GOVERNMENT POLICIES AND WORKFORCE: THE GROWTH OF SINGAPORE’S ECONOMY

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ABSTRACT

This paper seeks to provide an economic analysis of the labor policies and workforce characteristics in Singapore, which have made the country attractive for investment. To do so, this research will highlight the policies that the Singaporean government has instituted to encourage foreign investments. The Singaporean economy has faced many changes over the last several decades, but now it finds itself as one of the strongest economies in Asia. This research will focus on understanding the policies that allowed Singapore to succeed. Another area of focus will be on developing an understanding of the actual characteristics of the workforce. Today, Singapore has one of the most skilled and diversified workforces in the world. In exploring this workforce, this research will also provide an understanding of the industries and types of firms currently operating in Singapore.

This research is intended to be used to develop a better understanding of Singapore’s economy, specifically its role as a manufacturing/logistics hub. While many countries exist with low costs of labor, Singapore has established itself as the premier skilled-labor force in Southeast Asia. For companies considering offshoring their manufacturing operations, this research can be used as a base to develop a better understanding of the skills of the labor force and the business environment of the country.
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Chapter 1

Introduction

Labor is among the largest costs in the supply chain for manufacturing firms (Schnorbach, 2005). As such, the pressure to lower costs has led some firms to look beyond the countries they service, to seek lower labor costs or increase supply chain efficiencies globally. This process of the globalization of supply chains has allowed several nations to emerge as critical players in global supply chains. Among the largest beneficiaries of offshored production were China, India, and Mexico. However, in recent years, Southeast Asia has become an attractive location for the offshoring of manufacturing (Harrison A, 2011). While many countries in the region focus on providing low-cost/low-skilled labor, Singapore has found success with a different strategy. The city-state places an emphasis on creating a skilled labor force and promoting ease-of-business within its borders.

This paper seeks to provide an economic analysis of the government policies and workforce characteristics in Singapore, which make it a hotbed for foreign investment. To do so, the paper will first discuss the background of Singapore, including its historical political/economic position, and its economic situation today. Then, this research shifts focus to the policies that the Singaporean government has enacted over the last five decades to enable this growth. Next, this research will discuss the specific characteristics of the Singaporean workforce today, including demographic and industry-specific information. The final portion of this research will focus on the challenges facing the Singaporean economy currently and/or in the future.
This research seeks to inform the reader of Singapore’s role as an efficient supply chain hub in Southeast Asia. By its conclusion, the reader will have a better understanding about Singapore’s comparative advantages. It is the goal of this paper to provide supply chain professionals, who may be considering offshoring production to the region, with information about Singapore as a logistics hub. This paper will examine the types of industries and firms, which currently have operations in Singapore, as well as providing the benefits and possible dangers in the economy. At the conclusion of this research, the unique role that Singapore plays in Southeast Asia as a skilled-labor focused, export economy will become clear. Of course, the decision of whether or not to outsource is a firm-specific one. However, this paper seeks to help potential firms become more knowledgeable about whether or not to consider Singapore as a location for the offshoring of production.
Chapter 2

Background

While it is not a large country, Singapore is an economic giant in Southeast Asia. The nation includes the island of Singapore and fifty-eight other islands. The capital city (also called Singapore) lies on the main island and is home to people of all backgrounds, cultures, and religions (“About Singapore,” 2016). The government of Singapore today is one of the most efficient and least corrupt governments in the world (“Corruption Perceptions Index 2015,” 2016). It has been vital in pushing forth policies that have driven growth in the nation.

Due to its ideal location (between Malaysia and Indonesia), Sir Stamford Raffles founded the colony as a trading post for the British of the East India Company in 1819. Since then, the vigorous free-trade atmosphere has only gotten stronger and has helped enable the country to its economic status today. The islands eventually became part of the British Straits Settlements in 1826. During World War II, the Japanese briefly occupied Singapore but they returned the country to the British after the war. Singapore eventually gained independence from the British and became a part of Malaysia in 1963. Due to disagreements about governance, Malaysia ousted Singapore and the city-state gained its independence as a sovereign nation in 1965 (Turnbull, 1977).

Since then, Singapore has transformed massively. Today, it is one of the most resilient and richest per-capita Asian economies. To understand the extent of trade in Singapore, one only needs to examine the Port of Singapore, which is the second busiest port in the world behind
Rotterdam (“About Singapore,” 2016). Singapore’s economy is of the most innovative (Min, 2016), most competitive (Schwab, 2009), and most business-friendly in the world (Williams, 2015). The nation is also considered one of the least corrupt countries in the world (“Corruption Perceptions Index 2015,” 2016). Singapore enjoys one of the highest GDP-per capita of all Asia-Pacific countries, which can be seen in Figure 1 below. Furthermore, it is also the only Asian country to receive AAA sovereign ratings from all major credit ratings agencies (Monaghan, 2014). Singapore’s location, skilled workforce, low tax rates, ease-of-business, and lack of corruption make it attractive for foreign investments. Multinational corporations from the United States, Europe, Japan, China, and India are in all sectors of the economy. Some notable examples of these corporations are Hewlett-Packard, Micron Technology, Canon, Royal Philips Electronics, and Taiwan Semiconductor Manufacturing (Shameen, 2006).
Figure 1. GDP Per Capita of Asia-Pacific Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>2014</th>
</tr>
</thead>
<tbody>
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<td>Australia</td>
<td>$61,165.63</td>
</tr>
<tr>
<td>Singapore</td>
<td>$56,009.54</td>
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<tr>
<td>United States</td>
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<tr>
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<td>Brunei Darussalam</td>
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<td>Chile</td>
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</tr>
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<td>Palau</td>
<td>$14,167.93</td>
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<td>Malaysia</td>
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<td>China</td>
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<td>Bhutan</td>
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<td>Vietnam</td>
<td>$2,048.95</td>
</tr>
<tr>
<td>India</td>
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</tr>
<tr>
<td>Pakistan</td>
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<tr>
<td>Myanmar</td>
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<tr>
<td>Bangladesh</td>
<td>$1,162.74</td>
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<td>Cambodia</td>
<td>$1,095.62</td>
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<tr>
<td>Nepal</td>
<td>$799.66</td>
</tr>
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</table>

Source: International Monetary Fund, 2016
Chapter 3

Government Policies

After Singapore’s independence in 1965, the country found itself in a precarious position. The unemployment rate in the nation was running amok at 14 percent; GPD per capita was less than $2,700 USD; and around half of the country’s population was illiterate. Contrast that to the Singapore of today. Data from 2013 provides an almost opposite perspective of the nation: nearly full employment (1.9 percent unemployment rate); significant rise in GDP per capita to $55,183; and the improvement of literacy rates to 96.5 percent (Yap & Gee, 2015). The change during this approximately 50-year period was significant, to say the least. The state played a significant role in this change by reshaping both the economy and society. Unlike in South Korea, Taiwan, and Hong Kong, local enterprise played only a supporting role in the development of Singapore. Multinational corporations played a significant role in this development (Pang & Lim, 2015).

As Yap and Gee suggest, there were three broad phases of development in Singapore, “...An initial phase with an anti-natalist population policy and an employment-linked approach to immigration, 1965–1986; a pro-natalist, progrowth phase from 1987 to 2012; and from 2013 onwards a phase focused on productivity, with a continued pro-natalist emphasis coupled with a more tightly-calibrated foreign labor stance” (Yap & Gee, 2015).
Post-Independence

High fertility rates in the post-war era had resulted in a need for jobs during the initial phases of self-governance. The major programs enacted by the Singaporean government, following independence, focused on the goals of regulating birth rates, defining residency and citizenship, and controlling in-migration (Yap & Gee, 2015). The People’s Action Party, led by Lee Kuan Yew also called for tackling the problems of high unemployment, housing, and education (Pang & Lim, 2015).

In the early years, the Singaporean government acted to promote desired social norms. The bulk of these programs focused on reducing the birth rate and providing education to families. The National Family Planning and Population Programme in 1966 was a multi-pronged effort to educate and incentivize families to adopt a desirable family size. It focused on the theme of “Plan your family,” more specifically, “Plan your family small.” This came with a high-profile public education campaign that had popular slogans like “Stop at Two” and “Two is Enough.” The goal was to reduce fertility to replacement level, in order to achieve zero population growth. The hope was that this would act as a temporary solution to the joblessness problem (Yap & Gee, 2015).

The government also became a major player in the economic sphere after independence, not only as a regulator and planner, but also through taking equity stakes in many companies. This alleviated risk from the private sector, in an effort to create wealth and jobs (Pang & Lim, 2015). The government also realized the need for the adoption of an external economic strategy, as the nation's small and limited market provided a challenge for growth. The goal was to convince multinational corporations to set up manufacturing operations in Singapore to serve export markets (Yap & Gee, 2015). Furthermore, government policy-makers sought investment
from foreign capital. The Economic Development Board (EDB) led this investment-promotion effort. The EDB also had control over resource allocation, among other functions that affected labor market policies and outcomes. The state also sought to provide incentives to corporations to encourage industrial restructuring, technological upgrading, and inclusion of higher value-added activities, which would not have been a natural focus of market forces at the time. These state-driven incentives were devised to promote longer-term growth in the nation (Pang & Lim, 2015).

At the same time, political leaders tackled the problem of building a nation from a diverse ethnic population, where most individuals were descendants from immigrants (Pang & Lim, 2015). The government put forth policy to help its registered citizens by reforming the foreign-worker registration process. The new registration process severely limited the rights of foreigners to move in for work, as it only allowed registered citizens to obtain jobs in the country, without a temporary permit. Acquiring these temporary work permits was not easy for foreign workers. Employers were the ones to apply for these permits, rather than individuals. In this way, the permits were linked directly to growth in the private sector, rather than through the desires of foreign workers. The result was a sharp decline in the foreign labor force (Yap & Gee, 2015).

However, from 1967-1973, employment in the manufacturing sector expanded three and a half times. This employment growth primarily existed in labor-intensive, low-skilled jobs. By the mid-1970s, there was a recognized need amongst Singapore’s political leaders for an inflow of high-skilled labor, to match the high pace of economic growth. These leaders recognized that migrant workers would provide flexibility to the labor market by being a quicker source, as domestic labor sources would require many years of planning to train. As a result, the
government came up with various programs to allow skilled-workers and professionals to acquire permanent residence, citizenship, and temporary work. While there were some limits placed on foreign workers, the importation of labor continued in to the 1970s. However, in an effort to thwart dependence on foreign labor (which could impose high social and economic costs), the government planned to phase out unskilled foreign workers by the early 1990s. Yet, the new policies still allowed for the liberal importation of skilled, foreign labor (Pang & Lim, 2015).

By 1984, the government also relaxed its efforts to limit family size, especially among educated women. These educated women were having fewer children than average and were less likely to get married than their non-educated counterparts were. Leaders recognized that future, domestic, skilled and technical labor would likely come from families of these educated women. The government offered such women tax incentives, among other financial benefits, to have more children. By 1986, the government dissolved the Singapore Family Planning and Population Board and the anti-natalist phase of Singapore's population policy ended (Yap & Gee, 2015).

1987-2012

The late 1980s marked a shift to pro-natalist policy. The new direction took place after a decade of below replacement-level fertility. These prolonged low fertility levels had created an aging population. This came with its own problems, such as a lack of young workers, slow productivity growth, and the increasing tax burden on the young to provide for the increasing number of old. The government sought to tackle the internal problems by promoting a pro-
natalist policy. Marriage was integral to the new policy and was promoted by a financial aid packages. The benefits for child rearing for educated women also saw expansions in the coming years (Yap & Gee, 2015).

From the mid-1990s to early 2000s, unease grew about the extensive flow of migrant workers, but the government did not restrict it, fearing harm on the economy. Only after May of 2011, when the People’s Action Party suffered its greatest electoral setback in history (to the Worker’s Party), did the government tighten its inflow of foreign workers (Pang & Lim, 2015). Figure 2 below shows Singapore’s population data from 1990-2016, with the percentage of citizens, permanent residents, and non-residents.
Continued declines in fertility in the 1990s led to further measures to promote responsible family growth, including a series of marriage and parenthood packages in the early 2000s. The declining fertility and increasing in-migration led to a declining proportion of citizens to the total population. By 2010, the citizen population consisted of only 63.6 percent of the population, with permanent residents making up 10.7 percent and non-permanent resident foreigners making up 25.7 percent (Yap & Gee, 2015).
2013 to Today

Government policies since have been a continuation of the pro-natalist policies of the 1990s, with a more tightened immigration policy. The restrictions on in-flow of foreign labor remain, in order to alleviate pressures on citizens and to protect the culture of the diverse nation. Furthermore, increased state promotion of family expansion came in the form of the 2013 Marriage and Parenthood Package, which expanded on previous benefits and introduced other programs like paid paternity leave and benefits for introducing work/life balance for employers (Yap & Gee, 2015). Figure 3 below shows Singapore’s struggles with an aging population through the past 50 years.

Figure 3. Population Age Data
The Aging Population in Singapore

Source: The World Bank, 2016
Chapter 4

Labor Force

As a result of careful planning and policy, Singapore has been very successful at creating a prospering workforce. In 2013, the unemployment rate was around 2.8 percent and the labor force participation rate (for those above age fifteen) was around 66.7 percent ("World Development Indicators," 2016). This is in part thanks to a skilled, migrant population and a well-developed national education system.

Education

Within the spheres of political leaders in Singapore, there is much emphasis placed on human resource development, which is central to the country’s plan for growth and prosperity. The three levels of the education system—primary, secondary, and post-secondary—are state-managed and financed. Primary school in Singapore consists of six years of compulsory education costing no school fees to the students. Secondary school takes an additional four or five years to complete. Post-secondary education can vary in forms and length. Junior colleges and centralized institutions for the academically inclined take typically take 2-3 years to complete. The Institute of Technical Education trains students in technical knowledge and skills relevant to industry. Polytechnics, of which there are currently five in Singapore, develop knowledgeable graduates who are much sought after by industry. Autonomous universities
receive government funding but as the name suggests, are autonomous in their operations, while private universities do not receive government funding. The Ministry of Education aims to create a system, which is flexible and diverse, allowing for the development of different skills (“Education System,” 2016).

Figure 4 shows 2013 data from the World Bank for Singapore. It is a breakdown of educational attainment for the Singaporean labor force. It is worth noting that nearly half of the labor force has a post-secondary education.

**Figure 4. Educational Attainment in the Labor Force**
Workers in Singapore take on various roles in numerous industries. It is worth noting that 54.3 percent of Singapore’s employed residents in 2015 were professionals, managers, executive, and technicians. Clerical, sales, and service workers accounted for 24.2 percent. Production and transport operators, cleaners, and laborers contributed 21.4 percent (Manpower Research and Statistics, 2016). These roles exist across various sectors in both manufacturing and services oriented industries.

Manufacturing is an important pillar of Singapore’s economy. It represents approximately 20 percent of Singapore’s GDP. In 2015, over 400,000 workers were employed in manufacturing jobs. Figure 5 below shows the number of workers by industry in manufacturing (Department of Statistics: Singapore, 2016). It is worth noting that high-skilled industries like electronics, machinery, fabricated metals, and chemicals represent a significant portion of manufacturing jobs in Singapore.
Electronics manufacturing even contributed 5.3 percent to the country’s Gross Domestic Product in 2013. Singapore is also the site of important operations for more than thirty of the world’s leading biomedical sciences companies, including GlaxoSmithKline, Novartis, and Takeda. The increasing demand for transportation fuel, petrochemical, and specialty chemical products has also attracted top chemical companies to Singapore. With the development of Jurong Island, an integrated complex for global chemical firms, firms like BASF, ExxonMobil,
Mitsui Chemicals, and Shell have made investments in Singapore, making it a trusted base for high-tech manufacturing and R&D (“Industries,” 2016).

While manufacturing is a large part of Singapore’s economy, services have driven growth for the past few years. Figure 6 below shows the number of workers employed in different service industries in Singapore.

**Figure 6. Workers in Services by Industry**

Source: Manpower Research and Statistics, 2016
Retail and consumer businesses are attracted to Singapore because of its ease-of-business. Businesses can centralize key services functions like finance, human resources, and supply chain management. These are supported by a variety of professional services like accounting, legal, or logistics firms (“Industries,” 2016).

The World Bank ranked Singapore as the top Logistics Hub in Asia in 2014. Singapore’s strategic location has also made it a nexus for major shipping lanes. Twenty of the top twenty-five logistics firms have operations in Singapore, including DHL, Kuehne + Nagel, Schenker, and UPS (“Industries,” 2016).

Chapter 5
Conclusion

This research has shown various characteristics of Singapore’s work force. For further information general information about Singapore, refer to Appendix A. Appendix B provides additional key statistics about Singapore’s economy for reference. This high-skilled, often imported labor force attracts high-skilled, specialized industries to the nation. This is what has driven growth in the city-state during the past fifty years since its independence. However, it is the government of Singapore, which deserves significant credit in shaping the labor force of the nation to desired outcomes. Using social and economic policies, the government aimed to create an educated workforce, which could tackle the challenges of the future. Programs to incentivize education for families fostered a talented, homegrown, young workforce. However, concerns about an aging workforce remain, with the continuation of low birthrates. The continued importation of skilled-workers could also still pose a dependency problem in the coming years,
though the government hopes to fight it by using strict immigration policies to protect its citizens. Furthermore, uneven global recovery has had a negative impact on the manufacturing sector in recent years.

Whatever challenges it may face in the coming years, Singapore remains prepared. It is one of the strongest and most resilient economies in Asia. Moreover, Singapore’s competitive advantage in labor and location remain. The country continues to be attractive for foreign investment.

The role that Singapore plays in the world economy is one of providing high-skilled labor for companies considering shifting operations to Southeast Asia. Having discussed some of the challenges and benefits of production in the nation, it is the hope of this research to provide the reader with a better understanding of the country’s economy, labor force, and policies. For firms considering an off-shoring decision, the choice is a very personal one. Awareness of challenges, benefits, and trends will make the decision clearer.
# Appendix A

## General Information about Singapore

<p>| | |</p>
<table>
<thead>
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<th></th>
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<tbody>
<tr>
<td>Surface area (sq. km)</td>
<td>718</td>
</tr>
<tr>
<td>Population (2016)</td>
<td>5,697,000</td>
</tr>
<tr>
<td>Population density (per sq. km, 2016)</td>
<td>8137.9</td>
</tr>
<tr>
<td>Capital city</td>
<td>Singapore</td>
</tr>
<tr>
<td>Currency</td>
<td>Singapore Dollar (SGD)</td>
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<tr>
<td>Urban population percent</td>
<td>100.0</td>
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<tr>
<td>International migrant count (2015)</td>
<td>2,543,600</td>
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<tr>
<td>International migrant percent</td>
<td>45.4</td>
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<td>Infant mortality rate (per 1,000 live births, 2010-2015)</td>
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Source: Country Profile: Singapore, UN Data, 2016
Appendix B

Key Economic Indicators

Below is data regarding the Singaporean economy. The graphs below provide information about:

Gross Domestic Product (GDP) which measures output, GDP per capita, Gross Value Added (GVA)
which measures the value of goods and services produced, and employment.

Nominal GDP:

Source: The World Bank, 2016
GDP per capita:

Source: The World Bank, 2016
Industry and services by value added:

Source: Country Profile: Singapore, UN Data, 2016

Employment in industry and services:

Source: Country Profile: Singapore, UN Data, 2016
Median income:

Source: Manpower Research and Statistics, 2016
BIBLIOGRAPHY


Education:
   Major(s) and Minor(s):
      B.S. Supply Chain and Information Systems;
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      Minor in History

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