



Revealed Comparative Advantages in the Services Trade of Pakistan: What do they tell us?

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ABSTRACT

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The purpose of this study is to determine Pakistan's export competitiveness in the construction services sector on the global market. The competitiveness of Pakistan's service sector has been assessed using a variety of revealed comparative advantage indices from 2005-2020. The data have been collected from International Trade Center UNCOMTRADE statistics for exports of the services sector of Pakistan. The findings of the RCA, RSCA, Vollrath index, and InRCA indicate that Pakistan benefited from comparative advantage in the worldwide market for construction services from 2007 and 2016-2020, while Pakistan faced a comparative disadvantage in 2005-06 and 2008-15. Pakistan enjoyed a competitive advantage in the imports of the construction service sector by utilizing RMA index during 2006-2015 and in the year 2020, whereas Pakistan faced a competitive disadvantage in the imports in the other selected years. The RTA index portrays that Pakistan faced a net comparative advantage in the concerned sector in the years 2006-08, 2013-15, and 2020, while a net comparative disadvantage was observed in the remaining years. The trade balance index (TBI) highlights that Pakistan has become a net exporter in the services sector in the years 2007, 2014, 2015, and 2020, while Pakistan faced a net importer in the remaining years of the world economy. The present study recommended a method and strategy for addressing bottlenecks in the services sector's growth and for implementing a package of policy reforms to position the services sector as a critical sector for growth, employment, and poverty alleviation. Information technology (IT) is ideally suited for cluster-based development in the services industry.

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1. Introduction

It is widely accepted that international trade in products and services contributes significantly to economic growth and development, particularly in emerging and developing economies. However, in order to sustain this growth in the long run, it is critical to recognize where countries have a comparative advantage in terms of goods or services. Despite the literature's high level of interest in merchandise trade, the services sector has been overlooked, despite its greater resilience during recent financial instability and stronger growth rates in the post-crisis period (Siddiqui, 2014).

The concept of competitiveness is intrinsically tied to theories of international trade from a theoretical standpoint. According to Adam Smith, countries trade with one another based on their absolute advantages (Smith, 1992). Countries develop a product in which they

have a distinct competitive advantage and trade it for products in which they do not. In other words, countries export commodities that require fewer inputs and purchase goods that require fewer inputs from others, demonstrating absolute differences in the productivity of labour. This concept was suggested by Ricardo (Ricardo, 1821), who stated that comparative advantages, rather than absolute advantages, promote international trade between countries. In the Ricardian model, production technological differences are the basis of comparative advantage; as a result, production and trade are driven by it. Although technological superiority (high labour productivity) does not guarantee competitiveness, according to Ricardo (Ricardo, 1817), economies should specialize in those goods where they have a comparative advantage. Even further, neoclassical economic theories imply that diverse resource endowments, not technology, are the basis of competitive advantage (Heckscher, 1919). Neoclassical theories hold that technologies are the same across countries and that comparative advantage is dependent on differences in factor endowments.

The GDP growth is based on 2.77, 3.57 and 4.43 percent growth in agriculture, industrial and services sector, respectively. The value of services exported climbed to \$1.572 billion between July and September 2021, up from \$1.275 billion in the same period last year. Export growth in the construction services sector was favorable in 2006 and 2007, but negative in 2008-09 due to the international financial crisis. Exports of building services increased from 18000 US dollars in 2005 to 131000 US dollars in 2020. Pakistan imports these services from the rest of the globe during the time period specified.

The purpose of this research is to examine the growth of Pakistan in international trade in services in order to comprehend its growing importance in global trade. Similarly to (Kocourek, 2015), the countries' revealed comparative advantages or disadvantages will be recognized within the various categories of exported services. Thus, the present work seeks to address the following research question: "How have competitive advantages in service categories evolved in Pakistan?" This research intends to contribute to a better knowledge of international trade in services by addressing this research question. Thus, the following objective is developed in order to structure and direct the current research "Investigate and discuss the appropriate indicator for measuring comparative advantages in the services sector of Pakistan."

2. Review of Literature

According to the index of Revealed Comparative Advantage (RCA), a country's actual export performance might help determine its comparative advantage. According to Balassa (1965), the economies specialize and export commodities they can make at a lower cost than those of other economies. Physical and human capital resources are a country's comparative advantage, according to him. The comparative advantage of various economic sectors will shift if the supply of these resources or trade policy changes. Balassa and Noland used a set of RCA indices to measure the CA of the United States and Japan from 1967 to 1983. In this study, it was found that both economies had a CA in the high range products from technology. Smith (1992) looked at the major players in the international financial services trade, analyzed the market for several financial services, and assessed performance using market share data from significant institutions in Europe, the United Kingdom, and the United States. In a liberalized or open international setting, he also discussed how different economies' banking sectors will function.

Using pre-EU and post-EU data, Barry and Hannan (2001) assessed the RCA index's predictive value for 10 Irish industrial sectors. The RCA index was found to be worthless in forecasting post-EU membership, according to the authors. The study claimed that FDI, whose sector-specific destination inflows had no association with the pre-accession RCA index, boosted post-EU developments. Bender and Li (2002) inspected the export performance of a number of Asian and Latin American nations from 1981 to 1997 employing Balassa's model of comparative advantage. While RCA indexes can account for changes in a region's comparative advantage, they cannot distinguish between factor endowment effects and trade policy. Fertő and Hubbard (2003) examined the performance of Hungary's agriculture-food from 1992 to 1998 by using RCA indices. According to all four metrics, the current study found that Hungary had a comparative advantage in agriculture-food production on a global scale. The growth performance of Asian-Pacific countries in the services sector was studied by Ito and Krueger

(2003). They also looked at how increasing industries like financial services, tourism, accounting and telecommunications are affecting the economies of Hong Kong, Taiwan and Korea. According to Langhammer (2004), the method of RCA in international services trade cannot be compared to the RCA in international commodities trade. The main difference is that the service sector is governed by a number of domestic laws, and services necessitate close proximity between consumers and producers. He looked at RCA measures in the services trade in the EU, the US, and Japan, and found that domestic regulatory measures have a bigger impact on RCA than border measures in services. Kumar (2005) looked into CA in the services trade of South Asian nations and found that these economies naturally exhibit CA in labor-intensive services. He also looked at the GATS' potential for services trade and found that all South Asian economies had RCA in Mode 4 services. RCA is also available in Mode 1 and Mode 2 services in India.

Hisanaga (2007) examined the CA structure of the US international services trade by using the RCA index. He added that the RCA deviations' diversity reflects a similarity in the export structure of the US and the rest of the globe. Burange, Chaddha, and Kapoor (2010) used RCA analysis to look at the service sector's performance between 1980 and 2007. The growth of the service sector has also enhanced India's GDP growth rate, transforming the country into a global net exporter of services.

Balassa's RCA index was utilized by Amighini, Leone, and Rabellotti (2011) to assess Italy's pattern of international specialization between 1995 and 2005, taking into account local specialization trends. Their findings show that the national RCA distribution has been rather consistent over time. Nath, Liu, and Tochkov (2015) looked studied the causes, dynamics, and patterns of US service trade with India and China from 1992 to 2010. They used RCA indexes to analyze international trade data for 16 service types. His findings show that, with the exception of travel and transportation, the United States has RCA in the bulk of service sectors, whereas China and India have gained CA in computer and information technology-related services over the study period. Da Cunha (2016) investigated the comparative advantage in the services exports of developing countries by employing several revealed comparative advantage indices. Xu, Arshad, and Mahmood (2021) measured the competitiveness in the selected economies by utilizing Entropy and Gray correlation methods.

Several studies on the CA have been conducted in Pakistan, but the majority of the research has focused on agriculture or agriculture-related enterprises. For example, Riaz, Jansen, and Malik (2010) examined agricultural exports using RCA indices and discovered that Pakistan exports rice, fresh and processed citrus fruits, dates, mangoes, and vegetables. From 2003 to 2006, Akhtar, Zakir, and Ghani (2008) examined the performance of Pakistan's footwear sector using the RCA index. They discovered that, over time, the footwear industry has switched from comparative disadvantage to comparative advantage, and that, if it continues to grow, it might become a source of export money for Pakistan. Using Balassa's RCA index, Shahab and Mahmood (2013) compared Pakistan's leather industry to that of China and India. In comparison to its neighbours, Pakistan's leather sector has a strong RCA, according to their research. There is no comparative study for the services sector that can be used to assess Pakistan's performance in international services trade. As a result, using RCA indices and data from 2007 to 2014, this research will assess international trade trends and specialization in Pakistan's services industry. According to the International Monetary Fund's Balance of Payments Manual (BMP)-6, the services industry is divided into eleven subsectors (IMF).

Different indices of RCA were employed by Maqbool and Anwar (2018) to scrutinize export performance and competitiveness in the leather sector of Pakistan. The present analysis concluded that Pakistan enjoyed a CA in this sector. Several indices of RCA were utilized by Maqbool, Rehman, and Ditta (2019) in the cotton sector of Pakistan. The findings of this study showed that Pakistan faced CA in cotton sector. Pakistan's export performance of mineral sector was examined by Maqbool, Atiq-ur-Rehman, Khushbakhsh, and Bashir (2021) in the global market by employing a set of RCA indices. Maqbool, Bashir, ur Rehman, and Ahmad (2021) investigated competitiveness of fruit exports of Pakistan and competitiveness of ASEAN-5 economies in the world market.

The study's primary purpose is to assess Pakistan's export performance and competitiveness in the construction services sector from 2005 to 2020 using numerous measures of revealed comparative advantage. There are just a few significant studies in the literature that use these indices to determine Pakistan's comparative advantage and competitiveness in services exports. This study is a valuable contribution to the literature and will aid policymakers and researchers in conducting investigations in many industries throughout the country. Additionally, this study will assist and benefit Pakistan's policymakers in increasing services exports to the global market.

3. Methods and Material

The data for Pakistan's construction services exports from 2005 to 2020 was gathered from the International Trade Center (ITC) in order to assess the country's export performance and competitiveness. Liesner (1958) was the first to propose the concept of RCA index, which was then operationalized by Balassa (1965) to investigate the concept of comparative advantage of the concerned item or service. It has been said that the index of RCA is the ratio of the amount of a certain service or product and economy exports to its share of the total amount of goods and services it exports (Balassa & Noland, 1989).

$$RCA = \frac{X_i^t / \sum X_i^t}{X_i^w / \sum X_i^w} \quad (\text{Source: Maqbool et al. (2019)})$$

Where, X_i^t is Value of Pakistan's Construction services exports, $\sum X_i^t$ is Total value of Pakistan's services exports, X_i^w is Global Construction services exports and $\sum X_i^w$ is Total services exports of the world. $RCA < 1$ illustrates comparative disadvantage in the selected economy, whereas $RCA > 1$ portrays a CA in the selected services or products (Rivlin, 2000). Additionally, logarithms were used to the Balassa index of RCA, with $\ln RCA < 0$ indicating comparative disadvantage and $\ln RCA > 0$ indicating comparative advantage (Faustino, 2008). Moreover, the Revealed symmetric comparative Advantage index (RSCA) is used to control the skewness problem, and it is stated as follows.

$$RSCA = \frac{RCA - 1}{RCA + 1} \quad (\text{Source: Maqbool, Bashir, et al. (2021)})$$

The current index ranges from +1 to -1, avoiding the issue with zero values that occurs during the logarithms transformation (Source: Topcu and Sarigul (2015)). Vollrath (1991) also established the comparative advantage index, which is regarded as a more accurate indicator of competitiveness because it eliminates the problem of double-counting in globe (Gnidchenko & Salnikov, 2015).

$$RCA\# = \frac{\left\{ \frac{W_{ij}}{(\sum_i W_{ij}) - W_{ij}} \right\}}{\left\{ \frac{(\sum_j W_{ij}) - W_{ij}}{[(\sum_j \sum_i W_{ij}) - (\sum_j W_{ij})] - [(\sum_i W_{ij}) - W_{ij}]} \right\}} \quad (\text{Source: Topcu and Sarigul (2015)})$$

Where, W_{ij} is Pakistan's construction services exports, $\sum_i W_{ij}$ is Total value of Pakistan's services exports, $\sum_j W_{ij}$ is World's construction services exports and $\sum_j \sum_i W_{ij}$ is World's total services exports. The Relative Trade Advantage index (RTA) is used to calculate the sector's net trade advantage. The difference between RCA and RMA is used to calculate this index.

$$RTA = RCA - RMA = \frac{E_i^t / \sum E_i^t}{E_i^w / \sum E_i^w} - \frac{M_i^F / \sum M_i^F}{M_i^w / \sum M_i^w} \quad (\text{Source: Topcu and Sarigul (2015)})$$

Where, M_i^F is Imports of construction services of the economy, $\sum M_i^F$ is Total services imports of the economy, M_i^w is Construction services imports of world, $\sum M_i^w$ is Total services imports of the world. Moreover, the study used the Trade Balance Index (TBI) to figure out whether a country is a net exporter of construction services or a net importer for a certain group of services. Lafay (1992) employed this index to examine the review for CA.

$$TBI = X - M / X + M \quad (\text{Source; Sachithra, Sajeevi, Withanawasam, and Jayathilake (2012)})$$

4. Results and Discussions

Table 1 explains the several indices of Revealed Comparative Advantage of services sector of Pakistan from 2005-2020 in the global market. The current study examines the competitiveness and export performance of Pakistan's services exports in the global market from 2005 to 2020 using several Revealed Comparative Advantage indices. In table 1, the analysis findings indicate that Pakistan enjoyed a CA in the construction services export in the global market during 2007 and 2016-2020 because the RCA index is greater than 1. On the other hand, Pakistan faced a comparative disadvantage in 2005-06 and 2008-15. The positive values of LnRCA and RSCA highlight that Pakistan enjoyed a CA in the concerned sector during 2007 and 2016-2020, while the negative values of these indices showing a comparative disadvantage in the remaining years. The current study also found that Pakistan had a competitive advantage when it used the Vollrath index (RCA#) during 2007 and 2016-2020, whereas a competitive disadvantage was seen in the other selected years (Malik, Ghani, & ud Din, 2017). Pakistan enjoyed a competitive advantage in the imports of construction service sector by utilizing RMA index during 2006-2015 and in the year 2020, whereas Pakistan faced a competitive disadvantage in the imports in the other selected years. This shows that Pakistan also buys these services from other countries around the world. The RTA index portrays that Pakistan faced a net CA in this sector in the years 2006-08, 2013-15 and 2020, while a net comparative disadvantage was observed in the remaining years (Malik et al., 2017). TBI points out that Pakistan has become the net-exporter in the services sector in the years 2007, 2014, 2015 and 2020, while Pakistan faced a net-importer in the reaming years in the world economy.

Table 1: Revealed Competitive Advantage Indicators for Services Exports from Pakistan during 2005-2020

Years	RCA	RSCA	LNRC	RCA#	RMA	RTA	TBI
2005	0.323	-0.512	-1.131	0.3191	1.184	-0.862	-0.76
2006	0.551	-0.29	-0.597	0.5462	0.441	0.1093	-0.303
2007	1.014	0.0071	0.0141	1.0145	0.265	0.7488	0.211
2008	0.435	-0.394	-0.832	0.4292	0.264	0.1709	-0.134
2009	0.186	-0.686	-1.682	0.1824	0.425	-0.239	-0.558
2010	0.14	-0.754	-1.964	0.1375	0.218	-0.077	-0.184
2011	0.157	-0.729	-1.851	0.1541	0.596	-0.439	-0.667
2012	0.241	-0.612	-1.425	0.2365	0.3	-0.059	-0.175
2013	0.196	-0.673	-1.632	0.1922	0.114	0.0812	0.0556
2014	0.325	-0.509	-1.123	0.3205	0.221	0.1038	0.04
2015	0.39	-0.438	-0.94	0.3856	0.115	0.2755	0.4194
2016	1.706	0.2608	0.534	1.7285	4.285	-2.58	-0.644
2017	5.397	0.6873	1.6858	5.942	6.264	-0.867	-0.294
2018	5.294	0.6822	1.6665	5.799	5.97	-0.676	-0.343
2019	2.689	0.4578	0.9892	2.7771	3.329	-0.64	-0.288
2020	1.37	0.156	0.3145	1.3794	0.472	0.8976	0.3936

Source; Authors' calculations by utilizing ITC data

5. Conclusion and Recommendations

The current study examines the competitiveness of the construction services sector's exports in the worldwide market from 2005 to 2020 using a series of revealed comparative advantage indices. The results of RCA, RSCA and InRCA portray that Pakistan enjoyed a CA in the construction services export in the global market during 2007 and 2016-2020, while Pakistan faced a comparative disadvantage in 2005-06 and 2008-15. The current study also perceived that Pakistan enjoyed competitive advantage by utilizing Vollrath index (RCA#) during 2007 and 2016-2020, whereas a competitive disadvantage was seen in the other selected years. Pakistan enjoyed a competitive advantage in the imports of construction service sector by utilizing RMA index during 2006-2015 and in the year 2020, whereas Pakistan faced a competitive disadvantage in the imports in the other selected years. According to the RTA index, Pakistan had a net comparative advantage in this industry during the years 2006-08, 2013-15 and 2020, while a net comparative disadvantage was observed in the remaining years. TBI demonstrates that Pakistan has become the net-exporter in the services sector in the years 2007, 2014, 2015 and 2020, while Pakistan faced a net-importer in the reaming years in the world economy.

The current study recommended a method and strategy for addressing bottlenecks in the services sector's growth and for implementing a package of policy reforms to position the services sector as a critical sector for growth, employment, and poverty alleviation. Information technology (IT) is ideally suited for cluster-based development in the services industry. There is a dire need to focus attention on developing advanced technological skills and education for workers in order to meet global requirements and increasing labour absorption in complex industries such as finance, trade, transportation, and communication. Moreover, there is a strong need to explore new paths for the services sector. To advance research and development (R&D), technological advancement, and human resource development (HRD), specifically management development and a new policy environment will need to be developed.

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