Impact of Imports & Exports on The Profitability of Pakistani Banks

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This paper aims at examining the level of influence the macroeconomic variables (Exports & Imports) have on the profitability of commercial banks in Pakistan. The study covers the period 2005 to 2009 on quarterly basis. The period from 2005 to 2009 was chosen because during the given period, the global financial sector has shown a trend of significant decrease in profitability due to the global economic downturn (crisis) with many reputable banks liquidation deposit and this also negatively affected the banking sector in Pakistan including both private and public. In the study least square regression technique is applied to the data for analysis, in the line with Indranarain et al. (2009). The study used the Return on Assets (ROA) as a measure of profitability. Two variables, including exports and imports are used as explanatory variables. Both exports and imports are key factors in any country's economy around the world. The activity of imports and exports always brings employment, economic growth, and prosperity to the countries. All analyzes of this study are performed using the statistical software "Eviews-7". To test the autocorrelation in the collected data, Durbin-Watson statistic is used. Multicollinearity of the data is diagnosed by making the correlation matrix. Stationarity of the data is checked by using the "individual unit root test". The results obtained from the regression models show that both imports and exports are significantly affecting the bank's profitability. The better regression model is consisting of the macro-economic variable exports.

Anahtar Kelimeler:

Profitability; Pakistani banks; stationarity; regression; unit root test

Banks play an important role in the operation of an economy. This is particularly true in case of Pakistan, where banks are the major lenders of finances and their stability is very important to the country's financial system. An understanding of determinants of banks profitability is essential and crucial to the stability of the economy. External variables analyzed and highlighted by the researchers as important determinants of profitability include interest rate, inflation rate, exports and imports etc. Whereas this study involves only two variables; Exports & Imports.

Both the macroeconomic variables are very important for national economies and international markets. Every country of the world is with some advantages and some disadvantages in terms of resources. For example, some countries are independent in natural resources such as fossil fuels, oils, gases, timber, fertile soil or precious metals and other minerals, while other

countries have shortages of many of these resources. So the ones who are independent in such resources can sell those to the ones who are in need of those. Similarly some countries are developed in infrastructures, educational field, research activities etc., while many other countries are not.

Imports are important for international businesses. Countries often need to import items/goods that are either not available at home or are available at low price from abroad. Individual consumer are also benefitted from the international imports like they have a variety to choose from at a range of prices and this activity helps in their life standards better. The involvement of individual consumer is also good for the national imports because due to their involvement the international trade and imports increase.

Around the globe most countries want to export goods rather than import. Because it is like sell and purchase.

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If you sell money will come to you and if you buy money will go from you. Countries often sell what is extra and is needed by others in order to earn money. Countries often try to keep balance between imports and exports. If imports are higher than the exports of a country then the country will pay more than it is earning.

Overall the activity of imports and exports is good for the countries nationally and internationally. The activity fulfills the requirements of various countries by transferring things here and there. Similarly thousands of jobs are created by doing so and thousands of people are able to earn their expenses due to this. If a country is at higher side of exports then the country is earning more and finally its GDP increases. Such countries become wealthy with the passage of time.

The banking literature suggests that the factors of profitability are well explored, although the definition of profitability varies amongst studies. There are several studies on these factors (determinants) of profitability in the banking sector (Indranarain 2009, Valentina et al. 2009, Panayiotis 2005, Kyriaki et al. 2002, Krunakar et al. 2008), but there is hardly any such study in the context of Pakistan. For example, Aurangzaib et al.(2005) conducted a study on the association between economic performance and exchange rate in Pakistan. Auggire et al. (2005) studied the impact of exchange rate fluctuations and its volatility in Pakistan. Egert et al. (2005) studied the relationship of the effects of exchange rate on exports in Pakistan. Hussain et al. (2004) studied the performance of exchange rates of all the member countries of IMP including Pakistan.

Figure-1 shows the percentages of exports and imports of its GDP. Developed and advanced countries always have higher percentage of Exports and imports. Although the exports by non-EU countries are at higher side as compared to EU countries (see Figure-2). Figure-3 is showing the yearly imports and exports for the EU countries from 2007 to 2013 in billion Euros and interestingly the imports are in higher side as compared to the exports.

The present study used Return on Assets (ROA) as a measure of profitability in the line with Indranarain 2009, Valentina et al. 2009, Panayiotis 2005, Kyriaki et

al. 2002, and Krunakar et al. 2008. ROA, defined as net income divided by total assets, shows how well a management of a bank is using the real assets of the bank to produce profit.

Banking sector of our country Pakistan is governed/controlled by State Bank of Pakistan. Pakistani banking structure consists of banking institutions and non-banking financial institutions. The domestic commercial banks and foreign commercial banks are part of the banking institutions. Domestic commercial banks consist of both public and private commercial banks.

This study examines the contribution of these two macro-economic (external) factors to the variation in profitability across domestic commercial banks in Pakistan. The data for macroeconomic factors from 2005 to 2009 is used to explore the significance of these two variables in achieving elevated profits. Return on Assets (ROA) is used as an indicator of profitability, which is defined as net income divided by total assets, shows how well a management is using the bank's real resources to achieve high profitability.

Since 1997 Pakistan's banking industry has been passing through agonizing course of reformation. A comprehensive spin in performance of Pakistan's banking industry is not likely till the achievement of reforms but atleast signs of development are evident. In today's world the banking style, offers, deals, marketing is most advanced than ever before. One may find variety of options in banking.

A public bank is the one operated by the government and having several stakeholders. In Pakistan we have four public banks (appendix-A). Limited Bank is the one limited by charter and regulation by offering only limited services to the clients.

Exports

Goods and services exported by Pakistani exporter during a financial year. Exports are the goods those are sold out to a foreign country.

Imports

Goods and services imported by Pakistani importer during a fiscal year. Imports are the items purchased abroad to fulfill a domestic deficiency.

Review of The Existing Work

Otuori (2013) in his study concluded that exports and imports are positively associated with profitability of commercial banks and if the level of these two factors are raised the profitability of banks is likely to go up. This study used a sample of 27 banks from Kenya. Significance of the factors is estimated using the regression analysis technique. Both the variables proved significant at 5% level in affecting the bank profitability in Kenya. The study results are consistent with the study of Solnik (2000) who concluded if the cost of exports is raised by lower rate in comparison with imports the currency depreciation is likely to happen as compared to the business partner. The study of Otuori (2013) gave some recommendations to the government of Kenya that they must come up with a plan that to raise the level of exports and imports of the country and by doing this the commercial banking industry in Kenya can receive higher profits.

Arize (2002) conducted a study on fifty countries including Pakistan. The study used quarterly based data from 1973 to 1998. The study carried analysis on the long-run convergence between macroeconomic variables (imports and exports). The study used Johansen and Stock & Watson techniques. The study found the normalized vector as 0.92 for Pakistan using Johansen test. This value of 0.92 is significant in case of long term convergence.

Khan and Knight (1988) conducted a study to see the imports compression and exports performance in developing countries including Pakistan. The study used two stage least square regression analyses (2SLS). The study used pooled cross sectional time series data. The study did not estimate country wise results for Imports and Exports. The study however discovered the joint elasticity of exports to imports as significant at value 0.52.

Koukouritakis (2004) conducted a study in the line with the techniques and statistical model used by Khan and Knight (1988). The study estimated the impact of the Greek trade that was due to the European Union The main objective of his study was to estimate the effects of the Greek trade balance that were caused by the EU accretion. The study used three stage least square models for estimation of the business model. The results obtained from the model provided the long term exports elasticity to imports value as 0.78, hence showed statistical significance.

Irandoust and Ericsson (2004) studied the performance of business flows in developed countries including US, UK, Italy, France, Sweden etc. the study used Johansen test for estimating the long term convergence between the two macroeconomic factors i.e. exports and imports. The study revealed that the three countries USA, Sweden and Germany have very effective financial policies and in the long term the policies were proving beneficial and profitable. Interestingly for UK the study concluded that the macroeconomic policies regarding imports and exports are not fruitful and efficient in the long term for UK.

Sadia (2006) tested the hypothesis "imports of intermediate and capital goods are critical inputs in the export production of the country". The study used a sample of yearly data from 1973 to 2005. OLS statistical technique is applied for analysis. The results obtained from the study tell that for Pakistan long term relation exist between exports and imports.

Shaheen (2013) examined the relationship of exchange rate and its consequences on the macroeconomic performance of Pakistan. For the study annual data from 2000 to 2010 is used. The study found significant relationship between exchange rate and imports while the association between exchange rate and exports is found statistically insignificant.

Objective of The Study

Specific Objective:

To determine how exports and imports can affect the performance (Profitability as Return on Assets) of commercial banks in Pakistan.

Research Question:

What consequences do imports and exports have on the profitability of commercial banks in Pakistan?

Importance of The Study

The results of this study are very important and beneficial for the economic policy makers of the country and people who are associated to the commercial banking industry of Pakistan. By studying the results of the paper they can better understand the impact of these two variables on banks profitability. The study is to give some recommendations to the state bank of Pakistan and policy maker for improvements. The study is also fruitful for academicians and researcher in this field.

Material

In Pakistan we have 4 public and 25 private commercial banks, a total of 29. Out of these 29 a random sample of 15 banks is selected to carry out this study. Data for the two external variables (Exports & Imports) is retrieved from the web site of IMF through State Bank of Pakistan.

Statistical Analysis

As data in our research involves panels, it is appropriate to make use of the technique of "all possible regression" to catch the best panel regression model. The criterion of highest R2 is used to select the best model. In panel data regression equation there is a double subscript on its variables, i.e.

$Y_{it} = \alpha + \beta X_{it} + \varepsilon_{it}$,i = 1, …, N;   t = 1, … T

"i" = bank and "t" = time.

"α" is the intercept; "β" is K x 1 vector and "X_{it}" is the ith bank on kth explanatory factor at time "t".

Where $\varepsilon_{it} = a_i + b_{it}$

"a_i" = unobserved error and "b_{it}" = remainder error term.

In this research "a_i" is bank's unobserved ability and "b_{it}" varies with bank and time & is called the usual error term in the regression model.

In our research we made use of "cross-section weights" for all banks at time t, and the real variance, to generate a matrix-weighted average of the within and the between estimators (Baltagi,2001). Preliminary analysis is performed before running the regression models. Heteroscedasticity in the data is controlled by making use of the least square method to fixed effects models (Gujarati, 2004).

Preliminary Tests

The correlation matrix (Table-1) shows that the variables are positively correlated but not significantly correlated (Correlation > 0.80 is considered as highly & significantly correlated). Table (2) contains the output of "individual unit root test" for the two factors. At 10% level of significance P-values of these factors are signifying stationarity of data. Autocorrelation is tested by Durbin-Watson statistic, which confirms no significant autocorrelation at all in the data.

Results

Using the technique of "least square regression analysis" two models are run each of which is for one external variable to test its individual significance. Table (3) shows that both imports and exports are significantly affecting the profitability on individual basis on 10% level of significance. Imports are negatively associated to ROA while exports are positively affecting the country's economy and hence the profitability of domestic commercial banks. The better significant regression model on the basis of higher R2 is, the one with exports;

ROA = 0.237310 + 1.54E-07 (Imports).

Table (4) shows pair wise result for both the macroeconomic variables. The model is significantly affecting ROA as the p-values is zero. The coefficient of imports is again negative while the association of the exports to the ROA is positive. The significant regression model is,

ROA = 0.268793 + 9.31E-07 (exports) - 2.19E-08 (Imports).

In the analysis autocorrelation is measured by Durbin-Watson statistic. In all the regression models no

significant autocorrelation is found. Both the external factors are significantly affecting the profitability of Pakistan's domestic commercial banks.

Discussion

This paper is all about highlighting the significance of external variables (Exports & Imports) on the ROA of Pakistan's domestic commercial banks. The technique of "least square regression analysis" is applied to figure out the affect of each factor on profitability and collective affect on ROA. Coefficient of imports is negatively associated to ROA while the coefficient of the exports is positively associated to ROA. Both the variables are found significant in affecting the profitability of banks. The study found no multicollinearity or autocorrelation between the variables.

Since both the variables are found significant in performance of domestic banks of the country therefore the study recommends few steps to the government, economic policy makers, state bank of Pakistan and commercial banks of the country.

1.There is a need of carefully looking into the balance of imports and exports of the country because in this study the coefficient of imports is negatively and significantly affecting the banks performance. That is why the policy makers of the country should thoroughly survey the list of imports and they must adopt the one that is suitable to the economy and hence can bring balance to the financial system.

2.Since the exports of the country are positively affecting the ROA which means more exports more profitability. Keeping this in view the stake holders can revisit the list of exports and by increasing the exports more profits are likely to come.

3.Some good studies have proved that inflation rates are negatively associated to exports and imports. If the inflation rate raises the exports and imports are flattened. State bank of Pakistan must control the inflation rate to flourish the economy from this angle.

4.Some studies have also shown that interest rate is negatively affecting the imports and exports. If the

interest rates are set higher then the people and organizations borrowing money from commercial banks for participating in the imports and exports business will become reluctant and the imports exports activity will reduce in the country. So state bank of Pakistan needs to set the interest rate at low value.

5.In addition to these points the government can conduct some seminars on the topic for the banker, stake holders, business person etc to make them aware of the imports, exports business.

6.The government should start strict monitoring of the exporting goods whether those are of the best quality or not. In international market we should sell our best quality in order to receive more demand of our goods and hence profit.

7.The government must allow more exporting companies in the country in order to make a competitive environment in terms of price and quality both. The government needs to monitor the prices as well because high prices can negatively affect the exports of our country.

Table 1. The Correlation Matrix

	EXPORTS	IMP
EXPORTS	1	0.595587
IMP	0. 595587	1

Table 2. Panel Unit Root Test

(Individual trend & Intercept include in equation)

S/No	Variable	ADF Fisher Chi-Square	Im, Pesaran & Shin W-Statistic	Hadri Z-statistic	Brietung t-statistic	Stationary/ Non-Stationary
1	Exports	64.0095* (0.0003)	-3.9498* (0.0000)	4.4255* (0.0000)	0.0353* (0.5141)	Stationary
2	Imports	35.0277* (0.2416)	-1.2898* (0.0986)	1.8245* (0.0340)	-2.6812* (0.0037)	Stationary

Note:

1.'*' indicates value of the statistic.

2. p-values are in parenthesis.

3. Exports and imports are considered stationary as three out of four tests suggest stationarity.

Table 3. Individual Impact of Variables on ROA

Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-Squared	Durbin-Watson statistic
IMP	-9.45E-08	7.63E-08	-1.238346	0.0578	0.328556	1.316936
EXPORTS	1.54E-07	1.20E-07	-1.285783	0.0473	0.390457	1.856716

Table 4. Regression with Two Predictor Variables

Predictors	F-Stat	individually Significant variable	P-Value	R-Squared	Durbin-Watson statistic
Imp, exports	8.78758	NIL	0.000	0.411322	1.89675

References

1.Anna PIV & Chan HS. (2009). Determinants of Bank Profitability in Macao. Macau Monetary Research Bulletin 93-113.

2.Arize Augustine C. (2002). Imports and Exports in 50 Countries Test of Co integration and Structural Breaks. International Review of Economics and Finance. 11: 101-115.

3.A Aurangzeb, T Stengos & A U Muhammad. (2005). Short-Run and Long-Run Effects of Exchange Rate Volatility on the Volume of Exports: A Case Study for Pakistan. International Journal of Business and Economics. 4, No. 3,: 209-222.

4.A Aguirre and C Calderon. (2005). Real exchange rate misalignments and economic performance. Working Paper No. 315, (Central Bank of Chile)

5.B Egert, & A M Zumaquero. (2005). Exchange Rate Regimes, Foreign Exchange Volatility and Export Performance in Central and Eastern Europe Just Another Blur Project?. (Oesterr eichische National Bank)

6.Baltagi BH. (2005). Econometric Analysis of Panel Data. 3rd edition, John Wiley & Sons, Chichester.

7.Baltagi BH. (2001). Econometric Analysis of Panel Data. 2nd edition, John Wiley & Sons, Chichester.

8.Farzana Shaheen. (2013). Fluctuations in Exchange Rate and its Impact on Macroeconomic Performance of Pakistan. The Dialogue. Vol.8:No.4

9.Gujarati D. (2004). Basic Econometrics. 4th edition, New York, McGraw-Hill.

10.Husain A M, A Mody & KS Rogoff. (2004). Exchange Rate Regime Durability and Performance in Developing Versus Advanced Economies. Journal of Monetary Economics. 52:1: 35-64.

11.Irandoust, Manuchehr & Johan Ericsson. (2004). Are Imports and Exports Co integrated? An International Comparison. Metroeconomica. 55: 49-64.

12.Indranarain Ramlall. (2009). Bank-Specific, Industry-Specific and Macroeconomic Determinants of Profitability in Taiwanese Banking System: Under Panel Data Estimation. International Research Journal of Finance and Economics. Issue 34, 160-167.

13.Kyriaki Kosmidou, Sailesh Tanna & Fotios Pasiouras. (2005). Determinants of Profitability of Domestic UK Commercial Banks: Panel Evidence from the Period 1995-2002. Money Macro and Finance Research Group. 37th conference, 1-27, 2005.

14.Khan Mohsin S. & Malcolm D Knight. (1988). Import Compression and Export Performance in Developing Countries. Review of Economics and Statistics. 70: 315-321.

15.Koukouritakis Minoas. (2004). EU Accession Effects on Trade Flows: The Case of Greece. South Eastern Europe Journal of Economics. 2: 61-79.

16.Karunakar M, Vasuki K & Saravanan S. (2008). Are Non-Performing Assets Gloomy Or Greedy From Indian Perspective?. Research Journal of Social Sciences. 3: 4-12.

17.Otuori O H. (2013). Influence of exchange rate determinants on the performance of commercial banks in Kenya. European Journal of Management Sciences and Economics. Vol.1:86-98.

18.Panayiotis PA, Sophocles NB & Matthaios DD. (2005). Bank-Specific, Industry-Specific and Macroeconomic Determinants of Bank Profitability. working paper No.25, Bank of Greece 5-35.

19.Sadia Bader. (2006). Determining Import Intensity of Exports for Pakistan. State bank of Pakistan working paper No.15

20.Solnik B. (2000). International Investments, 4th edition. Addison-Wesley. Wesley Longman

21.Valentina F, McDonald C & Schumacher L. (2009). The Determinants of Commercial Bank Profitability in Sub-Saharan Africa. IMF working Paper. WP/09/15, 2-32.
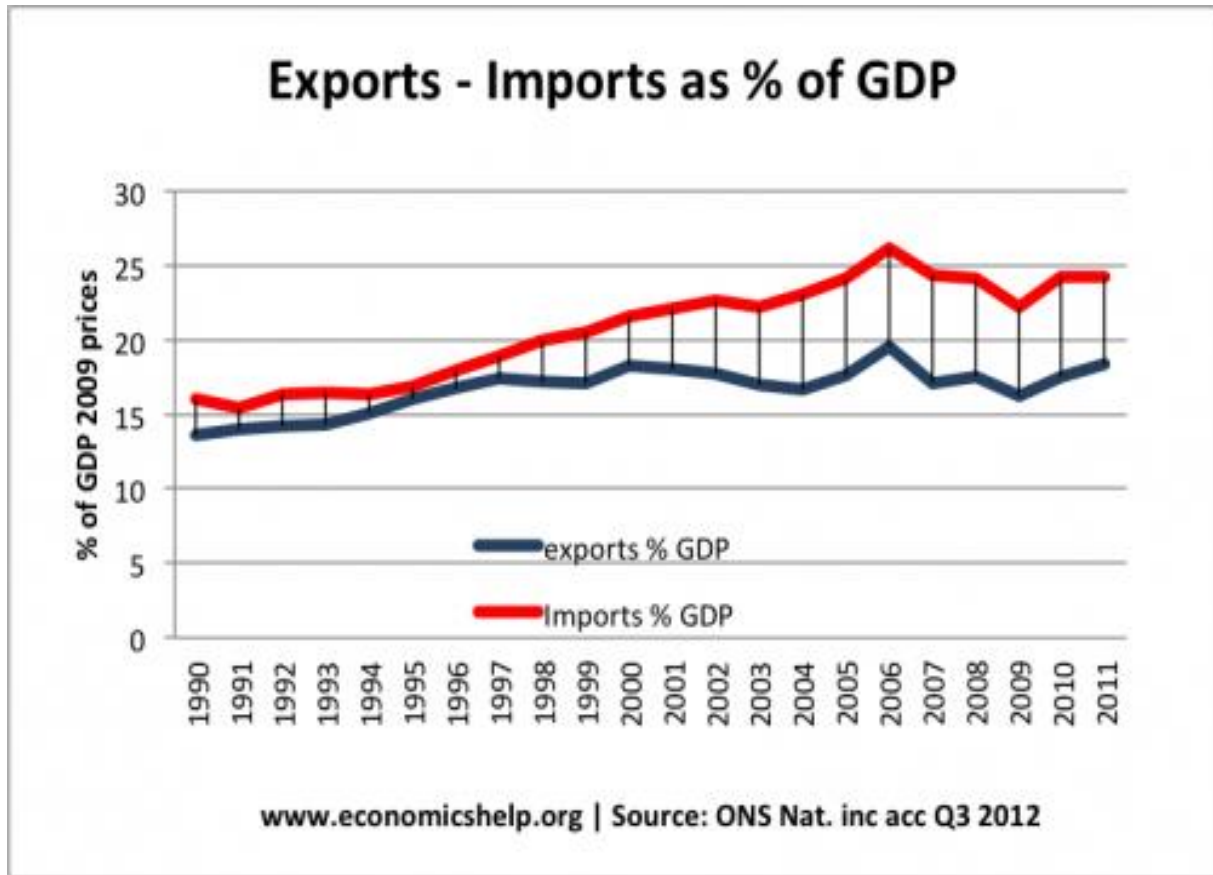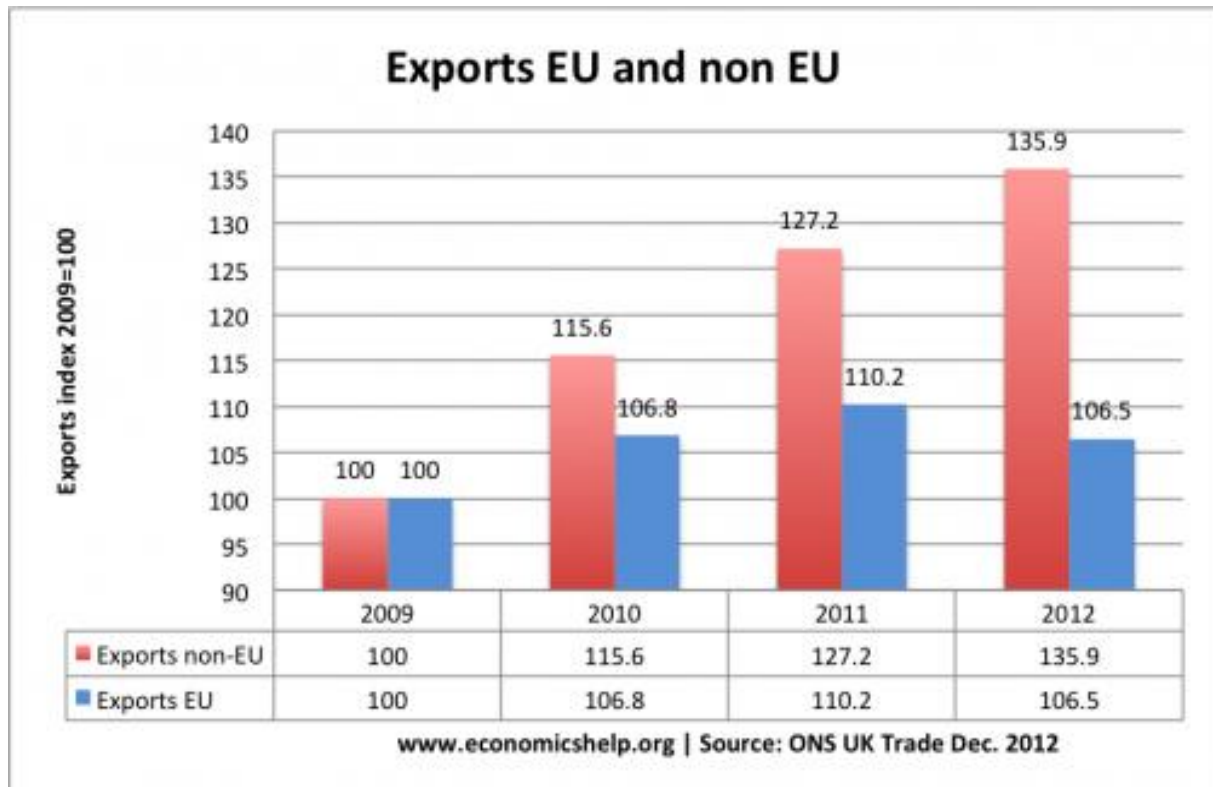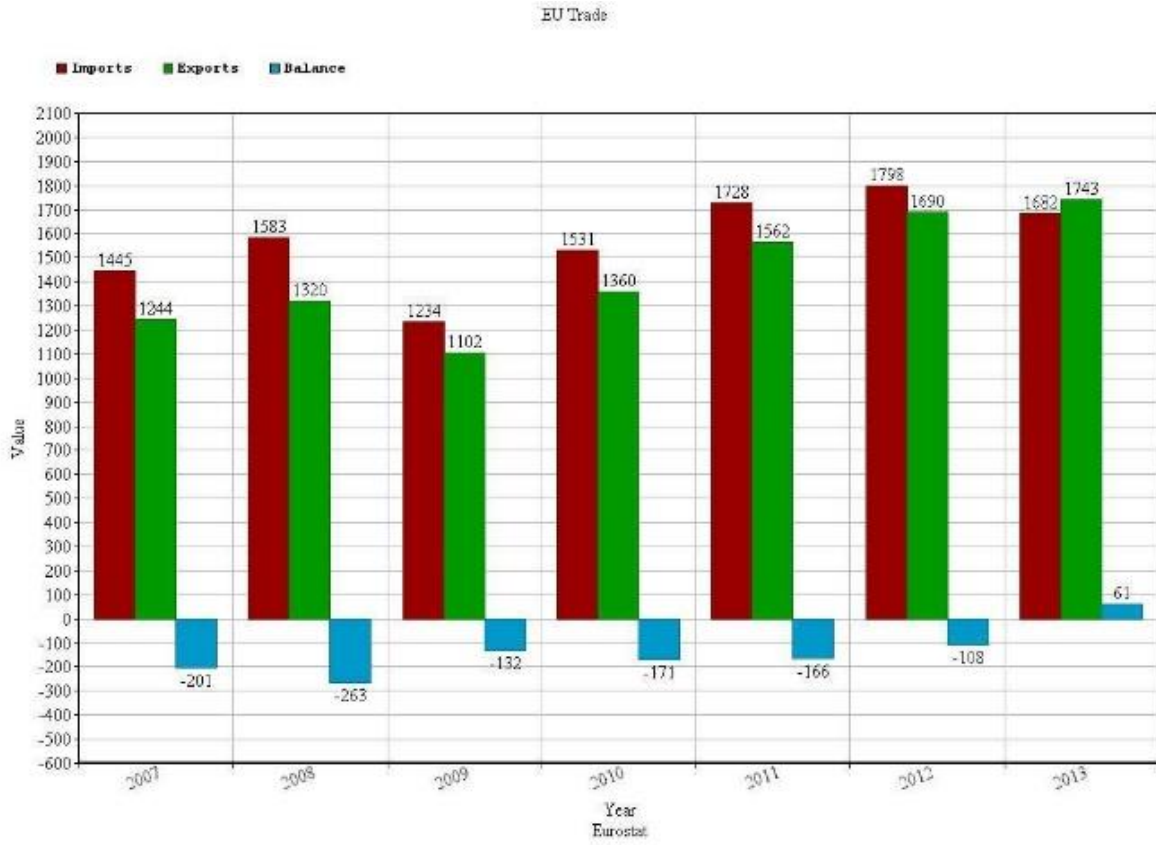
Figure-1

Figure-2

Figure-3

EU Trade

Appendix-A

Scheduled Domestic Banks Operating in Pakistan, as on

30th June, 2010

S/No	Name Of Bank	Branches	Website
A	Public Sector Commercial Banks	1621	
1	First Women Bank Ltd.	39	www.fwbl.com.pk
2	National Bank of Pakistan^	1267	www.nbp.com.pk
3	The Bank of Khyber	42	www.bok.com.pk
4	The Bank of Punjab ^	273	www.bop.com.pk
B	Local Private commercial Banks	6,850	
1	Allied Bank Ltd.	786	www.abl.com.pk
2	Arif Habib Bank Ltd.* ^	36	www.summitbank.com.pk
3	Askari Bank Ltd.^	204	www.askaribank.com.pk
4	Atlas Bank Ltd.* ^	40	www.atlasbank.com.pk
5	Bank Al-Falah Ltd.^	309	www.bankalfalah.com
6	Bank Al-Habib Ltd.^	267	www.bankalhabib.com
7	BankIslami Pakistan Ltd	70	www.bankislami.com.pk
8	Dawood Islamic Bank Ltd.	42	www.dawoodislamic.com
9	Dubai Islamic Bank Pakistan Ltd	36	www.dibpak.com
10	Emirates Global Islamic Bank Ltd.	58	www.egibl.com
11	Faysal Bank Ltd.	136	www.faysalbank.com.pk
12	Habib Bank Ltd.^	1457	www.habibbankltd.com
13	Habib Metropolitan Bank Ltd.^	120	www.hmb.com.pk
14	JS Bank Ltd. ^	40	www.jsbl.com
15	KASB Bank Ltd.^	70	www.kasbbank.com
16	MCB Bank Ltd.^	1085	www.mcb.com.pk
17	Meezan Bank Ltd.	180	www.meezanbank.com
18	Mybank Ltd. ^	80	www.mybankltd.com
19	NIB Bank Ltd. ^	204	www.nibpk.com
20	Samba Bank Ltd.	28	www.samba.com.pk
21	Silk Bank Ltd.	85	www.silkbank.com.pk
22	Soneri Bank Ltd.	156	www.soneri.com
23	Standard Chartered Bank Ltd.	162	www.standardchartered.com
24	The Royal Bank of Scotland Ltd.	79	pwkww.rbs.com.pk
25	United Bank Ltd. ^	1120	www.ubl.com.pk

Download from: www.osec.ch

* Since December 2010, Atlas Bank Ltd. and Arif Habib

Bank Ltd. have been merged and formed Summit Bank

Ltd.

 "^" indicates the banks used in this study