

Assessing the Impact of Liberalization of Trade Related Services on Services Growth in Pakistan

Maryam Mahfooz* Zafar Mahmood⁺ and Shabana Noureen[‡]

Abstract:

The services sector has offered sound support to Pakistan's economic development. It has emerged as one of the fastest growing and highest contributing sectors of the economy. Through the use of Fully Modified OLS Estimation Technique, this study has provided evidence that liberalization of the two key sub-sectors (telecom and banking) of services of Pakistan has played an important role in development of these sectors. The task is achieved by preparing liberalization index for the two sectors. The econometric evidence reveals that results are robust and in accordance with the theory. Relationships are found to be relatively strong for the telecom sector and less strong for the financial sector. The research also shed light on the constraints that the country has to face in the liberalization process of these sectors. Rapid liberalization of the telecom sector has attracted substantial amount of investment, both local and foreign, and has created saturation in the industry, which has hampered further investment opportunities. This resulted in substantial decline of investment in this sector. But due to fast changing technologies, there is a possibility of it picking up again. By the increased liberalization of the telecom and banking services, the GDP of these sectors also increased. Hence, the full scale liberalization in the telecom sector evidently plays important role in growing the share of the services to economy's GDP. Other economic indicators have also played an important role in defining the development of these sectors. Finally, a set of policy measures has been suggested to make the sector more effective and useful in accelerating the growth process.

Key Words: Services Liberalization, Telecom Services, Financial Services

* Maryam Mahfooz <maryam_mahfooz1@hotmail.com> is a graduate of Economics at School of Social Sciences and Humanities (S³H), National University of Sciences and Technology, Islamabad, Pakistan.

+ Zafar Mahmood <dr.zafar@s3h.nust.edu.pk> is Professor of Economics at School of Social Sciences and Humanities (S³H), National University of Sciences and Technology, Islamabad, Pakistan.

‡ Shabana Noureen <shabananoureen1992@gmail.com> is a PhD Scholar at Economics Department, School of Social Sciences and Humanities (S³H), National University of Sciences and Technology, Islamabad, Pakistan.

1. INTRODUCTION

Economic growth or progress is the essence of economic development. It is not merely an economic phenomenon rather; it is a multidimensional process creating a link between entire systems of an economy. Thus, in order to explain this link, different schools of thought (classical, neo-classical) came into the picture. Countries across the world are increasingly focusing on enhancing their international relations by strengthening their ties with economies around the globe. This is essential because it saves them of many pitfalls that were encountered by those who initiated these processes. Major economies' journeys towards economic development have created practical examples for developing economies to follow. Hence, it is safer for them to avoid impediments, which are likely to be encountered. Main factors in these efforts are economic integration and liberalization of goods and services across the world. It has been observed that liberalizing the trade of goods and services by reducing trade and other barriers has always boosted the economic growth of the countries.

The services sector, which is becoming increasingly significant, accounts for almost 70 percent of the world GDP and around one third of global employment [WTO (2014)]. According to an empirical investigation for 123 countries, services liberalization raises the per capita GDP of these economies [Kongsamut, *et al.* (2001)]. According to Clark (1951), Kuznets (1957) and Fuchs (1980) shifting the population or structural changes from basic agriculture to manufacturing and from manufacturing to services, is the traditional course of economic development. In the 1980s rapid increase in international transactions in services brought a drastic change in the trend and the services sector became the backbone/engine of development in various economies.

In the 1990s, total contribution of the services sector to total the GDP was hardly 35 percent in developing economies, which now dominates in all major economies of the world [World Bank (2013a)]. Full scale liberalization of services provides a larger range of services, which enhances the knowledge and increases its exchange and diffusion among nations generating economies of scales for the economies [Burgees and Venables (2004)]. Poor and developing countries were

slow in realizing the potential of the services sector and, therefore, could not benefit from it. The reason was obvious; change from basic agriculture was difficult to accept and adopt for such economies. After WTO intervention and opening of economies, these countries also woke up from slumber, realizing the prospective benefit of change over and results are very encouraging. The General Agreement on Trade in Services (GATS) is the first and only multilateral regime, governing international trade in services [WTO (2014)]. Specific commitments were made regarding market access and national treatment of six sub-sectors of services, including finance and communication. It basically came into existence as a response of huge growth in the services sector over the past 30 years. Now there is hardly any economy that is not paying attention to this potential and buoyant sector to change the sectoral composition for overall benefit of the people.

The contribution of the services sector in USA is around 80 percent, 71 percent in France, 43 percent in India, and around 57.7 percent in Pakistan [World Bank (2013b)], which could be much more than this had it not suffered the shock in its momentum of high growth in the 1990s. In Pakistan, the services sector has gained substantial importance in terms of its contribution to the national economy. It has appeared as a main driver of economic growth and playing a central role in sustaining economic activities in Pakistan. Its share to the GDP has increased in 1960-61 from 39% in to 59.16% in 2015-16 [GOP (2016)].

During the recent period of economic downturn, the services sector proved to be a major contributor to growth of the economy and was able to pull the economy out of that international financial meltdown. Now the question arises, what role could this sector play if Pakistan took some initiative to liberalize it internationally. It could be done by exploring the sub-sectors, which could best serve to boost the country's economy. It could be explained with the help of a positive spillover effect, as on one hand slow growth in the services sector could retard the economy wide productivity growth and on the other hand efficient information and communication technology promotes productivity across the entire economy [WTO (2014)].

This study focuses primarily on two broad sub-sectors: financial and telecommunication. In Pakistan, these sectors remained neglected

for a long period. Liberalization alone was not very inductive initially, as institutional arrangement for financing and linkages with other economies were also of paramount importance. For example, if liberalized regime is put in place but potential domestic investors have no access to financing, then desired results are difficult to realize. Another element that remained absent in all developing countries, Pakistan being no exception, they could not create complementary for services sector exports, which was essential for liberalization of this sector. Telecom industry of Pakistan is dying a slow death due to excessive burden of taxes. Telecoms sector has undergone a sharp downturn over the past year, with revenue from mobile falling by 1.8 percent and a dramatic drop in foreign direct investment [Ahmed and Ahsan (2011)].

In short, Pakistan cannot achieve the desired level of development and realize the dream of enhancing the standard of living, if it does not pay proper attention to enhancement of its services sector. Liberalization of this sector plays a vital role in its development. While increasing trade, more and more emphasis must be laid on the services sector exports. Thus, this vital engine of growth can only be productive when potential investors are given required finances through proper institutional arrangements [Matto, *et al.* (2001)].

The study is structured as follows. Section 2 reviews the existing literature on services liberalization and its impact on economic development. Section 3 provides an overview of the policies adopted by the country since its creation as well as overview of the services sector. Section 4 explains the impact of the liberalization on the development of economies through the micro economic and empirical framework. Section 5 provides the summary statistics and empirical findings of the study. Lastly, section 6 wraps up the research with conclusion and policy recommendations.

2. REVIEW OF LITERATURE

After agriculture, manufacturing industries were considered as the engine of economic growth for a long time. Things changed at the turn of the 19th century and since then the services sector has overtaken the industry in all developed as well as developing countries. In less than

two decades all major economies witnessed enormous growth in the services sector. Now services are considered as the backbone of an economy, and rightly so, as the services sector contributes more than 50 percent of the GDP. Services trade liberalization not only increases the GDP but also adds to efficiency enhancement because of greater competition and spillover effect of knowledge. There exists a huge body of literature on the impact of liberalization in services sector on economic development of a country, and the results culled out are quite diverse.

Liberalization promoted the service sector's production efficiency through foreign investment and trade in services [Hussain (2004)]. European trades stimulated their capital and services in a foreign country for higher returns and cheap raw materials [De Mello (1999)]. The capital movements for higher returns explained by the neo-classical trade theory are based on Heckscher and Ohlin model. The higher return on capital stimulates the foreign investors to invest in a developing economy [Hufbauer (1975); Nurkse (1935)]. In international trade of services by liberalization and globalization, a natural monopoly (telecommunications, energy) was removed. It also increased the economic growth, both in developed and in developing countries [Gulzar (2011)].

Multinational enterprises (MNEs), upgrades domestic labor and reducing cost of production by improving knowledge in host economies [Buckley and Casson (1976)]. However, host economies prefer efficiency and resource in their labour-intensive economy. It ad-libs technical skills of domestic labour with infrastructure [Conner (1991)]. Service sector of any country is a multifaceted sector of the economy that includes many investors. It also connects with other sectors and activity such as manufacturing and the use of materials, energy, finance, labour, and equipment [Field and Ofori (1988)]. Park (1989) found that the service sector makes large multiplier effects from its wide backward and forward connections with other sectors of the economy.

Pakistan is following the liberalization of trade in services sector by mutual negotiations, unilateral liberalization, and regional free trade bilateral agreements. But, the economy is under World Trade linked to the multilateral liberalization of services. How liberalization of services

moves the competitiveness and productivity of Pakistan's economy still has a larger appeal and is remained unknown. Recent studies have shown the evidence on services trade through methods of export capacity, operational constraints and supply in five service sectors of Pakistan counting architectural services; construction; financial services; professional services; IT, and medical and health services. They found an important relationship between main commodity producing sectors and services sector. They argued that there is important continues trade in services and opportunity in the export markets for all methods of supply in the specific sectors [Abid and Hussain (2007)].

Arnold, *et al.* (2008) assessed the impact of policy reforms in India's services sector on escalated performance of its manufacturing. The paper used the OLS estimation technique. The authors used panel data for 4000 manufacturing firms from 1993-2005. It was an attempt to find out the strong impact of the neglected (services) sector. In this effort, it was found that telecommunication, banking, and transport sector's liberalization had a significant and positive effect on productivity of manufacturing firms. Per the results of the paper, one-standard-deviation increase in aggregate index of services liberalization resulted into 11.7 percent productivity increase of domestic firms and 13.2 percent for foreign enterprises.

Francois, *et al.* (2008) assessed the potential gains to overall trade within EU (European Union) from more liberalized trade of the services sector. The study measured these gains through Computable General Equilibrium Model, using data from 1994-2004. The author pointed towards the fact that larger gains occurs from more inclusive cuts in restrictions (i.e., including all services sectors). The results of the study suggested that a 50 percent cut in restrictions, would increase the world services exports between 1.27 to 3 percent in short-run and 1.48 to 3.53 percent in the long-run. Thus, the author concluded that services trade liberalization in EU resulted in trade creation rather than diversion.

Bekaert, *et al.* (2001) proposed a time series panel methodology. The paper tried to find out how financial liberalization leads to increase economic development of developing economies. The author used five years non-overlapping data from 1981-1996. According to the results of the study, financial liberalization leads to an increase of 1.2 percent of

per capita GDP. The author further expanded the countries under analysis from 30 emerging economies to 95 countries. It also included those countries, which do not have very well developed financial markets. The results indicated that financial liberalization led to substantial increase in overall welfare of the economies under consideration.

Zebaze and Alexander (2006) measured the impact of liberalization of telecommunication sector in Africa on sectoral performance and economic growth. It is measured in terms of price and penetration. They used the data from (1997-2003) comprising Sub-Saharan countries. In case of sectoral performance, it was observed that increased competition led to a reduction in prices and better availability of telecom services. In terms of economic growth, results show that one percent increase in access to mobile networks resulted into 0.5 percent increase in GDP per capita.

Arshad and Qayyum (2006) investigated the impact of liberalization of the financial sector on economic growth of Pakistan. The empirical findings are based on the Bound test approach of Co-Integration, using data from 1961-2005. The authors argued that a liberalized financial sector plays a key role in channeling the funds to more productive sectors which in turn enhances the long run growth rate of the country. The results of the study suggested the presence of a strong and statistically significant long run relationship between real GDP and liberalized financial sector.

3. OVERVIEW OF THE SERVICES SECTOR OF PAKISTAN

The sectoral share of service sector in economic growth is increasing with the passage of time in Pakistan. The service sector occupies a lion's share in economic growth with 59% of GDP and it also provide one third of overall employment opportunities. Service sector is a source of providing inputs to other sectors and has strong linkages with agriculture sector and manufacturing sector. Services primarily consist of following sub sectors:

- Whole sale and Retail Trade
- Transport, Storage, and Communication
- Finance and Insurance
- Ownership of Dwellings
- Public Administration and Defense
- Social and Community Services

Table 1. Average Annual Growth Rate of the Services Sub-sector:
1975-2015

Services Sub-sector	Growth Rate (%)
Whole sale and Retail trade	5.19
Transport, Storage, and Communication	7.31
Finance and Insurance	7.03
Ownership of Dwellings	5.71
Public Admn and Defense	5.01
Social and Community Services	7.51
Total Services	5.93

Source: GOP (2016).

The growth rate of the services sector reached 5.93 percent after the signing of GATS in December 1994 (Table 1). The notion of progressive liberalization was one of the basic tenets of GATS. Specific commitments were made, relating to market access and national treatment of six sub-sectors including finance and communication services.

In the early years of independence, Pakistan adopted inward-looking policies for the advancement of the manufacturing sector. Then, the share of the services sector was quite low as contributing very little to the growth of the economy. In 1974, adoption of the nationalization policy with change in ownership of domestic banks and increased bureaucratic and political interference in nationalized banks further deteriorated the performance of the banking sector. In the late 1980s, government made attempts to liberalize the financial sector, which led to

a rise in the growth rate of this sector to about 7 percent per annum accordingly and thus a sharp rise in share of services to GDP (Table 1). However, the services sector finally gained momentum in the late 1990s. The wholesale and retail services emerged as the highest contributing sector with more than 19 percent share in total services and average annual growth rate of around 5 percent (Table 2).

Table 2. Average Annual Percentage Contribution of Services Sub-sector: 1960-2015

Services Sub-sector	Contribution
Whole sale and Retail trade	19.01
Transport, Storage and Communication	9.71
Finance and Insurance	5.13
Ownership of Dwellings	5.51
Public Admn and Defense	9.95
Social and Community Services	9.99
Total Services	59.23

Source: GOP (various issues).

3.1. Financial Sector

It is a well-accepted fact that an efficient and stable financial sector promotes economic growth. To achieve efficiency and stability, Pakistan initiated the process of financial liberalization in the 1980s. This attempt, however, could not materialize due to political and economic instability. In the 1990s, the 1974 act of nationalization was amended. The reform measures including deregulation and financial liberalization of the banking sector were introduced. The immediate result of liberalization was mushroom growth of banks with no direction. Instead of healthy competition a rat race started, even banking scandals were witnessed and State Bank of Pakistan (SBP) had to intervene to safeguard the interests of depositors. Non-banking financial institutions started; indulging in banking business, thereby threatening banking sector. Thus, SBP started the process of bank consolidation, while encouraging mergers and consolidation. Though liberalization did result in growth of banking sector, but the objective of full-scale liberalization could not be achieved [Abbas and Malik (2010)].

Table 3. FDI of the Financial and Communication Sector

Year	GDP Financial Sector (%)	FDI (Million US \$)	GDP Communication Sector (%)	FDI (Million US \$)
2000	3.7	29.6	11.3	31.0
2001	3.0	-34.9	13.1	81.5
2002	3.4	3.5	13.1	12.7
2003	3.2	207.5	13.5	24.3
2004	3.1	242.1	12.9	221.9
2005	3.9	269.4	12.4	517.6
2006	3.7	329.2	12.4	1937.7
2007	3.9	930.1	12.4	1898.7
2008	3.9	1865.0	10.3	1626.8
2009	3.8	707.4	13.5	879.1
2010	3.3	163.0	12.9	291.4
2011	3.0	310.1	10.9	-34.1
2012	2.9	64.4	9.8	-315.2
2013	2.4	314.0	10.8	-381.7
2014	2.5	192.8	10.9	434.2
2015	2.4	256.2	12.9	45.1

Source: GOP (2016) and SBP (2016).

3.2. Communication Sector

A glance at the communication sector of Pakistan reveals that this sector emerged as one of the fastest growing sectors of the economy with a rapid increase in tele-density from merely 2.3 percent in 1999-2000 to 16.1 percent in 2006-07 economy. The GOP took several steps for reorganizing the telecom sector for enhancing its performance. First of all PTC was privatized, and its role was redefined by the government as a sector policy maker from an operator. It started operating under Pakistan Telecommunication Corporation Act of 1991. In 1994 PTA emerged as an independent regulator under the Telecommunication Ordinance of 1994.

However, the telecom sector of Pakistan finally gained momentum in July 2003 after the formal announcement of deregulation policy for telecommunication sector. This announcement encouraged the foreign sector to invest and compete, which resulted in huge influx of FDI in the sector of around 21 percent, and the telecom sector became one of the highest contributing sectors of services. In 2003 Pakistan opened the telecom market in the sector of fixed line and cellular to private operators. In 2006 mobile sector became fully competitive. The contribution of telecom sector as percentage of total FDI stood around 54 percent in 2005-06 [PTA (2014)]. On the other hand this sudden process of liberalization also had some adverse impact on the investment side of the industry. This huge and rapid influx of FDI in the country led the telecom industry to reach the point of saturation and as a result FDI started declining from 2007 onwards, FDI exerts a negative effect (Table 3).

Inflation has also played a significant role in accelerating the growth process of this sector. As demand shock, related inflation is around 52 percent in the country, demand shock became dominant in the country after 2005 [Bukhari and Khan (2008)]. Resultantly, rise in circulation of money increased the demand for services. This explains vividly that when there is inflation, demand increases, which includes demand for services because of its overall impact in the economy. In a country like Pakistan, inflation results due to increasing demand, and share of the service sector in GDP shows every increase in demand positively affects the service sector.

National economic indicators reveal that the services sector is slowly taking the driving seat in economic development and its share in the GDP is continuously increasing. Being more buoyant, telecom and banking sub-sectors are given priority. For ensuring healthy and consistent growth, transparent regulatory framework is needed. Liberalization in the telecom and banking sectors has drastically increased its share in total services, and has created enormous employment opportunities. This liberalization can further enhance its share, if its merits and demerits are examined, and a proper regulatory framework is created to work in. Additionally, a few fruitful policy

measures can also be driven from the topic, which would help boost the overall growth of the economy in general and public services sector.

Table 4. A Strategic Framework of Liberalizing Trade in Services for Pakistan

Type of Service	Direction of Trade	Policy Tools
Govt.	Ho, Ne, It, Ba, Ir, Chi, Sin, UAE, Bel	Increase LPR, ENR; decrease Pop
Transport	USA, Ma, Ir, Chi, Sa, ho, Nep, Bh	Decrease relative BD, pop; increase relative ENR, LI, II, Mg
Communication	Ja, Sr, Ma, UAE, UK, Bang, Nep, Ir	Increase relative ENR, LI, LPR, II
Travel	In, Ma, Ba, Ho, Bh, chi, Ir, Sa	Decrease relative BD, pop; increase relative ENR, LI, II, Mg
Insurance	Ma, Mal, Bh, Chi, Nep, Tha, UAE	Decrease relative BD, pop; increase relative ENR, LI, II,
Financial	Ne, Tha, Sa, Nep, Bel, Bh, Ma, Ho	Decrease relative BD, pop; increase relative ENR, LI, II, sg
Other Business Services	Bel, Tha, Ne, It, Sin, Fr, Ma Ma, Mal, Ja, Ne, Bh, Ba, It, UK	Decrease relative BD, pop; increase relative ENR, LI, II, sg Decrease relative BD, pop; increase relative ENR, LI, II, sg
Computer Personal, cultural and Recreational	Tha, Ne, Bh, Chi, Sa, Ma, Nep, De, Sin	Decrease relative BD, pop; increase relative ENR, LI, II, sg
Royalties & License Fee	Tha, Chi, Ma, Ge, Bh, De, Mal, Nep	Decrease relative BD, pop; increase relative ENR, LI, II, sg
Construction	Bh, Mal, UK, Ma, Bang, In, USA	Decrease relative BD, pop; increase relative ENR, LI, II, sg

Source: Gulzar (2011).

Table 4 represents a strategic framework of liberalizing policies for services sector of Pakistan. Services include; Total services, Transport, Travel, Communication, Construction, Insurance, Finance, Royalties and License fee, Other Business Services, Personal, Cultural

and Recreational Services, Government Services. Trading partners are U. S. A. (US) U. K. (UK) U. A. E. (UAE) Saudi Arabia (SA) Switzerland (Sw) Denmark (Den) Germany (Ger) Thailand (Tha) France (Fr) Hongkong (Ho) Singapore (Sing) Netherlands(Neth) Italy (It) Bahrain (Ba) Belgium (Bel) China (Chi) Iran (Ir) India (In) Afghanistan (Af) Srilanka (Sr) Nepal (Nep) Bhutan (Bhu) Maldives (Mal) Bangladesh (Ba) Japan (Ja) Malaysia (Ma). The structural and institutional factors for the identification of policy tools in a preference order are enrolment ratio (ENR), labour participation rate (LPR), population (POP), logistic indicator (LI), trade in service sector (SG), goods trade (MG), days to start new business (BD) and foreign per capita income (II).

4. METHODOLOGY

4.1. Theoretical Model

The service sector consists of people and technologies that adaptively compute and adjust to a system's changing value of knowledge. The service systems can offer theory and practice around service innovation. The components of a service system are people, technology; internal and external service systems that are connected by value propositions, and shared information (such as language, laws, and measures). So, a theory of service systems should explain what service systems are and are not, how do they increase and evolve, the relation between internal and external service systems, and the role of people, technology, value propositions, and shared information in the system.

The classical Keynesian economic theory of income growth and exports are generally stated as the exchange of goods like agricultural products, food manufactures, garments, cars and other goods merchandise. It is seldom linked with services that are exchanged in the world market. In the neoclassical economics, services are regarded as something of value in the same manner of goods. Hunt and Morgan (1996) related the seven kinds of a firm's resources which were drawn well to service system components. Nelson and Winter (1982) separated physical and social technology, distinguished between physical and social technology, with physical technology mapping to the traditional

notion of technology, and social technology mapping to people, other service systems, and shared information.

The relationship between liberalization and development of service sector is explained by the basic AK [Frankel (1962)]. He explained the process of growth through technological innovation. He used the model that has been extended by many researchers to account for spillover effect of new techniques and ideas across the countries. Aghion and Howitt (2012) extended the model and explained the process of growth through innovation rate, which comes from liberalization of goods and services across the countries. According to the model productivity growth primarily comes from innovation that would enable a country to produce with productivity (quality) parameter given as:

$$A_{it} = \gamma A_{i,t-1} \quad \dots (1)$$

This is superior to previous productivity by factor $\gamma > 1$.

Innovation will take place at rate μ which will enhance the productivity by $(\gamma-1)$. Thus, according to Equ. (1) A_{it} grows at rate $\gamma-1$ with innovation rate μ , therefore expected growth rate of the economy is given as:

$$g = (\gamma-1)\mu \quad \dots(2)$$

where, g is the expected growth rate.

The trade liberalization model presented by Aghion explained a rise in growth rate through innovation rate. In Equ. (2) innovation rate μ of home country is less than the foreign country's innovation rate μ^* when closed. Innovation rate after liberalization is given by μ^*_c thus after opening up of trade growth in all the countries becomes equal and is given by:

$$g = g_c = (\gamma-1) \mu^*_c \quad \dots (3)$$

where, g_c is the growth rate after liberalization. $\gamma-1$ is the rate of productivity. Since μ^*_c is greater than the foreign innovation rate μ^* before opening up of trade, thus trade will raise foreign growth rate. Since both the economies will grow at the same rate in the open

economy, and by assumption foreign country grows faster than the home country because of higher innovation rate, liberalization of goods and services will increase the growth rate in home country as well.

Since Aghion explained the impact of enhanced productivity rate, through innovation rate which comes from liberalization of goods and services across the countries, thus Matto, *et al.* (2001) extended the basic model of growth to measure the impact of liberalization of goods and services. This extended model of growth includes vector of openness X , which explains the innovation rate and a vector of standard control variable R .

$$g = \alpha + X\beta + R\gamma \quad \dots (4)$$

4.2. Empirical Model

In assessing the impact of liberalization of the services sector on the development of services sector of Pakistan, it is essential to quantify the relevant roles of two key sectors of services i.e. telecommunication and banking services. It is not hard to identify, how an efficient services sector contributes to enhanced economic performance. The approach basically consists of model equation where the dependent variable is the log of GDP of the services sector (telecom and finance) of Pakistan (the country under consideration). Independent variable categories include vector of liberalization of the two sectors (telecom and banking) of services and vector of standard control variable.

The basic model used for empirical investigation of impact of liberalization was

$$Y_{it} = \beta_i + X_{it}\beta_{it} + R_j\gamma + \mu_{it} \quad \dots (5)$$

Following is the list of all the independent variables that this study has included, keeping in mind the current economic scenario of Pakistan.

1. Foreign direct investment (telecom and banking sectors) (INV).
2. Government consumption to GDP ratio (GCONS).
3. The inflation rate (INF).
4. Real exchange rate (RE).
5. Vector of liberalization (LIB).

Foreign Direct Investment can bring potential gains in productivity of service sectors by increasing economies' growth and technology transfers. Like productivity, effects of foreign direct investment (FDI) in the manufacturing sector are significantly positive because service supplies occur through FDI. Many studies [Caves (1974); Globerman (1979); Blomstrom and Persson (1983); Borensztein, *et al.* (1998)] represent positive evidence for the productivity spillovers of FDI. Foreign investment may also raise productivity growth and economic growth by enhancing competition [Girma (2005)].

Government Consumption expenditure is positively related to economic growth from the provision of public goods, infrastructure facilities, social services, and export subsidies. Lin (1994) investigates the positive impact of government consumption expenditure on economic growth.

Real Exchange Rates have significant impact on a firm's profit and competitive position in international market of the service sector [Feenstra (1989)]. Real exchange rate adversely affects trade (export and import), important business transaction across borders and value of money also changes [Baldwin and Krugman (1989)]. Inflation and economic growth are affected by exchange rates as well [Clarida (1991)].

Inflation Rate impact on services sector growth is significant and positive [(Ayyoub, *et al.* 2011)]. Whereas, many studies [Barro (1995); Bruno and Easterly (1998); and Mubarik (2005)] found negative relationship between inflation and growth rate of the different sectors.

Trade liberalization is gaining importance in developing economies as a strategy for sectoral growth [Dollar (1992); Sachs, *et al.* (1995); Ben-David (1993); Edwards (1993) and Coe (1999)]. For developing world trade liberalization enhance the market offers, a window of opportunity from developed world to accelerate their service sector.

The model equ. (5) using all the above mentioned variables finally appear as

$$\ln GDP = \beta_1 + \beta_2 \ln LIB_{it} + \beta_3 \ln FDI_{it} + \beta_4 RE_{it} + \beta_5 INF_{it} + \beta_6 GCON_{it} + \mu_{it} \dots (6)$$

where,

GDP = Gross Domestic Product as an annual percentage change.

FDI = Foreign Direct Investment, percentage of GDP.

INF = Inflation measured in terms of GDP deflator annual percentage.

RE= Real Effective Exchange Rate Index (2010=100).

GCON = Government Consumption Expenditure as a percentage of GDP.

LIB = Liberalization index.

Estimating Equ. (6) Will help evaluate the impact of liberalization growth of service sectors; namely, telecom and finance. Investment rate plays an important role in economic development of any country. Similarly, inflation and Real exchange rate also tends to impact the growth of the services sector significantly, and are important economic indicators of the country. Thus, estimation of this model could help policy makers to determine the scale of liberalization that could further help boost the performance of these sectors while keeping track of prevailing economic conditions of the country.

4.3. Liberalization indices

The distinctive nature of the services makes it important to construct the indices of liberalization for two sectors (telecom and banking) unlike goods sectors where extent of liberalization could be measured through tariff and non-tariff barriers.

4.3.1 Telecom liberalization index

The basic challenge for the telecommunication sector was the integration of three key aspects of liberalization, namely competition, foreign ownership, and regulation into an index. Competition is the situation of struggling to gain the power of dominance over others. Regulation is an action or rule that maintained by regulatory authority. FDI is an investment in one country to another country which is made by individual or different companies. It is bound to bring considerable benefits through transfer of technology and improvement of management.

4.3.2 Structure of index

The index was created ranging from 0 to 6 with higher value indicating higher liberalization. Competition is considered as most important variable of the index, it is formed by integrating three key areas: Fixed line services, wireless broadband and mobile services. If all three services are fully competitive then the telecom sector is considered competitive. Competition is then followed by foreign ownership (FDI allowed or not) and regulation (presence of independent regulator). Thus, the year in which competition is allowed (no restriction on issuance of license), foreign ownership is not restricted and an independent regulator will get the highest value on the index, i.e., 6. The most protected year is the one in which monopoly exists with no foreign ownership and absence of independent regulator will get the lowest value on the index, i.e., 2. If each indicator is partially restricted it will get the values of 1 and 2 if it is fully liberalized (Appendix Table 1 gives detail of the Index).

4.3.3 Banking liberalization index

The liberalization index for the banking sector is constructed on the similar basis as that of telecommunication sector. There were, though, two main differences; first foreign ownership was measured through foreign penetration rate, and secondly, regulatory dimension is also not included. It is constructed using information on market structure and foreign penetration rate. Market structure is defined as concentration rate of three largest banks (share in assets of three largest banks in total assets of banking department). Foreign penetration rate is defined as the share of foreign assets in total banking assets. It represents openness of the banking department.

4.3.4 Structure of index

In case of the banking sector two main indicators, foreign penetration and market competition, were integrated into a liberalization index. The index was created in a similar way ranging from 0 to 6, with higher value indicating higher liberalization. The year with less than 20 percent foreign penetration rate and more than 50 percent concentration rate of three largest banks gets the lowest value on the index, i.e., 2, and

the year in which concentration rate was less than 50 percent with more than 20 percent foreign penetration rate gets highest value on the index, i.e., 6. Each indicator gets the value of 3 if it is fully liberalized and 2 if it is partially liberalized (Appendix Table 2 gives details of index). The advantage of formation approach is that it not only captures the extreme situation of full liberalization and full restriction, but also gives recognition to adoption of partial liberalization measures as well.

4.4. Estimation Technique

4.4.1 Unit Root Test

To check the stationarity of variables, Augmented Dickey Fuller (ADF) unit root test has been conducted. Dickey and Fuller have formulated a Dicky and Fuller unit root test to check the non-stationarity. Later on, they have presented its augmented version, known as Augmented Dickey Fuller (ADF). The ADF has an additional advantage to abolish the autocorrelation as it comprises additional lagged terms of the dependent variable as an independent variable. The ADF test encompasses the following three models:

$$\Delta W_t = \phi W_{t-1} + \sum_{i=1}^p \pi_i \Delta W_{t-i} + u_t \quad \dots (7)$$

$$\Delta W_t = \alpha_0 + \phi W_{t-1} + \sum_{i=1}^p \pi_i \Delta W_{t-i} + u_t \quad (\text{With intercept}) \quad \dots (8)$$

$$\Delta W_t = \alpha_0 + \phi W_{t-1} + a_2 t + \sum_{i=1}^p \pi_i \Delta W_{t-i} + u_t \quad (\text{With trend \& intercept}) \quad \dots (9)$$

Equ. (7) indicates the model with no trend and no intercept in the data; Equ. (8) exhibits the model with intercept only and Equ. (9) states the model with both intercept and trend. Deterministic elements α_0 and $a_2 t$ distinguish the above three equation from each other. The two key points should be followed by researcher in ADF. First, specify the lag difference term. In ADF, sufficient lags are added to eliminate the problem of autocorrelation. Secondly, when different models of ADF are selected, their critical values are also changed. McKinnon Table of critical values is used to check the acceptance or rejection of null hypothesis.

4.4.2 Johansen Co-integration Test

To identify whether the all $I(1)$ variables give spurious regression or co-integration exists, Johansen co-integration test is run based on the no co-integration null hypothesis. Granger (1981) introduced the concept of cointegration for the first time. But it was applicable for two variables case. Johansen (1988) presented a new approach of cointegration among more than two series. It eliminates all the drawbacks, which Engle-Granger approach has. In case of Johansen approach, the ECM also extended into Vector Error Correction Model (VECM). Now consider three endogenous variables; R , S and T . In matrix form this can be written as;

$$V_t = [R_t, S_t, T_t] \quad \dots (10)$$

$$V_t = \beta_1 Y_{t-1} + \beta_2 V_{t-2} + \dots + \beta_k V_{t-k} + \mu_t \quad \dots (11)$$

In the context of VECM we can written as

$$\Delta V_t = \eta_1 \Delta V_{t-1} + \eta_2 \Delta V_{t-2} + \dots + \eta_{k-1} \Delta V_{t-k-1} + \omega V_{t-1} + \mu_t \quad \dots (12)$$

where,

$$\eta_i = (1 - \beta_1 - \beta_2 - \dots - \beta_k) (i = 1, 2, \dots, k - 1) \quad \dots (13)$$

$$\omega = -(1 - \beta_1 - \beta_2 - \dots - \beta_k) \quad \dots (14)$$

ω shows the 3×3 matrix, which depicts the true long run relationship between $V_t = [R_t, S_t, T_t]$. The $\omega = \sigma \chi'$, in which σ shows the speed of adjustment towards equilibrium and long run coefficients matrix is θ' . In single equation case $\theta' V_{t-1}$ is error correction term. To find out for multivariate case now assumes $k = 2$. So the model is

$$\begin{bmatrix} \Delta R_t \\ \Delta S_t \\ \Delta T_t \end{bmatrix} = \eta_1 \begin{bmatrix} \Delta R_{t-1} \\ \Delta S_{t-1} \\ \Delta T_{t-1} \end{bmatrix} + \omega \begin{bmatrix} \Delta R_{t-1} \\ \Delta S_{t-1} \\ \Delta T_{t-1} \end{bmatrix} + e_t \quad \dots (15)$$

or we can say that

$$\begin{bmatrix} \Delta R_t \\ \Delta S_t \\ \Delta T_t \end{bmatrix} = \eta_1 \begin{bmatrix} \Delta R_{t-1} \\ \Delta S_{t-1} \\ \Delta T_{t-1} \end{bmatrix} + \begin{bmatrix} \sigma_{11} \sigma_{12} \\ \sigma_{21} \sigma_{22} \\ \sigma_{31} \sigma_{32} \end{bmatrix} \begin{bmatrix} \theta_{11} \theta_{21} \theta_{31} \\ \theta_{12} \theta_{22} \theta_{32} \end{bmatrix} \begin{bmatrix} R_{t-1} \\ S_{t-1} \\ T_{t-1} \end{bmatrix} + e_t \quad \dots (16)$$

For simplicity just analyze the first equation's error correction part. The first row of P matrix is;

$$\omega_1 V_{t-1} = ([\sigma_{11} \theta_{11} + \sigma_{12} \theta_{12}] [\sigma_{11} \theta_{21} + \sigma_{12} \theta_{22}] [\sigma_{11} \theta_{31} + \sigma_{12} \theta_{32}]) \begin{bmatrix} R_{t-1} \\ S_{t-1} \\ T_{t-1} \end{bmatrix} + e_t$$

This can also be written as;

$$\omega_1 V_{t-1} = \sigma_{11} (\theta_{11} R_{t-1} + \theta_{21} S_{t-1} + \theta_{31} T_{t-1}) + \sigma_{12} (\theta_{12} R_{t-1} + \theta_{22} S_{t-1} + \theta_{32} T_{t-1}) \dots (17)$$

Equation clearly expresses the two cointegrating vectors and the terms of their speed of adjustment σ_{11} and σ_{12} .

Regarding the rank of matrix, there are three cases which are as follows:

- The variables in V_t are I (0), if ω has a full rank.
- There are no cointegrating relationships, when the ω is zero.
- There are $r \leq (n - 1)$ cointegrating relationships, when ω has a reduced rank.

4.4.3 Fully Modified Ordinary Least Square (FMOLS)

Based on the Johansen co-integration test, there exists a long-run relationship. In view of this, OLS estimators will be biased and inconsistent if applied to co-integrated variables and thus an alternative method needs to be adopted. For this reason, Fully Modified OLS (FMOLS), developed by Pedroni (2000), econometric technique is used. These estimations not only generate the estimated parameters as consistent still in small samples but also help to control for serial correlation.

4.4.4 Fully Modified OLS

The fully modified OLS was formulated by Phillips and Hansen (1990). It has the specialty to control the problem of endogeneity and serial correlation and consider an estimator that adopts a semi-parametric correction to remove the issues generated by long-run correlation between co-integration equation and stochastic explanatory innovations. The outcomes of fully modified OLS estimators are not biased asymptotically and entirely efficient mixture normal asymptotic permits for standard wald test using asymptotic chi-square statistical implication. The formula of fully modified OLS hires initial estimates of symmetric and one-sided long-run covariance matrices of residuals. Suppose $u_{1,t}$ is the residual derived from estimation. The $u_{2,t}$ might be attained indirectly as $\hat{u}_{2t} = \Delta \hat{e}_{2t}$ from levels regressions.

$$v_t = \hat{\eta}_{21}' D_{1t} + \hat{\eta}_{22}' D_{2t} + \hat{e}_{2t} \quad \dots (18)$$

or directly from the difference regressions

$$\Delta v_t = \hat{\eta}_{21}' \Delta D_{1t} + \hat{\eta}_{22}' \Delta D_{2t} + \hat{u}_{2t} \quad \dots (19)$$

Let $\hat{\psi}$ and $\hat{\Lambda}$ are long-run covariance matrices calculated by employing the residuals $\hat{u}_t = (\hat{u}_{1t}, \hat{u}_{2t}')$. The modified data can be expressed as;

$$z_t^+ = z_t - \hat{\phi}_{12} \hat{\eta}_{22}^{-1} \hat{u}_{2t}$$

and an estimated bias corrected term

$$\hat{\phi}_{12}^+ = \hat{\phi}_{12} - \hat{\eta}_{22}^{-1} \hat{u}_{22}$$

The FMOLS estimator is given by

$$\hat{\delta} = \begin{bmatrix} \hat{\alpha} \\ \hat{\Phi}_1 \end{bmatrix} = \left(\sum_{t=2}^T V_t V_t' \right)^{-1} \left(\sum_{t=2}^T V_t y_t^+ - T \begin{bmatrix} \hat{\phi}_{12}^+ \\ 0 \end{bmatrix} \right) \quad \dots (20)$$

where, $Z_t = (W_t', D_t')$. The basic of FMOLS estimation is the

formulation of long-run covariance matrix estimators $\hat{\psi}$ and $\hat{\Lambda}$.

$$\hat{\phi}_{1,2} = \hat{\phi}_{11} - \hat{\phi}_{12}\hat{\psi}_{22}^{-1}\hat{\phi}_{21}$$

of u_{1t} based upon u_{2t} . The degree of freedom adjustment can be applied to $\hat{\phi}_{1,2}$.

Hansen (1992) exhibits that wald statistics for null hypothesis $R\delta = r$.

$$W = (R\hat{\delta} - r)' (RV(\hat{\delta}) - R')^{-1} (R\hat{\delta} - r) \quad \dots (21)$$

4.5. Data Sources

The data are being used in this study measuring the impact of services sector liberalization on GDP of the services sector (telecom and financial) are from the year 1975-2014. The data are taken from GoP (various issues) and PTA (various issues) in constant prices of 2000.

Liberalization of telecom and banking sector is the basic explanatory variable. Different proxies are used in the literature for measuring liberalization. This study measured it by creating an index of liberalization, using liberalization indicators for both the sectors. In case of telecom, indicators are obtained from ITU (2014), whereas the indicators of banking sector were obtained from Financial Development and Structure database [Kunt, *et al.* (2013) and SBP (2016)]. Gross Fixed Capital Formation was taken as a proxy for investment position of the two sectors. The data for GFCF (constant 2000) for both the sectors were obtained from GoP (2016).

The data for inflation rate and government consumption to GDP (gov/gdp) ratio were obtained from World Bank (2013b). CPI was taken as a proxy for inflation and gov/gdp as proxy for size of government. Government consumption and GDP were taken in constant 2000 prices.

REER (real effective exchange rate) was taken as proxy for competitiveness of the country. The data was taken from UNCTAD (2013). It was defined as weighted average of country's currency (adjusted for inflation) relative to index of other major currencies.

5. RESULTS ANALYSIS

The study aims to analyze the impact of liberalization of telecommunication and banking services on GDP of telecom and financial sectors of Pakistan. The study has used annual frequency data for variables real GDP, GFCF, liberalization for the services sector from 1975 to 2014 for two sectors of Pakistan.

5.1. Results of Unit Root Test

H₀: Unit root

H₁: No unit root

The results of the unit root tests using the augmented Dickey Fuller (ADF) are summarized in Table 5 which reports that variables are not stationary in their level form, since the null hypothesis of unit root cannot be rejected. The ADF test statistics reject the null hypothesis of a unit root at first difference stationary (i.e., $I(1)$). It is possible to apply co-integration tests to determine if there exists a stable long run relationship.

Table 5. Augmented Dickey Fuller Unit Root Test

Variable	At Level		At First Difference		Order of Integration
	Intercept & Trend	P-Values	Intercept & Trend	P-Values	
GDP	-3.1105	0.6215	-13.1210	0.0000***	$I(1)$
LIB	-0.3101	0.4532	-5.3319	0.0013***	$I(1)$
FDI	-2.0102	0.7134	-8.2311	0.0001***	$I(1)$
REER	-1.3171	0.3041	-5.1561	0.0023***	$I(1)$
INF	-4.7505	0.9892	-9.0121	0.0000***	$I(1)$
GOV_CON	-2.10571	0.4031	-3.5143	0.0011***	$I(1)$

Note: *** denote the rejection of unit root at 1% significance level, respectively.

5.2. Empirical Results Johansen Co-integration Test

H₀: No Co-integration

H₁: Co-integration

Table 6. Johansen's Trace Tests and Maximum Eigenvalues Results

Null hypothesis	Alternative	Test statistic	10%	5%	1%	Results
J_{trace} test						
$r \leq 5$	$r > 5$	15.07	7.53	9.42	12.79	Reject H ₀
$r \leq 4$	$r > 4$	16.11	17.91	19.31	24.06	Fail to reject H ₀
$r \leq 3$	$r > 3$	30.03	32.11	34.19	41.00	Fail to reject H ₀
$r \leq 2$	$r > 2$	41.37	49.57	53.21	60.51	Fail to reject H ₀
$r \leq 1$	$r > 1$	47.98	33.00	34.51	41.05	Reject H ₀
$r = 0$	$r > 0$	105.51	71.69	76.00	84.35	Reject H ₀
J_{max} test						
$r = 5$	$r = 6$	15.07	7.53	9.42	12.79	Reject H ₀
$r = 4$	$r = 5$	10.53	13.59	15.76	20.02	Fail to reject H ₀
$r = 3$	$r = 4$	18.57	19.55	20.13	20.57	Fail to reject H ₀
$r = 2$	$r = 3$	21.53	25.61	24.41	23.41	Fail to reject H ₀
$r = 1$	$r = 2$	35.21	19.33	22.33	26.71	Reject H ₀
$r = 0$	$r = 1$	43.31	31.55	34.04	39.97	Reject H ₀

Results in the Table 6 show that the null hypothesis of no co-integration ($r = 0$) against the alternative of the presence of one or more co-integrating vector is rejected at the 10%, 5% and 1% levels of significance in both techniques (trace test and maximum eigenvalue). There exists a unique long-run relationship among variables with 3 co-integrating vectors.

5.3. Empirical Results of Fully Modified Least Squares (FMOLS)

According to the results reported in Table 7 liberalization of the services (telecommunication and banking) sector tends to have a positive impact on their GDP. The econometric evidence is relatively strong for the telecom sector. The results indicate that one percent increase in liberalization of telecommunication services will increase the real GDP of telecom by 0.07 percent.

Table 7. Fully Modified Ordinary Least Square for Telecom Sector

Variable	Coefficient	Standard Error
C	0.83719**	0.734321
INF	0.01094**	0.002583
REER	0.03921**	0.005546
GOV_CONS	0.6903	1.244032
LIB-TELE	0.07102**	0.035141
FDI-TELE	0.154763*	0.141343

* and ** show significance at 10% and 5%, respectively.

Studies conducted by Carsten, *et al.* (2003) and Ahmed, *et al.* (2012) support this result. The results further suggest that the rapid liberalization of Pakistan's telecom sector has played a vital role in accelerating the development process of this sector [PTA (2014)]. The liberalization that basically started in 2003 has induced higher demand for the telecom services and consequently attracted a huge amount of investment (foreign and domestic) in this sector [PTA (2013)]. As a result, telecom became one of the fastest growing and highest contributing sectors of services.

Table 8. Fully Modified Ordinary Least Square for Financial Sector

Variable	Coefficient	Standard Error
C	0.736121**	1.131475
INF	-0.052712**	0.024337
REER	0.071921*	0.003551
GOV_CONS	0.529137	0.626123
LIB-FINAN	0.426471*	0.057126
FDI-FINAN	0.375281**	0.0899717

* and ** show significance at 10% and 5%, respectively.

In case of the financial sector, the impact is less strong and statistically insignificant. One percent increase in banking liberalization increases the GDP of financial sector by 0.09 percent. In the banking sector, the process of liberalization started in the 1980s and took almost two decades for their partial implementation. This delayed and partial

implementation was mainly because of vulnerability of this sector to external shocks and instable economic condition of the country, which made it hard for the government to achieve full scale liberalization of this sector; consequently, it could not have a meaningful contribution in the development of financial sector during the study period. These results are similar to the findings of Bekaert, *et al.* (2001) in case of Nigeria.

5.4. Control Variables

In case of control variables gross fixed capital formation (investment), inflation, and real effective exchange rate (competitiveness) share a positive and significant relationship with the services GDP, whereas government consumption (government size) impact is positive but statistically insignificant.

The results suggest that inflation rate below a threshold level, which is 0.010 percent for Pakistan [Mubarik (2005)], has a positive and significant relationship with the services (telecom, finance) GDP. It can be argued through “hierarchy of needs” hypothesis, which states that as income increases demand for goods reaches its optimal limit and services tends to satisfy higher needs. This results into mounting demand for services making this sector more expensive than other sectors such as agricultural and industrial sectors, thus increasing the share of services in overall GDP.

According to Clark (1951) increase in circulation of money will shift the aggregate demand first from agricultural to industrial sector and then to the services sector. This shift in turn increases the profit margin of the services sector that causes an increase in investment, and in turn raises total output. These findings are consistent with the studies of [Chaudry, *et al.* (2013); Ahmed, *et al.* (2012); Mubarik (2005)].

The analysis also reveals that a higher competitiveness (real depreciation of the local currency) increases exports of the country as the home services become cheaper to foreigners with improvement in competitiveness due to real depreciation of the currency. At the same time with real depreciation of the home currency demand for imported services decreases. All in all, real depreciation induces investors to invest as improvement in competitive strength provides them opportunities to earn more. Thus, real depreciation ultimately positively impacts the

development of the services GDP. According to the results in Table 8, one percent increase in competitiveness will increase the GDP of services (telecom, finance) by 0.071 percent. These results are similar to the findings of [Rodrik (2006); Rapetti (2011)].

Investment also has a positive impact but it is found to be statistically insignificant in case of the telecom sector. The stiff competition and lack of further technological advancement have limited the investment opportunities and have created saturation in telecom industry that resulted in a sharp decline in FDI [SBP (2016)]. Thus, FDI in the telecom sector is showing a downward trend after 2008 [PTA (2014)]. This saturation has reduced the profit margins for the new investors, thus creating a positive yet insignificant impact on growth of the telecom sector [PTA (2013)]. According to the result, one percent increase in investment in telecom increases the GDP of telecom by 0.15 percent. These results are similar to the findings of [Katz (2012)].

Similarly, in case of the financial sector, investment spurs the development process of the services sector. Increase in investment rate will increase the cash flow and reduce the cost of capital. Thus, it will create a positive and significant impact on the development of the financial sector. This increase in investment is mainly because of the balancing act of government to ensure the stability and growth of the financial sector [Hussain (2010)]. Result shows that a one percent increase in investment in the financial sector will increase the GDP of financial sector by 0.33 percent. These findings are similar to those by Bekaert, *et al.* (2001).

The reported results suggest that government size has a positive but statistically insignificant relationship with the GDP of the two sectors (telecom, finance). In case of Pakistan, due to deteriorating law and order situation, defense expenditure has increased tremendously, and serves as one of the major heads of the government's expenditure [SBP (2016)]. Thus, the excess government borrowing in order to finance its expenditures, has limited the availability of funds to private investors, thus creating an insignificant impact on the GDP of the two sectors. According to the results, one percent increase in government consumption increases the GDP of two services sector by 0.69 percent.

The empirical investigation of Barro (1991) and Khilji and Mahmood (1997) support these results.

According to the results reported in Table 8, the value of adjusted *R*-squared is above 0.90 indicating a high goodness of fit; it indicating that a large amount of variation in dependent variable is be explained by the independent variables. Standard deviation of dependent variable is less than its mean indicating greater reliability of the results. Overall, *F*-statistics is also statistically significant with *p* value less than 0.05. Durbin-Watson value also indicates no autocorrelation.

According to the results reported in Table 8, liberalization and investment tends to have a strong positive impact on the GDP of financial sector. One percent increase in liberalization will increase the GDP of financial sector by 0.42 percent. Whereas, in case of investment, one percent increase in investment will increase the GDP by 0.37 percent.

However, in case of other control variables exchange rate and government consumption tend to have a positive but insignificant impact. Whereas, the impact of inflation is found to be negative during the period under consideration; one percent increase in inflation will decrease the financial GDP by 0.05 percent.

6. CONCLUSION AND POLICY IMPLICATIONS

6.1. Conclusion

The objective of this paper is to analyze the impact of liberalization of country's services regime on development of the two key sectors (telecom and finance). A liberalization index was created to measure the possible outcome. An empirical result of Fully Modified Ordinary Least Square shows that the impact of liberalization was positive on the development of selected sectors. It became further evident that a liberalized services sector plays an important role in accelerating the development process.

The econometric evidence for the telecom sector was found to be strong, and relatively less strong and statistically insignificant for the financial sector. However, the impact of liberalization became significant when financial sector was estimated individually for extended

time period. The GDP of these sectors appeared to be positively affected by the increased liberalization of the telecom and banking services. It is also evident that the full scale liberalization in telecom sector has played a major role in increasing the share of the services to economy's GDP.

The results further reveal that inflation also has an important role in explaining the development of these sectors. Inflation below the threshold level enhances the productivity of these sectors, so the government is required to maintain this level while keeping productivity of other sectors of the economy under consideration. Also, a high REER (illustrating improved competitiveness) enhances the development of these sectors, thus the government should pay attention to this aspect and try to maintain this trend up, to a certain level, in order to ensure enhanced investment opportunities and increased aggregate demand for home services.

6.2. Policy Implications

The above results indicate a dire need to pay special attention to accelerate investment rate in the services sector. In case of telecom sector the government needs to create new investment opportunities to overcome the problem of reduced and declining investment due to slow down in FDI. It needs to be underscored that investment, whether local or foreign, is conditioned with liberalization. It is incumbent on planners to take cognizance of those factors, which boost or hamper the investment.

This is because all evidence shows that these two sectors, telecom and finance, are more sensitive to controls and restrictions. At the same time these two sectors have potential to grow at a faster pace, compared to other sectors of the Pakistan economy. Reasons are obvious, i.e., fast changing technology in the telecom sector and ever growing innovation in the financial sector. The financial sector has another peculiarity; growth in any other sector will create new demand for this sector. If both these sectors are targeted and liberalized, within regulatory framework, these may bring healthy growth in overall GDP of the country.

As noted earlier, the inflation below the threshold bolsters the growth and beyond the limit, it may hamper the growth, rather it works

negatively. The external shocks may not be under the control of government, but indigenous factors can be managed through prudent monetary and fiscal policies.

Excessive borrowing by the government resulting in crowding down effect leaves little for the private sector to invest. It is also a time-tested fact that a major portion of government borrowing is used for non-productive purposes, which results in inflation without increasing the output.

Government subsidies based on borrowings or otherwise, generally go to sick or non-performing sectors, which negatively affects economic growth. Either subsidies be done away with, or to be used to create incentives, for buoyant services sector, so that local and foreign investments are attracted. It is worth pointing out that successive economic planners have neglected the productive use of remittances. In the last decade or so, remittances grew from around \$2 billion to around \$12 billion. If government pays full attention to this important area, it has enormous potential to grow. This will not only fetch much needed foreign exchange, but if properly used will strengthen the financial sector in general and the banking sector in particular. When remittances grow, they are likely to generate much needed activities.

In short, government should take deliberate steps to create enabling environment for spurring investment in the services sector, particularly buoyant sub-sectors, banking and telecom. Investigation of this paper has proved that these sectors react positively to liberalized regime. For achieving this end, inflation will also have to be contained below the threshold level. Government borrowings will have to be kept within acceptable limit, so that private investment is not choked.

As for a cursory look at financial sector of the country, this study finds that considerable effort has been made for liberalization of this sector since 1980s, but due to political and economic instability of the country, desired results could not be achieved [Khalid (2000)]. But since these sectors are very buoyant they showed substantial growth compared to other sub-sector of services. The telecommunication industry has also achieved substantial liberalization and strength from 2003 onwards [PTA (2014)].

REFERENCES

- Abbas, K. and M. Malik (2010) *Impact of Financial Liberalization and Deregulation on Banking Sector in Pakistan*. Pakistan Institute of Development Economics, Working Paper No. 64, Islamabad.
- Aghion, P. and P. Howitt (2012) *The Economics of Growth*. Massachusetts Institute of Technology: The MIT Press. Available at: <http://mitpress.mit.edu/books/economics-growth>.
- Ahmed, F., Khushnood, B., Yar, U., Rana, I. and A. Golo (2012) *Telecommunication Sector-Its Role, Contribution to FBR, Revenue, Problems and Issues*. Directorate General of Training and Research, Lahore.
- Ahmed, A., and H. Ahsan (2011) *Contribution of Services Sector in the Economy of Pakistan*. Working Papers & Research Reports, 2011.
- Arnold, J., Javorcik, B., Lipscomb, M. and A. Mattoo (2008) Service Reform and Manufacturing Performance. The World Bank Policy Research Working Paper, No. 5948. Available at: <http://elibrary.worldbank.org/doi/pdf/10.1596/1813-9450-5948>.
- Arshad, M. and A. Qayyum (2006) Trade liberalization, Financial Sector Reforms and Growth. *The Pakistan Development Review*, 45:4, 711–731.
- Ayyoub, M., Chaudhry, I. S., and F. Farooq (2011) Does Inflation Affect Economic Growth? The case of Pakistan. *Pakistan Journal of Social Sciences*, 31:1, 1-15.
- Barro, R. J. (1991). Economic Growth in a Cross Section of Countries. *The Quarterly Journal of Economics*, 106:2, 407-443.
- Bekaert, G., Harvey, C. and C. Lundblad (2001) Does Financial Liberalization Spur Growth? Available at: https://faculty.fuqua.duke.edu/~charvey/Research/Working_Papers/W56_Does_financialliberalization.pdf.
- Blomström, M., and H. Persson (1983) Foreign Investment and Spillover Efficiency in an Underdeveloped Economy: Evidence from the Mexican Manufacturing Industry. *World Development* 11:6, 493-501.

- Borensztein, E., De Gregorio, J., and J. W. Lee (1998) How does Foreign Direct Investment Affect Economic Growth? *Journal of International Economics*, 45:1, 115-135.
- Buckley, P. J., and M. Casson (1976) The Future of the Multinational Enterprise in Retrospect and in Prospect. *Journal of International Business Studies*, 8:2, 219-222.
- Bukhari, A. and S. Khan (2008) Estimating Output Gap for Pakistan's Economy, Structural and Statistical Approaches. Working Paper No. 24, Karachi: State Bank of Pakistan.
- Burgess, R., and A. Venables (2004) *Towards a Microeconomics of Growth*. World Bank Publications, 105-139.
- Burki, A. and S. T. Hussain (2007) *Opportunities and Risks of Liberalising Trade in Services in Pakistan*. International Centre for Trade and Sustainable Development (ICTSD), Geneva.
- Carsten, F., Aaditya, M. and R. Randeep (2003) Liberalizing Basic Telecommunications: The Asian Experience. HWWA Discussion Paper, No.163 available at: <http://www.econstor.eu/handle/10419/19325>
- Caves, R. E. (1974) Multinational Firms, Competition, and Productivity in Host-country Markets. *Economica*, 41:162, 176-193.
- Chaudry, I., Ayoub, M. and F. Imran (2013) Does Inflation Matter for Sectoral Growth in Pakistan, An empirical Analysis? *Pakistan Economic and Social Review*, 71-92.
- Clark, C. (1951) *The Conditions of Economic Progress*. London: Macmillan (first edition 1941).
- Conner, K. R. (1991) A Historical Comparison of Resource-based Theory and Five Schools of Thought within Industrial Organization Economics: Do We Have a New Theory of the Firm? *Journal of Management*, 17:1, 121-154.
- De Mello, L. R. (1999) Foreign Direct Investment-led Growth: Evidence from Time Series and Panel Data. *Oxford Economic Papers*, 51:1, 133-151.
- Field, B., and G. Ofori (1988) Construction and Economic Development: A Case Study. *Third World Planning Review*, 10:1, 41-50.

- Francois, J., Pindyuk, O. and J. Woe (2008) Trade Effects of Services Trade Liberalization in the EU. Institute for International and Development Economics, Discussion Paper: 08-02.
- Frankel, M. (1962) Endogenous Growth. Available at: http://www.econ.brown.edu/fac/Peter_Howitt/publication/endogenous.pdf.
- Fuchs, V. (1980) Economic Growth and the Rise of Service Employment. Prepared for a conference: Towards Explaining Economic Growth. Institute of World Economics, Kiel, Germany, June 24-28.
- Globerman, S. (1979) Foreign Direct Investment and 'spillover' Efficiency Benefits in Canadian Manufacturing Industries. *Canadian Journal of Economics*, 9(1), 42-56.
- GOP (2016) Pakistan Economic Survey: 2015-16. Ministry of Finance, Government of Pakistan. Available at: http://finance.gov.pk/survey_1213.html.
- GOP (various issues) Pakistan Economic Survey. Ministry of Finance, Government of Pakistan. Available at: <http://www.finance.gov.pk/>
- Granger, C.W.J., (1981) Some Properties of Time Series Data and Their Use in Econometric Model Specification, *Journal of Econometrics* 16, 121-130.
- Gulzar, A. (2011) A Strategic Framework of Liberalising Trade in Services for Pakistan. *The Pakistan Development Review*, 9:5, 733-770.
- Hufbauer, G. C. (1975) The Multinational Corporation and Direct Investment. *International Trade and Finance: Frontiers for Research*, 45:1, 253-319.
- Hunt, S. D., and R. M. Morgan (1996). The Resource-advantage Theory of Competition: Dynamics, Path Dependencies, and Evolutionary Dimensions. *The Journal of Marketing*, 107-114.
- Hussain, I. (2010) Pakistan's Growth Experience. Institute of Business Administration, *Business Review*, 5:2, 1-6.
- Hussain, S. B. (2004) *Encyclopedia of Capitalism* (Facts on File Library of World History) 3 VOL SET.
- ITU (2014) Advanced Data Search. Available at: <https://www.itu.int/neh4/itud/icteye/AdvancedDataSearch.aspx>.

- Johansen, S. (1988). Statistical Analysis of Cointegration Vectors. *Journal of Economic Dynamics and Control*, 12:3, 231-254.
- Katz, R. (2012) The Economic Impact of Broadband: Research to Data and Policy Issues. Geneva, Switzerland: International Telecommunication Union.
- Khalid, M. (2000) Macroeconomic Impact of Financial Liberalization in Pakistan: An assessment. Available at: <http://www.pide.org.pk/pdf/psde%2019agm/macroeconomic%20effects%20of%20financial%20liberalization%20in%20pakistan%20an%20assessment.doc>.
- Khilji, N. and A. Mahmood (1997) Military Expenditures and Economic Growth in Pakistan. *The Pakistan Development Review*, 36:4, 791-808.
- Kongsamut, P., Rebelo, S. and D. Xie (2001) Beyond Balanced Growth. *IMF Review of Economic Studies*, 68:1, 869-882.
- Kunt, A. D., Cihak, M., Feyen, E., Beck, T. and R. Levine (2013) Financial Development and Structure Database. Available at: <http://econ.worldbank.org/wbsite/external/extdec/extresearch>.
- Kuznets, S. (1957) Quantitative Aspects of the Economic Growth of Nations: II Industrial Distribution of National Product and Labor Force. *Economic Development and Cultural Change*, Supplement, 5:4, 211-219.
- Matto. A., Rathrindran. R. and A. Subramanian (2001) Measuring Services Trade Liberalization and its Impact on Growth. Policy Research Working Paper, No.2655. Available at: www-wds.worldbank.org.
- Mubarik, Y. A. (2005) Inflation and Growth: An Estimate of Threshold Level of Inflation in Pakistan. SBP-Research Bulletin: Working Paper, No.08.
- Nelson, R., and G. W. Sidney (1982) An Evolutionary Theory of Economic Change. *Harvard Business School Press, Cambridge*.
- Nurkse, R. (1935) The Schematic Representation of the Structure of Production. *The Review of Economic Studies*, 2:3, 232-244.
- Park, S. H. (1989) Linkages between Industry and Services and their Implications for Urban Employment Generation in Developing Countries. *Journal of Development Economics*, 30:2, 359-379.

- Phillips, P. C. B., and B.E. Hansen (1990) Statistical Inference in Instrumental Variables Regressions with I(1) Processes. *Review of Economic Studies*, 57, 99-125.
- PTA (2014) Telecom Indicators. Available at: <http://www.pta.gov.pk/index.php?Itemid=599>.
- PTA (2013) Annual Report. Available at: http://www.pta.gov.pk/annual-reports/annreport2013_1.pdf.
- Rapetti, M. (2011) Macroeconomic Policy Coordination in a Competitive Real Exchange Rate Strategy for Development. University of Massachusetts, Amherst, Working Paper No. 09.
- Rodrik, D. (2006) The Real Exchange Rate and Economic Growth. Available at: http://www.brookings.edu/~media/Projects/BPEA/Fall%202008/2008b_bpea_rodrik.PDF
- SBP (2016) Economic Data. Available at: <http://www.sbp.org.pk/ecodata/index2.asp>.
- UNCTAD (2013) Economic Trends. Available at: http://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx?sRF_ActivePath=p,4&sRF_Expanded=p,4
- World Bank (2013a) World Development Indicators. Available at: <http://data.worldbank.org/data-catalog/world-development-indicators>
- World Bank (2013b) Growth of Services Sector. Available at: http://www.worldbank.org/depweb/beyond/beyondco/beg_09.pdf.
- WTO (2014) *Services: Rules for Growth and Investment*. Available at: http://www.wto.org/english/thewto_e/whatis_e/tif_e/agrm6_e.htm.
- Zebaze, C.D. and K. Alexander (2006) Telecommunications Services in Africa: The Impact of Multilateral Commitments and Unilateral Reform on Sector Performance and Economic Growth. *World Trade Organization*, 37:5, 919-940.

APPENDIX

Table 1. Telecom Liberalization Index

Year	Market Structure	FDI	Independent Regulator	Ranks
2000	Partial-competition	Partially-restricted	yes	4
2001	Partial-competition	Partially-restricted	yes	4
2002	Partial-competition	Partially-restricted	yes	4
2003	Partial-competition	Partially-restricted	yes	4
2004	Full-competition	No-restriction	yes	6
2005	Full-competition	No-restriction	yes	6
2006	Partial-competition	No-restriction	yes	5
2007	Partial-competition	No-restriction	yes	5
2008	Full-competition	No-restriction	yes	6
2009	Full-competition	No-restriction	yes	6
2010	Full-competition	No-restriction	yes	6
2011	Full-competition	No-restriction	yes	6
2012	Full-competition	No-restriction	yes	6

Source: Authors' estimates based on information obtained from International Telecommunication Union (2013).

Table 2. Banking Liberalization Index

Year	Concentration Rate	Foreign Penetration	Ranks
2000	Not-competitive	<20%	2
2001	Not-competitive	<20%	2
2002	Not-competitive	>20%	4
2003	Par-competitive	>20%	5
2004	Competitive	>20%	6
2005	Competitive	>20%	6
2006	Competitive	>20%	6
2007	Competitive	>20%	6
2008	Competitive	$\geq 20\%$	5
2009	Competitive	$\geq 20\%$	5
2010	Competitive	$\geq 20\%$	5
2011	Competitive	$\geq 20\%$	5
2012	Competitive	>20%	6

Source: Authors' estimates based on information obtained from State Bank of Pakistan and Financial Development and Structure Database (2013).