, it would eventually drive the demand up from $D_1 \rightarrow D_2$ and the equilibrium price to increase from $P_1 \rightarrow P_2$, where it would cost more for the same visit to the clinic or hospital.

With the prices of basic healthcare in Singapore already being quite expensive, the prices would increase even further, if the ageing population is not being taken care of.

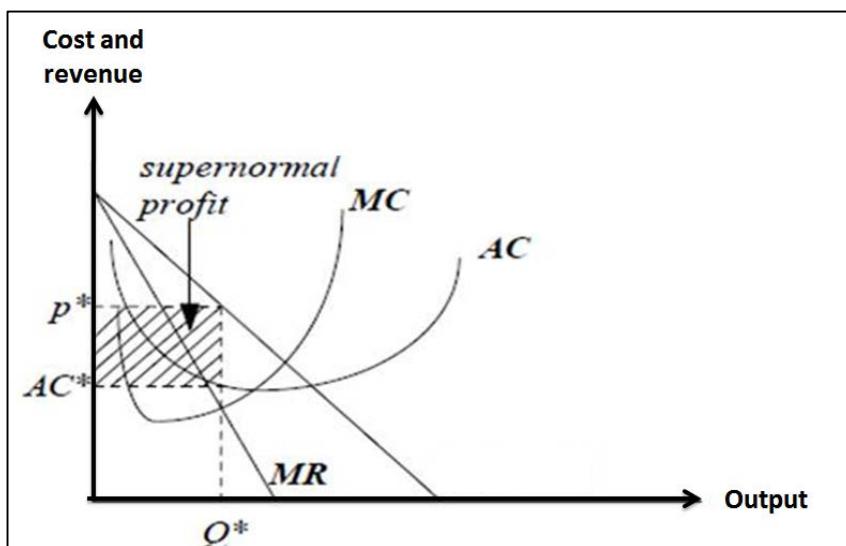
Effects of an Ageing population on Singapore Healthcare's market structure

There are quite high barriers to entry in the healthcare industry due to a variety of factors such as strong competition, high capital requirements for initial start-up and for Research and Development (which is also sunk cost if it fails), and high regulations to ensure adequate standards.

Due to these high barriers to entry, the healthcare industry in Singapore is mostly full or partial government owned oligopolies, such as the hospitals, pharmaceutical corporations, elderly care and nursing homes and medical research companies, where their products and services are almost identical (homogenous).

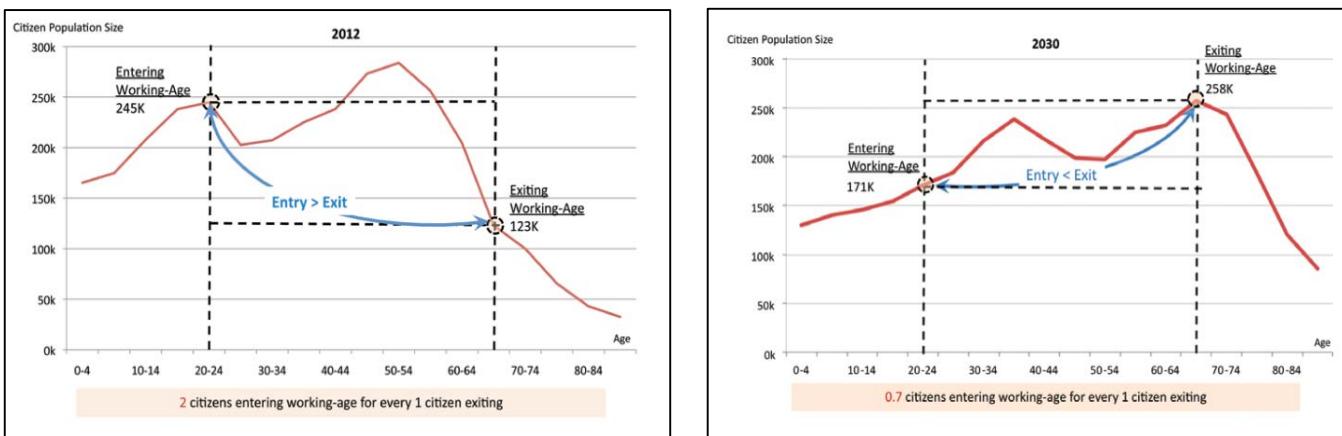
Due to the lack of competition, the high healthcare bills in Singapore earns the industry supernormal profits. Today the price of healthcare services have reached a high enough level to burn a hole in one's pocket, and the healthcare industry's profits blooming like flowers. A typical basic visit to a general practitioner at the void deck of HDB flat costs at least \$35 - \$40, with just basic medication, where in the past, it was just \$25 - \$30.

Referring to the diagram below, at an output quantity of Q^* , the average revenue (AR) exceeds the average cost (AC) by a fair bit, leading to the shaded area called supernormal or abnormal profits in economics, where firms earn and maintain their high profits due to little competition.



Current Actions taken by the government

The Singapore government's current actions are to import foreign talents from abroad, with a vast majority of foreign labor coming from India, China and the Philippines to supplement the current workforce. In 2013, the People's Action Party (PAP), which is Singapore's main political party, passed the legislation for an increase in the country's population via foreign migrants to 6.9 million by 2030.

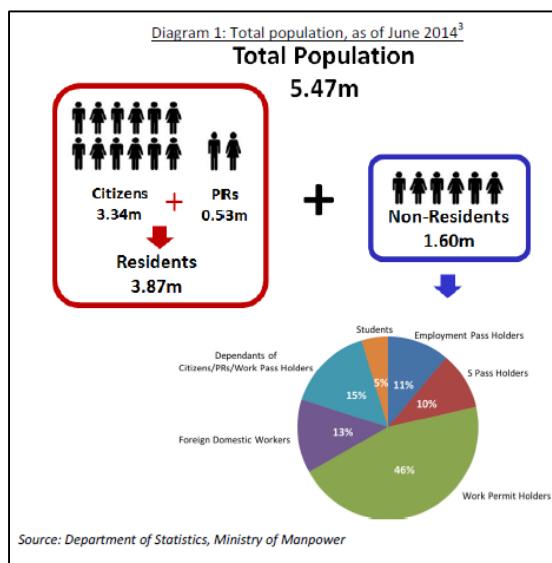


(Chart sourced from: <http://population.sg/whitepaper/resource-files/population-white-paper.pdf>, Pg. 11)

Currently from statistics in 2012, there are about 2 citizens entering the work force for every citizen retiring and it is projected to fall to 0.7 citizens entering the work force for every citizen retiring, assuming that there are no foreign immigrants to support Singapore's workforce as shown in the diagrams above.

Due to Singapore's heavy dependence on its workforce for its economic income and for defense, it has not many alternatives but to increase the influx of immigrants in order to be able to ensure that its economy is able to continue to grow for the time being. However, this is not a permanent solution because it is bound to bring many social issues, which is not good for our society, and the effects are already beginning to show.

For example, a famous case of such an incident happened in 2014, where a banking expatriate Anton Casey and his son mocked Singaporeans who take the public transport as poor people, drawing much flak from Singaporeans and the British community who are working here.



Firstly, as from June 2014, statistics shows Singapore's population stands at 5.47 million where over 40% of the population are non-locals, where most are working here on a work permit.

With 3.87 million pure singapore citizens and 1.60 million non-residents, our infrastructure is already struggling to cope with such a large influx of people in such a short time.

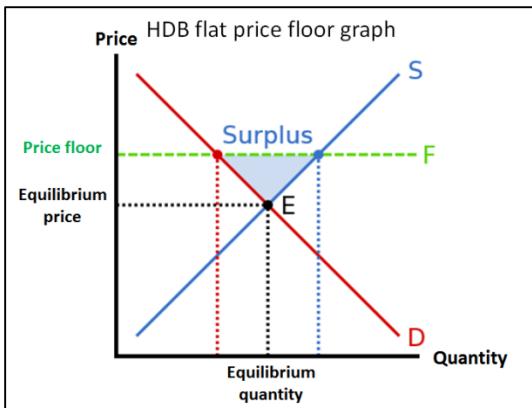
It can be largely gauged by the increase in failing rate of the train services this year compared to past years, where the increased operation and budget maintenance took a toll on the reliability.

Secondly, due to the sudden huge influx of immigrants, the prices of HBD flat both new and resale has increased by a steeply compared to just a few years ago.

The following two bold paragraphs are cited from Property Guru, which explains the reason behind the price increase of housing in Singapore (<http://www.propertyguru.com.sg/static/hdb-flat-prices-at-a-record-high>):

"The increase in HDB flat prices is due to their limited supply versus increased demand from both Singaporeans and foreigners."

"According to statistics from the HDB, in 2008, it built only 3,183 new flats when the government welcomed over 90,000 permanent residents (PRs) and 20,000 new citizens in the same year."



This have created a serious shortage, where it forced the government to impose a price floor, increasing the minimum sale price over the equilibrium price, in order to reduce the number of buyers and bringing back a healthy level of surplus.

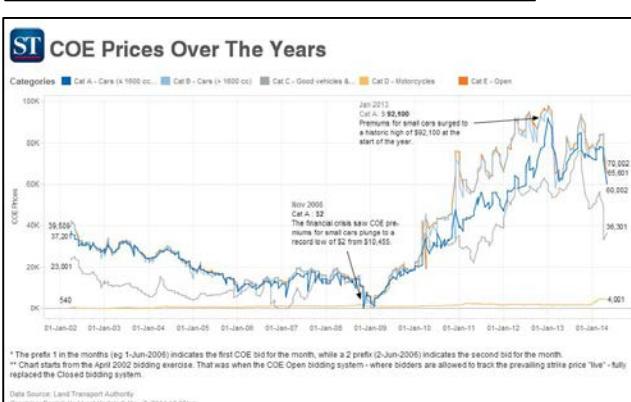
As a result, the prices of HDB flats have increased by a tremendous amount, compared to 10 years ago where my parent's 5-room HBD flat in Serangoon only cost \$265,000, but the same flat have a selling price of \$479,000 as of May 2015.

Median Resale Price (\$)					
HDB TOWN	3RM	4RM	5RM	EXE	Overall
Ang Mo Kio	308,888	446,000	682,500	665,000	344,000
Bedok	305,000	450,000	680,000	710,000	380,000
Bishan	380,000	540,000	710,000	931,000	580,000
Bukit Batok	200,000	415,000	550,000	565,500	359,500
Bukit Merah	388,000	595,000	768,000	783,000	515,000
Bukit Panjang	294,000	356,500	478,000	575,000	398,000
Bukit Timah	-	-	820,000	-	823,000
Central Area	438,000	808,000	1,050,000	-	804,000
Choa Chu Kang	287,500	367,500	425,000	557,500	385,000
Clementi	335,000	508,000	692,500	-	431,500
Geylang	285,000	412,500	620,000	646,000	386,500
Hougang	300,500	406,000	681,000	646,500	400,000
Jurong East	300,000	415,000	678,000	660,000	393,000
Jurong West	288,000	377,888	450,000	555,000	410,000
Kallang/Wong Chempas	340,000	514,000	758,000	-	450,000
Marine Parade	428,000	520,000	805,000	-	460,000
Pasir Ris	275,000	415,000	462,500	610,000	460,000
Punggol	-	425,000	600,000	640,000	430,000
Queenstown	380,000	-	700,000	700,000	545,000
Sembawang	-	368,000	410,000	500,000	378,444
Sengkang	373,000	410,000	448,000	580,000	435,000
Serangoon	340,888	480,000	479,000	767,500	460,000
Tampines	334,000	434,000	515,000	706,000	443,444
Toa Payoh	321,000	415,000	666,500	790,000	365,000
Woodlands	267,000	352,000	435,000	595,000	380,000
Yishun	290,000	350,000	480,000	575,000	342,500
Overall	310,000	408,444	470,000	591,000	408,000

Note: Grey fields contain figures derived from less than 10 transactions.
Blue fields contain figures derived from only 1 transaction.
Source: SRX PROPERTY / HDB

Additionally, the prices of cars in Singapore have also increased by 30% - 40% compared to 10 years ago for the same reason as housing, immigrant influx. There is only a limited number of COE (Certificate of Entitlements) available for every vehicle, and thus, the higher the demand the greater the shortage, hence the price for the COE have skyrocketed, with the peak reaching \$92,100 in 2013, where it adds on to original cost of a vehicle.

As a result, the most basic Toyota Corolla costs over \$120,000 after adding the COE to the cost of the car, due to the surge in demand causing a price floor, which was required to reduce the amount of buyers who could afford a car, effectively prevent road congestion.



Such a basic model already costs about \$70,000 - \$80,000 about 10 years ago, which was still rather expensive compared to other countries where they do not have COE, where the same model Toyota Corolla fully equipped with all the optional equipment costs a mere \$20,000 - \$30,000.

Why it is not ideal and unfair for Singaporeans

Singapore has been affordable in the past where the cost of living was affordable and reasonable.

However, in 2008, the Singapore government started taking in large population of foreigners without the knowledge of Singaporeans, and that was where the problems began when people started voicing their unhappiness, which was not heeded by the prime minister, Lee Hsien Loong.

Many of the foreign expatriates taken in at first were pretty affluent people, where they became managers and bosses of many firms in Singapore, replacing the Singaporean bosses, supervisors and managers, due to their lower salary expectations which bring companies higher profits.

Today it is a different story, where people from 3rd world countries such as India, China and Philippines mainly take most of our blue and white collar jobs, where many of them are given high positions such as managers or bosses, and they start to hire their own people to fill up the lower position jobs in favor of Singaporeans, taking away many blue and white collar jobs for Singaporeans.

While we are not against the employing of immigrants, because we understand that they play an important role in helping to sustain and improve our economy, we feel that the government should not accept such a large quantity in a short period. Additionally, they should not reserve a majority of the high position jobs for them, where they have the authority to recommend or employ their people from their countries in favor.

Because of that, the MOM (Ministry of Manpower) has implemented a framework called the Fair Consideration Framework (FCF), where they are supposed to consider Singaporeans fairly for jobs. However, this have not really solved the issues for Singapore, because the companies and their shareholders have gotten used to the higher profits they make from employing foreigners who are paid less, and many companies started offering Singaporeans short and low paying contract jobs lasting from 6 months to a year just to fulfil the criteria of employing Singaporeans, where the pay rate for both diploma and degree holders are at least \$300 - \$400 below the rates that it used to be at a few years back.

Additionally, the sudden influx of immigrants have also caused the cost of living to surge sky-high, making even necessities such as food at the hawker center expensive, where a plate of chicken rice which used to cost \$2.50, now costs at least \$5.00, whereas our salaries did not increased by any significant amount.

Application of Theories

The first graph, which I was used for my report in page 6, was the demand curves for the internal trade of Singapore and demand curve for healthcare services. These curves apply to these sections because it involves the supply and demand of goods and services, where it is the appropriate graph to use to show the changes in supply or demand.

Assuming *ceteris paribus*, the graph would shift if either the supply or demand changes, which would both affect the price. If the demand increases, and the supply stays the same, this leads to a shortage and price increase. Similarly if the supply decreases and the demand stays the same, would also lead to a shortage and cause the price to increase.

The second graph that I have used was the cost and output curve to show the market structure of healthcare in Singapore, where it is a government controlled and regulated oligopolistic industry which leads to few competitors.

The third graph that have used is the price floor graph for the housing prices of Singapore in page 9. Due to high demand and insufficient supply, a price floor had to be set above the equilibrium price, in order to deter some buyers and bring the demand down which in turn restores the surplus.

Other graphs miscellaneous I have used are line graphs, bar charts and tables, which I have sourced from the internet, which represents my data in graphical forms.

Conclusion and Recommendations

As a conclusion from my findings, my recommendations for the Singapore government to solve some of the issues Singapore is currently facing are as follow:

1. To increase birth rates, they should reduce the cost of living and give out more baby benefits to encourage people to have more babies. The cost of raising a baby in Singapore today is extremely expensive today when considering the total expenses parents have to pay for the baby's necessities, education and healthcare, so additional benefits or subsidies would help to encourage more people to raise children.
2. Re-employ and allow able bodied and willing retirees to continue working, and open up more management and clerical roles where they are involved with office paperwork, planning and training new staff instead of doing heavy physical work.
3. Implement a minimum wage rule to protect the workforce from being exploited by employers (This helps to benefit the security guards, cleaners and construction workers who work long hours and are paid poorly in Singapore)

These solutions are ideal for the long term, and are a good compromise between satisfying the citizens and allowing the economy to grow healthily.

However, there are definitely pros and cons for each point. For the first point, while having more baby benefits would boost the birthrates and help to solve the problem of ageing population, it would mean more money spent on the welfare for citizens to encourage more citizens to have babies, where it leaves lesser money for the development of other parts of Singapore, such as upgrading its infrastructure.

For the second point of allowing more elderly folks to work to an older age, it can help to reduce the burden on their children and would encourage them to have a baby. However, the workplaces have to be elderly friendly, such as having lift upgrades for the elderly employees who have weak knees and cannot climb stairs.

Lastly, for the third point, implementing a minimum wage rule to protect the population from being exploited is very important, because it ensures that people are being paid in adequate amounts, which are worth their hard work and long work hours. This is especially important to protect the people working as security guards, construction workers and cleaners, where some companies pay them very poorly and make them work extremely long hours. However, this means that small private businesses or small medium enterprises would have to employ fewer employees, since they are paying each one more, as they might not be able to afford the higher salaries due to their small profits where salaries make up a large portion of their expenses.

References:

- Singapore feeling impact of rapidly ageing population. (n.d.). Retrieved August 30, 2015 from: <http://www.todayonline.com/singapore/singapore-feeling-impact-rapidly-ageing-population>
- Singapore in 2020. (n.d.). Retrieved August 30, 2015 from: [https://rita.nrf.gov.sg/AboutUs/NRF_Initiatives/CRP3/Guidelines%20and%20Templates/Singapore%20in%202020%20%20\(Ageing\).pdf](https://rita.nrf.gov.sg/AboutUs/NRF_Initiatives/CRP3/Guidelines%20and%20Templates/Singapore%20in%202020%20%20(Ageing).pdf)
- Rapid aging in Singapore could halt economic growth by 2030: Moody's. (n.d.). Retrieved August 30, 2015 from: <http://sbr.com.sg/economy/news/rapid-aging-in-singapore-could-halt-economic-growth-2030-moody%E2%80%99s>
- 'Singaporeans need to understand scale of ageing problem' (n.d.). Retrieved August 30, 2015 from: <https://sg.news.yahoo.com/blogs/singaporescene/singaporeans-understand-scale-ageing-problem-084321328.html>
- Singapore PM warns of aging population's impact on economy and defence - The Economic Times. (n.d.). Retrieved August 30, 2015 from: <http://economictimes.indiatimes.com/news/international/world-news/singapore-pm-warns-of-aging-populations-impact-on-economy-and-defence/articleshow/47884689.cms>
- Bloom, D., Canning, D., & Fink, G. (n.d.). Population Aging and Economic Growth. Retrieved August 30, 2015 from: http://siteresources.worldbank.org/EXTPREMNET/Resources/489960-1338997241035/Growth_Commission_Vol4_Globalization_Growth_Ch13_Population_Aging_Economic_Growth.pdf
- Singapore experiences slowest population growth in 10 years. (2014, September 25). Retrieved August 30, 2015 from: <http://singapore.coconuts.co/2014/09/25/singapore-experiences-slowest-population-growth-10-years>
- Our Population, Our Future. (n.d.). Retrieved August 30, 2015 from: <http://population.sg/resources/population-composition/>
- Fury over 6.9 million population target for Singapore. (n.d.). Retrieved August 30, 2015 from: <https://sg.news.yahoo.com/fury-over-6-9-million-population-target-for-singapore-103503070.html>
- PRC WHO USED FAKE DEGREE TO APPLY FOR PR FLED, USES FAKE IDENTITIES TO RETURN. (n.d.). Retrieved August 30, 2015 from: <http://www.allsingaporestuff.com/article/prc-who-used-fake-degree-apply-pr-fled-uses-fake-identities-return>
- 2014 Population in Brief. (n.d.). Retrieved August 30, 2015 from: <http://www.nptd.gov.sg/portals/0/homepage/highlights/population-in-brief-2014.pdf>

- Statistics Show: Foreign Worker Numbers Jump while more Singaporeans Become Unemployed. (2014, October 31). Retrieved August 30, 2015 from: <http://redwiretimes.com/cow-beh-cow-bu/statistics-show-foreign-worker-numbers-jump-singaporeans-become-unemployed/>
- Our Population, Our Future. (n.d.). Retrieved 30th August 2015 from: <http://population.sg/whitepaper/faqs/>
- Is Singapore really short of doctors? (n.d.). Retrieved 1st September 2015 from: <http://www.todayonline.com/commentary/singapore-really-short-doctors>
- Anton Casey loses job, friends. Retrieved 4th September 2015 from: <http://news.asiaone.com/news/singapore/anton-casey-loses-job-friends>
- HDB flat prices at a record high. (n.d.). Retrieved 4th September 2015 from: <http://www.propertyguru.com.sg/static/hdb-flat-prices-at-a-record-high>
- HDB resale prices up slightly in April: SRX Property. (n.d.). Retrieved 4th September 2015 from: <http://www.channelnewsasia.com/news/business/hdb-resale-prices-up/1830854.html>
- 'Foreigners are taking our jobs' complain Singaporeans. (n.d.). Retrieved 5th September 2015 from: <http://www.telegraph.co.uk/expat/expatnews/11205536/Foreigners-are-taking-our-jobs-complain-Singaporeans.html>
- <http://www.slideshare.net/scaree-w/preparing-for-an-ageing-population>
- <http://1.bp.blogspot.com/-OrNgUfr237Y/VZv7OpNEWMI/AAAAAAAABFQ/X8aVfBZkOV4/s1600/MRT%2BBreakdown%2Brecords%2BJuly%2B2015.jpg>