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IN THIS POST-INDUSTRIAL AGE, IS INDUSTRIALIZATION UNACHIEVABLE OR POSSIBLY DANGEROUS FOR DEVELOPING COUNTRIES?

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ABSTRACT

This paper examines to what extent it can be argued that we live in a post-industrial age of economic development. The case of India is compared to that of China in order to draw attention to the differences between a service-led economy and a manufacturing-driven economy. Finally, this paper assesses whether developing countries should leapfrog to a service-led economy and skip the industrialization phase.
The literature suggests that the relative predominance of the service sector can be largely explained by high-productivity in the manufacturing sector. The cases of China and India indicate that service-led economic growth can lead to high levels of informal employment, as well as Balance of Payment and current account deficit. Finally, it is questionable that developing countries do not need to industrialize because of the modern benefits of the service sector. The cases of shipbuilding in East Asia illustrate that developing countries can build up industries and seize market shares by taking advantage of the loss of international competitiveness caused by high wages in advanced economies. Therefore, the relative shift towards services in advanced countries may enable developing countries to build up their industries.

INTRODUCTION

Some scholars claim that we live in a post-industrial age. The post-industrial age argument suggests that in modern economies most people work in services and services make up the largest share of the economy's output. In light of this, it is suggested that sectors such as finance, I.T and consulting have become the engine of growth in these economies.

The first part of this paper reviews the arguments claiming that we live in a post-industrial age. The second part explores the assessments that highlight the limits of the post-industrial age theory. After explaining these limitations; the question of whether industrialization is possibly dangerous for developing countries is examined. Should developing countries skip industrialization in the process toward their economic development, and move straight to a service-sector dominated economy? The case of India is used to evaluate if services can

become the engine of growth in developing countries in the third part of this essay.

Subsequently, the case of India is compared to that of China in order to draw attention to the differences between a service-led economy and a manufacturing-driven economy. In addition, the agricultural surplus theory is used to identify problems that may arise in a service based economy.

Finally, an alternative view is provided, suggesting that a post-industrial stage may facilitate industrialization, instead of making it unachievable for developing countries.

DE-INDUSTRIALIZATION AND THE POST-INDUSTRIAL AGE

In the 1970s, Bell (1973) forecast that the service sector would experience an enormous growth, which would lead people to live in post-industrial societies. In these societies, the service sector would employ most people and make up the largest share of output. To be considered post-industrial, countries should have gone through a steady decline of manufacturing share in output as a percentage of GDP (Tregenna 2009) and manufacturing employment (Palma 2005). This decline is called de-industrialization which throughout this paper will be used interchangeably with post-industrialism. Moreover, the scope of de-industrialization will be analyzed using measurements of employment and output.

Regarding the growth of the service sector, some argue (Szirmai 2012, Wölf2005) that services are now the most important sector in all OECD economies because it accounts for around 70% of GDP and employment. Given the service sector's higher potential to produce growth (especially finance, IT and consulting) than other sectors, Ghani and Kharas (2010) have suggested that developing countries can skip industrialization and profit from all of the advantages that these modern services provide. They argue that, due to the "Service Revolution" (high-productivity of services), rapid income growth and job creation led by services is now achievable. In addition, since patterns of demand and employment growth shift from manufacturing to services in the last stages of economic development (Rowthorn 1987), developing countries can skip one step in the development process by proceeding directly to services.

The ideas explained above have created a considerable amount of discussion among scholars. The debate concerning the leading role of the service sector over the manufacturing sector will be covered in the next section.

THE POST-INDUSTRIAL AGE IN TERMS OF OUTPUT AND EMPLOYMENT

To which extent has manufacturing output lost significance in rich countries? Debande´s (2006) research reveals that while the share of industry in the economy has declined relative to the service sector, industrial value added has grown in absolute terms in Europe, Japan and the United States by approximately 5% per year since 1970[1]. Rowthorn and Coutts (2004) add that the volume of industrial output seems to decline because high –productivity causes the price of manufacturing goods to fall. In a post-industrial era, the demand for manufacturing is supposed to shift towards services (Rowthorn 1987). However, the 'price drop' arguments explain how demand has not necessarily shifted. People now have more than one computer or a stockpile of cosmetics due to the relatively lower price of these products. The high productivity in the production of electronics and cosmetics, and low prices of these goods, lead people to spend a smaller share of their income in manufacture goods compared to services, where prices do not change as much due to these sector´s lower productivity. Finally, if price effects were taken into account to calculate the decline of the share of manufacturing in total output in Britain from 1955 to 1990, the figures change from 40 % to 10% (Chang 2001).

Another cause of the seemingly decline in manufacturing is related to outsourcing. Debande (2006) suggests that some services which were provided by manufacturing companies had been outsourced and because of it, the activities are currently reported as service outputs. Furthermore, Chang (2011) explains that some companies apply to be re-classified as service companies even though they still engage in manufacturing activities. For instance, this re-classification effect, accounts for around 10 % of the decline in manufacturing

[1]It worthwhile to mention, industrial value added has not been rising in the early 2000, which can signal that these economies may experience absolute de-industrialization in the future (Debande 2006).

employment in the UK. Finally, Palma (2005) argues that additional causes of de-industrialization are abrupt changes in economic policy against the manufacturing sector[2]and/or export surge of commodities.

The shift in demand towards services is seemingly why service employment grows at the expense of industry in advanced economies (Rowthorn 1987). Debande (2006) contends that industrial employment has declined in absolute terms in the United States, Japan and Western European countries. 70% of this downtrend is a consequence of productivity growth and changing consumption patterns (older people presumably demand more services). During the 1970s, it was already suggested that the UK economy was only experiencing de-industrialization in terms of loss of employment (Singh 1977).

Competition from Third World countries has been considered a major potential source of de-industrialization, as it negatively impacts the product and labor markets in rich countries (Singh 1977/1989). However, recent studies suggest that the rise of low income manufacturing powers, such as China, can only explain 20% of de-industrialization rich countries (Chang 2011). Debande suggests that 30% of de-industrialization can be explained by the trade with low wage countries. Similarly, Lawrence and Edwards (2014/2013) believe Third World competition can explain only a minor share of manufacturing job losses in the US, and factors such as a strong dollar, productivity growth and relative demand are more important.

The relative demise of the manufacturing sector output relative to the service sector and the absolute decline of manufacturing employment create concerns. However, Debande (2006) believes de-industrialization should not be opposed because it is caused by productivity, not market failure. In contrast, Singh (1977) advises that the issue should be taken more seriously because a country´s manufacturing sector should be the major source of foreign exchange earnings. This means a country should export enough goods to compensate for the import requirement. If a country has a productive domestic manufacturing sector which is not internationally competitive, its volume of exports could decrease and harm the balance of payments, and the country´s ability to imports

[2] Note that not all "abrupt" policy changes lead to de-industrialisation.

goods from abroad. This has the potential to ultimately reduce life quality (Chang 2011).

To sum up, the scope of the post-industrial age should be viewed through the lens of productivity growth and price fall in the manufacturing sector. The shift of output, demand and employment from manufacturing towards services is primarily a cause of high productivity and empirical analysis indicates that there are no examples of economic accomplishment which have not been driven by industrialization since the 1950s (Szirmai 2012). The idea that industrialization can be dangerous for developing countries is highly questionable. Nevertheless, how industrialization can be unachievable requires further study and the topic will be covered in the last section of this paper.

The effects of high productivity manufacturing were discussed previously. It is also worth noticing that some services have acquired high productivity and can provide growth. Remarkable examples are software services in India (Szirmai 2012) and the success of tourism in Seychelles (Chang 2011).Yet, a main issue left to examine is if the “service revolution” can allow developing countries to skip industrialization and if services can become the engine of growth in developing countries. The next section seeks to go over this idea by exploring the advantages of the service sector and analyzing India´s economic development.

“THE SERVICE REVOLUTION”

In the first part of the paper, it has been argued that the extent to which we live in a post-industrial age should be questioned. Manufacturing is still important for the economy and no country has (yet) experienced successful development without industrializing. However, due to technological improvements, modern services offer some benefits. These advantages questions the importance of the manufacturing sector as an engine of growth for catch up economies (Szirmai 2012) and hints that the sector can be an alternative engine of growth for developing countries. This section explores some contemporary advantages of the service sector.

Some of the most venerated characteristics of the manufacturing sector are its positive contribution to the balance of payments through high tradability,

its capacity to generate employment and productivity growth. The productivity and tradability are not as high in the service sector (Singh 1977). However, as international trade in services is growing fast, the positive impact of manufacturingon the balance of payment trough tradability and productivity is not a strong reason to avoid services anymore. The IT revolution allows providing call centre or backing office business services from far away (Dasgupta & Sing 2005) and recently consulting, finance, retail and IT have become increasingly productive (Szirmai 2012).

These new developments of the service sector are deemed by some to be sufficient for developing countries to rely on services as an alternative engine of growth. Ghani & Kharas (2010) add that as the global market for services is "big and unexploited", export oriented services can be a sustainable source of growth. However, others, such as Rodrik (2016) observe that a weak point of this statement is that highly tradable services need highly-skilled workers and thus do not have the same capacity as manufacturing to absorb low-skilled labor, which developing countries have in abundance.

INDIA AND THE "SERVICE REVOLUTION"

At the moment, India provides one of the best cases to investigate how a developing country can grow by giving primacy to services over industry. The case receives a lot of attention because it has direct implications not only for India but for all developing countries (Dasgupta and Sing 2005).This section reviews data of service employment and productivity in India.

On the subject of employment, services do not come across as the best engine for job creation in India. The IT sector is amongst the ones with the biggest potential to create jobs, but it requires well-educated people. Research indicates that only 5% of the relevant age group in India receives the necessary education (Joshi 2004). India is experiencing high-productivity without a widespread increase of labor-intensive activities (which was characteristic of fast-growing East Asian economies) (Tejani 2016). As a result, informal employment rates account for92% of the total (NCEUS 2009). The same pattern of informality has been detected in Africa and Latin America, where premature de-

industrialization is taking place. As manufacturing contracted, informality has grown and people who migrate to cities engage in low productivity service jobs (Rodrik 2016).

On the topic of productivity growth, India stands out for the fast expansion of high-productivity sectors (Tejani 2016).Some service sectors in India, such as communication, banking, and IT have grown faster than GDP. Furthermore, Dasgupta and Singh (2005) have indicated that IT services contribute significantly to the Balance of Payments and software exports constitute a large share of the country´s exports.

Informality and jobless growth in India, however, question the ability of the service sector as an engine of growth. Regarding the productivity of services, while it is true that this sector can generate growth and can positively impact the balance of payment (BOP), the important question is to what extent it can meet a country´s imports demands. The US is one of the countries with high-productivity in the service sector. Yet, the trade surplus of its highly-tradable services is not enough to compensate for the manufacturing deficits (Chang 2011). Sign (1977) questions the ability of services to positively impact the trade balance in the same level manufacturing does. What is it likely to be for India or another developing country?

Considering the development path of China and India is normally contrasted, the next section will go over the previous question by comparing China´s and India´s balance of payment (BOP) and current account. Ghani & Kharas (2010) argue that India´s experience demonstrates that services can provide an alternative to the manufacturing-driven development path of China, and the next part of this paper examines if this statement holds when it is seen through the lens of these countries' current account.

INDIA AND CHINA

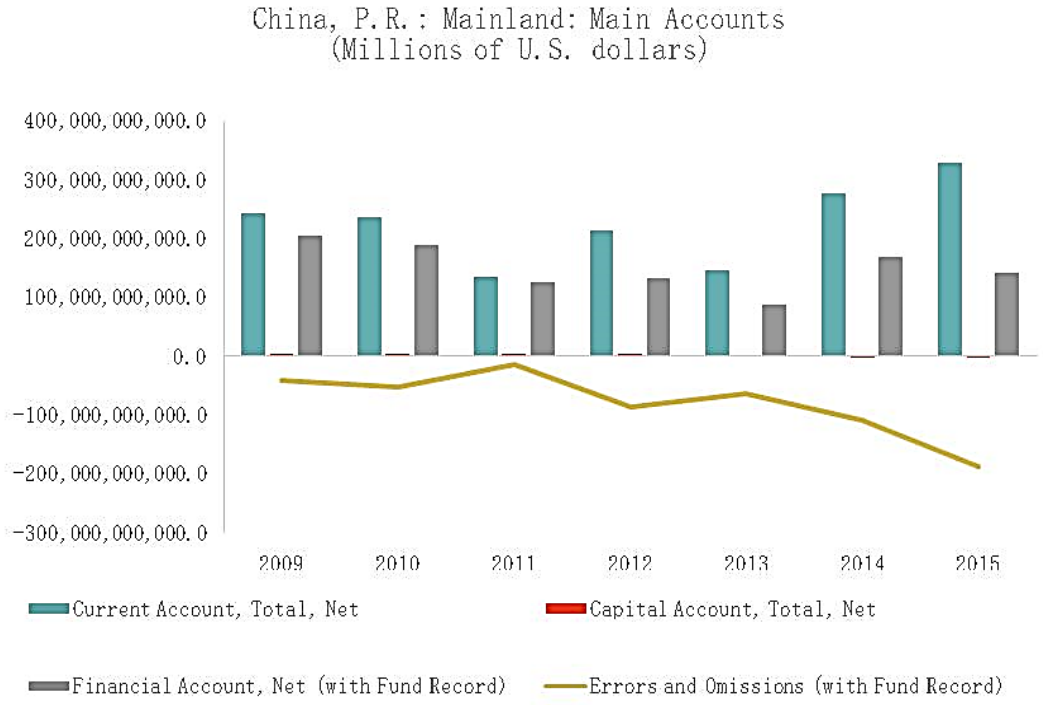
China and India differing development paths, hint that manufacturing and services have the potential to drive GDP growth. India´s GDP has grown around 7.5 % on average the last decade while China´s GDP has grown around 9.5%.

However, contrasting India and China BOP and current account can shed more light into these statements.

BOP[3]

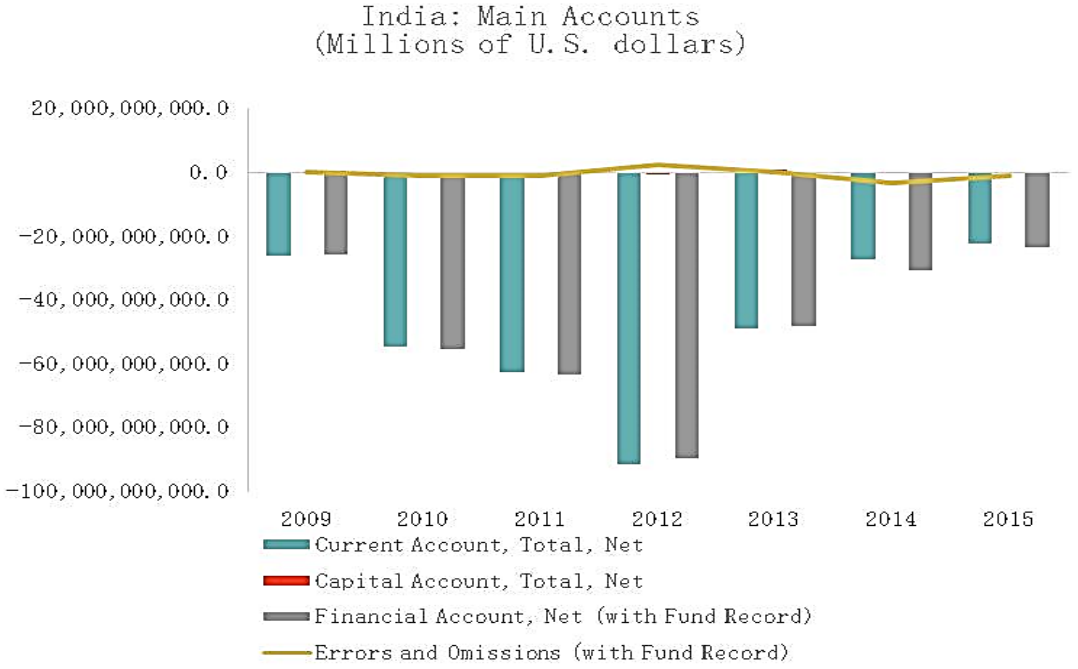
Figure 1[4], reflects a BOP surplus in manufacturing-driven Chinese economy. In contrast, figure 2 shoes that India´s BOP has been in deficit since 2009.

Figure 1



[3]The BOP is a country´s record of all its monetary transactions between. It is divided into three main categories: the current account, the capital account, and the financial account.
[4]Figure 1, 2, 4 and 5 were retrieved from the IMF data bank. Figure 3 uses data from the World Development Indicators

Figure 2

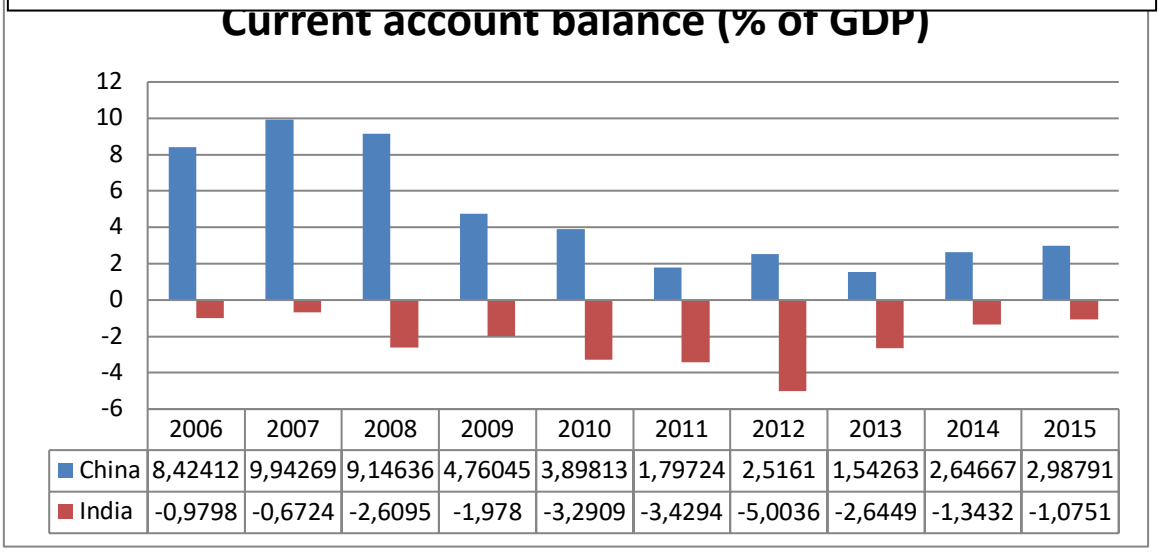


CURRENT ACCOUNT[5]

Figure 3 shows that China´s current account is in surplus while India´s is deficit. The breakdown of China´s and India´s current account in figure 4 and 5, suggest that India´s service[6] surplus is not enough to cover for the deficit in goods[7]. In contrast China´s goods surplus appears to cover the service deficit.

[5] Current account balance is the sum of net exports of goods and services, net primary income, and net secondary income.
[6] Services refer to economic output of intangible commodities that may be produced, transferred, and consumed at the same time.
[7] Goods exports refer to all movable goods involved in a change of ownership from residents to non-residents.

Figure 3



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
China	8,42412	9,94269	9,14636	4,76045	3,89813	1,79724	2,5161	1,54263	2,64667	2,98791
India	-0,9798	-0,6724	-2,6095	-1,978	-3,2909	-3,4294	-5,0036	-2,6449	-1,3432	-1,0751

Figure 4

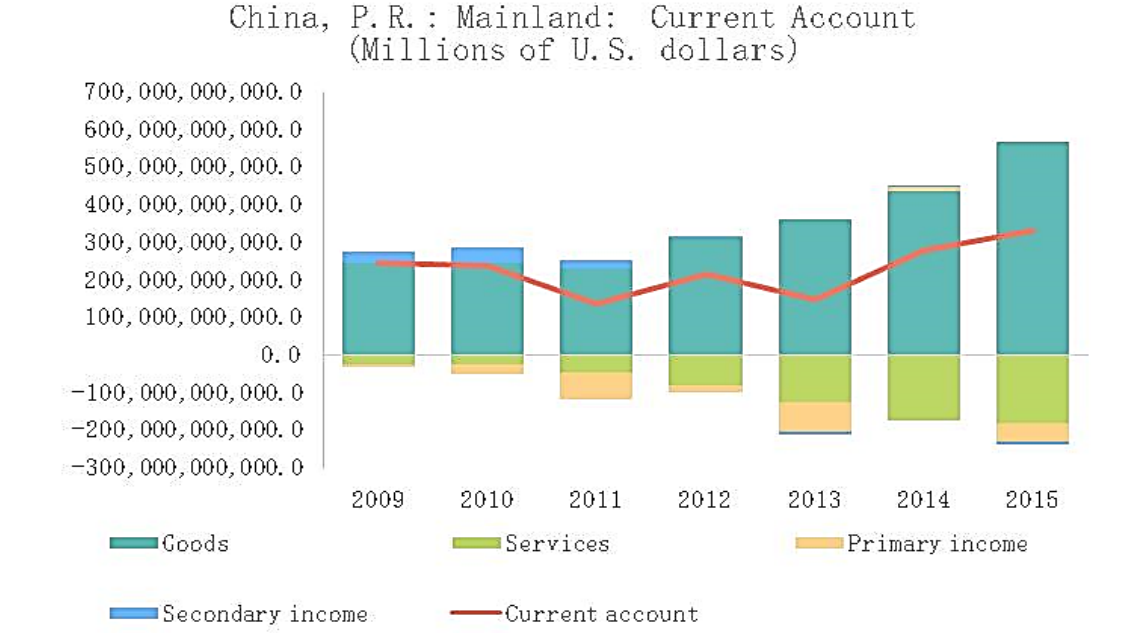
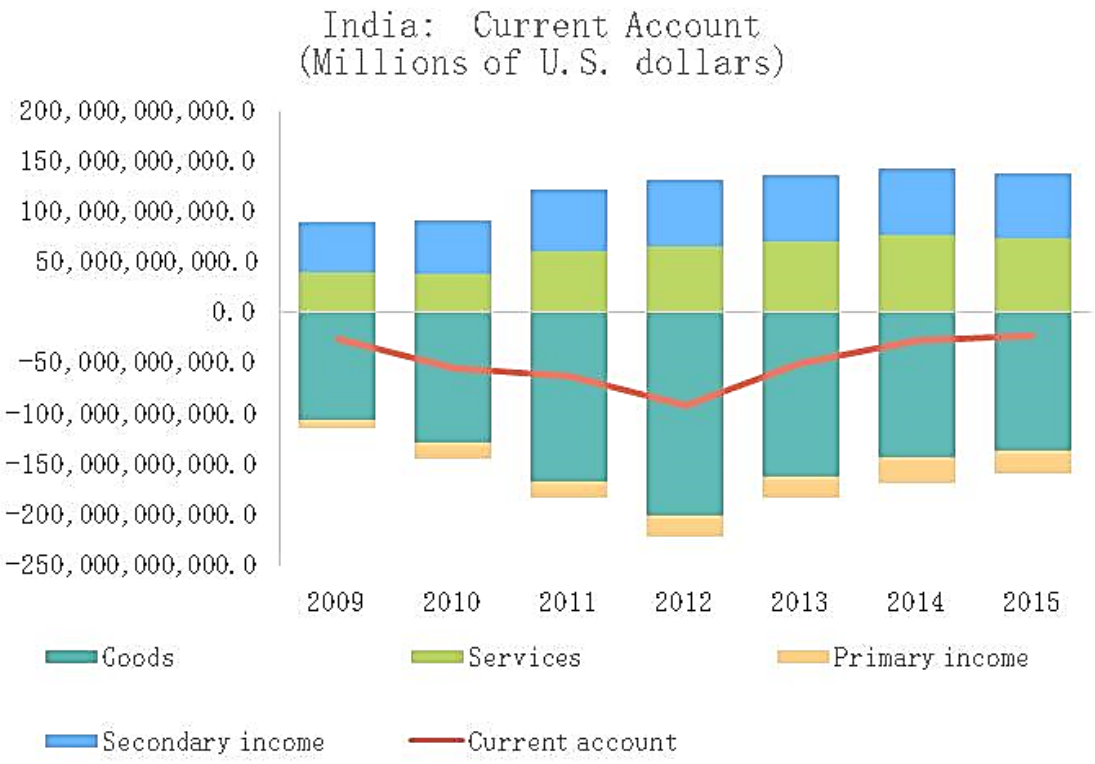


Figure 5



In 2005, Dasgupta and Singh registered that services contribute positively to India´s BOP. While that statement is borne out by the data, it appears that India´s BOP is currently suffering. India´s current account deficit, where services cannot compensate for the other deficits, hints that the service revolution may not be enough to replace manufacturing as the engine of growth. Similarly, the service-led GDP growth of India does not dismiss the idea that low tradability of services can harm a country´s BOP (Chang 2011). Particularly if it is compared to China, where the current account positively contributes to the BOP and in which goods seem cover the service deficit. The next part explores if service´s low tradability may create additional problems in a developing country.

THE AGRICULTURAL SURPLUS AND THE SERVICE SECTOR

The previous section highlighted the economic difficulties of India and also contrasted its economic development path with that of China. Although services are able to push up GDP growth rates, the current account problems that services may create cast doubt on its ability to provide healthy overall growth. This section explains the concept of *agricultural surplus (*Kaldor 1967) and relates it to employment and the balance of payments, in order to point out other problems service-based growth can cause in developing countries.

The agricultural surplus is the excess of food production over the food consumption of the food producers themselves. Using this principle, Kaldor (1967) contends that the manufacturing and service sector growth is dependent on the growth of this excess of food. Kaldor (1967) argues, if urban employment grows at a faster rate than the excess of food, the economy is bound to suffer inflation. Prices would rise because the rapid growth of non agricultural employment could create a rapid increase in the demand of food supplies, and create a demand-supply imbalance. To avoid inflation, the agricultural sector needs to be able to respond to this demand otherwise food needs to be imported. However, if the growth of the economy raises food import requirements while adding little to export capacity it could create a chronic balance of payment deficit.

By combining the remarks regarding the service sector with the agricultural surplus theory, it could be argued that service-led growth has the potential to be dangerous for developing countries if it is not highly-tradable. The current account deficit of India appears to hint that services may not be tradable enough to meet all the import needs of a country. In addition, low tradability is an inherent part of the service sector because it requires people to be in the same place (Chang 2011).Therefore, low tradability could lead developing countries to experience high inflation with a chronic BOP deficit, or elevated levels of foreign borrowing to import food or and/or to get inputs in order to improve agricultural productivity.

Given the logic above, it can be said that if developing countries choose to engage in the most tradable service businesses (i.e.: finance, consulting, IT) they could avoid high-inflation. However, it should be taken into consideration that in the UK, one of most advanced countries in service businesses, the service surplus is barely enough to cover for the manufacturing deficit (Chang 2011).In

addition, the highly-tradable parts of the service sector are highly concentrated businesses. For example, Nolan (2014) writes that “In less than a decade between 1997 and 2006, the top 25 banks increased their share of the total assets of the world’s top 1000 banks from 28 per cent to 41 per cent. After the round of merger and acquisition in the financial crisis, the top 25 banks further increased their share, which reached 45 per cent in 2009”. He also claims that as consequence of this process is a big discrepancy in competitive capabilities between financial firms from advanced economies and those in developing countries

The agricultural surplus theory comes across as reasonable because, if it is used to evaluate the possible dangers of service-based growth, it would lead to anticipate that India could experience high food inflation and BOP deficits. More people are demanding food and inputs and export earnings of the service sector are not enough to satisfy the country´s import requirements. In fact, according to the International Monetary Fund (IMF), over the past decade, India has seen as extended period of high inflation, to a large extent driven by persistently-high food inflation. The acceleration of India’s economic growth witnessed during the last ten years, accompanied by stagnant agriculture growth, resulted in excess demand for food, giving rise to relative food price inflation (IMF 2016)[8]

In light of these factors, it seems doubtful that countries can skip from agriculture to services without complications. The last section of this paper explores whether the relative growth of the service sector vis-à-vis the manufacturing sector could facilitate industrialization, instead of making it unachievable for developing countries.

THE CASE OF SHIPBUILDING IN EAST ASIA

As seen earlier in this paper, some scholars argue that because of the modern benefits of services in this post-industrial age, developing countries do

[8] Kaldor (1967) stated that monetary and fiscal policies implemented to control inflation in Latin America after the great depression didn’t work and economists in the west took long to recognize the failure of stabilization policies recommended by International Organizations. Currently, the effectiveness of similar policies to control inflation is being questioned in India. Kaldor would perhaps have recommended India to expand its agricultural capacity to fight inflation.

not need to industrialize. The following section assesses how the relative shift towards services in advanced countries may instead enable developing countries to build up their industries.

Part of the literature reviewed in this paper regarding the rise of the service sector relative to the manufacturing sector, was written in the 60s and 70s. If developing countries had chosen during those decades to jump straight to services and profit its benefits (as it is proposed today) they may not have developed some of the most prominent industries we know today.

For instance, in the early 1970s, Korea initiated the HCI Program, which entailed building up businesses such as shipbuilding, automobiles, and high-end electronics as export industries. Chang asserts that without developing these industries, Korea would not have sustained its export growth momentum and its ability to grow rapidly after the 1970s (Chang 2011). In the 1970s and 1980s Korea seized large market shares in the shipbuilding industry. Some studies suggest that, while Korean government support was essential, the loss of competitiveness of Western European shipbuilders, due to high wages and high production costs, contributed to the ascent of East Asian shipbuilding (Lars & Stig 2013)

Furthermore, it is pointed out that the shipbuilding industry is undergoing a similar pathway to that of the 1970s. However, this time around the low labor cost, government-sponsored player is China, while South Koreas position is similar to that of the established builders of Europe in the 1970s (Lars & Stig 2013). The case of East Asian shipbuilding, hints that the loss of competitiveness in manufacturing caused by high production costs in advanced economies can facilitate, at least to some extent, the process of industrialization in developing countries.

The example of the shipbuilding industry might hint that post-industrialism in high-income countries can be regarded as an opportunity for developing countries to engage in industrial activities rather than an obstacle. Still, there may be factors that make industrialization difficult, dangerous or unachievable for developing countries. However, these factors are not necessarily related to the service revolution. Industrial consolidation in many industries has been

considered by some authors (Nolan, Zhang & Liu 2007) as an obstacle for industrialization in developing economies.

The aerospace, automotive, beverage, electronics sector are highly concentrated and this creates barriers to entry for developing economies. Research suggests that catching up with leading firms in the aerospace industry can take up to 23 years and 14 years for consumer goods firms. These estimates are made assuming competitors are well-financed and forcefully trying to gain an important place in the global market. (Nolan, Zhang & Liu 2007) It seems that the challenge lies in being able to industrialize and seeking ways to overcome all of these barriers to entry. Nevertheless, the appropriate study of these factors is beyond the scope of this paper.

CONCLUSION

The extent to which we live in a service-led age is debatable. The decline of manufacturing in output and employment can largely be explained by high-productivity in the manufacturing sector and it is not necessarily a result of the shift of demand and production towards the service sector.

Moreover, the idea that industrialization should not be pursued because of the modern benefits of services that can allow developing countries to achieve economic growth is highly questionable. One reason is that India, a model of service-led economic growth, is experiencing considerable levels of informal employment, as well as BOP and current account deficit. While China, a manufacturing driven economy, enjoys a BOP and current account surplus. In addition, the agricultural surplus theory indicates that service-led growth could lead developing countries to experience high inflation and high levels of foreign borrowing.

Finally, the post-industrial age can facilitate industrialization in developing countries to some extent, instead of being a reason for why they should refrain from industrializing. The cases of shipbuilding in East Asia illustrate that developing countries can build up industries and seize market shares by taking advantage of the loss of international competitiveness caused by high wages in advanced economies.

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