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ECONOMIC ACTIVITIES ARE BENEFICIAL FOR ECONOMIES BUT CHALLENGE FOR ENVIRONMENT: AN EMPIRICAL INVESTIGATION ON THE BACKGROUND OF CHINA-PAKISTAN ECONOMIC CORRIDOR (CPEC)

DR. AHMAD RAZA BILAL[1], TEHREEM FATIMA[2] AND DR. MUHAMMAD NAVEED[3]

ABSTRACT

The aim of this study is to investigate the impact of economic activities and reciprocate challenges for environment, particularly in the CPEC region. To test long-run and short-run relationships among economic activities and environment, we used time series data for the period 1971 to 2015 for the economic activities i.e. energy consumption, economic growth, trade openness, financial development, urbanization and carbon emissions. To find statistical evidences of proposed hypotheses, Johansen cointegration, error correction and granger causality tests are used. Our results indicate that energy consumption, trade openness and urbanization have long run positive relationship with CO_2 emissions in Pakistan. In short-run, energy consumption and trade openness are found to have positive impact on CO_2 emissions, while urbanization is negatively linked to CO_2 emissions. In case of China, no cointegration is found among variables but unidirectional causality is established from energy consumption and economic growth to CO_2 emissions, economic growth to financial development, trade openness to economic growth and urbanization to financial development. In addition, bidirectional causal effect is traced between economic growth and energy consumption as well as trade openness and financial development. In line with statistical evidences, as well as massive projected economic development in different sectors of CPEC countries, policy makers and regulators are recommended to be more focused for improvement in environmental protection policies in China and Pakistan. Particularly in case of coal and oil-based energy projects, environmental friendly technology should be used to sustain clean environment for the communities.

INTRODUCTION

With the advent of global industrial revolution in late nineties, carbon emission as a waste product of industries has become one of the major cause of global warming (Hansen and Makiko, 2016). Energy generated from carbon-based sources i.e. coal, natural gases, oil and related energy inputs is prime source of carbon emissions (WDI, 2017). According to IAE statistics (2015), till first decade of 21stcentury, 68 percent of the total carbon emissions of greenhouse gases were mainly extracted by the energy sector in which, methane has nine percent contribution and nitrous oxide along with other gases have one percent contribution in total emission.

Pakistan's contribution in total world's carbon emission is 0.4%, which is gradually increasing along with the growth in industrial and energy sectors, particularly coal and gas-based energy units (Shahzad et al., 2017). Besides industrial growth, Pakistan's per capita income has increased from PKR 48,984.39 to PKR 53,381.94 with reciprocate intensification in carbon emissions from 0.86 (metric tons) to 0.92 (metric tons) during the years 2005 to 2011 (Shahzad et al., 2017). This increase in per capita income has caused rise in the demand of industrial goods, which resultantly increased energy consumption (Shahzad et al., 2017). This causal-loop factor is also documented in the extant literature, which indicates positive effect of

[1] Dr. Ahmad Raza Bilal, (Corresponding Author) Associate Professor, Chair Accounting and Finance, Superior University Lahore.
[2] Tehreem Fatima, PhD Research Scholar, Superior University Lahore (Pakistan).
[3] Dr. Muhammad Naveed, Associate Professor, Shaheed Zulfiqar Ail Bhutto Institute of Science and Technology, Islamabad (Pak.)

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energy consumption on CO_2 emissions (Shahzad et al., 2017; Behera and Dash, 2017). Few authors have highlighted the causes of higher energy consumption that includes installation of new machinery particularly in polluted sectors i.e. textile processing, leather industry, automobile sector, construction sector and addition of large numbers of new vehicles in the traffic system (Behera and Dash, 2017; Sadorsky, 2010).

Owing to large population, China has multiplier effects in the growth of energy, transportation and other manufacturing sectors (Schandl et al., 2016). This resultantly causes China to face deterioration in domestic environment, and this issue is further being complicated due to global pollution factors (Wang and Li, 2016). In this regard, Chinese government has made serious commitments to reduce CO_2 emissions (Lo, 2016) with the ultimate aim to lower CO_2 emissions per unit of GDP by 65% by the year of 2030 (Zhang et al., 2017). In the current worsening environmental scenario, this problem has posed a serious concern for the governments. Governments have to resolve these environmental issues by taking effective measures and suitable policies to regulate industrial carbon emissions. For this purpose, it's the need of present time to determine the dark side of industrial revolution and economic growth that is one of the main reasons of higher CO_2emissions (Jiang et al., 2017). Based on highest populous region in the world and center of faster economic growth due to land mark 'China Pakistan Economic Corridor (CPEC)' activities, this paper investigates the consequential factors of increasing carbon emission by causing higher economic activities in the CPEC countries.

Pakistan is included in the third world countries that have badly suffered from energy crisis during first two decades of 21st century (Siddique and Wazir, 2016). Said power crises adversely effected the manufacturing sector (Lin and Tian, 2016), and has become the cause of reduction in agricultural earnings, value added exports, attraction for foreign investments and resultantly higher unemployment (Arshad, Zakaria and Junyang, 2016). This adverse situation led to increase in poverty, substantial decline in GDP and reciprocate rise in inflation (Ratnasih, 2017). Keeping this situation in view, the main importance in CPEC agreement is given to resolve the energy crises in Pakistan where China showed its strong commitment to upgrade outdated power generation infrastructure and develop new coal, solar and wind energy projects to meet higher energy demand in Pakistan (Dadwal and Purushothaman, 2017). The aim of CPEC is to make Pakistan a stable and vibrant nation and to become a stronger partner of One-Road One-Belt great socioeconomic project. Owing to its central location, CPEC stakeholders are desired a sustainable manufacturing infrastructure and a wide-range logistic system in Pakistan to support the transportation network across the region (Ali et al., 2017).

Human Development Report (2015) indicates that economic growth and increase in population affect various environmental factors like carbon dioxide, sulfur dioxide and various other natural resources. Though various authors have argued that with better management, humanity can survive and grow without damaging natural resources (Ameer and Munir, 2016), but there is an evidential support that increase in economic growth, free trade and urbanization build a pressure on environmental factors, which resultantly damage natural resources (Zaman et al., 2015). More particularly, with the increase in trade activities, the utilization of fuel has also increased owing to its heavy consumption in the transportation and energy projects (Chang, Lewis and Lin, 2008). Keeping this constant deterioration in nature, it is argued that people in ancient times were having stronger health than today's communalities that is mainly due to purified nature and secure nature resources that is in actual an assurance of good human health (Ameer and Munir, 2016).

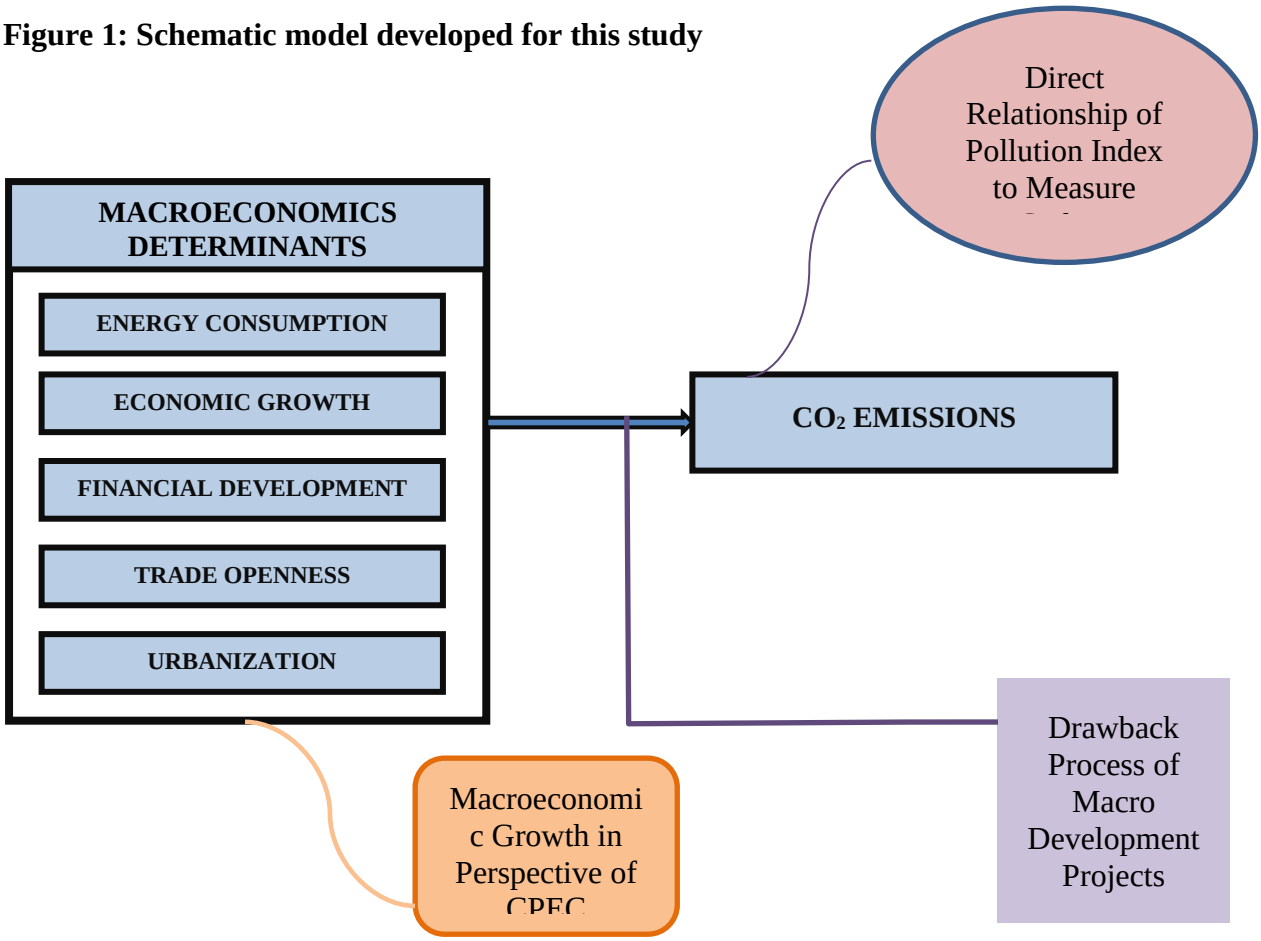
Extending conception of linear relation between economic growth and carbon emission, Zhang, Fan and Chang (2011) argued that income level is not the only factor that causes CO_2 emissions, but financial and industrial development are also considered as other responsible

factors. In this regard, financial development is an indicator of higher trade activities backed by adequate energy setups to support increased manufacturing needs (Islam et al., 2013). Financial development enhanced various financial activities like increase in local and international trade activities, offering credit facilities to individuals and industries to support the production of power; that has resultantly increased CO_2 emissions. These activities also attract foreign direct investment in the country (Sadorsky, 2010); however, this conception was denied by Tamazian, Chousa and Vadlamannati (2009) who argued that financial development supports industrial development with introduction of more environment friendly technologies and innovations to reduce CO_2 emissions. Moreover, it enables conventional power generation system to enhance energy efficiency with minimum damages of resources. Claessens and Feijen (2007) also highlighted the importance of better governance in new industrial setups with high-tech and advanced environmental friendly mechanism to minimize CO_2 emissions.

Given the unresolved debate of linearity between economic activities and consequential effects on carbon emission, this study aims to extend the current environment literature in order to respond existing problem through following research objectives:

- To test the short-and-long run relationships among environmental factor i.e. CO_2 emissions, and macroeconomic activities i.e. energy consumption, economic growth, financial development, urbanization and trade openness.
- To investigate the impact of macroeconomic activities on environmental factor in CPEC countries.
- To investigate the comparative significance of macroeconomic activities and consequential effects on environmental factors in case of China and Pakistan.

Figure 1: Schematic model developed for this study



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LITERATURE REVIEW

Energy Consumption

For progress and development of any nation energy resources play a vital role (Ali et al., 2017). They are essential for survival and growth of human lives, reflect the quality of living standards and increase economic progress (Soytas and Sari, 2009). Using time series data of macroeconomic variables for the period of 1971-2011, Shahzad et al. (2017) have indicated a positive relationship between energy consumption, financial development and trade openness with CO_2 emissions in Pakistan. Contrary to previous studies, which mainly analyzed environmental Kuznet Curve (EKC) to find out the relationship between energy consumption and carbon emissions, Shahzad et al. (2017) highlighted the significance of the value and threshold of energy consumption. They argued that current growth in economy is not achieving this threshold, hence carbon emissions are gradually increasing in Pakistan.

Chang, Lewis and Lin (2008) used structural decomposition approach to recognize the main components that contribute towards the change in carbon emissions in Taiwan. For this purpose, they used sector-specific data for the period of 1984 to 2004, which indicated that petrochemicals, road construction, iron and steel industries are considered as major causes of CO_2 emissions in Taiwan. In order to find long run relationship of energy consumption, urbanization and CO_2 emissions, Behera and Dash (2017) used data of Southeast Asian countries for the period of 1980 to 2012. For this purpose, they have taken 17 regional countries which were divided into three sub-regions with respect to their levels of income i.e. high, middle and low level income countries. Firstly, they used Pedroni cointegration test to investigate the long run relationship among primary energy consumption, urbanization and CO_2 emissions which was substantiated. But when fossil fuel energy consumption was replaced with the primary energy consumption, no relationship was proved among variables in the panel of high and low level income countries. On the contrary, significant relationship was traced among variables in the panel of middle level income countries. Furthermore, they used Westerlund cointegration test to find cointegration among variables of all sample countries, which was supported in the case of middle and low levels of income countries; however, in case of high level income countries, no cointegartion was proved among primary energy consumption, CO_2 emissions and urbanization. These results imply that high income countries tend to develop more environmental protection policies to keep their environment clean from pollution.

Extending this conception, Menyah and Rufael (2010) have investigated the relationship between CO_2 emissions and energy consumption in United States. For this purpose, they used renewable and nuclear energy consumption as proxies of energy and collected data for the period of 1960 to 2007.Their findings indicate a unidirectional causal relation among nuclear energy consumption and carbon emissions with negative coefficients. Their results revealed that carbon emissions decrease due to increase in nuclear energy consumption. Contrarily, no causality was found from renewable energy consumption on emissions. The findings showed the facts that the US has still not attained the threshold where the supply of renewable energy can support decrease in level of emissions.

Economic Growth

Ameer and Munir (2016) studied effects of economic expansion, trade liberation and urban population on CO_2 and SO_2 emissions. They developed STIRPAT model to estimate the cointegration among study variables. For this purpose, they used data for the period 1980 to 2014 for the eleven Asian countries. Their results revealed that economic growth has significant effect on both emission factors of CO_2 and SO_2. The result of error correction model

indicates long run causal relation between free trade and carbon emission while unidirectional relation was found between economic growth and carbon emissions.

Another study carried by Apergis et al. (2010), determined the relation among carbon dioxide emissions, energy consumption and economic development in South African countries. The cointegration results for the time series data spanning the period from 1965 to 2006 supported long-run and short-run relations among variables. Their study recommendations emphasized the standardization of economic development levels in order to control pollution in South Africa.

Trade openness

Trade openness is another important determinant of environmental impacts and carbon emission. According to Antweiler, Copeland and Taylor (2011) trade openness mainly effects environment in three ways i.e. technology effect, scale effect and composition effect. In technology effect, the advancement in technology causes decrease in carbon emissions with simultaneous increase in trade activities. In scale effect, the enhancement in free trade activities, reciprocate the increase in trade output but it also has negative impacts on environment. In composition effect, low income countries prefer to choose less capital-intensive investments even on the cost of higher generation of water and air pollution (Shahzad et al., 2017).

According to the survey report on Trade and Development (2015), an increase in global free trade competition is indicated along with the increased probability of production of various health hazard items. So, several countries, specifically in third world have imposed the condition of environmental protection certifications on the exporters in order to protect environment from pollution. The fixation of different tariffs in this regard highlights the potential relationship of trade openness and carbon pollution that might be a side effect of higher economic activities. We therefore, include trade openness as our potential predictor in the model to test its consequential effects on carbon emissions.

Urbanization

Urbanization is a process in which a large number of people who are permanent inhabitants of rural areas migrate towards urban areas and as a result makes country towns' crowded (Shahbaz et al., 2015). More broadly, it's a restructuring process in which agricultural areas are transformed into industrial and residential areas that consequently reduces cultivation land in the suburbs of large cities. This way, substantial gathering of people in the cities creates an unfavorable increase in the expenditures, social discrepancies and adverse impact in the environment. In this regard, Yeh and Liao (2017) investigated effects of population and economic growth on CO_2 emission. They used STIRPAT analytical tool to explain the separate potential impact of total population and gross domestic product on the environment. Data were taken from Taiwan for the period starting from 1990 to 2014. Their analyses exhibited negative coefficients in case of economic growth but positive coefficient in case of population factor. Their finding indicates that CO_2 emission reduced as the GDP (per capita income) increased in the economy of Taiwan during the period of 1990 to 2014. Contrarily, during the same investigated period, as population increased, a simultaneous increase in CO_2 emissions was observed. It was also noted in the findings that the impact of population on carbon emission was more than the effect of economic growth on environmental pollution. Based on these facts, authors argued that Taiwan is suffering from environmental deterioration but if its economic growth improves constantly with a growth rate of 1.7% till 2025, then an inverted U-shape curve is expected that might hazard the environment.

In extant economics literature, various authors have highlighted the key responsible factors that produce carbon emissions but their studies have certain limitations due to use of

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specific datasets, period of studies, and regions of study. More importantly, there is a scarcity of research that investigates the consequential factors of economic growth and their impact on environmental pollution particularly in South Asian countries. Keeping in view, high significance of CPEC, that is one of the most important socioeconomic projects under the vision of One-Road One-Belt development plan and considered as an economic game changer in the South Asian region; it is an important contemporary issue to be investigated. It will update the governments, policymakers and regulators regarding environmental friendly economic development that will be more focused on environmental protection and socioeconomic benefits for this world's one fourth populous region.

To find the influential macroeconomic factors, which might be responsible for the environmental issues, following hypotheses are developed in which carbon dioxide emission is used as a proxy of environment. We used three macroeconomic variables in the model i.e. financial development, trade openness and urbanization with regard of China and Pakistan.

H_1 Energy consumption has significant impact on CO_2 emissions.
H_2 Economic growth has significant effect on CO_2 emissions.
H_3 Financial development is significantly influenced CO_2 emissions.
H_4 Trade openness has significant effect on Co_2 emissions.
H_5 Urbanization has significant impact on CO_2 emissions.
H_6 The reported macroeconomic factors have simultaneous effect on environment.

METHODOLOGY

Data

Quarterly data of China and Pakistan for the period starting from 1971 to 2015 have been used, which are retrieved from World Development Indicators (WDI) and Economic Intelligence Unit (EIU). Logarithms of all variables were used for the purpose of coherence. General form of the model can be written as:

$$\mathbf{CO_{2t} = \beta_0 + \alpha_1 EC_t + \alpha_2 Y_t + \alpha_3 FD_t + \alpha_4 U_t + \alpha_5 T_t + £_t} \qquad \mathbf{(1)}$$

Co_2 = Carbon Dioxide Emission
EC = Energy Consumption
Y = Economic Growth
FD = Financial Development
U = Urbanization
T = Trade openness
£ = Error term
t = Time series analysis

Energy consumption (EC) is measured from kg of oil equivalent per capita; gross domestic product per capita (current US $) is used as a proxy for economic growth; financial development (FD) is measured through domestic credit to private sector as percentage of gross domestic product; trade openness is measured from import plus exports as percentage of gross domestic product and percentage of urban population in total population as a proxy of urbanization.

Variables which are used in this model have some differences according to the units of measurements. So, to solve this problem it is necessary to normalize and transform variables' data into consistent form of measurement. For this purpose, natural log has been taken to avoid all the problems related to time series data of all variables which are used in the model.

$$\mathbf{LnCO_{2t} = \beta_0 + \alpha_1 LnEC_t + \alpha_2 LnY_t + \alpha_3 LnFD_t + \alpha_4 LnU_t + \alpha_5 LnT_t + £_t}$$

Here, $LnEC_t$ is the logarithm transformation of energy consumption (EC), LnY_t is the logarithm transformation of economic growth (Y), $LnFD_t$ is the logarithm transformation of financial development (FD), LnU_t is the logarithm transformation of urbanization (U), LnT_t is the logarithm transformation of trade openness (T), $LnCO_2$is the logarithm form of carbon dioxide emission ($CO_{2)}$ while t represents that data are time series, beta (β) and alpha (α) show the parameters which require to estimate and £ denotes error term.

EMPIRICAL RESULTS

Unit root test

In first step, it is necessary to investigate the presence of unit root in time series data as recommended by (Nasir and Rehman, 2011). To check the properties of integration, Augmented Dickey Fuller test has been used (Behera and Dash, 2017). In Augmented Dickey-Fuller test, if the probability values of variables are greater than 0.05, it indicates presence of unit root in the data. Furthermore, if the absolute critical values at level of 1%, 5% and 10% are greater than the absolute values of Augmented Dickey Fuller statistics (t-statistics) than data are considered as non-stationary (Mackinnon, 1996).

Table 1: Unit root test

China								
Variables	**Level**				**First Difference**			
	Intercept		**Trend + Intercept**		**Intercept**		**Trend + Intercept**	
	ADF Statistics	**Critical values at level of 5%**	**ADF Statistics**	**Critical values at level of 5%**	**ADF Statistics**	**Critical values at level of 5%**	**ADF Statistics**	**Critical values at level of 5%**
$LNEC_t$	1.340884	-2.933158	-0.795800	-3.520787	-6.490171*	-2.935001	-6.886211*	-3.523623
$LNEG_t$	2.515225	-2.936942	-0.369024	-3.523623	-5.027809*	-2.935001	-4.523942**	-3.523623
LNT_t	-2.828430	-2.933158	-1.778072	-3.520787	-4.698049*	-2.935001	-5.069633*	-3.523623
$LNFD_t$	-0.601706	-2.933158	-2.226536	-3.520787	-5.973534*	-2.935001	-5.899343*	-3.523623
LNU_t	0.482527	-2.933158	-2.760715	-3.520787	-8.140848*	-2.935001	-8.087626*	-3.523623
$LNCo_{2t}$	0.962339	-2.933158	-1.079468	-3.520787	-5.453307*	-2.935001	-5.554856*	-3.523623
Pakistan								
Variables	**Level**				**First Difference**			
	Intercept		**Trend + Intercept**		**Intercept**		**Trend + Intercept**	
	ADF Statistics	**Critical values at level of 5%**	**ADF Statistics**	**Critical values at level of 5%**	**ADF Statistics**	**Critical values at level of 5%**	**ADF Statistics**	**Critical values at level of 5%**
$LNEC_t$	-1.911308	-2.933158	0.722779	-3.520787	-4.825305*	-2.935001	-5.398868*	-3.523623
$LNEG_t$	-0.087360	-2.933158	-2.200370	-3.520787	-5.672337*	-2.935001	-5.568320*	-3.523623

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LNT_t	-1.984328	-2.933158	-2.590869	-3.520787	-8.353877*	-2.935001	-8.226429*	-3.523623
$LNFD_t$	-1.435837	-2.933158	-1.568543	-3.520787	-5.581566*	-2.935001	-5.523275*	-3.523623
LNU_t	1.404311	-2.607932	-2.055857	-3.523623	-2.160605*	-2.936942	-7.017403*	-3.557759
$LNCo_{2t}$	-0.735940	-2.933158	-1.563233	-3.520787	-3.947123**	-2.936942	-9.212053*	-3.523623

Significance level: 0.001, 0.01**, 0.05****

Table 1 represents result of unit root in both datasets of China and Pakistan at level, and at first difference. Results indicate, there is a unit root in data at level stage because all variables' absolute critical values are greater than the absolute values of t-statistics in intercept as well as in 'trend and intercept'. Augmented Dickey Fuller (ADF) test has been applied to examine the stationary of data at first difference. Results show that data became stationary after taking first difference. The t-values of all variables are greater than their critical values at level of 5%. Furthermore, probability values of all variables are also significant because they are less than or equal to 0.05.

Cointegration

To check the long run relationship among macroeconomic variables; $LNEC_t$ (energy consumption), LNY_t (economic growth), $LNFD_t$ (financial development), LNT_t (trade openness), LNU_t (urbanization) and $LNCO_{2t}$ (carbon dioxide emissions), Johansen cointegration test has been used. The assumption of one co-integration leads that all variables must be integrated at first order. ADF test has confirmed this condition in case of China and Pakistan that all series are integrated at I(1). In Johansen Cointegration test, trace and maximum Eigen statistics are compared with their critical values at level of 5%. Moreover, null hypothesis has been rejected if the critical values of hypothetical co-integration equations are less than their trace and maximum Eigen values. Finally null hypothesis represents that there is no co-integration among variables.

Table 2: Johansen Co-integration Test (Trace and Maximum Eigen Value)

China							
Null Hypothesis	**Eigen Value**	**Trace Statistic**	**0.05 Critical Value**	**Probability**	**Max-Eigen Statistic**	**0.05 Critical Value**	**Probability**
R = 0	0.619182	92.63665	95.75366	0.0804	39.58283	40.07757	0.568
R ≤ 1	0.438226	53.05382	69.81889	0.5028	23.64287	33.87687	0.4819
R ≤ 2	0.299032	29.41095	47.85613	0.7485	14.56701	27.58424	0.7816
R ≤ 3	0.177818	14.84394	29.79707	0.7901	8.027518	21.13162	0.9020
R ≤ 4	0.149209	6.816421	15.49471	0.5991	6.625137	14.26460	0.5344
R ≤ 5	0.004655	0.191284	3.841466	0.6618	0.191284	3.841466	0.6618
Pakistan							
Null Hypothesis	**Eigen Value**	**Trace Statistic**	**0.05 Critical Value**	**Probability**	**Max-Eigen Statistic**	**0.05 Critical Value**	**Probability**
R = 0	0.768810	149.8412*	95.75366	0.000	60.04517*	40.07757	0.0001
R ≤ 1	0.574978	89.79604*	69.81889	0.0006	35.08016*	33.87687	0.0358
R ≤ 2	0.430009	54.71588*	47.85613	0.0099	23.04751	27.58434	0.1715
R ≤ 3	0.383601	31.66837*	29.797.7	0.0301	19.83827	21.13162	0.0750

R ≤ 4	0.197591	11.83010	15.49471	0.1653	9.025612	14.26460	0.2840
R ≤ 5	0.066115	2.804484	3.841466	0.0940	2.804484	3.841466	0.0940

- *No cointegration equation has found in trace and max-Eigen test at level of 0.05 in China*
- *Four cointegration equations have found in trace test at level of 0.05 in Pakistan*
- *There are two cointegration equations have found in max-Eigen test at level of 0.05 in Pakistan*
- **represents that null hypothesis has rejected at level of 0.05.*

Johansen co-integration test has applied to find out the long run association among determinants (Johansen, 1988; Johansen and Juselius, 1990). Table 2 represents the results of co-integration in both datasets of China and Pakistan separately. It is an assumption in Johansen cointegration test that at least one cointegration equation must exist to confirm the long-run relationship among variables. Therefore, four cointegration equations have been found in trace test and two cointegration equations have been found in maximum Eigen test in case of Pakistan. In addition, co-integration is found among variables in case of Pakistan in line with the results indicated in the study of (Shahzad et al., 2017). On the other hand, no long-run relationship is traced in case of China.

Error Correction Model (ECM)

Error correction model (Sargan, 1964) is applied to examine the coefficients of the model. ECM defined the long-run and short-run combined impact of macro-economic variables on CO_2 emission.

Table 3: Error Correction Model, Dependent Variable: DLNCO$_2$ Emission

Variables	Co-efficient	Standard Error	t-Statistic	Probability
C	-11.96662*	1.602878	-7.465706	0.0000
DLNEC	0.808875*	0.305552	2.647259	0.0141
DLNEG	-0.054666	0.133277	-0.410166	0.6853
DLNFD	0.023212	0.074177	0.312923	0.7570
DLNT	0.123329*	0.058992	2.090611	0.0473
DLNU	-8.689130*	4.360491	-1.992695	0.0578
LLNEC	0.932149*	0.292619	3.185536	0.0040
LLNEG	0.007134	0.037870	0.188382	0.8522
LLNFD	0.076595	0.062017	1.235051	0.2288
LLNT	0.168462*	0.054218	3.107094	0.0048
LLNU	1.491089*	0.393066	3.793481	0.0009

- *Significance level: 0.05**
- *D represents the short run relationships of macroeconomic determinants.*
- *L denotes the long run relationships of macroeconomic determinants.*

Table 3 represents the short-run and long-run effects of macro-economic variables (energy consumption, economic growth, financial development, trade openness and urbanization) on endogenous variable (carbon dioxide emissions). The result indicates causal effect, such that a 1% increase in DLNEC tends to increase 0.80% DLNCO$_2$ in the short-run (probability value 0.0141 significant @ <5%). Going forward, energy consumption has significant and positive effect on CO_2 in the short-run, which substantiate the findings of (Nasir and Rehman, 2011). The probability value of DLNEG is 0.6853 in the short run, which is greater than the significance level of 0.05.

Similarly, the probability value of DLNFD is also insignificant in the short-run because 0.7570 is greater than the significance level of 0.05. Therefore, in case of DLNEG and DLNFD,

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results can't be interpreted in the short-run. The causal effect indicates that a 1% increase in DLNT tends to increase 0.12% $DLNCO_2$ in the short-run. It indicates that trade openness significantly contributes towards CO_2 emission as previously indicated by (Shahzad et al., 2017). Simultaneously, an increase of 1% in DLNU tends to decrease $DLNCO_2$ by 8.69% in the short-run. Kais and Sami (2016) also found identical results for 'urbanisation' in the short-run. Their findings revealed that the decrease in CO_2 emission is mainly a consequential effect of change in technology. The causal effect of 1% increase in LLNEC indicates that there should be a simultaneous increase of 0.93% in $DLNCO_2$ in the long-run. This inclination also substantiated in the extant literature that LLNEC has long run relation with CO_2 emission (Mohiuddin, Asumadu-Sarkodie and Obaidullah, 2016; Salahuddin, Gow and Ozturk, 2015; Nasir and Rehman, 2011). The results indicate that financial development (LLNFD) has no long-run effect on carbon emissions, which validates the findings of (Ozturk and Acaravci, 2013). In the long-run relation, 1% increase in LLNT tends to0.17% increase in $DLNCO_2$. Hence, a significant long run relationship is traced between LLNT and CO_2 emission, which confirmed the results of past studies (Shahzad et al., 2017; Nasir and Rehman, 2011; Abdulai and Ramcke, 2009). Here our hypothesis pertain to relationship between free trade activities and environmental pollution is supported. This hypothesis lead to the fact that owing to week environment protection laws, the investors of third world countries prefer to produce pollution intensive goods having higher profit margin but create bad effects in the environment (Copeland and Taylor, 2004). Simultaneously, foreign irresponsible investors from developed nations also invest their money in third world countries where they can easily operate such environment unfriendly industries. So that they can earn substantial return on investments (ROIs) which is not possible in their own countries owing to the implementation of strict environment safety laws (Abdulai and Ramcke, 2009).

In Table 2, our result confirms long-run relationship between LLNU and $DLNCO_2$, which indicates that a 1% increase in LLNU tends to a simultaneous increase in $DLNCO_2$ by1.49% in the long run. Our findings substantiates that urbanisation is also a responsible factor to produce carbon emissions in the environment, which also indicates in the past studies (Asumadu-Sarkodie and Owusu, 2016; Al-Mulali, Ozturk and Lean, 2015). According to Shahzad et al. (2017), agricultural land in Pakistan is gradually converting into residential colonies and industrial zones. This change is creating a shift from green environment to various types of pollutions, which might prove to be a hazard for the health of human beings and live stocks in nearby areas (Behera and Dash, 2017). According to Ecological Modernization Theory, humans are creating various activities which have modernized them on the cost of polluted and harmful environment. But simultaneously, the additional modernization through technological cleaning and efficient filtration systems may decrease these issues (Ouyang and Lin, 2017).

Table 4: Regression Results

R-square	0.887448	Mean dependent variable	0.026231
Adjusted R-square	0.835861	Standard deviation dependent variable	0.054476
Standard error of regression	0.022070	Akaike statistic	-4.527970
Sum squared residual	0.011690	Schwarz statistic	-4.000130
Log likelihood	93.50346	Hannan-Quinn statistic	-4.343740
F-statistics	17.20309		
Probability value (F-statistics)	0.000000	Durbin Watson Statistic	2.558287

In Table 4, the probability value of F-test indicates the accepted significance level of all variables, which explained that all macroeconomic factors have significant effect on the carbon emissions. The value of Adj. R^2 indicates that 84% change in carbon dioxide emissions are explained due to the reported macroeconomic factors. The reported value of Durbin Watson (DW) is 2.56 that revealed no serial correlation in the model. The value F-statistic is 17.203 that show goodness of fit for our proposed model.

Table 5: Granger Causality Test

Null Hypothesis	Obs.	F-statistics	Probability
Energy consumption does not granger cause CO_2 emissions	41	4.29444*	0.0449
CO_2 emissions does not granger cause energy consumption		1.25619	0.2692
Economic growth does not granger cause CO_2 emissions	41	3.04697**	0.0888
CO_2 emission does not granger cause economic growth		1.21970	0.2762
Financial development does not granger cause CO_2 emission	41	1.28867	0.2880
CO_2 emission does not granger cause financial development		2.04739	0.1438
Trade openness does not granger cause CO_2 emission	41	1.27737	0.2911
CO_2 emission does not granger cause trade openness		0.40938	0.6671
Urbanization does not granger cause CO_2 emission	41	1.32171	0.2793
CO_2 emission does not granger cause urbanization		0.32956	0.7214
Economic growth does not granger cause energy consumption	41	5.36015*	0.0260
Energy consumption does not granger cause economic growth		3.40726**	0.0725
Financial development does not granger cause energy consumption	41	1.04488	0.3622
Energy consumption does not granger cause financial development		1.57635	0.2207
Trade openness does not granger cause energy consumption	41	0.16734	0.8466
Energy consumption does not granger cause trade openness		0.02819	0.9722
Urbanization does not granger cause energy consumption	41	0.60397	0.5521
Economic growth does not granger cause urbanization		0.28295	0.7552
Financial development does not granger cause economic growth	41	2.28535	0.1163
Economic growth does not granger cause financial development		3.28475*	0.0489
Trade openness does not granger cause economic growth	41	2.75636**	0.0769
Economic growth does not granger cause trade openness		1.26052	0.2957
Urbanization does not granger cause economic growth	41	0.93362	0.4024
Economic growth does not granger cause urbanization		0.11681	0.8901
Trade openness does not granger cause financial development	41	4.13279*	0.0242
Financial development does not granger cause trade openness		6.99198*	0.0027
Urbanization does not granger cause financial development	41	5.32538*	0.0264
Financial development does not granger cause urbanization		0.00861	0.9266
Urbanization does not granger cause trade openness	41	1.52938	0.2304
Trade openness does not granger cause urbanization		0.12286	0.8848

Significance level: 0.05, 0.1***

The results in Table 5 indicate that no co-integration is found among variables in the dataset of China. Therefore, we used Granger causality test to find out the short run relation among determinants as recommended by (Granger, 1969). Unidirectional causality is established from energy consumption that produce CO_2 emission as evidenced in previous studies (Shahzad et al., 2017; Mohiuddin *et al.*, 2016). In addition, no causal relation is found between urbanisation and CO_2 emission that is also confirmed in the past literature (Behra and Dash, 2017). Economic growth also causes Co_2 emission in the short-run as evidenced by (Esso and Keho, 2016; and Ameer and Munir, 2016). Our results are supported by Environment Kuznet Curve (EKC) that is initially used in past studies (Stern, 2004; and Acaravi and Ozturk, 2010). EKC indicates an inverted or u-shaped relation that 'with initial increase in the income level increases the CO_2 emissions, which at a certain point inverts and moves towards decreasing trend. This change in curve is mainly witnessed due to change in technology (Shahzad et al., 2017).

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The reported results in Table 5 revealed no causal relation between financial development and CO_2 emission as evidenced in past studies (Al-Mulali, Ozturk and Lean, 2015; Salahuddin, Gow and Ozturk, 2015; Boutabba, 2014; Shahbaz et al., 2013). However, a bi-directional relationship is found between energy consumption and economic growth as indicated in extant literature (Asumadu-Sarkodie and Owusu, 2016; Sebri and Ben-Salha, 2013). The unidirectional causality moves from economic growth to financial development; while trade openness causes economic growth. This trend indicates that causality moves from trade openness to economic growth as noted in previous literature (Akinci, Akinci and Yilmaz, 2014; Nasir and Rehman, 2011).

A bidirectional causality between trade openness and financial development is traced (Shahbaz, Khan and Tahir, 2013), while urbanisation causes financial development (Shahbaz and Lean, 2012). On the other hand, no causality is found between trade openness and carbon emissions as witnessed in past studies (Dogan and Turkekul, 2016; Ozturk and Acaravci, 2013; Kolher, 2013).

DISCUSSION

We used time series data of China and Pakistan to analyze the short-run and long-run relationship among macroeconomic variables and carbon emissions. The statistical results of both datasets showed different results for both countries owing to different economic conditions, financial standings and socioeconomic characteristics. In comparative analyses of variables for both datasets, interesting insights are driven, which might be more concerning for the policymakers owing to unseen facts of economic activities. The results of Johansen co-integration test revealed a long-run relationship among predictors and endogenous variables because its trace and Max-Eigen values are greater than their critical statistics at significance level of 5%. Owing to long-run relationship, we used ECM test to investigate the ratio of increase or decrease in CO_2emissions due to 1% change in macroeconomic variables. The ECM finding indicates significant co-efficient of energy consumption which revealed that an increase in energy consumption tends to increase in carbon emission in the long run. The factors behind the data of energy consumption comprised of oil and gas, coal and liquid gases which are mainly used in transportation and industries and causes of environmental pollution. The coefficient of trade openness is also found to be significant, which revealed that a 1% change in free trade causes an increase in the CO_2 emissions in the long-run. This confirmation indicates that owing to weak environment protection laws in third world countries, investors are inclined to produce pollution intensive goods due to higher return on investment. Their act to pollute the environment is irrespective to the hazards for the humanity and global danger for the nearby countries. Pakistan is also facing same difficulties due to weak implementation of environment safety laws and strict punishment for the violators. However, these issues can be overcome through state interference for strict enforcement of environment safety laws and use of modern technologies for fuel waste management and efficient filtration process.

Urbanization is found to have significant long-run impact on the environment. Major shifting of rural population towards urban areas has increased the health and environmental protection issues in Pakistan. The causes behind this shift are mainly the conversion of agriculture lands into the industrial zones and residential societies where green land is obsolescing gradually. This issue can also be prevented by the states if basic civic facilities to be provided in the rural areas i.e. health facilities, job opportunities, infrastructural improvements, better schooling, clean water and so on.

Captivatingly, no long-run relationship is traced among the predictors and endogenous variables in the dataset of China. Therefore, we used granger causality test to find out the short term causal relationship among variables. Our result indicates that energy consumption does

not granger cause of CO_2 emissions, hence null hypotheses are rejected; however, a unidirectional causality is traced that causes energy consumption to CO_2 emission. Similarly, economic growth is not fond to have cause of carbon emission, so null hypothesis is rejected. Here also a unidirectional causality is traced for economic growth towards carbon emission. On the other hand, no causal link is found between CO_2emissions and financial development, so null hypothesis is accepted. However, bidirectional causal link is found between use of energy and economic growth in case of China. Going forward, unidirectional causalities are traced from 'economic growth to financial development'; 'trade openness to economic growth'; and 'urbanization to financial development'. A bidirectional causal link is found between free trade and financial development. Contrarily, no causal effects are found between 'trade openness and urbanization' and 'carbon dioxide emission'.

CONCLUSION

In Pakistan, energy consumption and trade openness were found to have significant and positive effect on environment in the long-run as well as in the short-run. In short-run, urbanization had significant negative relationship with environment, but this relationship becomes significantly positive in the long-run. Furthermore, energy growth and financial development were found to have no impact on environment either in the short-run or long-run. In China, macroeconomic variables only influenced environment in the short-run and no long-run relationship was traced. Unidirectional causality was established from 'energy consumption to CO_2 emissions', and from 'economic growth to CO_2 emissions'; whereas, bidirectional causality was found in 'economic growth and energy consumption'. Economic growth was found to have causal effect on financial development, while trade openness was causally linked to economic growth. A bi-directional causality was established in trade openness and financial development, while a unidirectional causal relationship was found in urbanization and financial development.

This study has contributed in literature by comparatively examining the long-run and short-run effects of macroeconomic variables on environment in context of CPEC energy projects. These nonrenewable energy projects might have harmful impacts in the environment of Pakistan owing to excessive use of coal and oil based fuels, and resultant release of carbon emissions in the environment. The results of this study also offer practical insights for the policy makers. It is recommended that socioeconomic and environmental policies should be revisited by encouraging the investments in only clean or renewable energy projects. Going forward, CPEC projects should be focused on the installations of solar energy, fossil energy and wind energy power projects because these renewable energy projects are harmless for the environment. In this way, CPEC energy projects can have maximum positive impact on socioeconomic growth with minimal impact on damaging the environment.

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CONSEQUENCES OF MONETARY POLICY FOR CREDIT RISK IN THE USA

MÁRIA BOHDALOVÁ[1]* AND MARTIN PAŽICKÝ [2]

ABSTRACT

Financial institutions have experienced various difficulties for many years, which is the main reason why each bank should be aware of its credit risk evolution in order to set the objectives governing the bank's lending. The purpose of our paper is to characterize the credit quality of US banks using transition probability matrices constructed using Markov chains. The stationarity of credit migration probability is conditioned by macroeconomic development and monetary policy. We monitor the likelihood of migration among credit classes based on short-term trends in output gap and the Fed Fund rate. We claim that there is a certain relation between the two monitored parameters and the credit standards of the clients. In addition, we found evidence of the market's lessons from the global financial crisis in 2008 when the markets did not capture a deterioration in credit quality.

Keywords: Monetary policy, Transition probability matrix, Credit risk, Markov chains.

INTRODUCTION

Since the economic collapse in 2008, known as the global financial crisis, which has been caused inter alia by the mortgage bubble and the failure of credit rating systems, attention is paid to the reliable identification of credit risks. As a consequence, not only the fiscal, monetary and financial policies of advanced economies have changed, but the banking sector has also been tightened. The long period of liberalization in the banking sector has changed into a period of more stringent regulation known as the Basel rules.

Renowned rating agencies create rating scores based on quantitative estimates for measuring of exposure at default (EAD), loss given default (LGD) and recovery rate (RR). These statistical measures are used to determine the rating for a given entity. Ratings thus incorporate qualitative and quantitative components (Brown, 2004). An alternative model estimating credit risk incorporates transition matrices of Markov chains. The unique feature of Markov chains allows us to investigate discrete time series based on the stochastic process. It is possible to estimate the change between two neighbouring observations and to compute probability of such a change ignoring the history of the time series. As wrote Jones (2005), these models of migration rating show the evolution of creditor quality for broad groups of creditors with the same approximated likelihood of default.

Markov chains has become extremely popular for risk measurement purposes, especially in recent years. There are several examples of applying Markov chains in different areas, such as learning models of bird migration from citizen science count data (Sheldon et al., 2013; Liu, Sheldon and Dietterich 2014), learning models of human mobility from data that is aggregated to maintain privacy (Sun, Sheldon and Kumar, 2015), and fitting models of voter turnout and demography from census data (King, 2013; Flaxman, Wang and Smola, 2015). Markov transition matrices are increasingly used in finance to determine credit risks or bond ratings, see e.g. (Chang, Fu and Kao, 2017) for the measurement of credit quality of corporate bonds or (Chan, Wong and Zhao, 2010), who computed firm-specific transition probabilities or (Laurent, Sestier and Thomas, 2016), who designed a banking internal model using a two-

[1] * Correspondence Author. Associate Professor, Comenius University in Bratislava, Faculty of Management, Department of Information Systems, Slovakia. E-mail: Maria.bohdalova@fm.uniba.sk

2 Post Doc, Lecturer, Comenius University in Bratislava, Faculty of Management, Department of Information Systems, Slovakia, Ministry of Finance of the Slovak Republic, Department of Macroeconomic Analyses and Prognosis. E-mail: Martin.Pazicky@fm.uniba.sk.

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factor model or (Liang, Zhao and Zhang, 2016), who focused on the corporate bond rating system using Markov chains.

The closest to our research is the paper of Jones (2005), who modelled credit risk from historical data on the proportions of institutions with different credit ratings. Jones claims that his model is ideal for credit risk applications where there is a paucity of data on changes in credit quality, especially at the aggregate level. The author uses a generalized least square (GLS) methodology to provide estimates of transition matrices for the United States using both non-performing loan data and interest coverage data for the period 1984 – 2004. The model is used to condition the matrices on economic fundamentals and stages of the economic cycle (Jones, 2005). Similar research was conducted by Bangia, Diebold and Schuermann in 2000. Focusing on the turmoil in the capital markets in 1997 and 1998, they conclude that underlying macroeconomic volatility is a key part of a useful conceptual framework for stress-testing credit portfolios, and that credit migration matrices provide the specific linkages between underlying macroeconomic conditions and asset quality. Credit quality of obligors is characterized by credit migration matrices designed based on Markov chains theory (Bangia, Diebold and Schuermann, 2000). For more examples of Markov chains usage see Hu, Liang and Wu (2015) or Bernstein and Sheldon (2016).

Looking at advanced economies, Chi and Li (2017) used data for Chinese commercial banks from 2000 to 2014. Their paper examined the effects of economic policy uncertainty (EPU) on banks´ credit risks and lending decisions. Their results indicate that EPU increases banks´ credit risks and negatively influences loan size (Chi and Li, 2017). Vassiliou (2013) explored the rating system used by credit agencies with a focus on problems that justify the use of fuzzy set theory. The author models the evolution of credit migration of defaultable bonds as an inhomogeneous semi-Markov process with fuzzy states. The research was extended later by modelling the migration process of defaultable bonds as a different inhomogeneous semi-Markov model. The survival probabilities of a defaultable bond in every credit grade were found (Vassiliou, 2014). There are various papers assessing credit risk using transition matrices (e.g. Kunovac (2011) for the evidence from Croatia or Jackuliak (2014) using US data or Jackuliak and Bohdalová (2017) investigating credit standards in Slovakia and the Czech Republic or Walshe (2016) using the first-order Markov model in Ireland and UK).

There are several studies investigating the consequences of monetary policy for the banking sector and credit quality in the economy. For example, Borio, Gambacorta and Hofmann (2015) claim that unusually low interest rates and unusual flat term structure erode bank profitability. Different study investigated the effect of relatively loose monetary policy on bank risk through a large panel including quarterly information from listed banks operating in the EU and US. The research revealed that relatively low levels of interest rates over an extended period of time contributed to an increase in a bank risk (Altunbas, Gambacorta and Marque-Ibanez, 2014). In terms of the euro area region, it was found that lower overnight rates soften bank credit standards, both for the average and for the riskier loans. The softening of credit standards was identified over and above an improvement of the quality of borrower´s industry and collateral (Maddaloni, Peydró and Scopel, 2008). Research conducted by Maddaloni and Peydró provides evidence of excessive risk-taking for mortgages. The low interest rates after the 2008 crisis helped to ease lending conditions that were tightened due to bank capital and liquidity constraints, especially for business loans (Maddaloni and Peydró, 2013).

Despite the fact that a number of studies have been carried out on credit risks subject, our paper contains several innovations that could potentially contribute to the topic of credit risks. The benefits of our research are threefold. First, we focus on measuring credit risks in the US economy just after the end of monetary easing that was conducting since the global financial

crisis in 2008. The US economy, compared to the euro area, is mature enough to start monetary tightening. It is therefore likely that the US model becomes a pattern for the euro area economy, as we have already witnessed in the past. Second, we use Markov transition matrices to estimate credit risks. Although the method is known, it is not a common practice for credit risk measurement. The most important advantage of this method is its applicability to other economies under different conditions. Third, we condition transition matrices not only on economic cycle but also on monetary policy decisions. We are convinced that the combination of Markov theory as an estimation method in connection with monetary policy dynamics creates the most significant innovation of our paper.

The reminder of this paper is organized as follows. Sections 2 and 3 outline methodological application and the data used in our research. Section 4 presents our results and section 5 concludes the paper.

METHODOLOGY

The theory of Markov chains is based on the stochastic process principle. The key idea of the Markov chains is that the conditional distribution of the probabilities of the system in the next step as well as other steps in the future depends only on the current state of the system and not on the states of the system in the previous steps. For estimating transition matrices we will apply a similar procedure proposed by Jones (2005).

Markov transition matrices for credit risk modelling is a known methodology that is based on aggregated proportional data. This method is used in the absence of data on credit quality changes, especially at the aggregate level.

The Markov transition probability model defines a set of qualitatively discrete classes in which individual objects are classified. We will define a transition matrix, denoted as $P = [p_{ij}]$, which reflects the probability of sustaining in a given class or the probability of changing the category to the remaining $R-1$ classes over the observed period. The individual components of the transition matrix p_{ij} indicate the probability of a credit rating equal to i at time $t-1$ and the credit rating j at time t.

$$P = \begin{bmatrix} p_{11} & p_{12} & \cdots & p_{1R} \\ p_{21} & p_{22} & \cdots & p_{2R} \\ \vdots & \vdots & \ddots & \vdots \\ p_{R1} & p_{R2} & \cdots & p_{RR} \end{bmatrix}, \quad (1)$$

The key assumption is that once the rating in the worst credit class (i.e. the last column in the matrix shown in equation 1) is reached, it is no longer possible to improve the quality and change the credit class. This is because the last category represents failed loans that have already been written off. The last column thus represents so-called absorption vector.

If the data for individual rating changes is available (i.e. the rating of the selected group of institutions is known at the beginning of the period and at the end of the period), then the probability of changing the initial rating is simply calculated based on the following equation:

$$P_{ij} = \frac{n_{ij}}{\sum_j n_{ij}}, \quad (2)$$

where p_{ij} represents the probability of changing the rating i at time $t-1$ to the rating class j at time t and n_{ij} represents a total number of institutions, which had the rating i at time $t-1$ and rating j at time $t-1$.

Unfortunately, we do not observe the actual count of transitions from adjacent credit categories. Our dataset consists only of the aggregate proportions, $y_j(t)$ and $y_i(t-1)$, which represent the proportion of observations with credit quality j and i respectively. We can then write a stochastic relation connecting the actual and estimated occurrence of $y_j(t)$ as follows:

$$y_j(t) = \sum_i y_i\,(t-1)p_{ij} + u_j(t)\,, \quad (3)$$

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where p_{ij} shows the probability of credit quality being equal to i in period $t-1$ and credit quality equal to j in period t; $u_j(t)$ represents an error term with credit quality j in time period t.

As proposed Lee, Judge and Zellner (1970), equation (3) can be written in matrix form as follows:

$$y = Xp + u\,, \tag{4}$$

where the vector y is characterized by proportions of the selected rating over time as follows:

$$\begin{aligned} y &= [y_1 y_2 \dots y_{R-1}]^T \\ &= [y_1(1), y_1(2), \dots, y_1(T) \quad y_2(1), y_2(2), \dots, y_2(T) \quad \dots \quad y_{R-1}(1), y_{R-1}(2), \dots, y_{R-1}(T)] \end{aligned} \tag{5}$$

a matrix X_j consists of individual rating vectors, for $j = 1,2, \dots R-1$,

$$X_j = \begin{bmatrix} y_1(0) & y_2(0) & \dots & y_R(0) \\ y_1(1) & y_2(1) & \dots & y_R(1) \\ \vdots & \vdots & \ddots & \vdots \\ y_1(T-1) & y_2(T-1) & \dots & y_R(T-1) \end{bmatrix}, \tag{6}$$

after modification, we obtain the following matrix X in a block-diagonal form:

$$X = \begin{bmatrix} X_1 & 0 & \dots & 0 \\ 0 & X_2 & \dots & 0 \\ \vdots & \vdots & \ddots & \vdots \\ 0 & 0 & \dots & X_{R-1} \end{bmatrix}. \tag{7}$$

We define the vector of estimated transition probabilities p as follows:

$$\begin{aligned} p &= [p_1 p_2 \dots p_{R-1}]^T \\ &= \left[p_{11}, p_{21}, \dots, p_{R1} \quad p_{12}, p_{22}, \dots, p_{R2} \quad \dots \quad p_{1,R-1}, p_{2,R-1}, \dots, p_{R,R-1}\right]^T, \end{aligned} \tag{8}$$

and the vector of error terms u is given as follows:

$$\begin{aligned} u &= [u_1 u_2 \dots u_{R-1}]^T \\ &= [u_1(1), u_1(2), \dots, u_1(T) \quad u_2(1), u_2(2), \dots, u_2(T) \quad \dots \quad u_{R-1}(1), u_{R-1}(2), \dots, u_{R-1}(T)] \end{aligned} \tag{9}$$

To estimate transition probability matrix P, we apply the OLS (Ordinary Least Squares) method. We need to solve the quadratic problem with linear constraints:

$$minimize\ u^T u = (y - Xp)^T (y - Xp), \tag{10}$$

when the linear constraints are met

$$\sum_{j1}^{R-1} p_{ij} \leq 1$$

and

$$\sum_{j-1}^{R-1} p_{Rj} = 0$$

and

$$p_{ij} \geq 0.$$

We can rewrite the equation (10) in a matrix form as follows:

$$minimize\ u^T u = (y - Xp)^T (y - Xp), \tag{11}$$

with the constraints:

$$Gp \leq \eta$$

and

$$p \geq 0$$

and

$$G_{RxR(R-1)} = [I_1 I_2 \dots I_{R-1}]$$

and

$$\eta_{Rx1} = [1\ 1\ \dots 1\ 0]^T\ .$$

In this notation, the matrix G is $RxR(R-1)$ matrix of given constraints. The matrix G is composed of $R-1$ identity matrices of the dimension R. η represents $Rx1$ column vector of ones, with a zero in last row to ensure that the loss state in the default category is absorbing. The system of RxT equations serves to estimate the RxR unknowns probabilities based on T observations. It is possible to find a transition probability matrix $P$when we assume that $T \geq R$. The last row of transition probability matrix P is computed using the following equality:

$$p_{iR} = 1 - \sum_{j-1}^{R-1} \hat{p}_{ij}\ . \qquad (12)$$

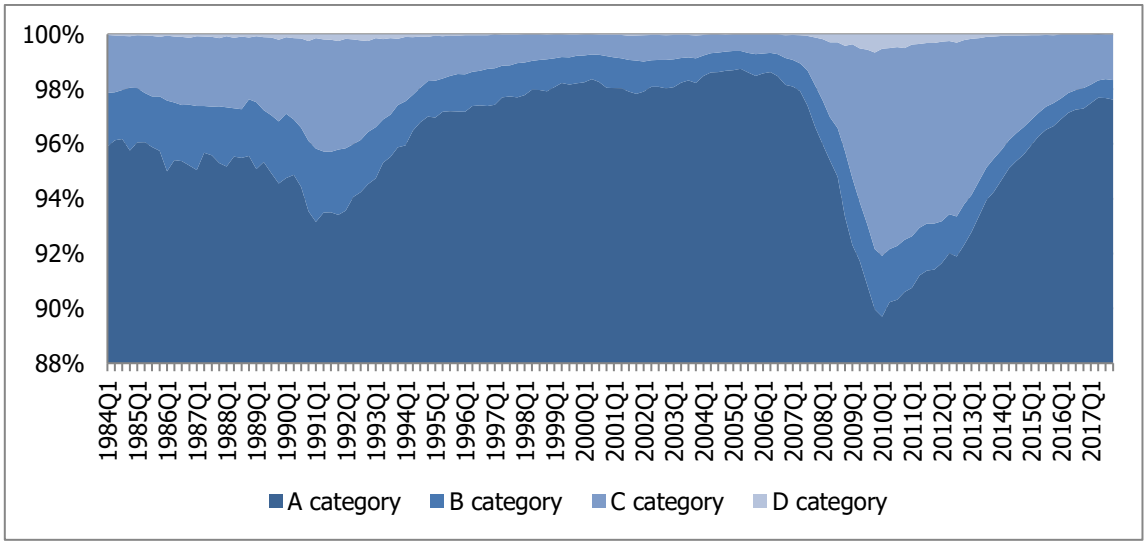
DATA

For transition matrices estimation we obtained quarterly data on non-performing loans for the United States for the period 1984 to 2017, which yields 136 observations. The data source is FDIC´s Statistics on Banking. Our dataset cover all US commercial banks that are insured by FDIC. Information on non-performing loans is broken down into several categories, but we focus solely on total real estate loans. We define 4 credit quality categories:

- **Category A**: performing loans and leases.
- **Category B**: loans and leases past due 30 – 89 days.
- **Category C**: loans and leases past due 90 days or more, including loans and leases in non-accrual status.
- **Category D**: cumulative charge-offs on loans and lease.

Credit quality evolution is illustrated in Figure 1.

Figure 1: Real estate loans in the US - credit quality



Source: own prepared based on FDIC data

Figure 1 shows that credit quality of real estate loans in the US follows the business cycle. For more detailed information, see Appendix A, where data characteristics are captured.

In order to estimate condition transition probability matrices, we have collected data representing macroeconomic and monetary variables. Macroeconomic conditions reflecting the business cycle are approximated by output gap. To estimate an output gap, we have used a well-known Hodrick-Prescott filter, which is a mathematical technique used to smooth non-linear data points in time series. A substance of Hodrick-Prescott filter is an assumption that the original output (GDP) denoted as y_t is composed of a trend component τ_t and a cyclical component c_t, which can be written as follows

$$y_t = \tau_t + c_t, \quad t = 1,2, \dots, T. \qquad (13)$$

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Hodrick and Prescott (1997) suggested a way to isolate τ_t and c_t by solving a following minimization problem:

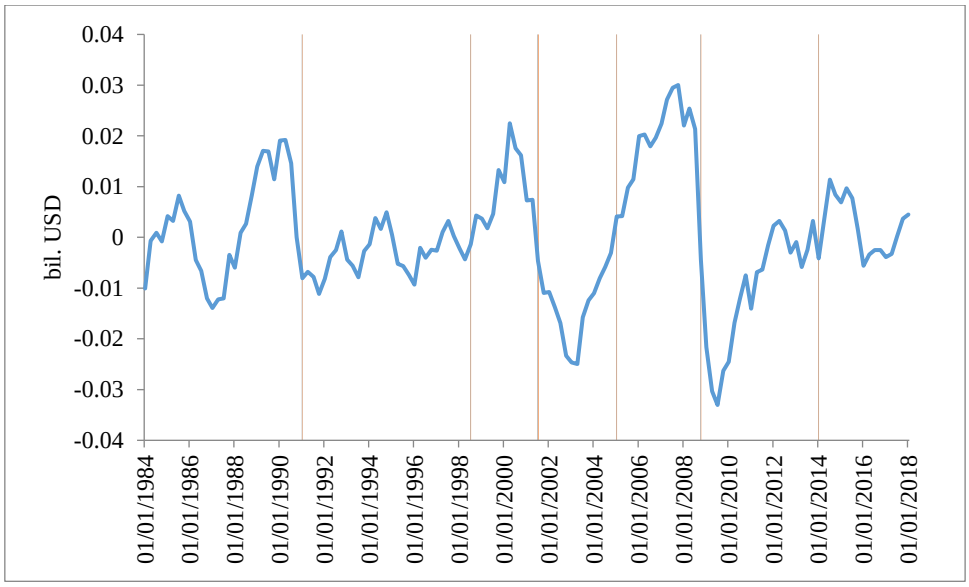
$$Min_{\{\tau_t\}_{t=1}^{T}}[\sum_{t=1}^{T}(y_t - \tau_t)^2 + \lambda \sum_{t=2}^{T-1}(\nabla^2 \tau_{t+1})^2], \quad (14)$$

where λ is the penalty parameter. The first term is the loss function penalizes the variance of c_t, while the second term puts a prescribed penalty to the lack of smoothness in τ_t. Cyclical component representing the output gap can be then identified as follows

$$c_t = y_t - \tau_t. \quad (15)$$

During the periods when the output gap is positive, the real output is above the potential level meaning what means, the economy is going well. Negative output gap indicates contractionary times. Output gap in the USA over the examined period is captured in Figure 2.

Figure 2: Output gap as a conditioning variable

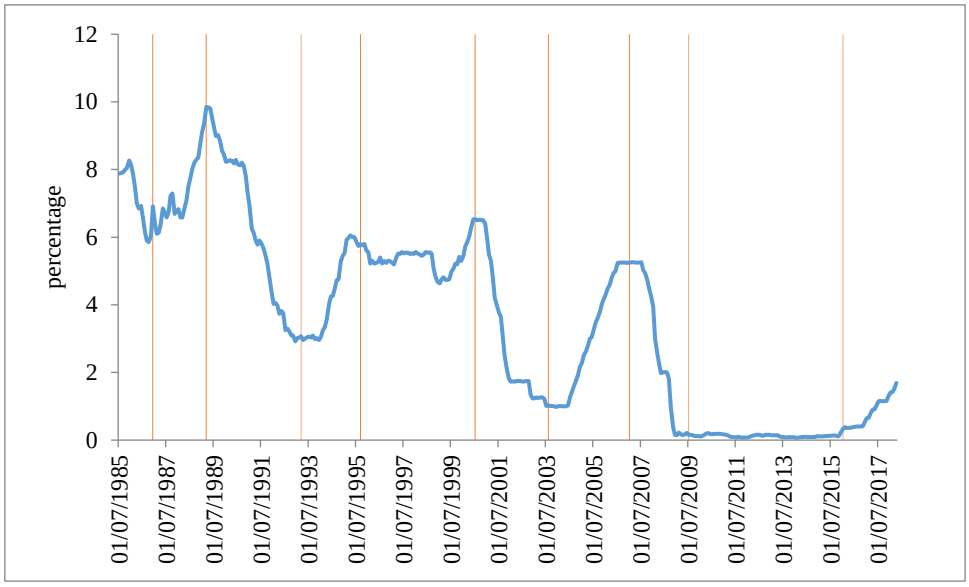


Source: own prepared based on FRED data

The entire period is divided into 7 sub-periods depending on short-run trends. During the first period, an output gap was mostly positive. The second period exhibits a near stable output gap close to zero. Subsequently, we can observe periods with positive followed by negative, positive and then again negative output gap. Finally, in the recent times, the output gap is again positive. We have estimated seven separate transition probability matrices, each capturing a credit stance in an examined sub-period based on output gap. Although Hodrick-Prescott filter has a couple of drawbacks, it is a sufficient tool to estimate output gap in this case.

In relation to monetary policy, we use the Fed Fund rate as a conditioning variable. The Fed Fund rate affects the cost of borrowing and, therefore, it is crucial to verify the relationship between Fed Fund rate and credit conditions. The Fed Fund rate is shown in Figure 3. As it is evident from Figure 3, we have identified 10 episodes with different trends over the entire period. The trends were determined using the *F*-test, which was performed to identify the break-even points when variance in the time series starts to be significantly different from the previous bunch of observations. When the *F*-test indicated a significant change in variance we have recorded this event on the time axis and we have used this discrete time point as break-even. Using a bunch of 10 observations we came to 10 different sub-periods. Notwithstanding the fact that we lost 10 observations on the beginning (i.e. degrees of freedom), *F*-test is a good method to identify substantial changes in our dataset.

Figure 3: Fed Fund rate as a conditioning variable



Source: own prepared based on FRED data

GDP data and Fed Fund rates are obtained from the Federal Reserve Economic Database (FRED). Detailed data description is available in Appendix B.

RESULTS

This paper provides the answer to the central question: what is the probability of a performing loan becoming non-performing and vice versa? The question relates to the dynamics of credit quality in the USA under macroeconomic conditions measured by the output gap and US monetary policy measured by the Fed Fund rate. The associated transition probabilities have been estimated based on the assumption that a usual credit follows a first-order Markov chain of credit quality. We assumed that the estimated transition probabilities are not fixed throughout the entire sample, and therefore we have estimated several models based on distributions of the conditioning variables (i.e. output gap and Fed Fund rate). We consider the transition estimates to be a useful input into a broad range of credit risk models.

Figure 4 shows the lending and leaseback dynamics divided into sub-periods according to the results of the output gap period (i.e. Figure 2). The probabilities to remain in the same credit category are captured in the left column. The borrowers rated in category A have a very high probability to meet their debts on time and stay in the same category. It is clear, borrowers keep very high credit standards over the period from Q2 1992 to Q2 1998, when the output gap was relatively stable and was close to zero. During this period, it was very likely to keep the actual rating (e.g. the probability of staying in A, B or C category was almost 100%) and there was almost zero probability of default. The results captured in Figure 4 do not indicate that credit conditions were more favourable during periods of positive output gap and vice versa. For example, during the period from 3Q 1998 to 2Q 2001 the output gap was positive and credit quality improved, but next period of negative output gap (i.e. Q3 2001 to Q1 2005) resulted in high credit standards. Interestingly, we can observe that in the period preceding the global financial crisis (i.e. Q3 2001 to Q1 2005) the probability of downgrading from A rating was almost zero despite the negative output gap. We can say that the market did not recognize the upcoming economic downturn. This situation was dramatically different in the next business cycle, when the output gap was again negative (i.e. from 3Q 2008 to Q1 2014). We can see a substantial drop in output gap and the deterioration in credit standard at the same time. The probability to stay in category A was relatively low and the event of downgrade was more likely. The transition probability of downgrade to the default category (even from A

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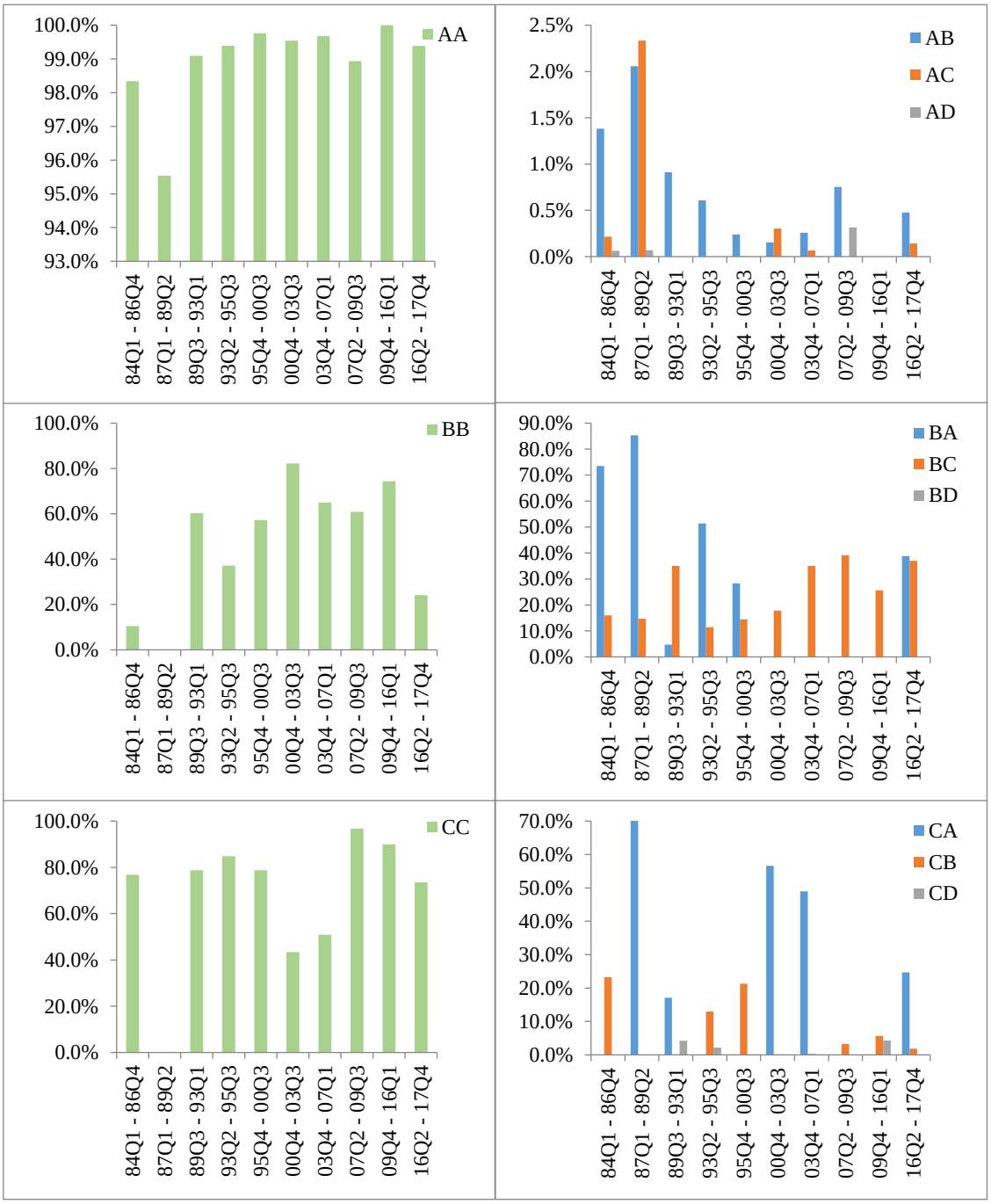
category) was high. We can say that the market matured and learned from the previous periods when it underestimated the macroeconomic performance. In the latest period (i.e. from Q2 2014), we can observe a positive output gap and credit quality improved, possibly due to the more stringent banking regulation.

Figure 4: Output gap results and transition probability

Source: own prepared based on FRED data

Figure 5 explains the same from the perspective of monetary policy. If we admit that the costs of borrowing play a role in appetite to borrow and consequently influence the loan repayment discipline then it makes sense to use the reference interest rate as a conditioning variable for Markov transition matrix.

Figure 5: Fed Funds rates results and transition probability



Source: own prepared based on FRED data

Figure 5 documents that it is complicated to assess the credit quality based on interest rate changes. In spite of this, it is possible point out few interesting observations. First, it seems that the stable interest rate evolution improves credit quality regardless of the level of interest rate. For example, the probability to stay in the same credit category was high during the periods from Q4 1995 to Q3 2003 and from Q4 2009 to Q1 2016. Both periods exhibited stable evolution of interest rate but the level was substantially lower in later one. In terms of further evaluation, it is unambiguous whether hawkish monetary policy results in higher credit quality or dovish policy deteriorates credit rates. We can see that dovish monetary policy from 1Q 1984 to 4Q 1986 resulted in credit rating deteriorations. The same is observable in the periods from 3Q 1989 to 1Q 1993 and 4Q 2000 to 3Q 2003. We can see similar causality during the period from 2Q 2007 to 3Q 2009, which corresponds to the global financial crisis. We can thus

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identify evidence of credit quality worsening during times of interest rate decrease. Cheaper interest rate creates and upward pressure on loans quantity. There are possible two effects. First, clients want to use the advantage of cheap borrowing. Second, the banks are searching for higher returns. As a consequence, they accept the borrowers with worse credit profile. In conjunction with remuneration based on commissions, risk taking is highly incentivised. Analysing hawkish monetary policy, the evidence is not clear. The period from Q1 1987 to 2Q 1989 is obviously very risky. The probability of downgrading and even default is relatively high. On the other hand, during the period from 2Q 1993 to 3Q 1995, we can see some improvements in terms of credit quality. For example, the probability to upgrade from category B to A or from C to B is quite high. From 4Q 2000 to 3Q 2003, the evidence is not clear. There is some potential to improve (i.e. from C to A category) but also a substantial part of loans downgraded (i.e. from B to C).

CONCLUSION

The credit quality depends on various factors and conditions. We examined the loan quality check over the period from 1984 to 2017, in the economy of the United States of America using estimated Markov chain models expressed by transition probability matrices. Conditioning on macroeconomic performance represented by output gap and on monetary policy given by Fed Fund rate, we came with interesting implications applicable as an input to the credit rating models. Our main aim was to analyse what is the probability of a performing loan becoming non-performing and vice versa.

In case of macroeconomic performance and the stage of the business cycle, it can be concluded that the best credit quality performance is observed during periods when the output gap was stable, close to zero. Our results do not indicate that credit conditions were more favourable during periods of positive output gap and vice versa. We can see that negative output gap from Q3 2001 to Q1 2005 resulted in high quality standards. Markets did not see the risks before the global financial crisis. Different picture comes from the period from 3Q 2008 to Q1 2014, when the output gap was again negative, but credit quality deteriorated. It means that the market learned from the history and anticipated the possible troubles.

The results of the Fed Fund rate as a measure of monetary policy are more complex. First, we identified certain similarities with output gap in the positive credit quality corresponding to the stable evolution. In case of Fed Fund rates, we found that a stable evolution of interest rates results in better credit quality, which is independent of the level of the interest rate. In the event of dovish monetary policy, we observed worsening of credit quality related to the cheaper cost of borrowing, easier access to loans and higher appetite of banks to borrow. The last could be referred as a moral hazard phenomenon. In times of hawkish monetary policy, the evidence is not straightforward. In general, monetary policy should have an impact on credit standards. It would therefore be beneficial to verify more variables (i.e. total credit injected into the economy measured by the total assets of the central bank, the great moderation periods, credit multiplier…).

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Appendix A

Table A: Real estate loans - description of credit quality

	Performing loans	30-89 days past due	90 days or more past due	In nonaccrual status	Total charge-offs
Starting period	1984 Q1	1984 Q1	1984 Q1	1984 Q1	1984 Q1
Ending period	2017 Q4	2017 Q4	2017 Q4	2017 Q4	2017 Q4
Frequency	quarterly	quarterly	quarterly	quarterly	quarterly
Num observations	136	136	136	136	136
Unit	mil USD	mil USD	mil USD	mil USD	mil USD
Mean	2 579 703	35 215	25 580	50 647	3 988
Median	2 372 850	27 910	5 758	21 851	1 282
Minimum	399 449	7 571	3 130	4 991	132
Maximum	4 660 085	115 118	116 182	222 285	30 690
Standard Error	120 723	1 993	3 077	4 688	542
Standard Deviation	1 407 858	23 244	35 884	54 675	6 318
Skewness	0.00	1.59	1.52	1.70	2.38
Kurtosis	-1.49	2.10	0.82	1.92	4.97

Source: own prepared based on FDIC data

Appendix B

Table B: Data description

	GDP	Interest rate
Starting period	01.01.1984	01.01.1984
Ending period	31.12.2017	01.02.2018
Frequency	quarterly	monthly
Num observations	136	410
Unit	bil USD	%
Mean	10820	3.86
Median	10490	4.11
Minimum	3913	0.07
Maximum	19754	11.64
Standard Error	399	0.15
Standard Deviation	4653	3.01
Skewness	0.21	0.27
Kurtosis	-1.24	-0.98

Source: own prepared based on FRED data

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APPRAISING THE ROLE OF LENDER OF LAST RESORT: A COMPREHENSIVE STUDY OF FEDERAL RESERVES, BANK OF ENGLAND AND STATE BANK OF PAKISTAN

MUHAMMAD HASSAN IDREES[1]

ABSTRACT

This research enunciates the functions and the significance of the lender of last resort (LOLR) with reference to contemporary financial issues. Primarily, the research provides the conceptual underpinning of the doctrine of LOLR and divulges that the ambit of the role of LOLR was nothing more than liquidity; hence, it could not get attention by the policy makers until the recent global financial crisis of 2007-08. It further explores the progression in the responsibilities of the Central Banks (CBs) after the financial crisis of 2007-08. Equivocal financial challenges eroded the contentions and paved the way for the LOLR and made it an inevitable part of the functions of CBs. Qualitative study is applied to carry out this research. It appraises the operations of LOLR during the crisis and highlights the lacunas of current legislation regarding it. The present research explains the emergence of Federal Reserves as a CB for the United States and unfolds its rescue operations to strengthen the financial institutions during crises. It also evaluates the gaps of the Federal Reserve's Act, 1913 and extensively explains the significance of Dodd-Frank Act, 2010. Additionally, it studies the financial challenges of the United Kingdom and the operations of the Bank of England as LOLR. In the current hour, the financial system of Pakistan is enduring numerous financial challenges; nonetheless, there is not much scholarly work done in this context. This research highlights regulatory problems and suggests reform proposals, therefore, it will immensely contribute to the literature and benefit the concerned researchers of this area. The laws which legitimate the powers of CBs as LOLR are also studied. Finally, it provides a comprehensive discussion regarding the moral hazard problems which are inseparable in the presence of LOLR and argues that how effacing these problems could be for the system.

INTRODUCTION

This research critically evaluates the role of LOLR played by the Federal Reserves, The Bank of England and the State Bank of Pakistan. It is divided into six parts which appraises the role of domestic and international LOLR. First part enunciates the functions of LOLR and their significance in the modern economic system. Second part explains its nature before the financial crisis of 2007-2008. It further unfolds how it has been emerged after the financial crisis. Third part is further divided into three parts, its first part explains the operations of Federal Reserve's second part explains the role of Bank of England and the final part divulges the role of State Bank of Pakistan as LOLR. Fourth part unfolds the laws of the US, UK and Pakistan which legalize the functions of LOLR in their countries. Fifth Part provides the opinion of the scholars who have criticized this role and are against its presence in the financial systems. Final part of this chapter extensively evaluates the moral hazard problems pertaining to it.

1Author of this paper has completed B.A.LL.B (Hons) from University of the Punjab, Lahore, Pakistan and LL.M (International Business and Corporate Law) with Distinction from University of Bedfordshire, UK. He is also a member of the Honorable Society of Lincoln's Inn and Currently a final year PhD student at Canterbury Christ Church University, UK.

FUNCTIONS AND SIGNIFICANCE OF LENDER OF LAST RESORT

In the modern economic system, it is a common fact that financial institutions can face liquidity shortage and it is only the CB of the state which is empowered to generate liquidity to fulfill its demand. There is no separate institution which is authorized to exercise the powers of LOLR. It is a vigorous part of the duties of CBs at domestic level and IMF which is a branch of World's bank performs the duties of international LOLR (Wallich, 1987). Usually, the understanding of LOLR is that the CBs intervene by lending liquidity to the financial institutions which need liquidity. The uncertain situation of the financial system and surging panic among investors invoke the operations of LOLR to enhance the resistance of the financial institutions against crisis (Giannini, 1999). However, impartation of the liquidity by private individuals or the institutions to the financial markets cannot attribute the role of LOLR to them because it is a part but not the entire function of this role. This role is not limited only to provide liquidity but has several functions. The stability of the financial system lies on trust of the depositors however; ups and downs are part of its activities (Fischer, 2016). In the modern financial systems, the institutions are working with each other hence they provide loans to the financial institutions which are facing problems. However, in some circumstance when they are unable to handle the issue and CB realizes that it could be detrimental for the system it operates as a LOLR (Humphrey, 2010).

In 1797, Sir Francis Baring argued that the Bank of England holds this power to lend liquidity when all other financial institutions failed to do so. Henry Thornton and Walter Bagehot has designed the characteristics of LOLR and explained the insight behind its operations (Fischer, 2016). The impartation of liquidity in the apprehension of a financial crisis is different from lending a loan. The CBs have responsibility to govern the system not to protect individual institutions. Therefore, the liquidity assistance in the operations of LOLR can only be granted to solvent institutions. The core function of the CBs as a LOLR is not to intervene during special circumstance but it is obligated to take all necessary steps to make an indomitable system. The dread of a crisis is more annihilating for the survival of the system than the shortage of liquidity. It is a vital part of the functions of the LOLR to ensure the trust of the stakeholder on the system. The reason behind establishing a CB is to have an institution which can regulate the financial system and have the powers to implement its policies (Bordo, 2014).

The functions of LOLR are enhanced and it is no more merely a facility of liquidity during crisis. It is regarded as a tool to govern the economic system. Thus, to give the monitoring and financial policy of the state is also an important part of this role. It must have an accurate check and balance of the system and diverge the insolvent financial institutions. The regulations regarding the functions of LOLR must be well clear that in which circumstance and on which grounds its assistance can be availed. It also ensures the trust of the domestic and foreign investors on the system by taking all necessary steps. According to the needs of the system, it provides opportunities to the financial systems to excel their businesses. Finally, if the financial institutions start facing liquidity shortage and are unable to overcome the problem by the normal loan facilities of the market. (Tucker, 2014). The CB extends its support of liquidity as a LOLR to abolish the problem of liquidity and curtail the panic of a crisis. The mandate of the role of LOLR is not limited to impart liquidity but it can also purchase the illiquid assets of the financial institutions which are in trouble (Tucker, 2014). Normally, to fulfill the demand of liquidity the financial institutions start selling their illiquid assets and a rapid sale always deteriorate the value of the assets and make the situation worse for the institutions to handle. Therefore, the functions of LOLR are not limited to certain operations, it can go to any limit for the survival of the system (Obstfeld, 2009).

The functions of an international LOLR are limited as compare to those of the domestic one. It is no more a contention if the modern global economic system requires an international

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LOLR or not. The failure of domestic system has effacing effects on the world's economy (Truman, 2010). Financial institutions seek help from the CBs when they face difficulties and the CBs in their difficult times ask the IMF to rescue them which is currently working as an ILOLR. (Landau, 2014). It can ask foreign investors to invest in the country which is facing liquidity problems or ensuring the existing investors that it will rescue the CB when it will be needed which eliminates the panic and allows the system to stabilize itself. The ILOLR can play a role of a consultant however; it cannot give the financial policy of the states. Like the domestic LOLR, the IMF cannot purchase the assets of the CB which requires its assistance. It can make its support conditional that the CB which needs its help must provide a viable financial policy that it will be able to return the money (Truman, 2010).

In the modern economic era, the significance of LOLR cannot be denied. Its salient functions and successful role in the recent financial crisis make it an inseparable part of the functions of the CBs at domestic and IMF at international level. Liquidity shortage and minor financial panics are common in the current financial systems which can be converted into a large financial crisis if there is no institution which can lend liquidity to address such problems. A trivial liquidity issue can escalate the apprehensions of crisis and make it difficult for even a solvent institution to survive. Large financial institutions in the absence of a LOLR will be mighty in the financial system and will make the conditions of loan facility unapproachable for small institutions. The rationale behind having a LOLR on domestic and international level is not merely to have an institution which will provide liquidity in difficult times but to make such an effective and efficient system where all institutions enjoy the same rights and can excel. However, to achieve this goal it requires a proper legislation to regulate this role according to the insights of having it. (Landau, 2014).

FEDERAL RESERVES AS LENDER OF LAST RESORT

Every financial system strives to maintain the stability of the system and back the financial institutions in tough economic conditions which requires a CB. The first CB for the United States was created in 1791 and it is known as the Bank of the United States. It was established to fulfill the traditional duties of a CB to assist the federal government in its financial matters. It was authorized to emit notes which were accepted by the federal government in making financial payments. Though, it was not well accepted unanimously by the inhabitants of the USA and particularly its private ownership allows it to work as an independent institution rather as a government institution. Hence, even after 20 years, it was unable to get approval from the congress to continue working as a CB. In 1836, President Andrew Jackson used his powers and rejected the bill of the extension of the second CB of the US (Powell, 2017). Absence of a CB was causing harm to the system and country had faced many financial crises in 1839, 1857, 1873, 1893 and in 1907. It was realized that the presence of an institution which can give monetary policy and help the financial institutions when they face liquidity problem the happening of these crises can be curbed. Minor financial institutions can create panic among the creditors and create a situation when the financial institutions will be unable to address it. The CBs are designed to help the financial institutions when the demand of liquidity rises and prevent the financial crisis. The CBs were collaterals hence, they were lending liquidity to the solvent institutions and allowed them to fulfill the demand of liquidity without selling of their assets. In the outset of 20th century, the US didn't have a CB hence; it had faced many crises one after another. Finally, the financial crisis of 1907 paved the way for the establishment of Federal Reserves though many economists were still opposing the idea of having a CB and were arguing that the powers should be granted to the regional bodies (Oganesyan, 2013).

The Federal Reserve Act (FRA) 1913 empowered the Federal Reserve to play the role of LOLR and lend liquidity to the financial institutions which were facing liquidity shortage.

In the recent global crisis, the role of Federal Reserves is commendable as it took a radical approach to deter the crisis. It did not rely on the traditional lending policies and took unconventional step to prevent the financial institutions from collapsing which also played an important role to extend the conception of LOLR. Sections 10-B, 13 and 14 of FRA 1913 legalized the operations of Federal Reserve as LOLR. In the starting of 2007 the Federal Reserve lent liquidity to the financial markets to enable them to resist the crisis. Although Bagehot emphasized that high interest rate should be charged to curtail moral hazard problems, but it was reduced to encourage the banking sector to lend each other which worked well to stabilize the system (Herr, Rüdiger and Wu, 2016). Federal Reserve's completely ignored the principles of Bagehot and directly lent to the insolvent institutions. Basically, it lent freely to nationalize AIG company which worked well to stabilize it. The Federal Reserve also followed the parable of the Bank of England and purchased the illiquid assets of the financial institutions which were forced to sale them rapidly because of the liquidity demand. This step provided liquidity to the financial institutions and prevented the depreciation of their assets (Dobler, 2016).

The role of LOLR is regarded as a vital part of the modern economic system however; it was not warmly accepted by many economists because of the moral hazard problems. In the case of Lehman Brothers when the Federal Reserve refused to lend liquidity it was badly criticized by the economists. It was perhaps the biggest bankruptcy in the history of United States and left many lessons for the financial institution to be learnt. The presence of LOLR allows the financial institutions to ignore the consequences of risky investment because they believe that they will eventually be rescued if there will be a panic which creates moral hazard problems. To address the issue of moral hazard problems Federal Reserve has set an apt precedent in the case of Lehman brothers. Although, the Federal Reserve has played a very effective role to resist against the financial crisis, even then it was observed that there are many lacunas in the legislation and this significant role cannot be left on the discretion of Federal Reserve therefore; it needs to be legislated. (Tucker, 2014). The United States which was struggling to have a CB which can play a role of LOLR when the financial institutions need liquidity is now leading in expanding the doctrine of LOLR. After the recent financial crisis to address the loopholes of the existing laws and fixing the moral hazard problems United States has enforced Dodd-Frank Act 2010. It provides principles on which the financial institutions will be provided with liquidity (Judge, 2016).

BANK OF ENGLAND AS LENDER OF LAST RESORT

This part of the research explains how the Bank of England (BOE) adhered itself with the insights of Sir Francis Baring and played the role of LOLR for the financial institutions during crisis. It is important to appraise the operations of LOLR in previous crisis to get guidance. As Lord Mervyn King said, "During the crisis, I found that the study of earlier periods was more illuminating than any amount of econometric modelling. The evolution of the LOLR is extensively described that although the BOE had lent liquidity in Eighteenth century but lending liquidity to the financial institutions when they need it, is a duty of the CB which was established in the last quarter of Nineteenth century. It is important to evaluate if the BOE has altered its policies after accepting the role of LOLR or not. There is no evidence which can enunciate that there was an empirical change in the policies of BOE henceforth. It was criticized because of having the primary aims of profit maximization that there is a conflict of interest and it cannot hold the position of CB (Anson et al., 2017).

The BOE has played the role of LOLR in the crisis of 1847, 1857 and 1866. Bagehot (1873) described the rules for LOLR which were followed by the CBs around the world. Bagehot's doctrine has three main principles of lending i) the CB must lend freely ii) it must lend at a high interest rate iii) its lending must be against worthy collaterals. Although, it can

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be evinced by the operations of the BOE as LOLR that it has freely lent liquidity, but it was lent only to few institutions. Like the other CBs there were no regulations regarding LOLR. Thus, BOE has also used its discretionary powers and lent three-fourth of the total amount of liquidity to the top five borrowers. The principle of charging high interest rate was strictly followed in the crisis of 1857 and 1866. The interest rate was more than the commonly practiced rate. Nonetheless, in the crisis of 1847 the interest rate on the lending of BOE was even below than the normal market rates. Therefore, it can be argued that there was no absolute condition for the lending of liquidity in the operations of LOLR that it cannot be lent on the interest rate less than the normal rate. Finally, the principle of lending against worthy collaterals was also practiced but the BOE has again used its discretionary powers to evaluation the collaterals and did not follow the same rules for all enterprises (Anson et al., 2017).

The principle behind the operations of LOLR is that it will only intervene and lend liquidity to the financial institutions which are experiencing liquidity problems but are not insolvent. In the cases of Barings and Yorkshire Penny Bank (YPB) when both were unable to fulfill the demand of liquidity sought assistance from the BOE were recused because they were illiquid not insolvent. However, in 1878 the City of Glasgow Bank (CGB) were refused to get liquidity support because the collaterals which were produced by the CGB were not accepted as a good security. It is however, an unaddressed issue that how the CB will determine if the financial institution is illiquid or insolvent (Anson et al., 2017). Baring was rescued and had established an argument that it was merely illiquid, but it took four years to settle its liabilities. Many institutions were declared insolvent and could not get the support of LOLR would be able to settle their liabilities if were granted several years like other institutions. In the case of Northern Rocks, the BOE has used an entirely different approach and instead of lending liquidity the BOE decided to nationalize it because it was not befitting for the system to let it fall on the grounds of not having good securities.

Tucker (2014) expressed his views that it was a tragedy that the role of LOLR was neglected in the major policy debates of central banking and no effects have been made to legislate on it. Albeit, the significance of the LOLR in modern financial system cannot be denied but leaving its functions on the discretion of CB will be fatal. The role of BOE as a LOLR during the financial crisis was well regarded by many economists however; it is also emphasized by all the policy-makers that like the issue of moral hazard problem it is also important to frame a regulatory frame-work for the functions of LOLR. The absence of an effective regulation will continue to allow the BOE to use its discretionary powers to judge if the financial institution is insolvent or merely illiquid. Hence, this role will remain controversial and it will not be possible to achieve the desired goals (Tomasic, 2009).

STATE BANK OF PAKISTAN AS LENDER OF LAST RESORT

Pakistan is among the developing countries and its banking sector is still evolving. State Bank of Pakistan (SBP) holds the gold resources of the country and has power to emit notes. It is the only institution which can lend liquidity to the financial institutions when no other institution is capable of lending (Raja, 2009). The SBP plays the role of LOLR to strengthen the financial institutions against crisis. However, its functions as being a LOLR are equivocal and still emerging. The State Bank of Pakistan Act 1956 legalize the LOLR operations of SBP. Due to unprogressive financial policies and unproficiency in the operations of LOLR, Pakistan has faced sever financial crisis. In this modern era the role of LOLR is not merely to lend liquidity in crisis, it has several functions to protect the system from recession as it was described. (Altaf, 2016). The panic among the creditors is the most annihilating factor for the financial system which the CB should eliminate while performing the role of LOLR. The SBP lent liquidity to many financial institutions to stabilize the system and issued many new notes to fulfill the

demand. However, the emittance of new notes rapidly deteriorated value of the currency and caused inflation. Therefore, Pakistan sought the assistance from IMF which is playing the role of international LOLR.

The role of LOLR has been emerged swiftly after the recent financial crisis in developed countries especially in UK and USA. Nonetheless, it is still not the part of major financial debates of the financial and economic forums of Pakistan. The Islamic Banking is an emerging sector in Pakistan however; there is no legislation and clear policy of the SBP that in case if this sector faces the liquidity crisis who will play the role of LOLR (Umer, 2015). There are no set principles for providing liquidity support and it will not be befitting to adopt the principles of the UK or USA because each system has different needs and dimensions (Altaf, 2016). The banking sector is not the only one getting liquidity support from the SBP but it also lends to the government institutions like Pakistan International Airlines (PIA), Pakistan Steel Mill and Pakistan Railways etc. Most of the financial and governmental institutions are unable to return the money to the SBP. Absence of a strong regulation to curtail moral hazard problems is hauling the system towards crisis. Public money is going in vain and due to moral hazard problems the LOLR itself is becoming the cause of recession. Thus, the SBP had no other option but to seek assistance from IMF. Notwithstanding, it is a dilemma that Pakistan's economy is standing at the verge of destruction and miserably depending on the aid of IMF but still there are no financial regulations which can address these issues. Although, IMF is working as an ILOLR, but it is alleged that it is influencing the economic systems of the countries and its stipulations are fair with the developing countries. This research aims to propose a regulatory frame work for the functions of LOLR in Pakistan.

LAWS RELATING TO LOLR IN US, UK AND PAK

The benefits of the role of LOLR in the recent financial has emerged it conception swiftly. There are no more contentions whether the modern financial systems at domestic and international need a LOLR or not. In the recent financial crisis, the CBs took unconventional measures to protect the system which worked well for the extension of the functions of LOLR. Federal Reserves unfolded all possible measures to address the crisis which is extensively discussed in this research. However, the role of LOLR in the crisis highlighted the moral hazard problems and lacunas of the current regulations regarding LOLR. The Federal Reserve Act 1913 legalizes its operations as LOLR, section 10, 13 and 14 of the Federal Reserve Act 1913 empowers it to play the role of LOLR. Nonetheless, it does not regulate its functions of LOLR. There are several principles to perform this role but still the Federal Reserve has many discretionary powers in this regard. The United States is the first one to regulate the functions of LOLR immediately after the financial crisis. Dodd-Frank Act 2010 describes all the functions of Federal Reserves as LOLR and provides the stipulations on which it can refuse to rescue a financial institution.

The Bank of England Act 1988 has legalized the operations of BOE as LOLR. It has played an important role to strengthen the financial institutions against crisis. It can be observed in the operations of BOE as LOLR that it followed the principles of Bagehot for operating as LOLR. The principles of Bagehot regarding the LOLR are extensively described. However, it can also be observed that these principles were not followed by the BOE as a hard and fast rule while acting as LOLR. There are several cases where the BOE has used its discretionary powers which was castigated by many economists. It was argued that to avoid this role from being politicized, it must be regulated.

In Pakistan, the State Bank of Pakistan (SBP) is empowered to play the role of LOLR for the domestic financial system. Section 17, 18 and 19 of the State Bank of Pakistan Act 1956 legalize the operations of SBP as LOLR. There is no regulation regarding the functions of LOLR and it is badly politicized. The domestic system enjoys the liquidity support of LOLR

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but does not return the loans, which is a big threat to the financial stability of Pakistan. Although, many developed countries have no regulations of LOLR but still they are following certain principles to carry out these operations and the current financial situation of Pakistan cannot sustain against a financial crisis without the help of IMF. Thus, it must regulate the functions of LOLR otherwise it cannot attain any benefit from this role.

CONCLUSION

This research has provided a critical evaluation of the role of LOLR. It has discussed the functions of LOLR and explained that if there will be no institution which will play the role of LOLR for the financial system in this modern system, the entire system can collapse because of a minor liquidity problem. The LOLR can address the liquidity problem and eliminate pain among the investors. It had discussed the role of Federal Reserve, the Bank of England and the State Bank of Pakistan as LOLR. It had also explained the laws of all three countries relating to the role of LOLR. Finally, it has explained the moral hazard problems and criticism on this role.

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TRIPLE HELIX REVISITED: CAN THE INVOLVEMENT OF DIASPORA ENHANCE TECHNOLOGY INNOVATION PERFORMANCE IN EMERGING AFRICAN ECONOMIES?

MARINA TOLKACHEVA[1], AND KINFE TSEGAY[2]

ABSTRACT

The rapidly changing and uncertain business environment makes organizations face the biggest challenge of how to capture their competitive advantage in this age of knowledge-based economy, due to intense market competition, shorter product life cycle and fast delivery with an ability to satisfy the customer's expectations. The triple helix serves as a collaborative system of knowledge generation among University-Industry-Government (UIG). However, regardless of the level of effort, triple helix still remains to be an abstract concept in the case of Africa in general and Ethiopian innovation system in particular. On the other hand, a large number of manpower with better technical and managerial capabilities that can provide supportive knowledge and skills for the technological innovation is residing in the advanced economies. Thus, the aim of this theoretical framework is to shed light on the importance of harnessing the knowledge and skills of the Diaspora community and integrating it to the current triple helix model. The paper also identifies the primary problems related to the implementation of the model in the case of Ethiopia. The study will investigate ways of maximizing the benefits of the triple helix model of innovation in the development of competence and boosting the performance of the manufacturing firms.

Keywords: Triple helix, Diaspora, Innovation performance, Emerging economies, Africa.

INTRODUCTION

Innovation has long been perceived to be the result of a complex system of interaction among different role players(Heng, Othman et al. 2012). According to Fransen, and Kuschminder (2009), innovation at both national and firm level are effective if institutional, regulatory and economic efforts are aligned in the direction of the national economic agenda. Consequently, triple helix, the collaborative system of knowledge generation among university, government and industry is becoming a widely used innovation model (Klerkx and Aarts, 2013). Nevertheless, due to some socio-economic and socio-cultural factors, the integration and practice of the model in the case of developing countries such as Ethiopia yet did not bring visible effect on the innovation competence and performance of the manufacturing firms (Etzkowitz and Roest 2008).

The main objective of the paper is to identify the problems in the integration and practice of the current triple helix model in the case of Ethiopia. It will also suggest an alternative quadruple that considers the actual conditions of the country and includes the diaspora community. A one day KJ analysis role played by a group of experts from academia, government institutions, and leather and textile product manufacturing firms was used as data source. Based on the analysis, six factors related to collaborative culture, sphere orientations, sphere development, continuity of collaboration, availability of resources, and the level of trust, were identified as the primary causes. Moreover, the group of experts believes that the involvement of the Diaspora community as one sphere in the model might help to solve some of the problems in the current triple helix practice.

1 Marina Tolkacheva, PhD Research Scholar, School of Management, Harbin Institute of Technology, China. E-mail: 15bf10060@hit.edu.cn.

2 Kinfe Tsegay, PhD Research Scholar, School of M and IE, Mekelle University, Ethiopia. E-mail: knife.tsegay@mu.edu.et.

LITERATURE REVIEW

The concept of triple helix

Innovation is becoming a primary source of organizational and national competitive advantage (De Fuentes and Dutrenit 2012). However, according to Fransen and Kuschminder (2009), effective innovation practice is possible only if institutional, regulatory and economic efforts are organised in the direction of national economic interests. In such an effort, governments in both developed and developing countries rely on the integration and practice of triple helix innovation model (Khan and Park 2013). Etzkowitz (2002) defined triple helix to be "a spiral innovation model that captures reciprocal relations at different points of knowledge capitalisation". It comprises three important role players: university, government, and industry. The university in the triple helix model is an entrepreneurial university that plays multiple roles (BagheriMoghadam, Hosseini et al. 2012). According to Bangun and Sukaraya (2012), it generates and transfers innovative knowledge, develops human capital and leads into the process of solving regional and national economic problems. On the other hand, the industry provides the necessary resources, uses generated knowledge to produce products of higher customer values and generates its own knowledge (BagheriMoghadam, Hosseini et al. 2012). According to Casas, Gortari and Santos (2000), also the national government through business and economic motivation influences the knowledge generation and implementation processes. Triple helix as an innovation philosophy is accentuated not only in the developed economies but also in developing ones (BagheriMoghadam, Hosseini et al. 2012). However, the practice of the model in the case of developing countries like Ethiopia is being challenged by different socio-economic and socio-cultural factors (Fitriati, Rahmayanti et al. 2012). With the aim of transforming the universities, boosting the performance of small and medium enterprises and improving the involvement of the government in the development of innovation competence, Ethiopia has started practicing triple helix (Etzkowitz and Roest 2008). Yet, the practice didn't bring visible improvement to the innovation competence and performance of the manufacturing firms.

Diaspora as a source of knowledge

To this day we continue to lose the best among ourselves because the light in the developed world shines brighter. Nelson Mandela (Mandela 2011).

Ever widening economic gap between nations and the huge appetite for skilled manpower in the West among other reasons are triggering an increase in the migration of the productive segment of the African population. As reported by (Mohamoud 2003), currently more than a third of highly qualified African manpower is in the Diaspora community. The diaspora is defined to be "an ethnic minority group of migrants residing and acting in host countries but maintaining a sentimental and mental link with the country of origin" (Newland and Patrick, (Newland and Patrick 2004). Though mostly targeted on the attraction of remittance inflow, a number of countries in Africa have invested an effort to involve the Diaspora community in national economic agendas. Newland and Patrick (Newland and Patrick 2004), also argued that if strategically handled, the migration of skilled manpower to the developed countries has an indirect positive economic effect on the country of origin. The Diaspora has a potential of facilitating industrial development, improving international trade, investing in technology demanding sectors, and facilitating the flow of market and technology related information to origin country (Vaaler 2013). Ethiopia is one of the countries in the continent suffering from the migration of the productive part of the population. For instance, a recent US census bureau report indicated that currently there are more than 140,000 Ethiopian Diaspora members and 30,000 decedents residing in America (Mohamoud 2003). In addition, 59% of Ethiopian

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Diaspora living in the US has been reported to have a college education or higher (Newland and Patrick 2004).

METHODOLOGY

The paper is a part of an ongoing research work that aims to identify problems related to the involvement of the diaspora community in the overall economic agenda of developing countries. More specifically, the paper investigates the core problems related to the low performance of the integration and practice of triple helix innovation model in Ethiopia. A one day KJ analysis role play by a group of experts from academia, supporting government institutions and textile and leather products manufacturing firms in the country is used as a source of data. According to Scupin (Scupin 1997), the KJ method is a group-based decision-making process developed by Kawakita (1970) for the purpose of military related complex problem-solving. The group of experts participated in the process has prior experience in the practice of triple helix model in the country. Hence, the input is believed to be reliable.

RESULT AND DISCUSSION

Gaps in the current model

To support its ambitious economic transformation, Ethiopia is trying to build its innovation competence through the integration and practice of triple helix innovation model (Etzkowitz and Roest 2008). As part of the effort for example, the Ethiopian association of triple helix supported by different economic partners of the country has been working for years to boost the innovation competence and performance of the small and micro enterprises in the country. However, regardless of the painstaking efforts from the collaborative spheres, the integration of triple helix innovation model in the country yet did not bring a visible effect (Etzkowitz and Roest 2008). Hence, with the aim of identifying the problem areas causing such a low performance in the practice of the current triple helix model, a group of experts from university, government institutions and manufacturing firms played a one day KJ analysis role. As the result of the one day KJ analysis role play, the group of experts identified six primary factors and related root causes resulted in a low performance in triple helix practice of the country. See Table 1. In general, the implementation of triple helix innovation model in the case of Ethiopia is fraught with problems related to lack of skilled manpower, inexperienced and underdeveloped institutions, lack of technical and managerial skills, and insufficiency of resources necessary for the university R and D activity. Consequently, in transforming the resource based economy into a knowledge-based economy, the country is constantly seeking international consultancy. Such gaps, however, can be filled with the inclusion of the knowledge and skills of the Diaspora community (Newland and Patrick 2004).

Table 1: Causes for low impact of triple helix practice in Ethiopia

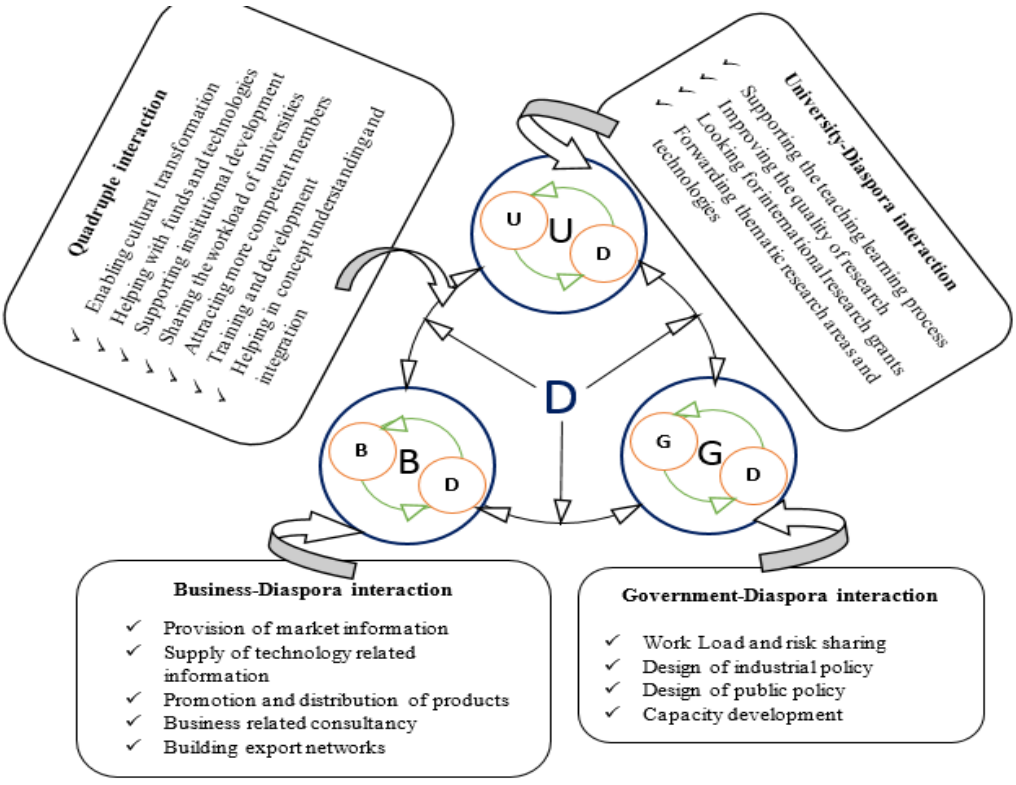
Problem	Related Causes
Culture	Lack of collaborative culture, lack of information sharing culture, isolated research design by universities, lack of culture of appreciation and dilemma on the capacity of university staff
Sphere orientation	Short term profit orientation of businesses, consideration of triple helix as an ad hoc activity, lack of readiness from university staff, satisfaction with current state of performance and slow paced solution from university side

Sphere development	Lack of necessary internal development in each sphere, newness to the international market, inflexible institutional structure, young universities, newness to the concept of the triple helix, lack of R and D experience and underdeveloped supporting government institutions
Operation continuity	Difficulty to understand industry problems, frequency of policy changes, lack of sense of ownership from university side, overload on government, policy uncertainties, difference in objectives
Trust and understanding	Lack of legal contract, bureaucratic administration, lack of transparency, desire for power of control, high level of corruption, high risk and low frequency of communication
Resource	Lack of input to solve industrial problems, low level of technical and managerial skills, low research funds, lack of market information, overloaded universities, lack of readiness to share associated costs

Filling the gap in the case of Ethiopia

Regardless of the efforts invested in integrating the triple helix model to the innovation system of the country, the result is still low in the case of Ethiopia. Hence, redesigning the model by considering the socio-economic and socio-cultural conditions of the country will have more impact. On the other hand, the low development in each sphere and the lack of resources might be solved by integrating the skills and knowledge of the Diaspora community. The notion supports the findings of Fitriati and Rahmyanti (Fitriati and Rahmayanti 2012), that the more spheres are included in the triple helix innovation model, the better the experience and the effectiveness of the interaction will be.

Figure 1: Role of diaspora in triple helix innovation mode



Therefore, the inclusion of the Diaspora community in a more contextualised triple helix model will enrich the effectiveness of both horizontal and vertical interactions (Allard, Martinez et al.

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2012). The Diaspora with its market and technology related information, technical and managerial skills and knowledge about international R and D grants will have both specific interaction with each sphere, (Vertical development) and the quadruple networking (horizontal interaction). This, in turn, will have an effect on filling the current gaps in the skills of the spheres of the current model as seen in Figure 1.

CONCLUSION

With the aim of investigating the problems with the current triple helix innovation model practice in Ethiopia and suggesting an alternative model, the paper uses KJ analysis as a source of data. According to the experts in the one day KJ analysis role play, six factors were identified as the primary cause of the low performance of the current triple helix model in the country. Thus, a more contextualised model that integrates the skills and knowledge of the Diaspora community will have more effect in the case of Ethiopia. To have such an effect, the national government needs to identify the possible role players and design a legal framework and motivation package to attract the Diaspora community to collaborate in the transformation of the model.

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NEW INSIGHTS INTO DIVIDEND POLICY: A CUSTOMISED AND DYNAMIC SECTORAL ANALYSIS

MUHAMMED NAVEED[1]*, MUNAWAR HUSSAIN[2] AND AHMDA RAZA BILAL[3]

ABSTRACT

Corporate finance encompasses wide range of pivotal areas; among all dividend policy is an imperative decision, while a mature body of corporate finance literature has manifested its entrenched nexus with value creation for shareholders. This study brings into focus new age of research on dividend policy by investigating strategically important areas of dynamic and customised analysis across different sectors. By applying dynamic and nested testing estimator on balanced data-sets of non-financial listed firms, the findings of this study substantiate the importance to customised dividend policy according to relative significance of combinations of firm, sector and country level factors. Moreover, the study corroborates the amount of sectors distinctive nature explaining the firms "dividend behavior. The innovation drive of the study remained focused on dynamic dividend model and customisation of dividend decisions in line with economic sensitivity and speed of adjustment. Consistent with principle objective, sector level determinants confirm the comprehensive mechanism for sectors in which the resources fullness and level of risk are also measured for each sector, and importantly level of sectors‟ concentration, which often becomes vital to be focused. The study warrants the need to unleash the role of policy makers and chief financial officers to revisit the significance of customised dynamic dividend models according to distinctive nature of sectors. Nevertheless, it uncovers future new horizons to investigate dividend policy under nested testing customised models.

Keywords: Dividend policy; Dynamic analysis, Economic sensitivity.

INTRODUCTION AND BACKGROUND OF STUDY

Corporate finance encompasses wide range of pivotal areas among all dividend policy is an imperative decision, while a mature body of corporate finance literature has manifested its entrenched nexus with value creation for shareholders and to solve the dividends vagueness it provides a considerable attention (Alzomaia and Ahmed Al-Khadiri, 2013). Financial decision making often opt either to pay cash/stock dividend or to retain for reinvestment purposes keeping in view the potential future prospects. According to Gordon (1963), paying large dividends reduced risk while reinvestment decisions yields the future return manifold, if management is concerned with value creation metaphor for investors. In line with existing evidence from financial literature, the information and analysis explained differently the behavior of dividend policy in the context of developing and emerging markets. Since path breaking study of Black (1976) entitled "Dividend Puzzle", the literature upto now mainly supports the argument that harder we look at dividend outlook, the more it seems like a puzzle (Julio and Ikenberry, 2010; Ramli, 2010; Velmurugan, 2015). A large strand of research literature across academic and corporate world have emerged on firm's level parameters that influence the firms‟ dividend behavior and how dividend policy influence firms‟ value in short and long run.

[1] Dr Muhammed Naveed, Associate Professor, Faculty of Management Sciences, ZSABIST, Islamabad, Pakistan. E-mail: dr.naveed@szabist-isb.edu.pk.
[2] Mr. Munawar Hussain, MS (Finance) Scholar, Faulty of Management Sciences, Riphah International University, Islamabad, Pakistan.
[3]Dr Ahmad Raza Bilal, Associate Professor, Faculty of Management Sciences, Superior University, Lahore, Pakistan.

Consistent with empirical evidences across developed and developing markets, the earlier studies corroborated the significance of firms and country level parameters that influence firms‟ dividend decisions; however, the significance of sectors‟ nature in explaining the firms‟ dividend behavior remained untapped. Though few studies signified the importance of sectors‟ nature in explaining the firms‟ capital structure nevertheless dividend framework remained untouched (Kayo and Kimura, 2011; Naveed and Bilal, 2016; Naveed and Kanwal, 2017). In terms of sectors‟ growth (munificence), dynamism and level of concentration (HHI), sectors‟ tend to have distinctive nature which warrants the need to investigate how sectors‟ nature differently influence the firms‟ dividend policy across developed and developing countries. Consistent with this spat of argument, the subsequent section of study brings into focus another important aspect which is pertinent to data estimations.

The extant research strands on dividend policy are consistent with static model estimations to predict the corporate dividend mechanism (Mehta, 2012; Velmurugan, 2015). The static modeling is subject to certain limitations as it fails to depict the impact of internal and external economic and financial shocks. Moreover, the dividend decisions are dynamic in nature and the impact of current year dividend is observable on next years‟ financial performance. According to Fama and French (2002), firms tend to adjust their targets in order to achieve or maintain optimum model. However, during this adjustment process, firms‟ face cost of adjustment (Guney at al., 2011). The Generalised Method of Moment addresses the dynamic nature of models and provides better insights into adjustment towards the target.

According to Brahmaiah (2018), dividend mechanism is dynamic naturally and hence need to be modeled as such. The extant literature reports that widely employed static models not include distributed and autoregressive lagged variables. For fixed and random estimators, the existence of endogenous variables causes inconsistency and not explain relative significance of variables and result in weak estimations (Brahmaiah, 2018). Moreover, static panel models capture timeeffects and firm-specific effects; however, fails to depict the impact of cost of adjustment and floatation on firms‟ financing and dividend models. They base on limited rational that lagged periods have no impact on current adjustment process. In line with significance of dynamic data, there is need to employ distributed and autoregressive estimators to investigate how dynamic dividend models explain the impact of economic and financial variations.

The study signifies the importance of Generalised Method of Moments (GMM) to investigate the dynamic nature of dividend mechanism in developed and developing countries. Adding to dynamic nature of dividend models, the study further brings into focus the strategic importance to investigate the relative importance of different economic conditions in explaining the dividend mechanism of firms working under different economic and institutional settings.

The economic outlook of every country tends to depict economic growth, crises, recovery and stability. It becomes strategically important for corporations to establish dividend model in line with economic conditions. The principle research investigation warrants the need to understand and examine whether and how the economic sensitivity influence the firms‟ dividend policy under different economic periods. In the context of empirical literature review from developed and developing countries consistent with dividend policy; the present study highlights three distinctive research innovation drives pertinent to corporation dividend mechanism which reinforce the need for seminal investigations.

- What is impact of sectors‟ munificence, dynamism and level of concentration on firms’ dividend policy across developed and developing countries?
- Whether firms‟ observe dynamic or static dividend model across developed and developing markets?
- What is sectors speed of adjustment across developed and developing markets?

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- Whether and how different economic conditions differently influence firms‟ dividend mechanism across developed and developing countries?

To summarise in the light of extensive literature research mainly concentrated on firm and country level factors as determinants of dividend, found less attention has been paid at sector level factors; dynamic panel modeling and relative significance of economic sensitivity in explaining nature of firms‟ dividend. This study is an attempt to fill these gaps in progression of sectors‟ nature, economic sensitivity and dynamic dividend modeling.

THEORETICAL DEVELOPMENT

The dividend policy is always critical decision of Board of Directors because of important elements including high or low payout, stable or irregular dividends, frequency of dividend and announcement policy of dividend. Since seminal research work of Linter (1956) highlighted the importance of firm level determinants which influence firms‟ dividend decisions. One strand of literature remained concentrated on firms and country level determinants across developed and developing markets (Sharp, 1964; Nishat and Irfan 2003; Younis and Javid 2014; Mehta, 2012; and Kisman, 2013). Consistent with irrelevance of dividend policy (Modigliani and Miller, 1958- 61), another strand of literature supported the irrelevance assumption of dividend based on perfect tax free capital market. The dividend policy does not convey only firm performance, it also signals about future prospects and other issues like agency problem; tax client's effects, window of opportunities and signaling mechanisms.

Dividend policy theories are propositions, explain the rational and principal arguments pertaining dividend payments by firms, which often wavering in between either to pay dividends or to retain for reinvestment in business. The arguments of perfect capital markets (without tax) proposed by Modigliani and Miller (1958, 1961) regarding dividend irrelevance are opposed by Lintner (1962), Walter (1963), Gordon (1963), hypothesised independently that dividends payments potentially determine the value of firm, particularly common stock valuation model presented by Gordon, considers the dividend as an important component in valuation. According to Miller (1985) and Pettit (1972) dividend announcements seem to convey the implicit information about firm‟s future earning potential, because investors may draw inference about firm‟s forthcoming earning prospective through dividend announcements. Although Short (2002) and Chen (2005) highlighted an inverse relationship between manager‟s ownership and dividend payout ratio, however, Eckbo and Verma (1994) claimed that this association can be positive only when firms are controlled by the institutional investors. The subsequent section brings into focus the significance sectors‟ nature in line with empirical literature.

According to Beard and Dess (1984), the environment's ability to maintain continuous growth is called 'Munificence'. Firms operating under munificent environment tend to have greater opportunities as compared to those working under less munificent environment (Almazan and Molina, 2005). In the light of agency theory, and findings of Kayo and Kimura (2011) there exists an inverse relationship between influence and munificence, simply stressed the importance of the theory of agency costs. The sectors in developed and developing markets have different nature and also tend to have different level of growth which differently influences the dividend decisions of firms. This purview hypothesises that there is significantly positive relationship between munificence and dividend policy.

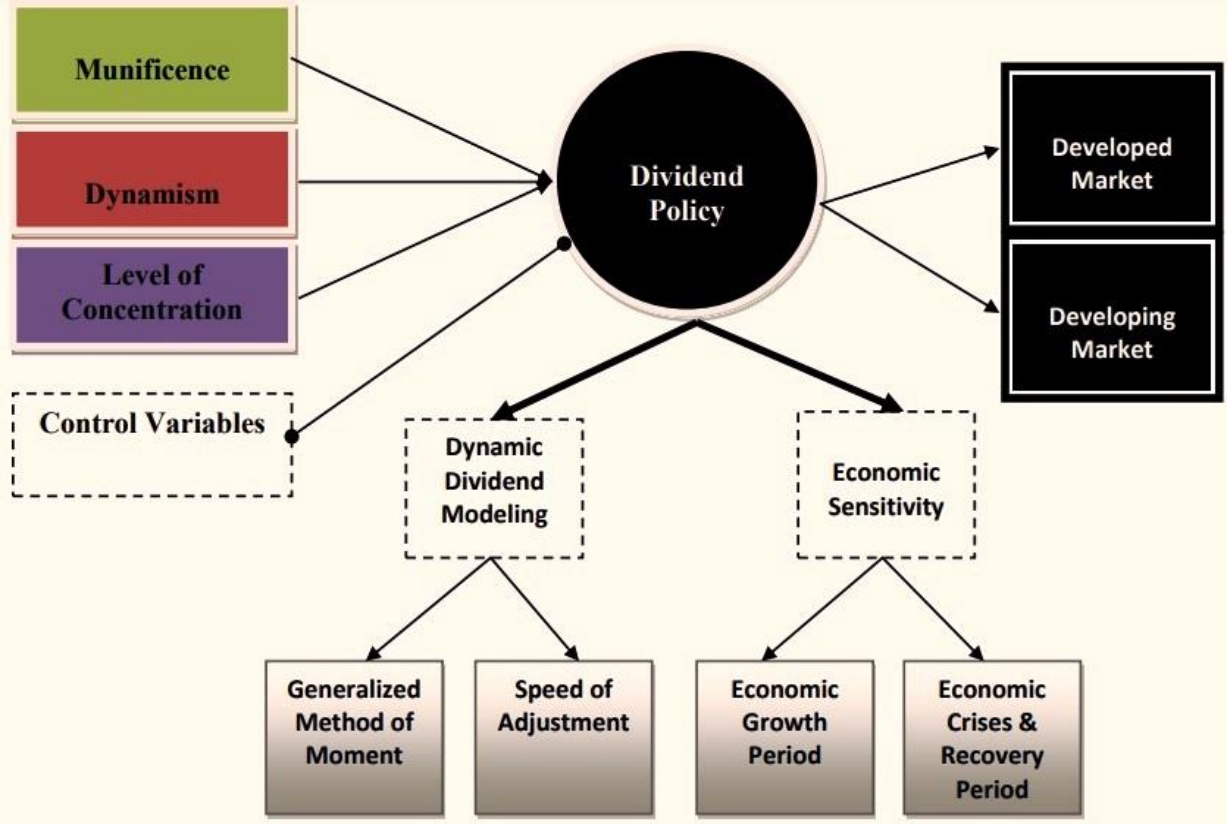
In line with sectors‟ nature, Smith (2014) reported dynamism as another parameter to which describes level of sectors‟ environment instability. Kayo and Kimura (2011) documented that companies tend to have similar characteristics that operate in a particular sector. Further it is argued that dynamic environment describes the speed and volatility of changes in the external environment of the company (Dess and Beard, 1984; Simerly and Li,

2000). In conjunction with sectors‟ dynamism which causes uncertainty in firms‟ financial performance, the study hypothesises negatively significant relationship between firms‟ dividend policy and dynamism across developed and developing markets. The sectors could further distinguished as high or low concentrated.

According to Moeinaddin, Nayebzadeh and Ghasemi (2013) the level of concentration (HHI) affect the companies to adjust differently. The higher the level of HHI more concentration and less competition and vice versa Setayesh and Kargarfard (2011). Ghasemi (2013) observed that Herfindahl Hirschman Index (HHI) is the most important, powerful and common in the calculation of the level of concentration of industries. Therefore, from this point of view to capture the impact of sectors‟ concentration, Hirschman Herfindahl index (HH index) is used to measure the size of the company in relation to the sector or industry.

A reasonable body of financial empirical literature reviewed reveals the importance to investigate how sectors‟ nature can influence firms‟ dividend policy across different economies. In line with sectors‟ importance, the principle objective of study further warrants the need to examine whether firms across developed and developing countries following static or dynamic dividend models, and how different economic conditions could differently influence the dividend behavior of firms working under different sectors.

FIGURE 1:THEORETICAL FRAMEWORK



(Figure 1: New Insights into Dividend Policy)

RESEARCH METHODOLOGY

The study employed secondary research approach based on panel data from 2003-2017. The population comprised of US and Pakistan non-financial sector firms listed on New York and Pakistan Stock Exchange respectively. The data related to variables formulation obtained from firms‟ audited financial statements, DataStream, MSCI, Compustat and Trading Economics.

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In line with firms‟ irregular dividend policy, the study obtained unbalanced panel data; however, all the firms which were in process of Mergers and Acquisitions (M&A), and firms delisted by relevant stock exchange during this period of study been excluded from the dataset. The overall final dataset consists of 750 non-financial listed firms comprised of 350 Pakistani and 400 US listed respectively. In purview of sensitivity analysis the dataset further partitioned into economic growth period (2003-2007) and economic crises & recovery period (2008-2017) in line with economic growth rate of Pakistan and USA.

The reliability and accuracy of financial data for measurement of variables is subject to quality of financial reports of firms. In order to control the effect of firm and country level factors which are significantly reported by past literature, the study at firm level employed Size, Profitability and Business Risk; while at country level Inflation and GDP as controlled variables.

TABLE 1: MEASUREMENT OF VARIABLES

Dependent variable	Measurements	Empirical Evidences
Dividend	Dividend coverage ratio	Thanatawee Y. (2013)
Munificence	Regressing the time against the sales of sector over the period of study and taking the ratio of the regression slope coefficient to the mean value of sales over the same period.	Kayo and Kimura (2013); Naveed M. (2015)
Dynamism	Standard error of Munificent slope divided by the mean value of sale over the same period.	Kayo and Kimura (2013); Naveed M. (2015)
HH Index	By summing the square of percentage of market shares held by the firms within a given sector.	Naveed M. (2015)
Firm Size	Natural Long of Sales	Rajan and Zingales (1995), Booth et al. (2004)
Profitability	Return of Assets	Kayo and Kimura (2011)
Business Risk	Variations in Firms 'Financial Performance	Abor (2008), Psillaki and Daskalakis (2008)
GDP	GDP Annual Growth	World Bank Economic Indicator (2018), Trading Economics (2018)
Inflation	Consumer Price Index	World Bank Economic Indicator (2018), Trading Economics (2018)

MODEL SPECIFICATION AND SERIES OF ANALYSIS

The study firstly performed diagnostic tests (ADF, Correlation Matrix and Descriptive Statistics) for reliability and validation of data. In line with series of principle research investigations, the study employed Panel Regression Estimator for the investigation of

significance of sector-level factors in explaining the dividend behavior of firms. The equation 3.1 provides estimated regression model which shows the association of dividend with independent and controlled variables.

$$DVit = \beta0 + \beta1(MUNIF)it + \beta2(DYNM)it + \beta3(HHI)it + \beta4(SIZE)it + \beta5(PROF)it + \beta6(BR)it + \beta7(GDP)it + \beta8(INF)it + Eit \quad \text{(Equation 1)}$$

Where;

MUN = Munificence
DYN = Dynamism
HHI = Herfindahl-Hirschman index (Level of Industry Concentration)
SIZE = Firm Size
PROF = Profitability
BR = Business Risk
INF = Consumer Price Index
GDP = Gross Domestic Product (GDP Growth)
E = Residual/Error Term

Consistent with second research objective to observe dynamic aspect of dividend model, the study employed Autoregressive Model. In line with Ramakrishnan (2012) the Autoregressive Model (Generalised Method of Moment) addresses the issues of endogeneity and provides times varying adjustments. The equation 2 provides specification of Step 1 GMM Difference Model while equation 3 and 3.1 indicates the target dividend as function of estimated model and parameters to ascertain the speed of adjustment (Ozkan, 2001);

$$\Delta DVit = (1 - \lambda)DVit - 1 + \beta1(MUNIF)it + \beta2(DYNM)it + \beta3(HHI)it + \beta4(SIZE)it + \beta5(PROF)it + \beta6(BR)it + \beta7(GDP)it + \beta8(INF)it + \mu i + \mu t + \varepsilon it \quad \text{(Equation 2)}$$

$$DV_{it}^{*} = \sum_{j=1}^{k} \beta_j X_{jit} + \varepsilon_{it}$$

(Equation 3)

Dit ∗ = The target dividend payout of firm i in time t
k = Number of predictors
εit = The error term

In order to achieve target dividend model firms tend to adjust their current divided (DVit) with the degree of adjustment coefficient "λ". The equation 3.1 explains the partial adjustment dividend model:

$$(DVit - DVit{-}1) = \lambda\,(DVit* - DVit{-}1)$$

(Equation 3.1)

Where;

DVit = The current dividend of firm i in time t
DVit ∗ = The target dividend of firm i in time t

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DV*it - DVit-1 = The target change λ = Represents the degree of change
On the basis of this equation,

- if λ = 1, then actual change in dividend is equal to the desired change and the adjustment in transaction cost free.
- If the value of the λ > 1, it implies that the firm makes more adjustments than necessary and is eventually unable to achieve the optimum dividend model.
- If λ = 0, there is no adjustment in dividend model, therefore, firms set their current dividend policy to the past dividend model.

Based on past literature from developed and developing markets which corroborates the significance of change in economic conditions as result of financial shocks at national and international fronts (Mittoo and Bancel, 2011; Zarebski and Dimovski, 2012). These economic variations and financial shocks warrant the need of investigate that how different economic conditions influence the firms‟ dividend mechanism. These cross sectional differences evident by previous researchers provide unique example to ascertain how different economic outlooks influence firms‟ dividend models under different economic periods across developed and developing markets. Hence, the final principle investigation deals with economic sensitivity model to examine the significance of predictors with dividend behavior under different economic conditions.

RESULTS AND DISCUSSIONS

The Table 2 provides the estimations of panel regression which are pertinent to investigation of significance of sectors‟ nature in explaining the dividend behavior of listed firms across US and Pakistani Non-Financial Sectors. The firms and country level factors are being observed as controlled variables. Based on overall and country specific datasets, munificence maintained positively significant relationship with dividend which clearly substantiates that firms‟ operating under munificent sectors‟ environment tend to pay more dividend. The level of significance shows that Pakistani non-financial sector is more resources as compared to US sector. These finding support the argument of Kayo and Kimura (2011) that industries and sectors operating under economies tend to have different level of munificence. As expected the dynamism which shows the level of sectors‟ risk have maintained negatively significant relationship with dividend behavior of firms based on overall and sector wise analysis. However, low level of significance been observed in case of US non-financial firms. This could be attributable to the reasons that volatility of sectors bring indirect impact on firms‟ financial decisions and ultimately such behavior is been observed in dividend decisions of firms (Dess and Beard, 1984; Simerly and Li, 2000).

Variables	Overall	(USA) Non-Financial Sector	(Pakistan) Non-Financial Sector
MUNIF	0.137**	0.7507*	0.598**
DYN	-0.8751***	-0.712*	-0.217***
HHI	-0.1033	-0.5371*	0.265
Firm Size	0.342	0.647*	0.464**
Prof	0.778***	0.452**	0.173***
BR	-0.764*	0.147**	-0.365**
GDP	0.223**	0.672***	0.165**
Inflation	-0.822*	0.972*	-0.529*
Adj R-square	0.650604	0.442405	0.531

*Levels of Significance (1%)***, (5%)**, (10%)**

Table 2:- Panel regression estimations

According to Jiao et al. (2011) in every industry there are significant differences in terms of environmental impacts for business properties. The p-values are highly significant at 1% level of significance based on overall and Pakistani dataset; however, 10% level of significance observed in case of US non-financial firms. It supports the findings of Simerly and Lee (200) that industries with different level of dynamism differently influence the firms‟ decisions. The level of concentration which is measured by HHI index has shown insignificant relationship with firms‟ dividend in case of overall and Pakistani non-financial dataset. However, the HHI reported negatively significant relationship (10% level) in case of US sector. This could be attributable to the fact that more concentrated sectors tend to have low competition hence dividend payout not takes the cost of capital budgeting (Setayesh and Kargarfard, 2011).

Table 3 provides analysis of dynamic dividend modeling and speed of adjustment across US and Pakistani non-financial sectors. In line with GMM dynamic estimations, the significant substance of past year dividend (lagged) is clearly traceable on current dividend model which confirms the principle research inquiry by recognising the existence of dynamic dividend models. The impact of dividend history (lagged dividend) on current dividend more significantly traceable in case of Pakistan as compared to US. This could be the attributed to the economic settings and variations in political and financial system of Pakistan which bring impact on dividend policy. In contrast, the US economy is more stable in terms of economic and financial variation hence the firms‟ dividend models deviate from their targets. The health of instruments (J-statistics) and Sargan Tests removes the correlations problem and over-identifications restrictions. The estimated coefficients of lagged dividend are significant across both economies which substantiates the existence of target dividend models. Consistent with Table 3 the subsequent discussion emphasis on speed of adjustment.

Table 3:- Dynamic dividend modelling and speed of adjustment

Variables	USA	PAK		Model	λ	Log (0.5)	Log (0.5)/ Log(1- λ)
DIV (-1)	0.737*	0.341***	Speed of Adjustment	GMM	0.737	-0.3	(USA) 0.517 (Year)
MUNIF	0.061*	0.763*					
DYN	-0.122***	-0.712**					
HHI	-0.177**	0.265		GMM	0.341	-0.3	(PAK) 1.65 (Year)
AR (1)	0.05	0.11					
AR (2)	0.13	0.15					
Sargan Test	0.17	0.25					

Refer equation 2, 3 and Table 3 based on GMM Dynamic Model Estimations and Speed of Adjustment (Arellano and Bond, 1991), the rate of convergence is given by λ, and dividend half-life is defined as the time (in years) that it takes a firm to partially adjust back to the target dividend after one-unit deviations from target $\ln(0.5)/\ln(1 - \lambda)$. The speed of adjustment reports adjustment time that how fastly firms can adjust to their target dividend model (Clark et al., 2009; Mukherjee and Mahakud, 2010). Table 3 reports that Pakistani nonfinancial sector takes approximately 1.65 year to adjust toward their target dividend. On the other hand, fast speed of adjustment is been observed in case of US non-financial sector which is approximately 0.517 year. Consistent with Flannery and Rangan (2006) and Mukherjee and Mahakud (2010), a quick adjustment process toward optimum level confers the implication of dynamic model. In addition, Clark et al. (2009) concluded that faster speed of adjustment mechanism extends benefits of closing the gap with target model. Consistent with sensitivity analysis, Table 4 reports how dividend mechanism of firms under different economic conditions change across developed and developing markets. During economic growth period (2003-2007) the sectors

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growth (munificence) maintained positively significant relationship with dividend. However, the impact of economic sensitivity of dividend behavior becomes clearly traceable as the level of significance has changed during economic crises and recovery period (2008-2017). During crises and recovery period, the munificence reported insignificantly positive relationship with dividend across US sector and 10% level of significance in case of Pakistan. Likewise, the sectors‟ dynamism has maintained different relationship with dividend during different economic conditions and economic crises & recovery times. Interestingly, the level of concentration has shown similar results based on US non-financial sectors. However, different sign of coefficient and level of significance been observed in case of Pakistan which validates the arguments that how economic sensitivity brings impact on financial decisions of firms. According to Jiao et al. (2011), in every industry there are significant differences in terms of environmental impacts for business properties.

Table 4: Senstivity analysis under different economic conditions

Variables	(USA)		(Pakistan)	
	2003-2007	2008-2017	2003-2007	2008-2017
MUNIF	0.651**	0.132	0.841***	0.431*
DYN	0.335**	-0.714**	-0.132**	-0.476***
HHI	0.752	0.514	0.653*	-0.763*
Adj R-square	0.51	0.44	0.69	0.56

Looking into effect of economic sensitivity which is explained by different economic conditions, the strands of these findings are consistent with studies on corporate finance structures from frontier and secondary emerging economies (Rajan and Zingales, 1995; Frank and Goyal, 2003; Kayo and Kimura, 2011).

CONCLUSION

In line with obstinately seminal estimations, this study brings into focus new age of research on dividend model by investigating strategically important areas of dynamic, sectoral and customised economic sensitivity across developed and developing economies. The application of advanced econometric and financial modeling on panel dataset has clearly substantiate the importance of dynamic dividend modeling under economic sensitivity to trace the adjustment process and time to develop optimum dividend policy which will create shareholders value. Additionally, the main findings corroborate the influence of sectors‟ distinctive nature in explaining the firms‟ dividend policy. Consistent with principle objective, sector level determinants confirm the comprehensive mechanism for sectors in which the resources fullness and level of risk are also measured for each sector, and importantly Herfindahl Hirschman Index examined the level of sectors‟ concentration, which often becomes vital to be focused. The study warrants the need to unleash the role of policy makers and chief financial officers to revisit the significance of customised dynamic dividend models according to distinctive nature of sectors. Nevertheless, it uncovers future new horizons to investigate nested testing effect of customised model in line with structured and unstructured models.

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BEARING THE BRUNT OF INTENTIONAL CRIMINALISATION: AN UNENDING STORY OF STIGMA AND DILEMMA OF THE DNT IN INDIA

DEEPSHIKHA AGARWAL[1]

ABSTRACT

Certain Indian nomadic communities were notified as criminal by the British under various Acts were brought by them to bring them. After independence, the Indian Government de-notified these criminal tribes and took administrative measures to protect them, but these are ineffective, and they continue to live a life of misery. The community chosen for the study are the Perna and the locale of study is NCT region of Delhi. The Perna women indulge into forced prostitution, and gain expertise in conning their customers- all this being a part of Perna sub-culture.

The methodology used in this paper is a mix of doctrinal and empirical research. Ethnographic profiling, extended life – history method and narratives were used for collecting further information.

This paper analyses the dual stigma of criminal caste and prostitutes faced by the Perna women using sociological and anthropological theoretical models.

Keywords: Criminal tribes, Nomadics, Inter-generational prostitution, Deonotified tribes.

BACKDROP

Perna caste is one of the denotified castes living in the NCT region of Delhi. The Perna people were originally a nomadic tribe, who were branded as vagrants by the British Ethnographers and were compared to the Nats and Bazigars[2], alleged to be involved in forced and inter-generational prostitution. This paper intends to study the socio- economic status of Perna caste and to explore the incidence of criminality/ deviance among them. It also aims to evaluate the problem of prostitution and its impact on the Perna women and provide a critical review the legal provisions on ex- criminal and de –notified communities/ tribes in India and give some practical recommendations.

AN INTRODUCTION

Tribal population in India has always presented a panoramic picture on the Indian landscape. Over the years many changes have occurred with respect to these communities- some have been assimilated in the Indian mainstream by being a part of the Indian political corridors, others have good job profiles and are leading comfortable life- thanks to the govt. positive discrimination/ reservation policies (Srivastava, 2008). Some tribes have been Hinduised or have adopted other religions like Christianity or Islam. Some have been *sanskritised* and have been incorporated in the folds of the Indian caste system. Yet there are others who remain totally untouched by the mainland culture and continue to live their own lives- primitive tribal groups (or particularly vulnerable tribal groups as they have been re- christened) illustrate such examples (Srivastava, 2018).

There are groups which have been highly disadvantaged, specially since the British period- because of the treatment given to them. These are so called criminal tribes, or the notified tribes as the British called them.

[1] Associate Professor, University School of Law and Legal Studies, Guru Gobind Singh Indraprastha University, Delhi, India
[2] Acrobats and magicians who performed tricks in small localities to earn their livelihood.

The concept of criminal tribes or community was new to India- it was a concept already prevalent in the West[3]. The British probably borrowed the concept to target certain communities/ groups in India which they were not able to control for various reasons, as they picked up arms against the British and had expertise in guerilla warfare tactics (Roy Burman 2010). These groups earned their livelihood by indulging in petty activities like theft, horse-jockeying, fortune- telling, acrobatics, dancing- singing etc. They mostly did not mix – up with the mainland population and travelled in groups to different destinations in caravans, usually settling down near the boundaries of two villages, near the forests or hills. Such a life- style helped them in absconding in case there was a hunt for them. Before independence it is also observed that they were given shelter by certain kings to harass their neighbouring kingdoms (Roy Burman, 2010).

Even after the independence, the concept of criminal tribes/ communities prevails in India, though the nomenclature may have changed (from notified tribes to de-notified tribes) and the policy to deal with them has also undergone change over the years. But these communities remain ostracised and treated as criminal both by the government and people at large. Strong vigil is kept over their activities and they can be picked up as suspects and convicted at slightest instigation.

HISTORICAL BACKGROUND

According to Emile Durkheim, crime is a natural and necessary phenomena in society- natural because it is not possible that all members of society will follow all the norms, and necessary because crime, or deviance often brigs positive change in society (McLaughlin, 2003). Crime has been present in Indian society since the ancient period, just like all other societies across the world (Das, 1990). There is enough of evidences of crime in the Vedic period, specially in the later Vedic period, when some degree of degeneration of religion and social morals occurred. So, the king had to use *danda* or punishment to curtail criminal and other deviant activities in society.

In the Medieval period in India, there are references to theft and robbery in the Moghul period in the travelogues of the foreign travelers who visited India in that period (Rajjak, 2014; Sangara, 1998). During the British period new references to crime came, where crime was not just seen aa an individual act- it was entire community that was regarded as criminal. The British rulers first identified these so called 'criminal communities' on basis of certain characteristic features that they possessed and were formally notified as criminal communities.

There are many references on thugs in medieval period and British period in India (Woerkens, 2002). These thugs usually moved in gangs, remained in disguise and used coded language to communicate with each other and were devoted to goddess Kali. In the British period, the thugs were brutally suppressed by William Bentinck and William Henry Sleeman (Dash, 2005). The rigorous operations under Sleeman led to capture of 1400 thugs, who were either hanged or transported for life. Special prison for thugs was created in Jabalpur. Apart from the thugs, there were other robbers and dacoits in India who were organised as multi-ethnic bands. This means that these criminal acts could not be attributed a particular community as such. There was no hereditary character to criminal tendencies. Lombroso in his positivist approach had put the theory of born criminals and had indicated that the criminals can be identified through their physical characteristics, but he did not indicate that criminality could be assigned to a particular community (Gibson and Rafter 2006). In fact this connection between race and crime/ criminal tendencies is not objectively established and has been

3 During the time the British ruled in India, the idea of 'dangerous class' dominated the Victorian thought, where, based on their physical characteristics and locale from where they hailed, the vagabond, poor, unemployed, petty criminals, prostitutes were included because they fitted well into the conception of a criminal group.

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criticised the world over because of its detrimental implications (Markowitz and Jones -Brown, 2000).

But the British administrators did just that- branded and criminalised certain communities/ tribes and jeopardised their lives for ever. It was basically a tool to control some groups of people whom they thought to be invincible and incorrigible. The Criminal Tribes Act was enacted in 1871, which notified certain tribes[4] as criminal with extreme repurcursions- the members of these communities were required to register themselves at local police stations and mark their attendance everyday. Their mobility was curtailed, and severe punishments were meted against the defaulters. Further, the police could take them for enquiry upon slightest suspicion.

There was an amendment in 1897, which brought more stringent penalties for these communities. The Criminal Tribes Settlement Act was passed in 1908, was enacted in 1911 and modified in 1923-24 with the purpose of social inclusion and rehabilitation of these communities into the mainstream. However, the ground realities were totally different and these tribes continued to be harassed and oppressed by local administrators.

A Committee was formed under K. M. Munshi to review the Act, which provided comprehensive solutions to contain the problem (Kapadia, 1952). The Committee tried to give clear definitions of terms like tribe, gang, class, habitual offender, criminal etc.

The Act was repealed by provincial governments, empowering them to recommend names of certain tribes as criminal on the basis of allegations of non- bailable offences.

When India became independent, the Criminal Tribes Acts were repealed in 1952 and series of Habitual Offenders Acts were passed by State governments of India, which only mirrored the Criminal Tribes Act of the Britishers. The tribes/ communities notified by the British government were denotified (hence the term denotified). The National Commission for Denotified, Nomadic and semi- nomadic Tribes was constituted in 2005 and since then several state commissions and committees have been formed. Several recommendations have been given by them, but no concrete results have come as yet that would bring visible change in the lives of these people (Guha, 2015).

Various studies have been conducted by different anthropologists, historians, academicians from field of law, NGOs and other groups (Guha, 2015; Heredia, 2007; Radhakrishnan, 2009). Various perspectives have evolved through these studies, which provide a realistic picture about their status in contemporary India.

PERNA CASTE: A CASE UNDER ACADEMIC SCRUTINY

The Perna are a Hindu caste, a sub- group of Dom community. They are located in state of Haryana, mainly in Rohtak, Gurgaon, Sirsa and Faridabad districts in India, and areas in vicinity of Delhi. Some members of the Perna caste reside in Dharampura and Premnagar area of Najafgarh also, which are at the outskirts of South- East Delhi. They have been accorded scheduled caste status and are enlisted under Government of NCT Delhi.

Originally, they were associated with begging and were scheduled under Criminal Tribes Act. Presently they are settled in Haryana and provide bulk of labour in the State. Some of them have also been given land by state and transformed into settled agriculturists. A significant number of them have also now migrated to neighbouring cities and towns, where they are employed in construction industry. They live in a very precarious condition.

The Perna members of Dharampura region migrated from Rajasthan around 1960's (Ranjan and Dalal, 2014). Earlier they resorted to begging to earn their livelihood. Later they took to prostitution in absence of any other means of survival. Delhi provides good number of

[4] About 198 tribes were notified as criminal.

clients and it's easy money, though there are risks of getting caught by the police, who rather than protecting them, tends to harass them.

They are mainly an endogamous group and do not marry Dom groups (of which they a part) and practice clan and village exogamy. Polyandry, usually in form of bigamy is prevalent here, as the women are the source of income, or mostly the only earning members in the family. Child marriage is quite a common phenomena, rather it's a norm, with girls getting married when they are few months old! The normal age of marriage is from around 14 to 16 years. After their marriage, the women spend couple of years as housewives, serving their husband and in- laws, and bearing children.

They take to commercial sex after they get married and have children, i.e. they have completed their family. Since they are active in the night soliciting clients/ customers, they don't get sufficient sleep. Even when they are home, they are busy in the household chores and in taking care of their families. As they become older, their earnings start dwindling, and they lose their value to their husband, and to the community. Thus, the Perna women bear the brunt of being poor and low caste women.

They are active in night and solicit sex in an organised way. They leave their area around mid- night in a van or a rickshaw. They go in a group and tout for customers at the local bus-stands or auto- stands. They can service 3- 5 customers in an night, earning Rs. 300 to 500 per customer. Some women solicit customers, while others, generally the menstruating and pregnant women who can't be sexually active, stay in vicinity on guard. In case a problem brews, they shout and warn other group members. These women are also given some money for keeping the vigil.

Apart from acting as prostitutes, the Perna women can also indulge in conning their customers. During the fieldwork, some Perna women gleefully shared that they can even take away the belongings of their customers (their gold chain, rings, wallets, mobiles) by blackmailing them. The customers are more vulnerable when caught in such a situation and have to yield to the demands of these women who work in a gang (which may also include men). If the situation turns against them, in case a customer shouts for police or for help, they may land up in jail. The policemen often harass them by demanding money and free sex.

If we look at the health condition of the Perna women, it's rather bad. Since they are active in the night soliciting clients/ customers, they don't get sufficient sleep. Even when they are home, they are busy in the household chores and in taking care of their families. The nutritional health is poor since they survive on eggs and meat, with negligent fruits or vegetables. They mostly eat chapati, rice not being their staple diet. They indulge in substance abuse in form of smoking bidis, occasionally taking alcohol. Drugs amongst the boys is getting quite common as they have lot of free time when they do nothing- no school as such and no other job to do. Men indulge in alcoholism as a common practice.

The physical condition in which the Perna people live is also pathetic. Dharampura that formed the locale of this study is a filthy slum area, with open defecation and littering in the narrow streets. No cleaning of the open drains is done by the Municipal corporation of Delhi, because the MCD staff doesn't want to visit the area, as there is lot of stigma attached to the people. Even water is not available easily and the people have to go to distant places to fetch it. As a result, bathing etc. on a routine basis is a luxury they can't afford.

The indoors of their houses are very congested, with the families living in one- room apartments. Cooking is usually done indoors, sometimes in open, mostly on the chulha (mud hearth) using horse dung cakes. The cleaniless inside the houses is not maintained.

Such a situation inside and outside the houses of this area leads to unhygienic and unhealthy situations and low standard of living. To further aggravate the problem, the Perna girls are married very young and are expected to bear children at relatively a very early age, (from around 14 to 16 years). All this can have significant effect on their physical health. As

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they become older, their earnings start dwindling, and they lose their value to their husband, and to the community.

Explanation of prostitution among the Perna caste

Many scholars have mentioned prostitution as a social problem and have tried to provide an analysis of why it occurs in society. Goffman (1971) looks at prostitutes as deviants "who are engaged in some kind of collective denial of social order". Others look at prostitution as a career and have given an explanation of entire process of apprenticeship, in which they also learn to handle their clients and talk to them openly about sexual acts and preferences Gragnon and Simon, 2017).

Prostitution can be seen as a sexual behavior drawing meaning from context of shared beliefs of the concerned social group (See sexual script theory of Wiederman 2003). The meaning attached to it can also be derived from 'metaphorical scripts' that individuals have learnt and evolved as a function of their involvement in the social group (Gragmon and Simon, 2017).

Prostitution was never a traditional occupation for the Perna women- before they migrated to Delhi and near- by areas, they were engaged in other activities to irk their livelihood. But since survival was not easy in new habitat, they had no other option than prostitution. The customers were easily available and were ready to pay for sexual pleasure, and the community members just took to it. Once the Perna women solicited the customers, the men also accepted it and became rather facilitators in the prostitution process.

Some societies look down at prostitution and regard it as unethical and is made punishable by the State. In other societies, prostitution is a recognised profession (Fondation Scelles, 2012). How prostitution is perceived in each society will depend upon what values are upheld in its culture or sub- culture.

Among the Perna members, a sub- culture of prostitution has developed that justifies the act as something normal[5]. This sub- culture grooms the males for sitting idle and pimping their wives for livelihood. From an early age the boys are told that they don't need to do anything, as it would be the duty of the wife after marriage to get earning for them through sex trade. The women are groomed to listen to their husbands unquestionably and do whatever they are asked to do. So the women accept forced prostitution and adjust to their husbands' polygynous relationships and bring more wives (often, the wives being sisters).

Due to this 'sub- culture of prostitution', prostitution as an act appears to be normal to all Perna members. Even the acts of conning/stealing from the customers the Perna women solicit as normal. This is something that makes them peculiar to the outside society, and they tend to shun them.

Forced prostitution among the Perna can also be explained from the perspective of Marxist feminism, which holds patriarchy to be responsible for many women related problems, including prostitution (Child, 2009). The theory likens prostitution with commodification of labour- thus prostitution is a labour process which these women experience on a daily basis (Green, 1989). Both capitalism and family life structure men's and women's lives, from patriarchal perspective.

Men have an escape from these overpowering systems and go out to earn for their families. When they get home after work, they have their wives/ women looking after their home and feeding them. But when the working women return home, they get absorbed in the usual household chores, working alone in the second shift (Hochschild 1989). In context of Perna caste of Dharampura area, the men go nowhere, earn nothing, yet exercise control over

[5] See sub- culture theory of Miller 1958

their women, (because their cultural system permits that) and force them into prostitution. During the day, after the Perna women return home after soliciting their customers, they finish their household chores of cooking, washing and cleaning, and taking care of the family.

Prostitution arises among the Perna also out of the inequalities present in the society, and it stems through a system of control that exists between the powerful (the Perna men) and powerless (the Perna women). Thus, prostitution can be seen from the perspective of a power structure that maintains status quo and propitiates inequalities in a patriarchal society. The Perna women exchange their sexual availability, a resource that they control, for which they be willing themselves, or maybe forced to do so by the men and the elders of their community.

Looking at prostitution from feminist conflict theory perspective, poverty and patriarchal mentality are main causes for continuance of prostitution culture. It views men as dominant figure in heterosexual relationships, and women as sex objects- men are willing to pay for sex and women are willing to paid for it (Barry1996). Here the oppression and exploitation involved under prostitution reflects the more general oppression and exploitation in the larger society.

Why Prostitution exists among the Perna Caste?

The functionalists look at prostitution as a way of channeling or controlling sexual behavior. They argue that presence of certain amount of deviance in society provides it overall stability and regulates social conduct of the members (Durkheim in Harlombos and Holborn, 1990).

According to Kingsley Davis (1937), prostitution will always exist in societies - it provides impersonal gratification without any emotional involvement between the involved parties, it provides sexual outlet to people who not have active sexual partners and protects the society from breaking down of family as an institution[6]. It has economic function in terms of providing source of livelihood to prostitutes and others involved in the practice. It also provides certain safety valve to the people who are going through 'sexual stress' in their lives. Further, it helps in identifying the existing social problems and also indicates malfunctioning social institution (here family).

For the Perna, prostitution is seen to serve largely the economic function, as the Perna families get their livelihood through this. It acts as a safety valve for the customers/ clients, who may be indulging in having sexual behavior with multiple partners, or who do not have active sexual partners, or are not satisfied in their married lives.

The Perna women bear dual brunt of belonging to a denotified caste and being forced into intergenerational prostitution – thus they are doubly stigmatised by these labels. These labels that have been applied on them from outsiders are dominant labels which colour their identities as women, wives, daughters etc[7]. The others evaluate them with respect to these labels and it costs them their dignity (See Howard Becker, 1963).

As they enter into prostitution, the road to normal life ends for them. The entire community is affected by these labels, but women are affected more. It is difficult for the Perna people to shed the stigma associated with the label of criminal/ ex- criminal community and prostitute. The police evaluate them on the basis of this label and often harass them or abuse them. The people from the mainstream society maintain a distance and don't like the localities inhabited by them. MCD workers and service providers avoid them.

The media keeps reinstating their label as sexual workers and people/ activists post their photographs on social media such as Facebook and Instagram. It is to be noted that though the members of Perna caste don't have formal education, the young women who are more tech-savvy know what it is being written about them, or what is being posted about them. So, they

[7]A study conducted on transgendered prostitutes highlights the multiple issues of conflict of sexual identities, shame, isolation faced by them (Crosby and Pitts, 2007).

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try to avoid strangers/ outsiders all the more- unsure of what would be reported on them if they open up their mouth. Such media coverage discourages the Perna members to interact with outsiders. Further, the people of Perna caste feel that such interactions will convert their docile women against prostitution and they will lose their only source of earning. This is the reason why formal education is also kept at a bay.

CHANGES IN PERNA CASTE

In context of the Perna caste of Dharmpura region, some break through has been made by NGOs like Apne Aap Women Worldwide, which is working with these women for last seven years[8]. The NGO has tried to introduce formal education here, and they have been able to make some headway. Some Perna girls do aspire to study and break away from the community trend of inter- generational prostitution but breaking through the conventional practices is not easy. Some youngsters want to give up their traditional practice of prostitution and do something 'more dignified', but road to change is a steeplechase full of all sorts of hurdles. Social institutions like village panchayats also perpetuate the conventional practices.

In a personal conversation with one worker of Apne- Aap Women Worldwide, an NGO working for the community in Dharmapura, an elderly Perna woman approached the NGO to save her daughter who was being forced into prostitution by her husband and his family. When she tried to approach the NGO, the girl's family approached the village panchayat for remedy.

Usually the people sitting in the village council[9] also have the same mind set of accepting forced prostitution as normal and take decision in favour of the husband, thus once again pushing the woman into prostitution. But in this particular case, as narrated by Apne Aap Worldwide worker, the panchayat was aware that the case involves the NGO workers, and if decision is taken in favour of the husband and his family (who were forcing the woman to earn for them by forcing her into prostitution), there will be police action against them. So, they took decision in favour of the mother and her daughter. However, the girl's in- laws and husband did not give up and demanded five lakh rupees from the mother as compensation for the loss of earning the girl would have earned through prostitution.

Some attempts have also been made to rehabilitate the Perna women by introducing sewing as a vocation. Apne Aap introduced the sewing center in their locality and got a famous designer to train them in the job, but clearly there are few takers. Initially the project of rehabilitation through self- employment was challenging, but some dent has been made and it appears that new generation youth want a change in their conventional practices.

Change among the communities like these can come only very gradually as they are caught in a very tough situation. Government has done very little for these communities to integrate them in the mainstream and give them a dignified life. Effective changes can occur only by introducing these people to the world outside and integrate them into the mainstream. But noting can be done without formal education and attempts of rehabilitation. Residential schools need to be opened where both boys and girls are groomed into the norms of the mainstream. They need to be weaned out of their own negative conventions and value systems. The society also needs to adopt a positive approach towards them and help them in getting their identity and dignity.

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[8] Visit apneaap.org, the official site of Apne Aap Women Worldwide for more information
[9] Various village matters of dispute are taken up by panchayat, which is body of five elected members, formed on basis of provisions given in the Indian constitution.

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1-BP07-6169

CELEBRITY ENDORSEMENT IN SURROGATE ADVERTISING: LEAVING FOOTPRINTS ON CONSUMERS

DR. RUCHI GUPTA[1]

Advertising has often been criticized for promoting such products to people which undermine their health. Considering the harmful effects of some such products, the advertising of liquor and tobacco products was banned by the Government of India by introducing various laws and regulations. As a reaction to this, the manufacturers of liquor and tobacco products introduced various other products like sodas, fruit juices, cassettes and CDs in the market with the same brand name (as that of the liquor and tobacco brands). When such substitute products (surrogates) are advertised, it keeps reminding the customers about the liquor and tobacco products with the same brand name, the advertisement of which is banned. This phenomenon, known as 'surrogate advertising' is of ethical and legal concern in advertising.

The practice of surrogate advertising has been used extensively by liquor and tobacco industry in India. The practice needs to be checked if the ban on liquor and tobacco products needs to be implemented in real sense in India. However, there seems to be a serious concern here with the top most celebrities endorsing liquor and tobacco brands in the country. This is especially true when empirical researches have already proved the effectiveness of celebrity endorsements in achieving brand recall. Today celebrity endorsement has become an integral part of the advertisement industry. Numerous researches have proved empirically the effectiveness and the positive influence of the endorsements by the celebrities in advertising, particularly on message reminder, announcements approval, achieving consumer attention and positive ad perception, building brand attitudes and purchase intention. Marketers expect their brands to benefit in many more ways by linking their brands to the celebrities.

The present study attempts to find out the impact of celebrity endorsement on consumers' brand attitude and purchase intention by collecting responses from a sample of educated youth of India on a recent case of surrogate advertisement of a popular liquor brand. Confirmatory factor analysis is used to test the model for unidimensionality, reliability, convergent validity and discriminant validity. Structural equation modeling is used to find the impact of celebrity endorsement in surrogate advertising on brand attitude and purchase intention of the liquor products. Results reveal that the strategy of using celebrity endorsement for surrogate products of the liquor brand has a significant impact on brand attitude and purchase intention for the liquor products of the said brand. Thus, it can be concluded that the use of celebrities in surrogate advertisements defeats the very purpose for which the ban on liquor products was imposed. This has important implications for the policy makers.

Keywords: Brand attitude, celebrity endorsements, confirmatory factor analysis, purchase intention, structural equation modeling, surrogate advertising.

[1]Dr. Ruchi Gupta, Assistant Professor, University of Delhi, India.

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3-BP04-6224

GUESS WHO'S LOOKING: THE EFFECTS OF ANTICIPATED AUDIENCE ON SELF-PRESENTATION BEHAVIOUR

DR. GAVIN PRICE[2]

"These self-evaluations are a charade…. It's a farce. People cannot be impartial about themselves." (Gurganous, Pedrad and Riggi, 2012). These are the opening lines from an episode of 30 Rock, spoken by the character Jack Donaghy, President of NBC. Liz Lemon, reports to Jack: "I finished my self-evaluation. Nailed it! My greatest weakness is humility. I'm probably the most humble person in the whole world!" (Gurganous, Pedrad and Riggi, 2012).

Why are self-evaluations, so common in the workplace, such ripe subject material for comedy? This research argues that this is because people adapt their presentations of the self to their circumstances, so much so that self-presentations in the workplace, as a true reflection of a person's performance or character, are barely worth the paper they are written on.

This research approaches this phenomenon of misrepresentation of the self from a situational perspective, demonstrating that individuals strategically adapt their representations of the self for the audience they perceive. In this sense, self-presentation is not an objective assessment of the self but better understood as a process of resolving the internal self with the social domain, or of presenting the dimensions of the self for an audience. In this sense, people are able to represent the audience's reactions to different reporting behaviour, as there is a shared understanding of what different reported on dimensions mean in a given context and adapt their responses accordingly. Self-evaluations are typically performed in the workplace to apportion rewards, judge suitability for promotions and to assign people to appropriate roles. However, people adapt their representations of the self to their circumstances so much so that self-evaluations, as a true reflection of a person's performance or character, are often of little worth. Assuming honest and sincere rather than manipulated feedback in the workplace is preferable for achieving business objectives, this research describes hypothesised key drivers of self-presentation behaviour and contributes towards improving the design of self-evaluation instruments.

A theoretical model of self-presentation behaviour is constructed drawing on theory of social desirability bias, impression management and accountability that proposes that anticipation of two distinct characteristics of an audience – power to reward and knowledge of the dimensions being assessed – cause the self-presenting individual to adapt their representations of themselves in specific and predictable ways.

A quasi-experiment was performed using a sample of 278 executive MBA students on the effects of audience anticipation on self-reporting on the dimensions of performance and personality. Statistical pair-wise comparisons of means in experimental groups and principal components analysis verified the theoretical model. The results demonstrate that self-presentation of both personality characteristics and performance is influenced the anticipated audience.

[2]Dr. Gavin Price, Senior Lecturer, Gordon Institute of Business Science, South Africa.

4-BP12-6088

TRADE OPENNESS AND ECONOMIC GROWTH: A CASE OF PAKISTAN

MR. BILAL MUHAMMAD YASEEN[3]

This study is an attempt to investigate the relationship between trade openness, remittances and economic growth. Using different sources, annual time series data on Pakistan is collected and used over the period 1976-2017. To find the order of integration, different stationarity tests such as Augmented Dickey-Fuller (ADF) and Phillip-Perron (PP) were used. Autoregressive Distributed Lag (ARDL) Bounds Test techniques was used to find the long run relationship between the variables. The result shows the existence of short run relationship between the variables and long run negative relationship between GDP per capita and trade openness. On the other hand, GDP per capita has no long run relationship with remittances.

5-BP17-6443

THE STUDY OF THE CSV STRATEGY BY THE SMALL AND MEDIUM COMPANY : MAINLY ON INDUSTRIAL AGGLOMERATIONS AND FOREIGN CURRENCY ACQUISITION

MR. SATOSHI MOMOTAKE[4]

This report is a study of the Industrial agglomerations of the small and medium company by the networking based on a theory of Creating Shared Value(CSV) creating of M.E.Porter and R. Kramer. The last purpose of this study is to arrive at universal Regional Development theory.This report chose the second economic zone of Japan, an area called Sensyu area of South Osaka in the Kinki district.In this area, an artificial island named Kansai International Airport was built in 1994. Kansai International Airport is an airport of the Japanese third place that around 6 million foreigners use in one year (the first: Narita Airport, the second: Haneda Airport).However, the sightseeing spot popular with in bound tourists is Tokyo, Osaka (Central Osaka), Hokkaido. Therefore, the inbound tourist used Kansai International Airport, but the economic effect was light without using it around an airport. In late years Japan Tourism Agency which is affiliated with Japan Ministry of Land, Infrastructure and Transport appeals to the local government for the DMO(Destination Management/Marketing Organization) establishment. This is because it is important that the country acquires power to earn money.Therefore, DMO came to be made in the South Osaka Sensyu area with Kansai International Airport.An organization following made DMO is association of Sensyu promotion, association of Izumisano city promotion, association of Kishiwada city promotion. It is written on the printing block in 2016 of the small and medium white paper. The small and medium company should earn "foreign currency" from an inbound tourist" Foreign currency of this case is the money that an inbound tourist uses in Japan.". This report analyzes the point of view of the Industrial agglomerations about the small and medium company to earn the small and medium company network and the foreign currency in the area from CSV. And This report clarifies future Japanese the small and medium company network model from the viewpoint of CSV.

[3]Mr. Bilal Muhammad Yaseen, Lecturer, University of Central Punjab (UCP), Pakistan.
[4]Mr. Satoshi Momotake, Lecturer, Osaka University of Tourism, Japan.

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7-BP10-6209

ANALYSIS ON TOURISM DEMAND OF INBOUND VISITORS TO LAS VEGAS

PROF. DOOHWAN WON[5]

Approximately 20% of total visitors to Las Vegas come from foreign countries. Since mid-2000s, the origins of foreign visitors further diversified with the growing number of Chinese visitors. During Great Recession of 2008, Las Vegas had greatly suffered from the external shocks due to the shrinking tourism demand of both domestic and foreign visitors. This paper develops income elasticity and price elasticity of tourism demand for the foreign visitors from the top 16 origin countries. Using a dynamic panel data analysis over 10-year period (2006-15), we estimate short run and long run dynamic models for all foreign visitors, European visitors and visitors from Asian countries and Australia. Estimation results clearly demonstrate how a local tourism industry in Las Vegas is linked to economic conditions of foreign countries including GDPs and exchange rate. This study provides implications for policymakers of economic development to make informed decisions with the understanding of the potential impact of global economic conditions on local tourism industries.

9-BP01-6171

SOME CHARACTERISTICS OF JAPANESE MARKETING AND VALUE CO-CREATION: A CASE STUDY OF NESCAFE AMBASSADOR

MS. KAZUKO DENO[6]

Nestlé Japan Ltd. is a leader in domestic instant coffee market and they are also active player in the production and sales of food and beverages.

Nestlé Japan has been operating a large scale promotion named “Nescafe Ambassadors” since 2012 by which provides a coffee machine for free to individuals who wants to take part in the program.

These people, called ambassadors, place the coffee machine at their workplaces and make it possible for colleagues to enjoy cups of coffee with a little money. Mostly ambassadors place a piggy bank next to the coffee machine and ask people to pay proper amount of money each time they drink coffee. The money is used only to pay for the next order of coffee and cartridges.

The ambassadors are office workers not associated with Nestlé Japan. But they are expected to report their problems or opinions to the company because they are considered to be a part time marketer. Nestlé Japan and the ambassadors have discussed the following issues and solved them through trial and error: How to have their coffee machines placed in offices, how to convince more people to drink coffee at workplaces, what kind of drinking experiences they can deliver, and how best they can receive payments for coffee.

The main focus should be on solving customers' problems by offering solutions that cover services and machines. Nestle Japan has prepared instruction tools for the new office, offered subscription service, and improved the machines to response for ambassador’s requests.

[5]Prof. Doohwan Won, Professor, Pusan National University, South Korea.
[6]Ms. Kazuko Deno, Doctoral Student, Kwansei Gakuin University, Japan.

Since Nestlé's headquarter encouraged Nestlé Japan to take the responsibility and adjust to the needs of the Japanese market. In 2017, the number of the ambassadors reached more than 300,000. From this point of view, "Nescafe Ambassadors" program requires customization from country to country.

The president realized that this program contributes to "self-realization" of the ambassadors, which Kotler named "Marketing 4.0". In Japan, people traditionally have the mind of "Omotenashi," which focus on the whole people in their organization instead of pursuing their self-interests. In this paper, the author discusses about value co-creation model of "Nescafe Ambassadors" using the service marketing triangle (Grönroos, 2016). Then the author shows county differences of contents of the value among Japan, USA and Finland .

The findings will show clearly the characteristics of Japanese relationship marketing and the importance of considering the cultural differences when adopting the business model.

10-BR06-6439

MEETING OR MISSING THE REQUIREMENTS OF A SOCIAL MODEL APPROACH TO MENTAL DISABILITY- AN ANALYSIS OF THE PERTINENT LAWS OF TRINIDAD AND TOBAGO

MRS. AFIYA FRANCE[7]

As a group, persons with disabilities ("pwd") have historically been oppressed, excluded and denied human rights. As a subset of this group, persons with mental disabilities ("pwmd") have been doubly subjugated.

Disability scholars have made the argument, drawing from the theory of social constructivism, that disability is socially produced. From this train of thought, the "social model" of disability evolved. Under this model, a negative experience of disability is caused, not predominantly because of an individual's impairment, but through the interplay of the impairment and the way that the organizational structures and attitudes of contemporary society oppress the individual and exclude them from mainstream participation. This definition of disability, and by extension the social model, have been endorsed in the Preamble and language of the United Nations (UN) Convention on the Rights of the Child, entered into force in 2008. Trinidad and Tobago, a country within the Commonwealth Caribbean, ratified same on June 25, 2015.

The social model is antithetical to the more orthodox "medical model" approach of locating disability squarely on the impaired individual. This model places all the focus on the treatment of the impairment and no attention to removing the societal discrimination which handicaps people. By altering the traditional definition of disability to place causation for same on the society, the social model sparks an inquiry into the specific areas where societal structures have failed pwd, with a view towards improving the deficiencies. The laws of a country, as set out in legislation and case law, provide a lens through which one can perceive aspects of the structures of the society.

This paper makes two unique contributions to the literature. First, using the literature on the social model of disability and the obligations under the CRPD, this paper creates a social model conceptual framework of the main normative positions existing in a law which is responsive to the social model and impacts pwmd. Specifically, such law should remove existing societal barriers to pwmd; promote inclusion and not marginalization of pwmd; be non-discriminatory; afford and

[7]Mrs. Afiya France, PhD Student, The University of the West Indies, Trinidad.

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not deny human rights to pwmd. Second, using the framework it analyses TT legislation and case law impacting pwmd in the areas of involuntary detention, medical treatment and employment to assess the extent to which these laws surpass, model or fall short of the conceptual framework. The findings reveal antiquated laws and social attitudes steeped in the medical model tradition. The use of the conceptual framework offers a critical assessment of the extent to which Trinidad and Tobago demonstrates a social model approach to disability and fulfils its obligations under the CRPD. In addition, it furthers the literature on the social model by showing its applicability in a developing country and provides a conceptual framework that can be used to evaluate the legal approaches to pwmd in other jurisdictions.

11-BR07-6456

ENFORCEMENT (AMENDMENT) ACT 2017 TO THE IMPLEMENTATION ACT 2013 OF SAUDI ARABIA: A CRITICAL REVIEW

MR. ABDULKARIM ALOTAIBI[8]

The current legal framework in the Kingdom of Saudi Arabia compel Both Courts Decisions and arbitration tribunal awards seeking enforcement in the Kingdom to go through specialised enforcement courts and be subject to the enforcement law of 2013. This law is the first unified enforcement regulation in the kingdom's legislative history and reflect a real attempt towards modernising the kingdom's legal framework. Before the introduction of the 2013 enforcement regulation, the enforcements of foreign decisions and awards used to be subject to unnecessary complications that made the kingdom's legal system less attractive to international commerce. However, the kingdom's authorities have realised such deficiency in the its enforcement procedures and as a result the enforcement law of 2013 was issued. This regulation was followed by the issuance of a number of other regulations in different areas of law that aims to codify the Saudi legal system by creating a set of written rules that are easily accessible by both local and foreign concerned parties. Such attempts to codify the kingdom legal system has helped bring the kingdom's legal framework more in line with the developed world practices and increased its attractiveness and reliability in the eye of foreign commerce. This is particularly important because the kingdom has suffered from a long standing history of dissatisfying foreign commerce especially when its comes to the enforcement of foreign awards and decisions. In light of such modernising vision, the kingdom has further attempted to develop its enforcement procedures by issuing a second implementation act for the 2013 enforcement regulation. This act was issued in November 2017 and introduced nine new provisions that attempt to clarify some of ambiguities embodied in the 2013 enforcement regulation. This paper aims to critically assess the 2017 amendments and the extent to which they develop the enforcement procedure in Saudi Arabia.

[8]Mr. Abdulkarim Alotaibi, PhD Candidate, Warwick University, UK.

13-BP15-6415

A STUDY IN THE EFFECT OF TOURISM INDUSTRY SERVICE PROVIDERS' RAPPORT BUILDING BEHAVIOR ON RELATIONSHIP QUALITY AND LOYALTY

MS. YAN WENYAN[9]

The purpose of this study was to identify the types of rapport formation behaviors of tourism industry service providers and to investigate the influence of rapport formation behaviors of tourists on the quality of relationship and loyalty with foreign tourists. Data collection was field surveys for foreign tourists visiting Seoul. A total of 271 validity samples were used for final analysis. Statistical package the SPSS 23.0 program was used to analyze frequency, exploratory factor analysis, reliability analysis, and multiple regression analysis.

The result showed that rapport formation behaviors of tourism industry service providers were identified by three factors such as "Common Grounding Behavior and Information Sharing Behavior", "Connecting Behavior", and "Courteous Behavior". Also, the rapport formation behaviors of tourism industry service providers effects improving the quality of relationship between tourism industry service providers and foreign tourists. It also effects on loyalty. Based on the results of this study, it can be expected to be used as an empirical data for human resource management in tourism industry.

14-BP16-6441

A STUDY OF LOCAL RESIDENTS' EXPOSITION IMPACT PERCEPTION AND MARKET SEGMENTATION: A CASE OF YEONGJU

MS. MISEONG KIM[10]

Even though local residents are key success factor of the regional industrial exposition, there are only few studies which researched about the behavioral intention of local residents to support holding the regional industrial exposition.

The purpose of this study was to identify the exposition impact perception factors of local residents in Yeongju(one of the rural city in Republic of Korea), and segment the exposition market using a cluster analysis based on expo impact perception.

Using the quota sampling based on demographic characteristics(gender, age, residence, income, etc.), total of 513 questionnaire was distributed in Yeongju city. Among them, 14 insincere questionnaire were ruled out and 499 remaining were used to analyze. Factor analysis was performed to determine the expo impact perception factors, and cluster analysis was applied to identify groups of local residents based on the delineated four impact perception factors.

Through the factor analysis, the study revealed the 4 factors of the expo impact perception; 'Positive Impact on Regional Tourism Infrastructure', 'Positive Impact on promotion and awareness improvement of the region', 'Positive Impact on related industries', and 'Negative Impact on the Region'.

Using the cluster analysis, three distinct groups were formed; High Impact Perceived Group, Middle Impact Perceived Group and Low Impact Perceived Group. The results of the study showed statistically significant differences among the three groups in terms of demographic,

[9]Ms. Yan Wenyan, Researcher, Kyunghee University Tourism Industry Reseach Insitute, Korea.
[10]Ms. Miseong Kim, Ph.D. Student, Kyunghee University, Republic of Korea.

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support and behavioral intention variables. The study revealed the age, hometown and interests in holding the expo are most significant factors for segmentation among all factors for segmentation. In addition,Two-way ANOVA indicated that high expo impact perception could lead high supportiveness and behavioral intention.

Through the findings, marketing and management implications for effectively targeting each segments and further implications for industry practitioners and public officers as well as suggestions for future study were discussed. By improving positive effects of the expo and expo impact perception level, successful hosting of regional industrial expo could be achieved. Also, using the strategy targeting each segment will lead support and participation for hosting the expo from the local residents. For High Impact Perceived Group which is mainly composed of the men in over 50s who were born in Yeongju and for Middle Impact Perceived Group which is mainly composed of the people who are in their 30~40s and own private business, since they have a high interest in expo, providing the various information about holding the expo will lead their behavioral intention and active participation. For Low Impact Perceived Group which mainly composed of the people who are in their 40s and came from other cities, improvement of their expo impact perception is the first and most important thing. In order to hosting the world-class expo, future studies need to compare various regions and research foreign visitors as well.

16-BP14-6427

AN ASSESSMENT OF ETHICAL LEADERSHIP DECISIONS FROM INTERNAL STAKEHOLDERS PERSPECTIVE WITH SPECIAL REFERENCE TO BRAHMAPUTRA CRACKER AND POLYMER LIMITED. (BCPL), ASSAM, INDIA

MR. ANURAG BURAGOHAIN[11]

Abstract of the paper entitled An assessment of ethical leadership decisions from Internal Stakeholders perspective with special reference to Brahmaputra Cracker and Polymer Limited. (BCPL), Assam, India Brahmaputra Cracker and Polymer Limited. (BCPL) is a Petrochemical Complex at Lepetkata, Assam, India and the present study aims to analyze the use of PLUS Ethical Decision-Making Model from the Internal Stakeholders perspective. The model is customised to the study area with the objectives as follows: • To find out how ethical the management of the Company in making decisions parse the policies laid down by the Company • To assess the decisions taken are within the purview of legal parameters or regulations of the Company. • To assess that decision taken are in consonance with the core values and the company culture and • To assess the decisions taken meet standards of fairness and justice. Research Questions • Whether the decisions are in line with the policies laid out by the Company? • Whether the decisions violate any legal parameters or regulations? • Is it in tune with core values and the Company Culture? • Does it meet standards of fairness and justice? Methodology of the Study The total sanctioned manpower in the Company is 700 (491 executives + 209 non-executives). The employee strength of the Company as on 31st March, 2017 was 576 including 389 executives and 187 non-executives. Purposive random sampling method under non probability sampling has been used for the study. With a purpose to elicit information respondents were taken purposively as per Table 1.1. A total of 40 respondents were taken 18 female and 22 male from different categories of

[11]Mr. Anurag Buragohain, Student, Dibrugarh University, India.

manpower namely from Managerial level, Operational level and Field Staff. The Managerial level is divided into Senior Executives and Executives of which the Researcher randomly selected 4 number of male and 2 number of female Senior Executives and 4 number of male and 3 number of Executives. There were 6 number of male and 5 number of female Supervisors in the Operational level. Under Field staff the strength of manpower under workmen regular and casual were both 4 under each of the category of male and female respectively. The profile of the respondents on the basis of variables such as age, gender and educational qualification are classified to analyse the respondents response to ethical decisions in line with the policies laid out by the Company, the decisions violating any legal parameters or regulations, whether decisions are in tune with core values and the Company Culture and does it meet standards of fairness and justice. Category Designation Strength of Manpower Male Female Managerial level Senior Executive 4 2 Executives 4 3 Operational level Supervisor 6 5 Field Staff Workmen (Regular) 4 4 Workmen (Casual) 4 4 Total 22 18 (Source: Field Survey) Taking the bases of the PLUS Ethical Decision-Making Model, the Researcher has applied the model in the present study and analysed the data with help of simple statistical tools.

17-BP19-6380

INDIGENOUS TOURISM –AN IDEAL SUSTAINABLE TOURISM MODEL FOR IDUKKI, KERALA

MRS. BINCY KALUVILLA[12]

India has been reinvented through the ‘Incredible India’ campaign which highlights the various facets of India. The current Indian tourism scenario seems to be optimistic. India’s growing reputation in the last few years as one of the fastest emerging tourist destinations has enthralled the attention of tourists all over the world. The country is fast catching up on the infrastructural development with the upgradation of roads, airports and hotels. At the same time, there is a big concern of sustainability. Each tourist destination is unique in its own way. The alternative tourism possible in one place may not be same for another. Identifying a suitable tourism model and to conduct a study on its feasibility are very much essential for rightly positioning a tourism destination. This paper examines the indigenous tourism potential of Idukki district of Kerala, which is one of the emerging destinations in South India. Being an identified ecotourism destination, promoting indigenous tourism as special interest tourism was found ideal for the destination. The study examines the perceptions of the tourists about tourism in Idukki and their preferences for various forms of tourism available there. Tourists’ perception on Indigenous attractions of Idukki has also been analysed. Major challenges faced by the destination are addressed along with recommending an Indigenous tourism model suitable for Idukki

[12]Mrs. Bincy Kaluvilla, Senior Lecturer, Emirates Academy of Hospitality Management, United Arab Emirates.

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FLE Learning Ltd
Conference Division: North America
T: +1 778 819 0134 F: +1 604 757 0701
E: submit@flelearning.ca W: www.flelearning.ca