Institutional Quality, Human Capital and Exports: An Empirical Investigation

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The theoretical and empirical studies on determinants of exports mainly concentrating on exchange rate fluctuations, domestic GDP and international exports are ubiquitous. This paper aims to contribute to our understanding of determinants of exports in the context of Pakistan's economy from proximate causes to more fundamental causes by introducing two additional relevant variables namely institutional quality and human capital. The goal of the paper is to empirically investigate the relationship between exports and these variables by employing the data from 1980-2016. In particular we explore whether the widely held belief that the exchange rate depreciation, high GDP growth, increase in international demand, good institutions and increase in human capital has significant impact on exports of Pakistan. The rationale behind introducing these additional variables in the determination of exports is that a vibrant export sector that can produce according to global quality standards needs the requisite skills as well as good institutional quality that enable exporters to become globally competitive both in terms of price and quality. However, we do not significant impact of human capital and institutions on the exports of Pakistan, which can be due the fact that Pakistan does not export institution intensive exports which doesn't require skilled labour and strong institutions.

1. INTRODUCTION

A voluminous body of literature on economic growth subscribes to the idea that exports are an engine of economic growth [Bhagwati (1978); Krueger (1978)]. Empirical research has confirmed the view that exports contribute to economic growth by enabling countries to produce according to their comparative and competitive advantage thus raising productivity and overall economic growth. The literature has emphasised a variety of determinants of exports including tariff and non-tariff barriers, macroeconomic policy framework, and exchange rate regime. On the other hand, the economists from neo-classical camp follow the traditional production function benchmark and emphasise the importance of physical capital while in endogenous growth models the human and physical capital both are viewed as important factors within the framework of endogenous technology. Both of these theories rely on the proximate determinants of exports and advocate that increase in physical and human capital is important for enhancing exports.

The aim of this paper is to explore the role of institutional quality as a key determinant of exports besides human capital and other traditional correlates of exports

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including exchange rate regime and world export demand. Institutional quality plays a significant role in determining the effectiveness of public policy to achieve the desired trade outcomes. In economies with strong institutions, investments tend to be productively used thus contributing positively to trade. Recent work has emphasised the role of deeper determinants of exports such as the quality of institutions. It is argued that quality of institutions influence productivity in an economy and hence countries must strive to have better institutions to augment productivity. In an influential work Baldwin (2003) explains that other than tariff and non-tariff barriers some important policy tools such as reduction in corruption, competitive exchange rate, reduction in inflation as well as investing on human capital and improving institutions are the important targets for increase in trade. A key component of institutional quality is enforcement of contracts. A belief that contracts would be enforced is important for exports as it facilitates the trade transactions among different jurisdictional territories [Levchenko (2004); Nunn (2007); Costinot (2006)].

Anderson and Marcouiller (2005) view bad institutions as a hidden tax on trade. Similarly, there is uncertainty involved in international trade transactions when contract enforcement regulations are not very effective which adversely impacts international trade [Levchenko (2004)]. Rodriguez and Rodrik (1999) and Edwards (1993) argue that the administrative capacity and political stability are important factors that influence exports. As Douglas North (1991) noted, institutions impact trade magnitudes by influencing transactions costs involved in international exchange. Similarly, Dollar and Kraay (2002) find a strong correlation between institutional quality and trade. While quality of institutions is relevant for overall exports, it is especially important in sectors that involve complex goods whose production processes require high quality institutional framework [Nunn (2005); Costinot (2005)]. Table 1 highlights least institutionally intensive and most institutionally intensive products. It is clear from the table that agro-food processing and basic manufactures such as fabrics and paperboard are least institutionally intensive products, whereas products that involve complex production processes and modern technology such as aircraft and machinery are most institutionally intensive products. Ranjan and Lee (2003) stress that the quality of institutions is critical in industries where production processes involve a high level of technological sophistication such are aircraft and high-tech machinery and equipment.

Table 1

The Least Institutional Intensive and most Institutional Intensive
Industries from Nunn (2007)

Least Institutionally Intensive	Most Institutionally Intensive
Industry description	Industry description
Meat packing plants	Aircraft parts and equipment, n.e.c.
Soybean oil mills	Mineral wool
Poultry slaughtering and processing	Surgical appliances and supplies
Special product sawmills, n.e.c	Packaging machinery
Creamery butter	Noncurrent-carrying wiring devices
Petroleum refining	Current-carrying wiring devices
Fluid milk	Small arms ammunition
Tire cord and fabrics	Manufacturing industries, n.e.c.
Malt	Grey and ductile iron foundries
Setup paperboard boxes	Mobile homes

The literature on exports and institutions has also emphasised that property rights are important for exports [Acemoglu, *et al.* (2006); Cunat and Melitz (2006); Levchenko (2004); Matsuyama (2004); Nunn (2005)]. Similarly, institutions related to labour market facilitate hiring of labour in an efficient manner thereby contributing to export competitiveness.

Table 2

The Least Institutional Intensive and most Institutional Intensive Industries from Nunn (2007) Applied to Pakistan Exports Basket

Product	Share in Total Exports (%)	Contract Intensity	Institutional Intensity
Textiles and Clothing	60	Low	Low
Food Processing	15	Low	Low
Mineral and Metals	5	Low	Low
Engineering Goods	11	High	High

A look at the composition of Pakistan's exports shows that Pakistan mostly exports products that require low institutionally intensity such as textiles and clothing, food processing and minerals and metals (Table 2). Only 11 percent of Pakistan's exports consist of engineering goods which are considered as institutionally intensive products. This could be due to weak institutional set up in Pakistan pointing out the need to improve institutional framework for improving Pakistan's competitiveness in high-end products.

A voluminous literature correlates exports with human capital and argues that for higher exports it is critical that the labour market facilitates specialisation and that the employment level can be regularly adjusted based on the volatility and flexibility of the market [Grossman and Maggi (2000); Grossman (2004); and Ohnsorge and Trefler (2004)]. Following the same reasoning, Costinot (2006) argues that the countries with better human capital or high skilled labour exhibit a pattern of higher exports especially in the sectors where job tasks are more specialised and multifaceted. Similarly, studies find that well-functioning financial market institutions enhance exports [Beck (2003); Manova (2006)]. Costinot (2004) develops a trade theory with endogenous technology differences by combining education with institutional quality and concludes that the countries with better quality human capital and good institutions that tend to have strong competitive advantage.

The rest of the paper is organised as follows. Section 2 provides a review of literature focusing in particular on the role of institution in governing economic activities including exports. Section 3 sets out the empirical strategy and discusses the key findings. Section 4 concludes.

2. LITERATURE ON INSTITUTIONS AND TRADE

In line with the widely quoted definition of North (1990) institutions define the "rules of the games" and are comprised of in(formal) constraints on political, economic and social exchanges. Building on this line of argument good institutions contribute to economic growth and promote efficiency, which helps to reduce uncertainty inherent in

international exchanges. However, narrowing down this broad definition of institutions the other side of the spectrum can argue that institutions are comprised of procedural structures and regulatory setups that help to promote a better policy choice. Following the same line of enquiry, it can be maintained that high institutional quality signals secured property right; contract enforcement and rule of law, which reduces, trade costs and augment transparency in international transactions. As this discussion hints that given the importance of institutions it is natural to come to the conclusion that the productivity of firms can also depend on the quality of institutions which determine the international trade volumes.

This section reviews the literature that deals with the interplay between trade and institutions. In so doing, it sheds new light on the relationship between exports and institutions by bringing into focus a variety of institutional dimensions such as property rights, the problems of credible commitments, contract enforcement and rent seeking. The institutional approach takes into account major institutional and incentive constraints that are important determinants of trade policy outcomes. A significant body of literature focuses on the role of institutions and argues that there is an important relationship between institutional quality and the effectiveness of export strategies. In economies with good governance and effective checks and balances on institutions, the complex products tend to be efficiently produced thus contributing to comparative advantage. In countries with good public policy in terms of provision of soft public goods such as property rights, and rule of law, investors utilise maximum benefits of international trade since strong institutions provide right incentives to investment [Keefer (2004)]. This is confirmed by empirical evidence which shows that levels of observed public investment, expressed as a fraction of national income or of total investment, public and private, are considerably higher in countries with low levels of a composite measure of expropriation and contract repudiation risk, law and order, corruption, and bureaucratic quality.

Political institutions shape the legal system that defines the rules that govern exchange in domestic and international markets. In a political process, different interest groups vie for gaining political power or capturing economic rents within the laws and regulations set up by the legal system. Without an appropriate incentive structure within political institutions, rules may be designed to bestow political advantage to particular groups at the expense of the society, which generally lacks basic legal protections against government expropriation of private property. In such an environment, public investment tends to be unproductive leading to adverse trade outcomes.

According to the contract theory, the state and associated institutions provide the legal framework that enables private contracts to facilitate economic transactions thereby reducing transaction costs. Acemoglu (2005) argues that "contracting institutions" are the rules and regulations governing contracts between private citizens.[2] The most important component of contracting institutions is the functioning of the legal system. Differences in laws and their implementation across countries introduce significant differences in the costs of enforcing contracts and consequently

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[2]The contracting institutions are proxied by three variables including an index of legal formalism, index of procedural complexity, and procedures necessary to resolve a court case involving commercial debt. All three measures explicitly deal with a dispute between private citizens without access to special political power and correspond to the costs of enforcing a straightforward contract.

in the equilibrium contracts and transactions. An example of how differences in laws affect contracting institutions is the ban on debt-type contracts in some Islamic countries,[3] while the different enforcement of legal protections for investors across post-communist countries illustrates the differences in the implementation of laws.[4] The "property rights institutions"[5] are the rules and regulations that protect citizens against the power of the government and elites. In this case, the absence of checks on the use of political power by the government and elites makes it difficult to enter into ex ante contracts that guarantee against future expropriation, ex post distortions by the state because the power to enforce contracts rests with the politicians and government officials.[6] The implications of above debate are twofold. First, there is dire need for deeper understanding of property rights institutions in public policy formulation to explore the potential channels through which such institutions influence the process of trade. Second, potential threats of expropriation by the powerful groups due to weak property rights are key barriers of trade hence legal infrastructure should receive priority in public policies.

Property rights institutions are closely linked to the distribution of political power in a society because these govern the relationship between private citizens, politicians, and elites with access to political power. Weak property rights institutions are unable to constrain those who control the state which makes it difficult to enforce contracts that protect citizens against expropriation because the state, with its monopoly of legitimate violence, is the ultimate arbiter of contracts [Acemoglu (2003)]. Weak enforcement of property rights can encourage rent seeking activities. With economies of scale in private protection, rich individuals have an advantage when operating in an environment with incomplete protection of property rights. Furthermore, their ability to gain from redistribution due to improper protection of property rights makes them averse to improvements in public protection of property rights.

A well-functioning legal framework is essential to underpin private investment generally and more specifically in export-oriented industries. However, reforms in legal institutions are often hampered by low public spending on legal infrastructure due to the fact that the incumbent governments tend to be myopic and care about the current costs while ignoring the future benefits of improvements in legal infrastructure in terms of better long term growth potential. This approach feeds a perpetual cycle in developing countries in which current governments do not reform the legal system which makes it difficult for future governments to collect adequate tax revenues which again leads to low public spending on legal infrastructure. In essence, this situation results from a lack of political stability, which adversely affects the incentives to invest in legal infrastructure [Svensson (1998)]. Such legal and institutional weaknesses are generally believed to be contributing factors in sluggish export performance especially in the context of developing countries.

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[3]See Mills and Presley (1999) for details.
[4]See Glaeser, Johnson, and Shliefer (2001).
[5]Keefer (2002) refers to such institutions as institutional approach to property rights.
[6]For property rights institutions, the study uses Polity IV's constraint on the executive measure [Gurr (1997)] Political Risk Services' assessment of protection against government expropriation in a country [Knack and Keefer (1995)], and Heritage Foundation's assessment of private property protection.

3. EMPIRICAL STRATEGY AND DISCUSSION OF RESULTS

This section outlines the methodology and describes the data used to estimate the relationship between institutional quality, human capital and exports while controlling for real effective exchange rate, domestic GDP and world exports. To begin with, we specify the following reduced form export equation:

$$X = e^{\alpha}.R^{\beta}.Y^{\gamma}.W^{\phi}.H^{\theta}.I^{\mu}.e^{\epsilon} \qquad \ldots \qquad \ldots \qquad \ldots \qquad \ldots \qquad \ldots \qquad (1)$$

Equation (1) postulates the exports depend on real effective exchange rate as a measure of trade competitiveness, real GDP as a measure of domestic supply capacity, and total world exports as a measure of world demand. In addition, human capital and institutional quality are also added as explanatory variables to capture the fact that a vibrant export sector requires a skilled labour force as well as good governance that provides the right policy environment to exporters. An increase in real effective exchange rate makes exports expensive in world export markets and hence hurts the country's trade competitiveness which has a negative impact on exports. We thus expect a negative relationship between exports and real effective exchange rate. Real GDP is used as a proxy for domestic supply capacity and hence an increase in real GDP is expected to have a positive impact on exports. Similarly, an increase in world demand is expected to boost the country's exports. The availability of human capital is expected to positively influence exports by facilitating production of value added products that are high in skill content. Finally, the institutional quality provides an overall enabling environment for businesses to compete effectively in international markets and hence positively impacts exports.

Taking natural logs, our estimation equation can be written as:

$$\ln X = \alpha + \beta \ln R + \gamma \ln Y + \phi \ln W + \theta \ln H + \mu \ln I + \epsilon \qquad \ldots \qquad \ldots \qquad (2)$$

Where

    X = Total exports (million US$)
    R = Real effective exchange rate (2010=100)
    Y = Real GDP (million Rs.)
    W = Total world exports (million US$)
    H = Human Capital Index
    I = Governance index to represent institutional quality.

Data on total exports, real effective exchange rate, real GDP, and total world exports, are taken from the World Development Indicators for the time period 1980-2016. The Human capital index is obtained from Penn World Tables while the governance index is taken from Khan and Ullah (2014). In Hall and Jones (1999) the estimate of human capital is "ability to perform" which is based on "Business Environment Risk Intelligence" index on quality of workforce. Barro and Lee (2000) have also followed the same index. Furthermore, the estimate of institutional quality widely used in literature is perception of crime, incidence of crime, effectiveness of judiciary, the effectiveness of bureaucracy and the certainty involved in enforcement of the contract. Some missing values in human capital index and governance index have been extrapolated from past trends.

Equation (2) is estimated using the Autoregressive Distributed Lag (ARDL) technique. A priori we expect a negative sign for the real effective exchange rate and positive signs for domestic GDP and world exports. Similarly, we expect positive signs for human capital and institutional quality. The ARDL model is preferred over other techniques for several reasons. First, the approach is flexible as it does not require all variables to be integrated of the same order. Second, it is applicable for small samples as against the Johansen's technique which is sensitive to the sample size. Third, it can handle the issue of endogeneity by relying on the dynamic structure of the model using lag values.

To implement the ARDL model, the first step is to estimate Equation (2) through the Ordinary Least Square (OLS) to determine the dynamic structure of the model in terms of the optimal lags. Next we check for cointegration by using the bounds test approach to test the null hypothesis of no cointegration based on an F-test. Finally long run model and short run error correction model are estimated.

Before applying the ARDL technique we check for the stationarity properties of the time series data using the Augmented Dickey Fuller (ADF) test for the existence of unit roots. Table 1 reports the results of ADF test under the null hypothesis that the variable has a unit root. The results show that all the variables are non-stationary in levels but are stationary in first difference. Hence all the variables are integrated of order one and hence ARDL is an appropriate estimation technique.

Table 1

Augmented Dickey-Fuller (ADF) Test

Variables	Level	First Difference	Order of Integration
LX	−1.27	−5.03***	1
LR	−2.14	−4.65***	1
LY	−1.26	−3.57**	1
LW	−0.57	−5.02***	1
LH	−1.27	−3.71***	1
LI	−2.29	−6.47***	1

Note: *** (**) denotes rejection of null hypothesis at 1 (5) percent level of significance.

To test for the existence of a long run relationship among the variables of interest, the optimal lag length is chosen based on the Akaike Information Criteria (AIC). The test determined one lag each for exports and real GDP, four lags each for real effective exchange rate and human capital index, no lags for world exports, and 2 lags for governance index. Using the optimal lag structure, the existence of a long run relationship is tested by employing the bounds test approach to test the null hypothesis of no cointegration among the variables. Table 2 presents the results of the ARDL bounds test. The results confirm the existence of a significant long run relationship between exports, real effective exchange rate, domestic GDP, world exports, human capital and institutional quality as the F-statistic exceeds the upper bound at 1 percent level of significance.

Table 2

The Bounds Test Result—Dependent Variable Log Exports

Regressors	F-Statistics	Level of Significance	Bounds Test Critical Values	
			I(0)	I(1)
LR, LY, LW, LH, LI	8.48***	10%	2.33	3.42
		5%	2.80	4.01
		1%	4.13	5.76

k = 5
n = 36

Note: *** denotes rejection of null hypothesis of no cointegration at 1 percent level of significant, k is the number of regressors, n is the number of observations and I(0) and I(1) respectively denote lower and upper bounds of the critical values.

The next step is to estimate the long run relationship as well as short run dynamics using the ARDL approach. Table 3 reports the long run cointegrating relationship among exports, real effective exchange rate, GDP, world exports human capital and institutional quality.

Table 3

Estimated Long Run Relationship—Dependent Variable Log Exports

Regressors	Coefficient	P-Value
LR	−0.59**	0.0260
LY	−0.42	0.3616
LW	0.94***	0.0012
LH	0.02	0.9805
LI	0.19	0.6340
Constant	−9.85	0.1133

Note: *** (**) denotes significant at 1 (5) percent level of significance.

The long run results show that real effective exchange rate is significant and negatively impacts exports. An increase in real effective exchange rate signifies loss in trade competitiveness which exerts a negative influence on exports. Contrary to expectation, GDP has a negative but insignificant impact on exports, indicating that domestic supply constraints are not binding on exports in the long run. World exports positively and significantly impact exports indicating that an increase in world export demand can boost exports in the long run. Both human capital and quality of institutions have a positive influence on exports though their coefficients turn out to be insignificant. A possible reason for the insignificance of human capital and quality of institutions could be that Pakistan's exports are primarily concentrated in low value added product segments which require relatively little skills. Similarly, as Pakistan is not exporting complex and sophisticated products which are 'institutions-intensive' along the lines of Ranjan and Lee (2003, 2007), the quality of institutions does not appear to be a significant factor in Pakistan's export performance.

The estimated short run error correction model is reported in Table 4. The error correction term is highly significant with a negative sign, showing that the short run deviations from the long run equilibrium are corrected so that the model converges to equilibrium in the long run with a high speed of adjustment. All the variables play a significant role in the determination of exports in the short run with a lag structure determined by the Akaike Information Criteria (AIC).

Table 4

Error Correction Model based on ARDL

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LREER)	0.154500	0.212184	0.728142	0.4777
D(LREER(-1))	0.462211	0.234092	1.974486	0.0670
D(LREER(-2))	0.092873	0.214395	0.433185	0.6710
D(LREER(-3))	0.402167	0.169971	2.366094	0.0319
D(LRGDPRSM)	1.237205	0.307566	4.022567	0.0011
D(LGOV)	0.105610	0.151070	0.699078	0.4952
D(LGOV(-1))	0.321062	0.143906	2.231055	0.0414
D(LHCI)	–2.048437	1.484716	–1.379683	0.1879
D(LHCI(-1))	3.015355	2.079030	1.450366	0.1675
D(LHCI(-2))	–0.387912	1.993995	–0.194540	0.8484
D(LHCI(-3))	–7.089482	1.756939	–4.035132	0.0011
CointEq(-1)*	–0.917190	0.100628	–9.114689	0.0000
R-squared	0.854282	Mean dependent var		0.059872
Adjusted R-squared	0.777953	S.D. dependent var		0.094449
S.E. of regression	0.044506	Akaike info criterion		–3.111087
Sum squared resid	0.041597	Schwarz criterion		–2.566902
Log likelihood	63.33294	Hannan-Quinn criter.		–2.927985
Durbin-Watson stat	2.464029			

Table 5 reports the results of several diagnostic tests including Breusch-Godfrey LM test for serial correlation, autoregressive conditional heteroscedasticity (ARCH) for residual variance, Ramsey RESET test for specification bias and Jaque-Bera (JB) test for normality. The results show that the estimated model provides robust results and does not suffer from serial correlation, conditional heteroscedasticity, specification bias and non-normality of errors.

Table 5

Model Diagnostics

Test	Test Statistics	P-Value
Serial Correlation	0.622	0.5518
ARCH Test	0.585	0.4501
RESET Test	0.868	0.4000
JB Test	0.127	0.9381

To test for model stability, Cumulative Sum of Recursive Residual (CUSUM) and Cumulative Sum of Squares of Recursive Residual (CUSUMQ) tests have been applied. Figure 1 and Figure 2 show that the residual plots are within the critical bounds at 5 percent level of significance confirming stability of the estimated coefficients.
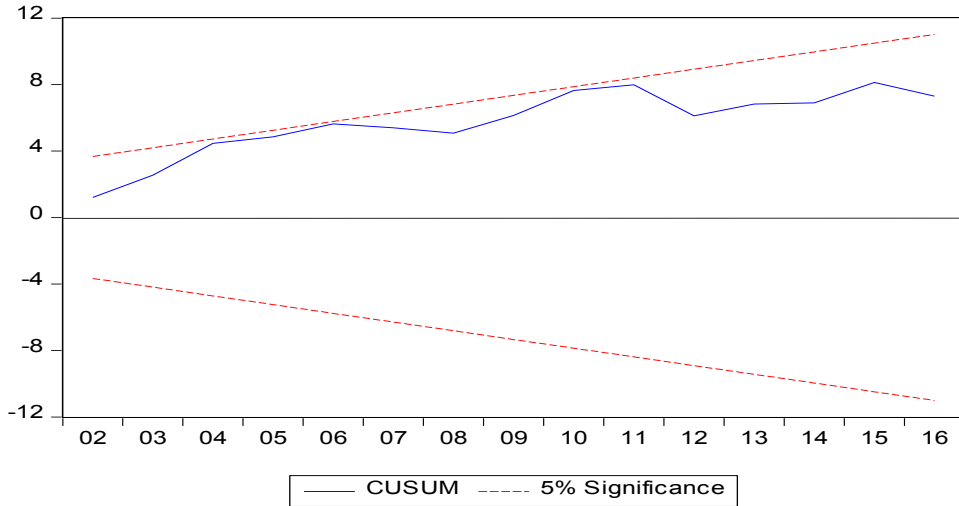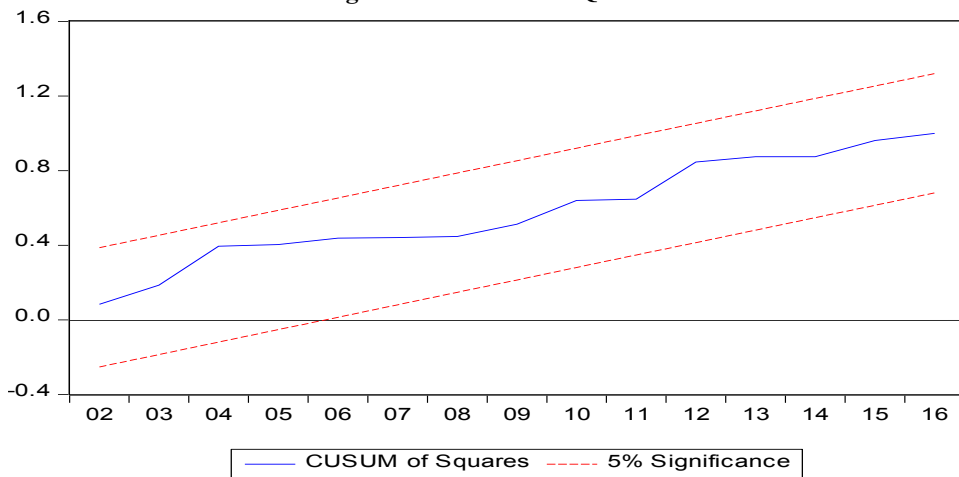
Fig. 1. Plot of CUSUM Test

Fig. 2. Plot of CUSUMQ Test

4. DISCUSSION

A significant body of literature on economic growth view exports as engine of economic growth. However Pakistan's exports have failed to grow on a sustained basis and remain confined to low value added products mainly textiles and clothing. Most of the research on exports of Pakistan revolves around the proximate determinants of exports. In this paper, we give an alternative view of determinants of exports in the context of Pakistan's economy by focusing on more fundamental factors including

institutional quality and human capital. Pertinent to this the paper carries a simple investigation that whether the widely held belief about the role of good institutions and human capital in promoting exports holds true for Pakistan. Previous research on comparative advantage and economic development had given salience to technology/innovation together with physical and human capital accumulation as the drivers both of comparative advantage and export growth. However, these proximate drivers of growth are themselves the product of deeper social, political and economic processes that have come to be gathered under the rubric of 'institutions.' This insight from the institutions-and-growth literature suggests that we could draw fresh insights by exploring the institutional determinants of international trade.

A simple example makes the main point about the role of institutions for comparative advantage. Consider a complex product such as a commercial airliner. Its production requires high levels of innovative efforts by all parties involved and these efforts cannot take place in a judicial environment where contract enforcement is problematic and only incomplete contracts can be written between these parties. In contrast, more basic products such as blue jeans do not require any relationship-specific, non-contractable inputs. Thus, a country with good contracting institutions will have relatively low costs of producing airliners and countries with poor institutions will find manufacture of airliner prohibitively expensive making the production unviable. Examples of contracting institutions include laws on the books and contractual flexibility that mitigate contractual incompleteness [La Porta, *et al*. (2008), p. 300]. Nunn (2007) was one of the first to empirically examine the impacts of contracting-institutions on comparative advantage.

Levchenko (2007) examined institutions more broadly defined—contracting institutions, property rights institutions, etc. —and provided evidence for their impacts on comparative advantage. Institutions associated with financial development (e.g., bankruptcy law, securities law and corporate law) are also a source of comparative advantage. A variety of labour-market-related institutions affect comparative advantage. These include institutions that affect the ability of a firm and its workers to enter into contracts that induce high levels of effort [Costinot (2009)], institutions that affect hiring and firing costs [Cunat and Melitz (2012)], and institutions that affect labour-market search frictions [Davidson, Martin, and Matusz (1999), Helpman and Itskhoki (2010)].

5. CONCLUSION

The literature underlines several factors that can impact export performance including exchange rate regime, world demand, and physical and human capital. In this paper, we have argued that it is important to look at deeper determinants of export performance including institutional quality that shapes the incentive structure for investors in export oriented industries. We have developed an empirical framework to analyse Pakistan's exports in terms of institutional quality and human capital while controlling for other important determinants such as real effective exchange rate, domestic GDP and world demand. The results show that there exists a significant long run relationship among exports, institutional quality, human capital real exchange rate, and world exports. Institutional quality and human capital exert a positive influence on exports, suggesting that improvement in human capital and institutional quality can boost

exports by promoting factor accumulation and technological innovation in the long run. At present, though, Pakistan lacks sophisticated and 'institution-intensive' complex products in its export profile, which could possibly explain insignificant coefficients in the cointegrating relationship. As Pakistan moves up the technology ladder and starts producing high value-added products, it will be imperative to improve institutional quality and develop human capital to put in place a well-diversified and globally competitive export sector. The literature underlines several factors that can impact export performance including exchange rate regime, world demand, and physical and human capital. In this paper, we have argued that it is important to look at deeper determinants of export performance including institutional quality that shapes the incentive structure for investors in export oriented industries. We have developed an empirical framework to analyse Pakistan's exports in terms of institutional quality and human capital while controlling for other important determinants such as real effective exchange rate, domestic GDP and world demand. The results show that there exists a significant long run relationship among exports, institutional quality, human capital real exchange rate, and world exports. Institutional quality and human capital exert a positive influence on exports, suggesting that improvement in human capital and institutional quality can boost exports by promoting factor accumulation and technological innovation in the long run. At present, though, Pakistan lacks sophisticated and 'institution-intensive' complex products in its export profile, which could possibly explain insignificant coefficients in the cointegrating relationship. As Pakistan moves up the technology ladder and starts producing high value-added products, it will be imperative to improve institutional quality and develop human capital to put in place a well-diversified and globally competitive export sector.

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