

World Trade Organization Accession impact on Iran's Economy

Afifa Jabbar, Fahad Bashir

Abstract—The study aim is to find the world trade organization accession impacts on economy of Iran. Is the world trade organization accession boost or depress the economy? To fulfill the aim of the study, data is taken from World Bank official website during the time period from 1990 to 2014. To measure the effect of world trade organization accession on economy, least square regression, and Langrage Multiplier used. It found that this world trade organization membership is not good for economy of Iran. It has a negative impact on Iran economy growth. Country should make some sound and basic steps to better deal with country level issues like political and strategic stability in Iran, justice with all region, and better implementation of policies, which are major reasons depressing its economy. A key limitation of this study is that, it used annual database because monthly, quarterly and semiannually data of all indicators were not available for every client.

Index Terms—WTO, economy growth, FDI, GDP, imports, exports

1 INTRODUCTION

WORLD Trade Organization is an international organization working for the trading rules, policies and trade disputes. Countries trying their best to get the membership of world trade organization. As trade liberalization is healthy for economies. Many countries enjoyed the benefit from this world trade organization memberships in past. Iran is a wishful country for world trade organization, as currently it is working as observer member of WTO. The comments and opinion of experts about Iran world trade organization accession are very different. Some experts think that this accession will not be beneficial for Iran. On the other side many experts believe that Iran's economy growth is only possible by membership of world trade organization. The second group of experts thinks that Iran's economy problems have only one solution, which is the incorporation of world trade organization (Kalbasi and Hassan 2004).

In one study by Li and Wu (2004), claimed that the weak industrial environment in many countries is preventing those economies from getting benefit of world trade organization accession. (Rose 2004), done parametric estimations and found that world trade organization or general agreement on tariffs and trade accession has not a significant impact on a country bilateral trade. One of the Iran supreme leaders Ayatollah Ali Khamenei said that

“Iran needs to strength its exports before joining world trade organization”. In 2004, Ianchovichina and Martin study of china world trade organization accession.

They claim that this accession give benefit to country economy because export quotas removed, easy access to international markets and distributional channel. A study by Anderson and Wincoop (2003), explained china affect of joining world trade organization and its influence on rest of the world. The country enjoyed a high benefit from the accession due to their liberalization. Other developed countries also get benefit because of reduction in cost of import of goods. Accession of world trade organization is an opportunity for economies, but it's all depend on countries that how much benefit they can draw from it.

(a) Statement of problem

The subject of world trade organization accession of Iran got significant attention from scholars of different areas. Iran is not doing too many efforts to achieve their strategic and country specific goals. Its major focused is to get full membership of WTO. But despite of all this Iran is still working under the tag of a world trade organization supervisor member. The study is actually formed to assess the Iran world trade organization observer membership accession effects, either it will boost the economy of Iran or depress it.

(b) Objectives

In order to achieve the desired goals following aspects of WTO accession examined:

- Afifjabbar is currently M.phil Scholar in Lahore School of Accountancy UOL Lahore Postcode 54000, Pakistan. E-mail: Afifjabbar@hotmail.com
- Fahad Bashir is currently M.phil Scholar in Lahore School of Accountancy UOL Lahore Postcode 54000, Pakistan PH+923338578128 Email: FahadBashir211@gmail.com

(This information is optional; change it according to your need.)

- Study the effect of world trade organization accession on Iran's economy growth.
- To analyze the effect of WTO membership on trade.

2 LITERATURE REVIEW

Ianchovichina and Marti (2004) examined the impact of China's world trade organization accession on some economic variables. It included economic variable factors such as household income, factor return, trade volume, prices, output and employment over a time period of 1995 to 2007. The study utilized Standard Global Trade Analysis Project (GTAP is a general equilibrium model) and World Bank website for data collection. In conclusion they claimed that reforming economies and their trading partners get benefit from the accession. China plays a most important role in global trade.

Bidabad and Anaraki (2004) investigated the effect of Iran's world trade organization accession on cement industry. Data collected from data bank of central bank of Iran and from cement companies of Iran and covered a time period from 1963 to 2002. Iran cement output, Iran's cement imports in tons, Iran cement exports, world price of cement, Iran improved cement price, cement wholesale price index, gross domestic product at constant factor price, non oil gross domestic product at factor costs, effective exchange rate, change in cement industry in Iran and cement consumption of domestic production utilized as important variable. Economic model estimated by using ordinary least square methods. Results indicated that Iran accession to world trade organization have no huge impact on its consumption, production and exports. The entry in world trade organization influences the Iran imports. As cement industry majorly contribute in gross domestic product. It is expected that in coming years it show economic growth.

Jensen and Tarr (2007) investigated the impact of Kazakhstan accession to world trade organization. The quantitative assessment utilized the computational general equilibrium model. It considered some factors like country tariff reduction, improved market access, local content reforms, restrictions on multinational service entry and policies considering multinational firms. It estimated productivity effects by using Dixit-Stieglitz framework. It carried out sensitivity analysis also. Questionnaire survey conducted to get data about regulations and descriptions.. It estimated that country major revenues or gains extracted from accession of world trade organization, which liberalized the multinational service provider's barriers. All the variables included in the study model contributed positively in measuring gains. Piecemeal sensitivity analysis explained that results qualitatively robust. It

reported that this study result consistent with literature and the access to the diverse group of providers important and crucial for country growth.

Ghosh and Rao (2010) examined the combine impact of China's accession to the Worlds Trade Organization, removal of tariffs and non tariffs on textile and Apparel by industrialized countries in other major countries. It used Computable General Equilibrium model. The model ranked against to the benchmark GTAP data of 2001. It analyzed real output, employment, trade flow and investment in details. All industries in china got benefit from accession to world trade organization except motor vehicle and parts. Industries of textile and apparel in china and India got gain because of the removal of quotas condition. But Canada, Europe and U.S faced a reduction in these two industries that would be off set against the increase in real gross domestic product. All regions attained gain from the WTO accession.

Aghdaie and Renani (2012) studied the Iran accession to world trade organization impact on automotive industry. All information collected from library sources like book, articles and scientific journals. Purpose of the study attained by considering various factors like competitive strength, share of Iranian car in foreign sale market, quality of domestic car, foreign investment, and share of Iranian car in domestic sale market, reforming custom rules, select level, customer satisfaction and price of domestic cars. A questionnaire designed to accept or rejects the null hypothesis. Random sampling utilized as research technique. It found that world trade organization accession affect all above mentioned variables. Trade liberalization or joining world trade organization uplifted the competitiveness of domestic cars by decreasing price. The decrease is only because of diversity in automotive industry. The accession of organization increased industry opportunity in foreign markets by foreign markets. And it decreased the sale share of domestic car in domestic or local market.

Aslund (2013) studied the Russian accession to world trade organization. It was a timely assessment. It focused on a time period from 2000 to 2007. It also focused on accession effect on some economic variables like gross domestic product, real exchange rate, aggregate export, capital, skilled labor and unskilled labor. To got aims of the study data collected from library sources like official websites, books, scientific journals and articles. Country accession had three separated period. First period from 1993 to 1999, during this time period Russia was passive about joining the world trade organization. Period from 2000 to 2003 was an active interval to got world trade organization accession and the active interest decreased in 2004 to 2007 time interval. Russia behaved democratically

intensive in second period and the democratic intention decreased when Russia struggled to get membership of world trade organization. In case of Russia, struggle to get world trade organization membership decreased country achievements and took the economy backward.

Vertakova (2015) examined the key factors determinants for industrial development of Russia under condition of membership in world trade organization. Geographical location of the study was Russia. Data set used between a times period of 2002 to 2014. After the world trade organization accession the elements affecting the developments of Russia economy changed now. Russia became member of world trade organization since 2011. But Russia joined the world trade organization on worst terms and conditions. It stated that the joining of world trade organization has a negative impact on Russia economy and it's an urgent need of Russia to overcome the adverse effect on economy. As Russia country liberalized for trade it open Russia for an innovative competition. It found that country need to improve legislation system , reduce interest rate on high loans, make strong policies about tariff regulation, make relax monetary policies, develop a strong control over trans-boundary exchange of capital and Russia also need to change its import and export policies.

3 METHODOLOGY

The data collected from World Bank official website for the time period (1990 -2014). Collected annual data analyzed through E-views to achieve the aim of the study. Population will be "the countries accession to world trade organization (WTO) impact on their economies" The sample is considering the Iran accession to world trade organization impact on Iran's economy by focusing on two time period from 1990 to 2004(pre accession) and 2005 to 2014(post accession).

(c) Research Questions

The study objectives direct to some research questions, mentioned below.

- What is the effect of world trade organization accession on Iran's economic growth?
- Which variables help to boast the economic growth of Iran?
- How trade influenced economic growth of Iran?

(d) Hypothesis

- H0: There is a positive impact of Iran accession to world trade organization on Iran's economy.

H1: There is a negative impact of Iran accession to world trade organization on Iran's economy.

(e) Economic Model

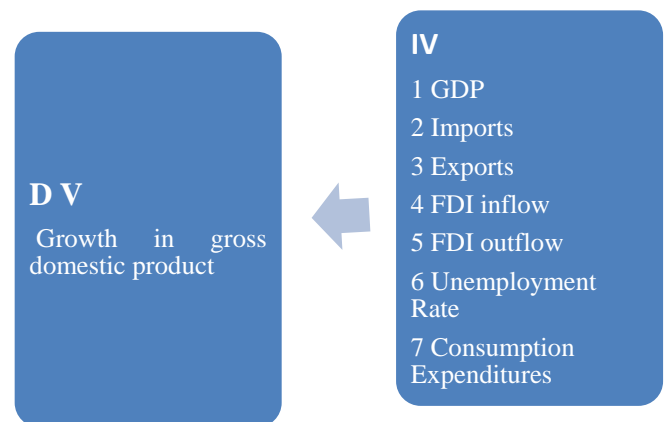
The study utilized Least Square and LM-Test to examine the impact of world trade organization accession on Iran's economy. These economic models having economic equations which include specification as follows:

$$GGDP_t = \beta_0 + \beta_1 GDP_t + \beta_2 IMPO_t + \beta_3 EXPO_t + \beta_4 FDIIN_t + \beta_5 FDIOUT_t + \beta_6 UNEMPRATE_t + \beta_7 CONST + \epsilon_t$$

Where, GGDP= Growth in gross domestic product of Iran at period t, GDPt = Gross domestic product of Iran during period t, IMPOt = Imports of Iran at time period t, EXPOt = Exports of Iran during time t, FDIINt = Foreign direct investment inflows of Iran during period t, FDIOUTt = Foreign direct investment outflows of Iran at time t, UNEMPRATEt = Unemployment rate of Iran during time period t, CONST = Consumption expenditures of Iran at time t, εt = Error term.

In 2004, Ianchovichina and Martin study of china world trade organization accession impacts on some economic variables used trade, price, employment and household income to examine the relationship. Bidabad and Anaraki (2004) investigated the effect of Iran's world trade organization accession on cement industry. They used Ordinary Least Square model by considering variables like gross domestic product, cement prices, exchange rate, and cement consumption of domestic production. In 2013, Aslund's study on Russian accession to world trade organization, gross domestic product, exchange rate, capital, skilled and unskilled labor used as core variables for analysis.

(f) Conceptual Framework



3 INTERPRETATION

(a) Pre- WTO Analysis (1990-2004)

Table I: Least Squares

Dependent Variable: GGDP
 Method: Least Squares
 Date: 06/01/17 Time: 21:12
 Sample: 1990 2004
 Included observations: 15

Variable	Co-efficient	Std. Error	t-Statistic	Prob.
C	-14.66461	28.12488	-0.521411	0.6182
GDP	-0.143576	0.293326	-0.489477	0.6395
IMPO	0.191757	0.299005	0.641316	0.5417
EXPO	-0.050704	0.520201	-0.097469	0.9251
FDIIN	5.64E-10	2.02E-09	0.278534	0.7887
FDIOUT	-0.006069	0.011858	-0.511822	0.6245
UNEMPRATE	0.652120	1.986674	0.328247	0.7523
CONS	3.07E-10	4.08E-10	0.753840	0.4755
R-squared	0.567269	Mean dependent var	3.013333	
Adjusted R-squared	0.134538	S.D. dependent var	4.261768	
S.E. of regression	3.964732	Akaike info criterion	5.897280	
Sum squared resid	110.0337	Schwarz criterion	6.274907	
Log likelihood	-36.22960	Hannan-Quinn criter.	5.893258	
F-statistic	1.310904	Durbin-Watson stat	2.141880	
Prob(F-statistic)	0.365011			

The least square analysis of world trade organization accession impact on Iran's economy exhibit intercept coefficient value as -14.66461. It showed negative coefficient values for gross domestic product, exports and foreign direct investment outflows. The probability is also known as p-value. Its marginal significant level used 5% or 0.05. P-values are above the significance level of 5 percent. The R-squared value is 0.567269, which means 56.7% fractions of variations in dependent variable explained by the independent variable. The Durbin Watson test give value of 2.14. The majority of results in Iran analysis showed the insignificance results. It means analysis of least square providing us evidences for rejection of null hypothesis i.e. there is a positive effect of world trade organization accession on Iran's economy. These all variables have negative relationship with economy of Iran in pre world trade organization accession period.

Table II: Langrage Multiplier Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.777635	Prob. F(2,5)	0.2611
Obs*R-squared	6.233473	Prob. Chi-Square(2)	0.0443

Test Equation:

Dependent Variable: RESID
 Method: Least Squares
 Date: 06/01/17 Time: 21:13
 Sample: 1990 2004
 Included observations: 15
 Presample missing value lagged residuals set to zero.

Variable	Co-efficient	Std. Error	t-Statistic	Prob.
C	2.976181	26.37859	0.112826	0.9146
GDP	0.210654	0.311589	0.676063	0.5290
IMPO	0.227435	0.334764	0.679390	0.5271
EXPO	-0.547714	0.571947	-0.957631	0.3822
FDIIN	4.72E-10	2.26E-09	0.209166	0.8426
FDIOUT	0.003937	0.011183	0.352054	0.7391
UNEMPRATE	0.068633	1.850188	0.037095	0.9718
CONS	-2.84E-10	4.28E-10	-0.664174	0.5360
RESID(-1)	-0.521015	0.568413	-0.916614	0.4014
RESID(-2)	-0.795965	0.438304	-1.816010	0.1291
R-squared	0.415565	Mean dependent var	-4.74E-15	
Adjusted R-squared	0.236418	S.D. dependent var	2.803489	
S.E. of regression	3.586295	Akaike info criterion	5.626837	
Sum squared resid	64.30755	Schwarz criterion	6.098871	
		Hannan-Quinn criter.	5.621809	
Log likelihood	-32.20128	Durbin-Watson stat	2.043963	
F-statistic	0.395030			
Prob(F-statistic)	0.892978			

LM-Test is mostly uses to test simple null hypothesis and forecasting purpose. It is a test that measures that a variable of our interest has value equal to the particular value. In Langrage Multiplier test analysis results exports and consumption expenditures coefficients present negative values as -0.547714 and -2.84E-10 respectively. Rest of the explanatory variables gross domestic product, imports, foreign direct investment inflows, foreign direct investment outflows, unemployment rate coefficients values are 0.21065, 0.22743, 4.72E-10, 0.0039 and 0.06863 respectively. The Langrage Multiplier test results of t-statistic for explanatory variables gross domestic product, imports, exports, foreign direct investment inflows, foreign direct investment outflows, and unemployment rate and consumption expenditure are as 0.67606, 0.67939, -0.957631, 0.209166, 0.352054, 0.037095 and -0.66417 respectively. The Langrage Multiplier test results present that all the independent variables have insignificant value of probability (gross domestic products 0.5290, imports 0.5271, exports 0.3822, foreign direct investment inflows 0.8426, foreign direct investment outflows 0.7391,

unemployment rate 0.9718 and consumption expenditure 0.5360). All explanatory variables have values higher than the level of significance (5%). The R-squared value measures in LM test is 0.415565. On the basis of LM-Test evidences support the rejection of null hypothesis. It accepts the alternative hypothesis that these all economy variables have negative effect on economy of Iran during pre accession period. In both the tests (Least Square and LM-test) applied on the pre period of accession the independent variables (GDP, imports, exports, foreign direct investment inflows, foreign direct investment outflow, unemployment rate and consumption expenditures) showed insignificant results and reject the null hypothesis.

(g) Post WTO Analysis (2005-2014)

Table III: Least Squares

Dependent Variable: GGDP
Method: Least Squares
Date: 06/01/17 Time: 21:18
Sample: 2005 2014
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-27.35164	50.85159	-0.537872	0.6445
GDP	0.192205	0.136557	1.407512	0.2946
IMPO	-0.025584	0.345156	-0.074122	0.9477
EXPO	-0.094709	0.217424	-0.435598	0.7056
FDIIN	-4.73E-09	4.56E-09	-1.036021	0.4090
FDIOUT	-0.000103	0.005342	-0.019290	0.9864
UNEMPRATE	4.071026	4.393142	0.926678	0.4519
CONS	-3.12E-10	2.49E-10	-1.251714	0.3372
R-squared	0.818526	Mean dependent var	1.610000	
Adjusted R-squared	0.183365	S.D. dependent var	4.489605	
S.E. of regression	4.057160	Akaike info criterion	5.629406	
Sum squared resid	32.92109	Schwarz criterion	5.871474	
Log likelihood	-20.14703	Hannan-Quinn criter.	5.363857	
F-statistic	1.288691	Durbin-Watson stat	2.236207	
Prob(F-statistic)	0.503850			

The Least Square analysis of post accession period (when Iran got observer member status in world trade organization) showed intercept coefficient as gross domestic product 0.192205, imports -0.025584, exports -0.094709, foreign direct investment inflows -4.73E-09, foreign direct investment outflows -0.000103, unemployment rate 4.071026 and consumption expenditures -3.12E-10. All independent coefficients value showed negative relation except gross domestic product and unemployment rate. The t-statistics results for gross domestic product, imports, exports, foreign direct investment inflows, foreign direct investment

outflows, and unemployment rate and consumption expenditure values are as -1.407512, -0.074122, -0.435598 -1.036021, -0.01929, 0.926678 and -1.251714 respectively. R-squared is also known as the coefficient of multiple determinations for multiple, or coefficient of determination. The least squares regression analysis results value of R-Squared is 0.8185. It means 81.8% percent of fraction of variations in dependant parameter is explaining by the independent variables (gross domestic products, imports, exports, foreign direct investment inflows, foreign direct investment outflows, and unemployment rate and consumption expenditure). And remaining 18.2% is affecting by the other parameters outside the independent variables written above. All variables (gross domestic product 0.2946, imports 0.9477, exports 0.7056, foreign direct investment inflows 0.4090, foreign direct investment outflow 0.9864, unemployment rate 0.4519 and consumption expenditure 0.3372) has significant level higher than 5 percent or 0.05. Variables p-value is higher than their level of significance, which is enough for rejection of null hypothesis. The independent variables portrayed insignificant value of probability test. Insignificant value of probability test portrays that Iran's economy has negative effects of accession of world trade organization accession on economy during post accession period.

Table IV: Langrage Multiplier Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	4.896379	Prob. F(1,1)	0.2702
Obs*R-squared	8.304044	Prob. Chi-Square(1)	0.0040

Test Equation:

Dependent Variable: RESID
Method: Least Squares
Date: 06/01/17 Time: 21:27
Sample: 2005 2014
Included observations: 10
Presample missing value lagged residuals set to zero.

Variable	Co efficient	Std. Error	t-Statistic	Prob.
C	-58.66838	39.75014	-1.475929	0.3791
GDP	0.144207	0.102822	1.402496	0.3943
IMPO	0.318637	0.247274	1.288599	0.4201
EXPO	0.165577	0.147084	1.125729	0.4624
FDIIN	-5.97E-09	3.79E-09	-1.575951	0.3600
FDIOUT	0.005525	0.003989	1.385005	0.3981
UNEMPRATE	4.533612	3.277806	1.383124	0.3985
CONS	-3.64E-10	2.19E-10	-1.659109	0.3453
RESID(-1)	-1.783038	0.805792	-2.212776	0.2702

R-squared 0.830404 Mean dependent var 1.47E-15
Adjusted R-squared 0.526361 S.D. dependent var 1.912564

S.E. of regression	2.362895	Akaike info criterion	4.055067
Sum squared resid	5.583273	Schwarz criterion	4.327394
Log likelihood	-11.27534	Hannan-Quinn criter.	3.756326
F-statistic	0.612047	Durbin-Watson stat	2.300429
Prob(F-statistic)	0.762994		

LM-test stands for Lagrange Multiplier test. It is a measure of hypothesis testing and forecasting. In Lagrange Multiplier test analysis results foreign direct investment inflows and consumption expenditures present values of $-5.97E-09$ and $-3.64E-10$ respectively. Rest of the explanatory variables gross domestic product, imports, exports, foreign direct investment outflows, unemployment rate shows positive effects with values of 0.144207, 0.318637, 0.165577, 0.005525 and 4.533612 respectively. The R-square value is 0.830404 and p-value is the ultimate measure of null hypothesis rejection and acceptance. As all the independent variables have probability higher than the level of significance. So it rejects the null hypothesis and accepts the fact that world trade organization accession has negative effect on economy of Iran during post accession period. Both tests results show that if Iran gets complete membership of world trade organization it may be beneficial for Iran's economy. In the pre and post observer member status accession period, all the factors determined that these variables negatively related to the Iran's economy.

4 CONCLUSION

This paper expanded earlier studies and try to find this relationship between world trade organization accession and Iran's economy by considering different dimensions.

- Prior studies determined that different countries economy positively or negatively affected by world trade organization accession. Some studies were in favor of Iran accession and some experts think accession is unhealthy for Iran. This research makes confirmation about second school of thoughts that Iran not growing after supervisor membership of world trade organization.
- It rejected the null hypothesis and evidences support that there is a negative relationship between world trade organization accession and economy of Iran. Seidi and Fathollah, (2012) conducted a study to assess the world trade organization accession impact on textile industry. They claimed that this accession is not healthy for Iran local market.
- The foreign direct investment, exports has a negative relationship with economy of Iran. One of the main reasons that foreign direct investment is not growing in Iran is the operating restrictions and requirements foreigner investors have to face if they wish to

invest in Iran. According to the Iran's recent years statistics Iran is not making too much efforts to attract new foreign direct investments.

- Country is trying very hard to get the title of full membership of world trade organization. But this study proved that Iran does not show any healthy boast in economy of Iran after and before observer membership.
- Hence, the rejection of null hypothesis concluded that there is a negative effect of world trade organization accession on economy of Iran.

5 RECOMMENDATIONS

- It is recommended that the government of Iran needs to consider or pay special attention to the political and international strategies and paves way to accomplish the goal by less reacting towards sanctions and full membership of world trade organization.
- Iran needs to attract foreign direct investment in all the sectors especially in less attractive sectors of Iran. So that the amount of new investments, employment rate and trade volume increase in Iran.
- Government of Iran should make some policy reforms about trade and investment. It is also the responsibility of Government of Iran that they establish political stability in the country, which is a first, basic and necessary step towards economy growth.

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7 APPENCIES:

Appendix A: Variables

Variables	Definition
Economy	Economy is the position of any country regarding production and consumption of goods and services and money supply.
Gross Domestic Product	It is a total output of goods and services produces during a time period within a country
Imports	Imports are purchases of goods and services for sale or trade purpose from foreign country.
Exports	Exports are a trade activity where goods produced in a country and sale to other country for trade or sale purpose.
Foreign Direct Investment Inflows	The inflow of foreign direct investment is the value or amount of inward investment done by nonresident investors in that country.
Foreign Direct Investment Outflows	The outflow of foreign direct investment is the value or amount of outward investment made by resident investors in that country to other countries.
Employment Rate	Employment rate indicate the percentage of labor force employed of an economy. It is the purchase of goods and services for utilization purpose by household of Iran
Consumption Expenditures	Consumption expenditure is defined as purchase of goods and services for use by Households in the country.