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Contents

EDITORIAL NOTE

In this Issue of the Journal of Economic Cooperation and Development – September 2018 - I am glad to inform the readers that we have selected five noteworthy articles tackling issues of great importance to the OIC member countries. Although competence of the world market seems to put too much pressure on many OIC countries, they relatively struggle to keep pace with the fast changing world trends trusting on their great potentials to sustain economic growth and development. In this connection, this September issue sheds light on topics related to poverty measurement, impact of foreign direct investment, effects of ownership structure on firm performance, online financial disclosure of Islamic banks, and energy. These topics have always gained greater importance and attention in many developing countries as major drivers of social-economic progress and means of recovery in order to achieve economic development goals.

The first article aims at analyzing a multidimensional poverty measurement in Indonesia by confirming that the monetary measurement of poverty should be complemented with the multidimensional poverty measurement to capture a comprehensive picture of deprivation in Indonesia. The study also identifies that a health indicator is the major source of multidimensional poverty in Indonesia; therefore, a universal health program launched in 2014 is important for tackling multidimensional poverty as well as improving human capital

The second article proposes and provides an empirical test for "giving hope hypothesis". The postulated hypothesis states that, along with its potential contributions in augmenting domestic investment in recipient countries, the presence of FDI could also increase growth in domestic investments by giving them hope in domestic business environment. The study also adds that the relationship between foreign direct investment (FDI) and domestic investment often represents a focal point for huge number of scholarly research. In short, FDI has a potential to promote domestic investment through several channels including strengthening backward and forward linkages between Multinational Corporations (MNCs) and domestic sectors, diffusing contemporary technologies in underdeveloped sectors, equipping workers with managerial skills as well as connecting domestic industries with foreign markets.

The third article paper aims to evaluate the relation between ownership structure and firm performance from all sectors in Kingdom of Saudi Arabia for two years. The study evaluated this relation using several control variables such as; firm size, firm age, financial advantage and industry sector.

Ownership concentration was found to have a positive, statistically insignificant effect on company performance. Institutional ownership was found to have a positive effect on company performance. Managerial ownership did not have a significant effect on company performance; however, managerial ownership had a positive effect on performance. Foreign ownership was found to have a negative, statistically significant effect on firm performance, and family ownership was found to have a positive and statistically insignificant effect on firm performance.

The fourth article investigates the association between online financial disclosure, board characteristics and performance of listed Islamic banks in the Gulf Cooperation Council bourses. Findings indicate that there is a positive relationship between the level of online financial disclosure and performance indicators. Accordingly, the study recommends that regulatory bodies should develop a guideline of disclosing information through the internet in order to enhance the transparency and performance among Islamic banks leading to sound decision-making.

The fifth and last article studies Turkey's energy cooperation with Caspian Sea or Central Asian countries, especially, between Ankara and Astana, within the scope of the energy partnership between Turkey and Kazakhstan on Turkish-Kazakh energy ties. Through explaining Ankara's energy cooperation with Astana in the framework of Realism and Liberalism, this paper shows that Turkey's energy security concerns; its aspiration of becoming an energy hub; the economic and business partnerships established between Turkey and Kazakhstan; the close political, historical and cultural links between the two countries; and regional issues such as the aspiration of the EU to reduce its dependence on Russian gas and the competition among Russia, Turkey, Iran, China and the EU control over the Caspian energy resources, including those of Kazakhstan, are the main determinants of Turkey-Kazakhstan energy cooperation.

Our willingness to continue to provide our JECD readers with every opportunity to make use of this fine selection of articles, and promote a research environment that is profitable and constructive will maintain course. I believe that the set of articles in this issue can fully serve the needs and requirements of the readership by promoting their academic work and upholding their willingness to contribute to the expansion of economic and technical cooperation in the OIC Member Countries.

Amb. Musa KULAKLIKAYA
Editor-in-chief

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The Multidimensional Approach to Poverty Measurement in Indonesia: *Measurements, Determinants and its Policy Implications*

Dwi Rani Puspa Artha[1] and Teguh Dartanto[2]

The notion of poverty is diverse, dynamic, and multidimensional. Conventional poverty measurement using either the consumption or the income approach is insufficient for explaining the multiple deprivations faced by the poor. Therefore, this study aims at analyzing a multidimensional poverty measurement in Indonesia. Applying Alkire and Foster's multidimensional framework and utilizing the 2011 National Socio-Economic Survey Indonesia, this study confirmed that the monetary measurement of poverty should be complemented with the multidimensional poverty measurement to capture a comprehensive picture of deprivation in Indonesia. Around 61% of populations categorized as non-poor by the conventional poverty measurement are still categorized as poor using the multidimensional poverty measurement. Although Spearman's rank correlations shows that both poverty measurements at the provincial level are weakly correlated, our econometric estimations confirmed that both determinants of poverty are relatively similar – for instance, a higher educational attainment of the household head leads to a higher probability of being non-poor in terms of both monetary and multidimensional poverty. Our study also identifies that a health indicator is the major source of multidimensional poverty in Indonesia; therefore, a universal health program launched in 2014 is important for tackling multidimensional poverty as well as improving human capital.

Keywords: Multidimensional poverty; Monetary poverty; Determinants of poverty; Indonesia

1. Introduction

The broadening of the definition of poverty has caused increased criticism regarding the measurement of poverty, which is based solely on monetary attributes such as income or consumption. Critics argue that monetary

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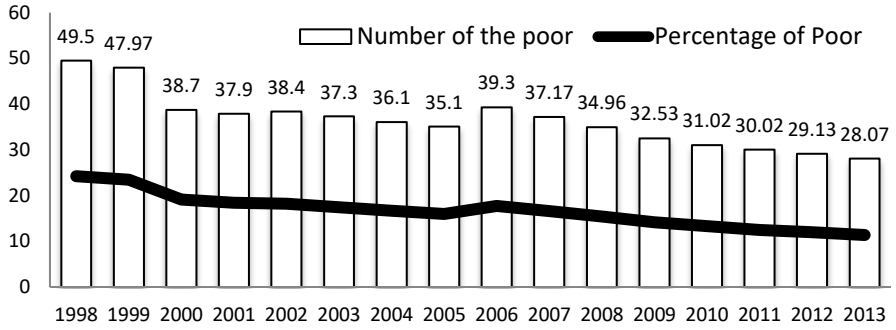
poverty measurements alone are insufficient to explain multiple deprivations of the poor. Poverty measurement should involve basic human needs such as health and education (Tsui, 2002). Poverty is essentially a multidimensional phenomenon, so it should be explained by a multidimensional approach (Bourguignon and Chakravarty, 2003). Many researchers have proposed new methods of poverty measurement employing a multidimensional approach. For example, Alkire and Foster (2007) proposed a multidimensional poverty measurement using FGT's (Foster, Greer, and Thorbecke) class of one-dimensional poverty measurements.

Indonesian poverty measurement uses the concept of ability to satisfy minimum basic food and non-food needs measured from the consumption side (monetary attribute only). Over the past 15 years, Indonesia has recorded a significant reduction of poverty by over 40% (Figure 1). However, as mentioned previously, a single measurement of poverty might not be sufficient to capture the multiple deprivations of the poor, since those categorized as non-poor by the monetary poverty measurement could still be categorized as poor by the multidimensional poverty approach due to shortcomings in their living standard – for instance, a lack of basic sanitation.

Based on the 2011 National Socio-Economic Survey (SUSENAS), we found that the non-poor of monetary poverty are also still deprived in non-monetary indicators, such as health (childbirth processes), education (illiteracy), housing, drinking water, sanitation, cooking fuel, and asset ownership. Almost 20% of those among the monetary non-poor are deprived in terms of health, while 8% are deprived in the area of education. Over 20% of the monetary non-poor cannot afford clean drinking water, while almost 40% do not have access to basic sanitation, proper cooking fuel and asset ownership. Even though the poverty indicator (monetary measure) is statistically decreasing, the statistical figure cannot comprehensively capture human deprivation in terms of non-monetary indicators. Therefore, it is important to employ the Multidimensional Poverty Index (MPI) to complement the money metric of poverty measurement.

Figure 1: Poverty in Indonesia (1998–2013)



Source: Central Statistics Agency of Indonesia

This paper aims at addressing the following two research objectives: (1) measuring and comparing the headcount of multidimensional poverty (MPI henceforth) and the monetary poverty index in Indonesia; and (2) exploring the determinants of the multidimensional poverty and the money metric of poverty. The MPI informs policymakers that human deprivation is not always about money; therefore, government programs and interventions aimed at alleviating poverty should also address non-monetary issues. In addition, the MPI can aid effective and efficient allocation of resources by targeting those most affected by poverty. It can also help address SDGs (sustainable development goals) strategically and monitor impacts of policy intervention.

Previous research about the Multidimensional Poverty Index in Indonesia has been conducted by Alkire and Santos (2010) and Whardana (2010). Alkire and Santos (2010) measured the Multidimensional Poverty Index in 104 countries, including Indonesia. They used three dimensions: health, education, and living standard. They found that 1.7 billion people are living in multidimensional poverty and most of them live in middle-income countries. Whardana (2010) compared multidimensional poverty and monetary poverty using the Indonesian Family Life Survey (IFLS). This study revealed that human assets (health and education) contribute more than physical assets (living standard) in terms of multidimensional poverty.

Unlike all previous studies that used the Indonesian Family Life Survey (IFLS 1, 2, 3, 4), this study utilizes the 2011 National Socio-Economic Survey Indonesia (Susenas) collected by the Central Statistics Agency of Indonesia. Susenas data is more up to date than Indonesian Family Life Survey (IFLS) data. Susenas covers all provinces in Indonesia and presents a better overall picture compared to that of the IFLS data, which only covers 13 of 33 provinces. Therefore, using the Susenas dataset, we could disaggregate the multidimensional poverty measurements to the provincial level. This research therefore provides an alternative approach for exploring multidimensional poverty in Indonesia using the most available and most suitable data. We also accommodate some new indicators of the poverty dimension that capture new dimensions of deprivation in Indonesia.

The article proceeds as follows: section 2 provides a literature review of multidimensional poverty measurement; section 3 presents the methodological framework, data and econometric estimation procedure; section 4 analyzes the findings of the MPI as well as its determinants; lastly, the concluding section of the paper summarizes the key findings and discusses policy implications.

2. Literature Review

2.1 Defining poverty measurement

Poverty measurements have improved compared to those employed a hundred years ago. The United Nations Development Programme (UNDP) and Amartya Sen have created the Human Development Index (HDI) as an alternative assessment to determine whether a country is developed, developing, or underdeveloped, using not only economic indicators but also social indicators. The HDI comprises three components: health, education, and standard of living. Health is measured by life expectancy at birth; education is measured by a combination of adult literacy and gross enrollment; and the standard of living is measured by GDP per capita. The HDI, however, is not responsive to changing policies over a short time period. Therefore, the Human Poverty Index (HPI) was introduced to improve the HDI. The HPI used the deprivation concept,

whereby poverty is considered a situation in which people are not able to fulfill the basic needs of life.

The HPI measures deprivation in each dimension of human development, while the HDI measures the average achievements. Both measurements are only able to analyze at regional/national levels; however, they are unable to analyze poverty at the household level. The Multidimensional Poverty Index (MPI) is then employed to complement both previous measurements. The MPI is able to analyze poverty at household/individual level. Alkire and Santos (2010) introduced the MPI as a composite measure of health, education, and standard of living. Health is approached in terms of nutrition and child mortality. Education is measured by years of schooling and enrollment levels. Standard of living considers a combination of cooking fuel availability, sanitation, water quality, electricity, floor conditions, and asset conditions.

Alkire and Foster (2007) propose a new approach of a weighting system to identify the poor. Any person deprived in a certain dimension will be given a certain weight. The total weight is ranked 0–1. Each dimension has an equal weight, so if we use n-dimensions, the weight for each dimension is 1/n. If one dimension consists of several indicators, then each indicator's weight in the same dimension has equal value. The second cutoff is simply the number of dimensions in which a deprived person must be in order to be considered poor (Alkire and Foster, 2011a; 2011b). The advantage of this method is that the identification approach is applicable to ordinal variables. All cardinalizations of ordinal variables yield identical conclusions when applying both cutoffs. Also, these methods are sensitive to the joint distribution of deprivations (Alkire and Foster, 2011a; 2011b).

This method has been applied in many countries around the world. Awan et al. (2011) applied Alkire and Foster's method (AFM) for measuring multidimensional poverty in Punjab Province, Pakistan. This study uses eight dimensions to measure multidimensional poverty: housing, water, sanitation, electricity, assets, education, expenditure, and land. The results show that land, expenditure, sanitation, housing, and education are the major contributors within overall multidimensional poverty. Other research conducted by Batana (2008) in sub-Saharan Africa defines four

dimensions of MPI: assets, health, schooling, and empowerment. This study concludes that AFM is appropriate for measuring poverty in developing countries such as those in sub-Saharan Africa. Whelan et al. (2014) applied AFM by using 20 non-monetary indicators grouped into four dimensions – basic deprivation, consumption, health, and neighborhood environment – for 28 European countries. Naveed and Tanweer-ul-Islam (2011) applied AFM in Pakistan to calculate multidimensional poverty measurements with four dimensions: education, health and nutrition, living standard, and wealth. The results show that multidimensional poverty incidence is significantly higher than monetary poverty incidence (which is consumption based). This study also verifies that consumption alone does not sufficiently explain deprivations faced by the poor.

Alkire and Foster (2007) already illustrated multidimensional poverty measurement using Indonesian data. In 2010, Alkire and Santos (2010) measured multidimensional poverty incidence in Indonesia by using three dimensions: education, health, and standard of living. Similar to three dimensions used by Alkire and Santos (2010), Whardana (2010) also estimated multidimensional poverty incidence in Indonesia compared to monetary poverty. This study reveals that human assets (health and education) contribute more to the Multidimensional Poverty Index than physical assets (living standard).

2.2 Determinants of poverty

Many studies have found that the key determinants of monetary poverty are human capital, demographic factors, geographical location, physical assets, and occupational status. Fissuh and Harris (2005) found that regional unemployment is positively related to poverty in Eritrea, while remittance, house ownership, access to sewage, and sanitation have negative effects. Awan and Iqbal (2010) found that public employment, the informal sector, household size, and age and sex compositions of heads of households are determinants of food calorie (consumption) poverty in Pakistan. Baiyegunhi and Fraser (2010) showed that age, level of education and occupation of household heads, dependency ratio, exposures to idiosyncratic risk, and access to credit are significant in explaining a household's vulnerability to poverty in South Africa. Usman,

Sinaga, and Siregar (2006) confirmed that agricultural activity, education, family health, and infrastructure are other important factors often associated with poverty in Indonesia.

Dartanto and Otsubo (2013) also proved that the determinants of consumption poverty are educational attainment, size of household, physical assets, employment status, health shocks, sectors in which people work, the availability of microcredit programs, and regional characteristics such as agricultural productivity, the Human Development Index and sanitation availability. In addition, Dartanto and Nurkholis (2013) also confirm that the determinants of poverty dynamics in Indonesia are educational attainment, the number of household members, physical assets, employment status, health shocks, the microcredit program, access to electricity, and changes in employment sector and employment status.

Bruck and Kebede (2013) compared consumption poverty and multidimensional poverty in rural Ethiopia. They found that the determinants of these two poverty measurements are different. A household's size matters in consumption poverty but not in multidimensional poverty. This also applies to the drought shock effect. Short-term shocks are reflected more in consumption poverty, while simultaneous shocks are significant for multidimensional poverty. Abufhele and Puentes (2011) compared income poverty to the multidimensional poverty approach. They verified that increasing the years of schooling could provide a more sustainable contribution to staying out of impoverished conditions in the long run. Level of education has the strongest relation to both poverty measurements. The age of a household head or house owner has a positive relation to multidimensional poverty.

3. Methodology

3.1 Counting multidimensional poverty

We follow Alkire and Foster's methodology of multidimensional poverty (2007). Suppose we have a group of individuals. Let d≥2 be the number of dimensions and $x = [x_{ij}]$ the n x d matrix of achievements, where x_{ij}

is the achievement of individual i (i = 1, ..., n) in dimension j (j =1, ..., d). x is of the following form:

$$x = \begin{pmatrix} x_{11} & . & x_{1j} & . & x_{1d} \\ . & . & . & . & \text{d dimension} \\ x_{i1} & . & x_{ij} & . & x_{id} \\ . & . & . & . & . \\ x_{n1} & . & x_{nj} & . & x_{nd} \end{pmatrix} \Big\} \text{n individual}$$

Let z be a row vector of dimension-specific thresholds z_j, x_i the row vector of individual i's achievements in each dimension, and x_ja column vector of dimension j's achievements across the set of individuals. Suppose matrix deprivation $x^0 = [x_{ij}^0]$ is derived from x as follows:

$$x_{ij}^0 = \begin{cases} 1 \; if \; x_{ij} < z_j \\ 0 \; otherwise \end{cases}$$

$x_{ij}^0 = 1$ means that individual i is deprived in dimension j, while $x_{ij}^0 = 0$ means that individual i is not. Let k be the cutoff. By summing each row of x_{ij}^0, we obtain a column vector c of deprivation counts containing c_i, the number of deprivations suffered by individual i. An individual i will be considered as poor if $c_i \geq k$

$$p_k = \begin{cases} 1 \; if \; c_i \geq k \\ 0 \; if \; not \end{cases}$$

The first measure is given by a headcount ratio *H*. Let q_k be the number of poor identified according to the threshold vector *z* and the cutoff *k. H* is calculated as follows:

$$H = \frac{q_k}{n}; q_k = \sum_{i=1}^{n} p_k$$

The share of possible deprivations suffered by a poor individual i is given by:

$$\bar{c}_i(k) = \frac{1}{d}[c_i p_k]$$

and the average deprivation share across the poor is given by:

$$A = \frac{1}{q_k d} \sum_{i=1}^{n} c_i p_k$$

The adjusted headcount ratio is the total number of deprivations experienced by the poor divided by the maximum possible number of deprivations experienced by all people (Alkire and Foster, 2007). It integrates the headcount ratio of poverty (H) and the average deprivation share among the poor (A). A is the average deprivation gap and is calculated as the sum of deprivation divided by the total number of poor people. The adjusted headcount not only provides information about the percentage of the poor, but also about the depth of deprivation among the poor. Then, the adjusted headcount ratio is the so called Multidimensional Poverty Index (MPI=H.A).

$$M_0 = H\,A = \frac{1}{nd} \sum_{i=1}^{n} c_i p_k$$

3.2 Data and selection of dimensions, indicators, and cutoffs *Data*

This paper uses the 2011 National Socio-Economic Survey Indonesia (Susenas) data collected by the Central Statistics Agency of Indonesia. The survey covers all of the 33 provinces in Indonesia, providing rich information on education, health, employment, housing, and other social information. Susenas surveyed 285,307 households and 1,118,239 individuals. This paper also combines the 2011 Susenas and the 2011 Village Potential Statistics (Podes). The 2011 Podes provides information about village characteristics for all villages in Indonesia (77,961). It is surveyed in the context of the periodic censuses (Agriculture, Economy, and Population). Using the emerging data, we obtained data about 253,280 households from a total of 56,848,691 households in Indonesia. The Susenas data is used for calculating the MPI, while the combined dataset between Susenas and Podes is used for estimating poverty determinants.

Selection of dimensions, indicators, and cutoffs

The selection of dimensions, indicators, and cutoffs for each indicator is complex and incorporates methodological decisions and political considerations (Abufhele and Puentes, 2011). Most past studies did not explain how dimensions were chosen explicitly. Alkire and Foster (2011a & 2011b) concluded five methods of selection, and most were used implicitly: (1) using ongoing participatory public deliberation; (2) using lists that have achieved a degree of legitimacy through public consensus; (3) implicit or explicit assumptions about what people value or should value; (4) convenience or a convention that is taken to be authoritative or used because these are the only data available that have the required characteristics; (5) empirical evidence regarding people's values, data on consumer preferences and behaviors, or studies of what values are most conducive to people's mental health or social benefit.

Based on the literature and available data, the dimensions considered in this study are: health, education, and standard of living. After identifying the dimensions, Table 1 shows a list of indicators and a cutoff point for each indicator. The advantage of AFM is that it allows for categorical/ordinal data or even qualitative data as long as we can clearly identify who is deprived in a particular dimension. The next step is to assign weight to various dimensions/indicators on the basis of specific criteria. AFM provides the opportunity to assign the same or different weights to various dimensions, depending upon their relative importance. For example, if policymakers want to emphasize the education dimension, they can allocate deprivation a higher weight in this dimension than in others. We assign equal weights to all three dimensions. The dimension weight is then equally divided into its nested indicators. The indicators in the same dimension have the same weight. The details of weights are provided below in Table 1.

Table 1: Preliminary Indicators

Dimension	Indicator (question code)	Deprived if	Weight
Health	Unhealthy (b5r2)	Any household member has experienced illness in the previous one month prior to the survey	0.167
	Health insurance (b7r6a-g)	Household is not covered by health insurance	0.167
Education	Adult illiteracy (b5r19a)	At least one household member cannot read or write (age≥15)	0.167
	Years of schooling (b5r17)	At least one adult member in the household did not complete secondary school (junior high school; age≥18)	0.167
Standard of living	House floor (b6r7)	Majority of house floor is sand	0.056
	Sanitation (b6r13a-b)	House has no toilet with septic tank / shares public toilet	0.056
	Drinking water (b6r9a)	Household does not use proper drinking water, i.e. bottled water/mineral water, tap water, pump/well, protected spring water	0.056
	Electricity (b6r14a)	House does not have installed electricity	0.056
	Cooking fuel (b6r15)	Household's cooking fuel is firewood/charcoal/briquettes	0.056
	Asset ownership (b7r4a-j)	Household does not own a vehicle (car, boat, bike, motorbike) and does not own more than one of these: TV, air conditioner, heater, or refrigerator	0.056

Source: Authors' compilation

Education is important for increasing individuals' well-being. Educated people, including those in low-income developing countries, enjoy higher earnings than those who are less educated (Roberts, 2003). There is also a private benefit from education. It gives individuals the opportunity to participate actively in social, economic, and political activities of their lives (Naveed and Tanweer-ul-Islam, 2011). The two indicators selected under this dimension are described below:

a. Adult illiteracy: The literacy rate of 15–24-year-olds is one of the indicators for achieving sustainable development goal (SDG) 4. This indicator is used to look at the quality of education in the whole household.

b. Years of schooling: Access to universal primary education is SDG 4. However, since May 1994, Indonesia already has its own program called the "9-year Compulsory Education Program," which encourages children to complete secondary school. It further states that an important stage in the development of education is to improve compulsory education between the ages of six and nine years old. Implementation of the program has become more widespread under Law Number 20 of 2003.

Like education, health also has an important role in determining individuals' well-being. Health, as a part of well-being, is becoming SDG 3. Health conditions will impact directly on daily activities. The two indicators selected under this dimension are described below:

a. Unhealthy: This indicator reflects the condition of household members' health – being healthy or not. Unhealthy workers will have decreased productivity. Unhealthy students will struggle to learn and concentrate.

b. Health insurance: the poorest countries in the world are characterized by extremely low expenditure on health compared with high-income countries. Expanding coverage of health insurance would be one strategy for developing countries to increase access to health services as well as to provide financial protection to low-income groups (OECD, 2003).

The standard of living dimension has several indicators that portray the conditions under which households live. A total of six indicators are selected under this dimension:

a. House floor: This indicator describes the quality of housing by identifying whether the majority of the house floor is built of mud.

b. Sanitation: Having a private toilet is an important dimension of a household's' well-being. Poor sanitary facilities can have disastrous consequences for human health (Bartram et al., 2004). Having improved sanitation is also part of SDG 6.

c. Drinking water: Clean drinking water is also an important dimension of a household's well-being. Water contamination is the major source of many diseases, such as typhoid, cholera, hepatitis, worm infestation, diarrhea, skin infection, eye infection, stomach problems, and allergies (Jabeen et al., 2011). Increased access to safe drinking water is also part of SDG 6.

d. Electricity: This indicator is also an important dimension of a household's well-being. It gives the household access to several activities.

e. Cooking fuel: The type of fuel used for cooking is crucial for the health of a household, particularly for women who are almost exclusively involved in cooking in Pakistan (Naveed and Tanweer-ul-Islam, 2011). Moreover, cooking fuel also affects the environment and indirectly corresponds to SDG 7.

f. Asset ownership: Household assets reflect the long-term material well-being status of the household. Asset ownership shows the stock of wealth.

We apply these indicators to the household data in Susenas. We then calculate the headcount index of the MPI, and those that do not meet several indicators are categorized as multidimensional poor households.

3.3 Model for determinants of multidimensional poverty and monetary poverty

We use a logit model to examine the determinants of poverty measurements of each of the poverty categories – that is, why households are categorized as poor or not poor in terms of monetary poverty and multidimensional poverty (Eq. 1). We also apply an ordered logit model to examine the relative effects of different household characteristics on their poverty outcomes (Dartanto and Otsubo, 2013) – that is, why individuals only experience one poverty measurement while others experience poverty in two measurements (Eq. 2).

The logit and ordered logit models are as follows:

$$\Pr\left(y_i^{LM} = 1\right) = \frac{e^{\sum_{n=1}^{N} \alpha_n CH_{ni} + \sum_{m=1}^{M} \alpha_m RC_{mi} + e_i}}{1 + e^{\sum_{n=1}^{N} \alpha_n CH_{ni} + \sum_{m=1}^{M} \alpha_m RC_{mi} + e_i}} \quad (1)$$

$$\Pr\left(y_i^{OLM} = 0\right) = \frac{e^{\sum_{n=1}^{N} \alpha_n CH_{ni} + \sum_{m=1}^{M} \alpha_m RC_{mi} + e_i}}{1 + e^{\sum_{n=1}^{N} \alpha_n CH_{ni} + \sum_{m=1}^{M} \alpha_m RC_{mi} + e_i}} \quad (2)$$

where,

- y_i^{LM} is a poverty category for each of two poverty measurements: 1 = poor, 0= non-poor;
- y_i^{OLM} is a poverty experience: 0 = non-poor in two poverty measurements; 1 = poor in only monetary measurements; 2 = poor in two poverty measurements;
- e_i is an error term;
- i is the household identifier (i = 1, …, 253,280);
- CH_i is a vector of household characteristics, including marital status of household head, educational attainment of household head, number of household members, locational dummy, size of house, and access to the government's credit program (n=1, 2, …, N);

- RC_i is a vector of village characteristics, including village location, being directly adjacent to the sea, ratio of males in the population, ratio of agricultural families and ratio of male migrant workers in the village, heterogeneity of ethnicity in the village, ratio of medical experts living in the village, road condition in the village, and availability of a commercial bank in the village (m=1, 2, …, M).

Eq. 1 is a logit model with binary response outcomes y = {0, 1}. The logit model solves these problems:

$$\ln\frac{p}{1-p} = \sum_{n=1}^{N} \alpha_n CH_{ni} + \sum_{m=1}^{M} \alpha_m RC_{mi}\,;\; p = Pr(y = 1)$$

The estimated probability is:

$$p = \frac{1}{\left(1 + e^{-\left(\sum_{n=1}^{N} \alpha_n CH_{ni} + \sum_{m=1}^{M} \alpha_m RC_{mi}\right)}\right)}$$

Eq. 2 is an ordered response model with three outcomes y = {0, 1, 2}. Ordered logit is often conceptualized as a latent variable model. The latent variable y* is determined by,

$$y^* = x\beta + e, e|x \sim Normal(0,1)$$

where β is a kx1 coefficient vector, and for reasons to be seen, vector **x** does not contain a constant.

We estimate all parameters using the maximum likelihood estimation. The estimated coefficients cannot be interpreted directly but the signs have exactly the same meaning as those estimated by ordinary least squares (OLS). A negative sign implies that the choice probabilities shift to lower categories when the explanatory variable increases. We are interested in the response probabilities or partial effects of the ordered probit/logit models (for a detailed explanation of the response probabilities, see Wooldridge (2010).

Table 2: Explanatory variables used in logit and ordered logit models

Variables	Measurements and units	Expected effect
Household Characteristics		
Marital status of household head	1=married; 0=other	+/–
Educational attainment of household head	Completed schooling of household head (0=no schooling, 1=elementary, 2=junior high, 3=senior high, 4=one to three years of vocational training, 5=undergraduate, and 6=post graduate level education)	–
Number of household members	The number of household members	+
Location dummy	1=urban; 0=other	-
Size of house	Log size of the house (square meters)	-
Access to poverty credit program	1=having; 0=other	-
Village Characteristics		
Village location	1=flatland; 0=other	-
Adjacent to the sea	1=yes; 0=no	-
Ratio of agricultural families in the village		+
Ratio of male migrant workers in the village		+
Ethnic groups in the village	1=having more than one ethnic group; 0=other	-
Ratio of medical experts living in the village		-
Main road condition in the village	1=asphalt; 0=other	-
Availability of a commercial bank in the village	1=having commercial bank; 0=not having	-

Source: Authors

4. Multidimensional poverty analysis

4.1 The Multidimensional Poverty Index in Indonesia

Table 3 presents a headcount index for all provinces in Indonesia. The national poverty index of both poverty measurements in 2011 is 12.14% (for monetary poverty) and 73.4% (for multidimensional poverty). There was over a 60 percentage-point difference in poverty outcomes between monetary and multidimensional poverty. This indicates that the monetary indicator of poverty does not sufficiently represent the deprivation of society in Indonesia. People might not be categorized as poor in terms of monetary poverty, but when they do not have access to education, health, and clean energy sources, then they most certainly are poor.

The highest level of monetary poverty is found in Papua (33.27%), and the highest level of multidimensional poverty is found in East Nusa Tenggara (84.93%), while the lowest level of monetary poverty is found in Jakarta (3.45%), and the lowest level of multidimensional poverty is found in the Riau Islands (50.79%). The top three provinces in terms of the biggest percentage-point differences in poverty outcomes between monetary and multidimensional poverty are West Kalimantan (75.1%), Central Kalimantan (73.14%), and West Sulawesi (70.78%). These three provinces have over a 70 percentage-point difference in poverty outcomes between monetary and multidimensional poverty. In addition, their monetary poverty index is much lower than the national monetary poverty index, while their Multidimensional Poverty Index is higher than the national Multidimensional Poverty Index. It indicates that the income is spent in a small portion to fulfill the needs of health, education and living standard. Those living in these three provinces do not have a serious concern on the issues of health, education and living standard.

Table 3: Headcount ratios of monetary and multidimensional poverty (%)

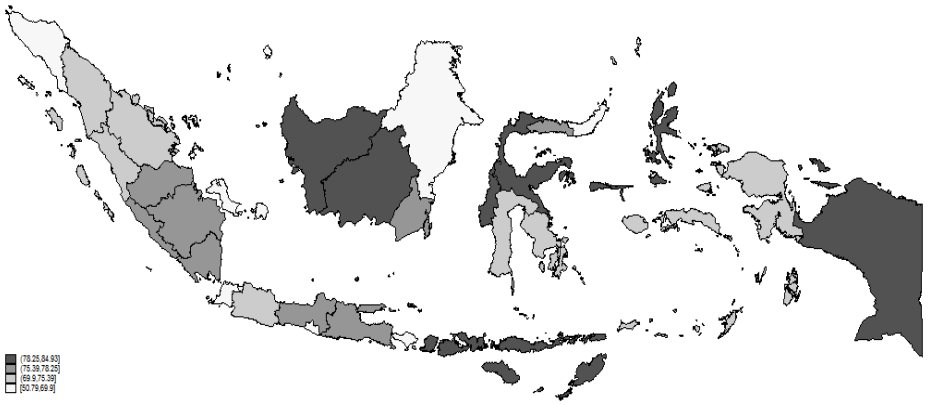
Province	Headcount Monetary Poverty Index	Headcount Multidimensional Poverty Index
Aceh	18.18	59.58
North Sumatra	9.59	73.04
West Sumatra	8.19	75.39
Riau	7.81	73.42
Jambi	7.73	78.25
South Sumatra	14.1	77.4
Bengkulu	16.63	75.58
Lampung	16.42	78.1
Bangka Belitung	4.39	65.26
Riau Islands	7.25	50.79
Jakarta	3.54	56.47
West Java	10.48	71.36
Central Java	15.43	77.15
Yogyakarta	15.56	61.51
East Java	13.92	78.09
Banten	6.7	68.5
Bali	4.74	63.11
West Nusa Tenggara	17.99	79.78
East Nusa Tenggara	23.82	84.93
West Kalimantan	7.65	82.75
Central Kalimantan	5.93	79.07
South Kalimantan	5.09	75.48
East Kalimantan	6.9	52.17
North Sulawesi	7.6	69.9
Central Sulawesi	14.18	79.48
South Sulawesi	11.67	71.41
Southeast Sulawesi	12.04	72.78
Gorontalo	18.09	78.1
West Sulawesi	12.53	83.31
Maluku	19.61	73.54
North Maluku	9.92	79.05
West Papua	26.83	70.52
Papua	33.27	83.26
National	12.14	73.4

Source: Authors' calculation

Figures 2 and 3 show the headcounts of the monetary poverty index and the Multidimensional Poverty Index in each province of Indonesia. The map categorizes the province index into four levels: very low, low, medium, and high. The figures clearly portray the shifting of the index level in some provinces. Some provinces that are at a low level among all the provinces in the monetary poverty index move to a high level in the Multidimensional Poverty Index. Central Kalimantan raises three levels from monetary poverty to multidimensional poverty: very low in the monetary poverty index to high in the Multidimensional Poverty Index. This means that the monetary poverty is not enough in capturing the deprivation of the poor.

Figure 2: Map of Headcount of the Monetary (Expenditure) Poverty Index

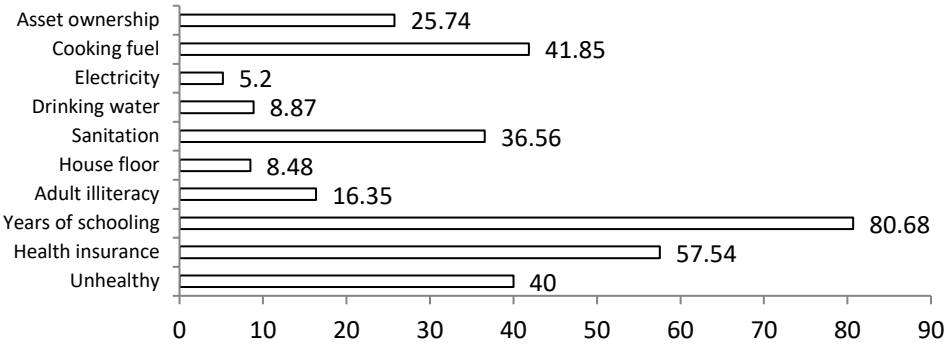
Figure 3: Map of Headcount of the Multidimensional Poverty Index



4.2 Driver of multidimensional poverty and its policy implications

Figure 4 presents the percentage of individuals under the cutoff for each indicator of the three dimensions. In terms of years of schooling, the cutoff is any adult member in the household who has completed secondary school; over 80% of individuals are deprived in years of schooling. This finding illustrates that the level of education in Indonesia is still low. In terms of cooking fuel, since 2007, Indonesia has had a program encouraging 40 million poor households to use gas. It appears that this program has not provided satisfactory results. In terms of standard of living, 34% of individuals do not have improved sanitation. House floor and drinking water conditions appear average. The figure shows that almost all Indonesians have access to electricity. Almost 60% of individuals are deprived of health insurance and 41% are deprived of cooking fuel. Although, since 2005, the Indonesian government has issued a special program for the funding of social health insurance to protect the poor, it is not widely distributed to cover the entire population.

Figure 3: Percentage of deprivation for various indicators

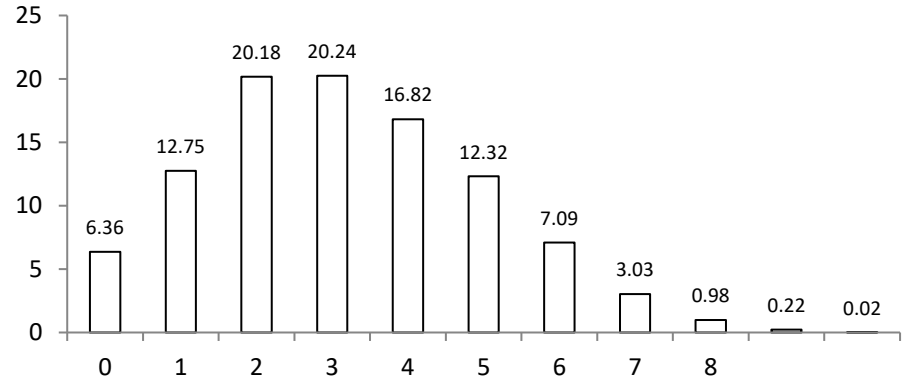


Source: Authors' calculation

Figure 5 presents the percentage of individuals facing deprivation for exact numbers of indicators. Very few individuals (6.36%) are found to have no deprivation at all. The result is quiet shocking, with over 90% of individuals deprived in at least one of the indicators. If we use the union approach and set the indicator as a dimension, then almost all households are categorized as poor. Most individuals are deprived in two to four

indicators. The figure also reveals that over 50% of individuals are deprived in three or more indicators. About 4.25% of individuals are deprived in seven or more indicators, and 0.02% of individuals are deprived in all indicators.

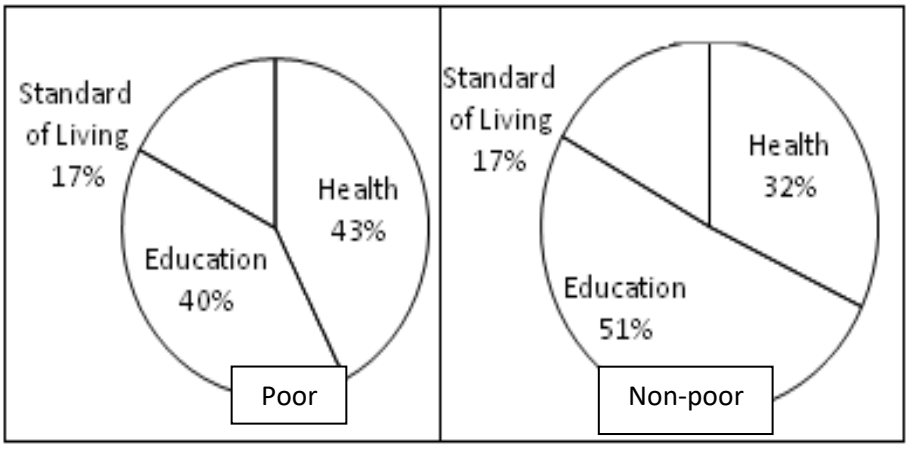
Figure 4: Percentage of individuals facing various numbers of deprivations



Source: Authors' calculation

Figure 6 presents the contribution of each dimension to the overall deprivation experienced by those falling below the poverty line (second cutoff, k=1/3). It shows the dimension-wise deconstruction of multidimensional poverty at the aggregate level. Health makes the highest contribution in overall deprivation faced by the multidimensional poor. This reflects the poor state of health in the whole country. The next contributor to poverty is lack of education. This reflects the unsatisfactory education level in Indonesia. In order to alleviate multidimensional poverty, the government and other stakeholders should prioritize health, particularly awareness of health insurance, due to it being one of the main drivers of multidimensional poverty.

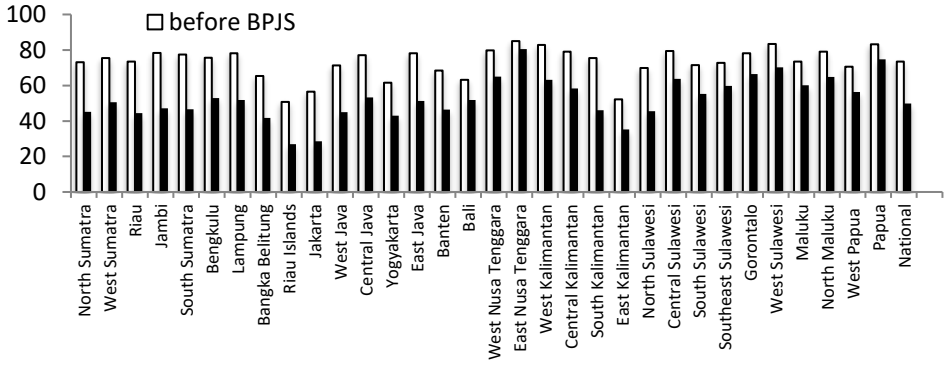
Figure 5: Poverty drivers of the multidimensional poor and non-poor (%)



Source: Authors' calculation

Since 2014, the government has introduced National Health Insurance (*Jaminan Kesehatan Nasional* / *JKN*) with the aim of Indonesia having universal health coverage by 2019. The new program mandates all Indonesian citizens and those foreigners that have been in Indonesia for at least six months to register with BPJS Health (National Health Insurance Institution). This program will significantly change the Multidimensional Poverty Index in Indonesia. We simulated multidimensional poverty in Indonesia with an assumption that all Indonesian citizens have health insurance. Figure 7 illustrates the change in the headcount ratio index of multidimensional poverty before and after the BPJS is implemented successfully. It shows a large impact on reducing the number of multidimensional poor. At the national level, the Multidimensional Poverty Index decreases by 23.5%, from 73.4% to 35.7%. This policy is most effective when applied in Jambi, South Sumatra, South Kalimantan, Riau, Jakarta, and North Sumatra, with the Multidimensional Poverty Index decreasing by around 30% in these provinces.

Figure 6: Headcount ratio of multidimensional poverty before and after BPJS



Source: Authors' calculation

4.3 Sensitivity analysis: changes in cutoff selection

This sub-section is used to analyze the effect of changes in cutoffs on poverty measurements. We lowered the cutoffs for the education dimension. We set a new cutoff for the years of schooling indicator: households are considered deprived if all adult members have not completed secondary school (junior high school). We also amended the cutoff for illiteracy: households are considered deprived if none of the adult members of a household are able to read/write. Cutoffs for all other indicators remained the same. We call it the "W-version of multidimensional poverty" to differentiate it from the version in the previous section. We analyze whether the headcount ratio of poverty is affected by adopting the two alternative definitions.

Table 4 shows that the W-version of multidimensional poor is a subgroup of the multidimensional poor, because the W-version multidimensional indicator cutoff is lower than the multidimensional poverty cutoff. The W-version of multidimensional poor is obviously also the multidimensional poor. Around 37% of the W-version multidimensional non-poor become the multidimensional poor after raising the cutoff of the education dimension. It indicates that the measurement is quite sensitive to the cutoffs of indicators. This implies that cutoff selection is crucial in the calculation of multidimensional poverty. Therefore, policy makers or

researchers should be careful and take a serious effort to choose the dimension and indicator when they would like to calculate the MPI as a poverty indicator.

Table 4: Cross tabulation between two definitions of multidimensional poverty

		Multidimensional poverty measurements "W-version"	
		Non-poor	Poor
Multidimensional poverty measurements	Non-poor	61,954,368	0
		26.6	0
	Poor	87,777,616	83,207,062
		37.68	35.72

Source: Authors' calculation

4.4 Relationship between monetary and multidimensional poverty

Table 5 presents a cross tabulation of 1,079,277 Indonesians extracted from the 2011 Susenas, being classified as poor or non-poor by two poverty measurements. While 87.86% of the population is categorized as monetary non-poor, only 26.6% of the population is reported as multidimensional non-poor. The main difference between the two measurements is that the monetary poverty measurement provides very conservative estimates of poverty. The multidimensional poverty estimates show that 73.4% of the population falls below the poverty line –six times higher than the result when using the monetary poverty measurement, which finds only 12.14% of the population to be below the poverty line.

Table 5 contrasts the status of the population using both measurements of poverty. Around 62.3% of the population is non-poor according to the monetary poverty measurement, but in higher poverty measurement are declared as poor. This provides strong evidence that monetary (consumption) measurements alone do not satisfactorily explain deprivations faced by the poor. On the other hand, 1% of the population declared as poor by the monetary poverty measurement is considered non-poor by the multidimensional poverty measurement.

Table 5: Cross tabulation between multidimensional poverty and monetary poverty

Poverty measurements		**Multidimensional poverty**	
		Non-poor	Poor
Monetary poverty	Non-poor	59,511,584	145151670
		25.55	62.31
	Poor	2,442,784	25,833,008
		1.05	11.09

Note: For each cell, the first row contains the number of people in that category. The number in the second row shows the percentage share of the total sample population.
Source: Authors' calculation

The relationship between the two methods of poverty estimation is explored by Spearman's rank correlation. Spearman's rank correlations among the provincial rankings for both poverty indicators found that the ranking of monetary and multidimensional poverty measurements is significantly correlated among the provincial rankings. The correlation coefficient is 0.39 (p-value = 0.025). This finding is similar to that reported by Naveed and Tanweer-ul-Islam (2011). The coefficient is statistically significant, but it is low and does not provide the basis for accepting the one-dimension measure as a single, comprehensive criterion for the estimation of poverty. Besides, monetary (consumption) deprivation has a low correlation with deprivation in other dimensions. The highest correlation of consumption is 0.24, with the cooking fuel indicator.

5. Analysis of determinants of poverty in Indonesia

Before we conducted an econometric estimation, we conducted a descriptive analysis by comparing two poverty groups (Table 6): monetary poor (5,125,462 households) and multidimensional poor (39,407,050 households). Compared with the monetary poor group, the multidimensional poor group was slightly better in educational attainment and had ownership of a larger land area. The multidimensional poor group has fewer household members, lives in urban areas, and has a lower percentage of members working in the agricultural sector or as migrant

workers. Their village conditions are also better, with better main roads and the availability of a commercial bank.

Table 6: Descriptive data on poverty status

Variables	**Monetary poor**	**Multidimensional poor**
	Mean	**Mean**
Household Characteristics		
Marital status of household head (1=married; 0=other)	0.896	0.859
Educational attainment of household head (Completed schooling)	0.927	1.254
Number of household members	4.827	3.946
Locational dummy (1=urban; 0=other)	0.248	0.427
Size of house (Log size of house [square meters])	3.862	3.982
Having government credit program (1=yes; 0=no)	0.072	0.106
Village Characteristics		
Village location (1=flatland; 0=other)	0.680	0.797
Directly adjacent to the sea (1=yes; 0=no)	0.112	0.109
Ratio of agricultural families in the village	0.648	0.408
Ratio of male migrant workers in the village	0.004	0.003
Ethnic groups in the village (1=having more than one ethnic group; 0=other)	0.740	0.798
Ratio of medical experts living in the village	0.001	0.001
Main road condition in the village (1=asphalt; 0=other)	0.712	0.789
Availability of commercial bank (1=having; 0= other)	0.108	0.211
Number of Observations	5,125,462	39,407,050

Completed schooling: 0=no schooling, 1=elementary, 2=junior high, 3=senior high, 4=one to three years of vocational training, 5=undergraduate, and 6=post graduate level education)

Source: Authors' calculations based on Susenas data

5.1 Determinants of poverty

The logit and ordered logit models are estimated by the maximum likelihood estimation with robust standard errors. The estimation results of the logit model (Eq. 1) are shown in Tables 7 and 8. Table 8 shows the estimation results of poverty determinants for both monetary and multidimensional poverty measurements. Table 8 summarizes the partial effects (dy/dx) of changes in the probability of households being poor or non-poor. Estimation results of the ordered logit model (Eq. 2) are reported in Table 9. The partial effects (dy/dx) of explanatory variables on the ordered poverty experiences are summarized in Table 10.

Characteristics of a household

The result of the logit analysis shows that all family characteristic variables of marital status, educational attainment, number of household members, locational dummy (1=urban or 0=rural), size of house, and having the poverty credit program are significant. The negative coefficient of the educational attainment variable means that higher educational attainment of the household head leads to a higher probability of being non-poor. The probability of being monetary and multidimensional poor will decrease by 0.02% and 0.14%, respectively, when the completed schooling of the household head increases from one step to the other, such as no schooling to elementary school (Table 8). The effect of educational attainment is higher in multidimensional poverty than monetary poverty. These findings confirmed the conclusions of previous studies such as those conducted by Baiyegunhi and Fraser (2010), Usman, Sinaga, and Siregar (2006), Abufhele and Puentes (2011), and Dartanto and Otsubo (2013).

On the other hand, a larger number of household members increases the probability of being poor in both monetary and multidimensional poverty measurements. The probability of being monetary and multidimensional poor will increase by 0.02% and 0.015%, respectively, when households have one more child. Married households tend to be poorer. The size of the house as an indicator of physical asset ownership affects monetary and multidimensional poverty negatively and significantly. The dummy variable of location also has a negative coefficient, which means that

households in urban areas tend to be less poor. This result is predictable, because urban areas are more developed than rural areas, and there are more jobs and facilities. The headcount index for rural areas is always higher than that for urban areas in all provinces in Indonesia.

Village Characteristics

All village characteristics, including village location, being directly adjacent to the sea, ratio of male population, ratio of agricultural families, ratio of male migrant workers, ethnic groups in the neighborhood, ratio of medical experts, main road conditions, and availability of a commercial bank, are significant. The availability of asphalt roads has a significant role in reducing poverty, both in the monetary and multidimensional measurements. The availability of asphalt roads significantly correlates with the probability of being poor in monetary (0.003%) and multidimensional (0.039%) poverty measurements. The existence of medical expertise has the biggest impact in reducing poverty. The probability of being monetary and multidimensional poor will decrease by 1.25% and 4.7%, respectively, when there is an increased number of medical experts in the neighborhood. Surprisingly, the number of ethnic groups has a negative coefficient in both measurements, which means that having more than one ethnic group in a neighborhood leads to a reduction in the number of poor. Having more than one ethnic group in a neighborhood significantly reduces the probability of being poor in monetary (0.02%) and multidimensional (0.005%) poverty measurements. The availability of a commercial bank has a negative effect on monetary poverty but has no effect on poverty status in the multidimensional poverty measurement.

Table 7: Estimation results of logistic regression of poverty determinants

Variables	Monetary poverty		Multidimensional poverty	
	Coef.	Robust S.E.	Coef.	Robust S.E.
Household Characteristics				
Marital status of household head (1=married; 0=other)	0.081***	0.024	0.451***	0.015
Educational attainment of household head (Completed schooling)	–0.344***	0.007	–0.795***	0.004
Number of household members	0.433***	0.004	0.085***	0.003
Locational dummy (1=urban; 0=other)	–0.699***	0.022	–0.379***	0.013
Size of house (Log size of house [square meters])	–0.704***	0.014	–0.138***	0.008
Having credit program (1=yes; 0=no)	–0.471***	0.027	0.016	0.017
Village Characteristics				
Village location (1=flatland; 0=other)	–0.356***	0.017	–0.217***	0.015
Directly adjacent to the sea (1=yes; 0=no)	–0.062***	0.018	–0.133***	0.013
Ratio of agricultural families in the village	0.792***	0.017	0.785***	0.013
Ratio of male migrant workers in the village	4.365***	0.558	3.064***	0.621
Ethnic groups in the village (1=having more than one ethnic group; 0=other)	–0.369***	0.018	–0.025*	0.015
Ratio of medical experts living in the village	–25.621***	3.275	–25.849***	1.781
Main road condition in the village (1=asphalt; 0=other)	–0.064***	0.016	–0.219***	0.015
Availability of a commercial bank (1=having; 0= other)	–0.302***	0.028	–0.017	0.013
Constant	**–0.480*** **	**0.061**	**2.648*** **	**0.041**
Wald Chi-Square	**32,867**		**78,096**	
Log Pseudo Likelihood	**–64,150**		**–115,393**	
Pseudo R2	**0.204**		**0.253**	
Number of Observations	**253,280**		**253,280**	

Note: *, **, and *** denote statistical significance at the 10%, 5% and 1% level, respectively.
Source: Authors' calculation

Table 8: Estimation results of marginal effect (dy/dx) of poverty determinants (%)

Variables	Monetary poverty	Multidimensional poverty
Household Characteristics		
Marital status of household head (1=married; 0=other)	0.004	0.089
Educational attainment of household head (Completed schooling)	–0.017	–0.144
Number of household members	0.021	0.015
Locational dummy (1=urban; 0=other)	–0.033	–0.070
Size of house (Log size of house [square meters])	–0.034	–0.025
Having poverty credit program (1=yes; 0=no)	–0.020	0.003
Village Characteristics		
Village location (1=flatland; 0=other)	–0.019	–0.038
Directly adjacent to the sea (1=yes; 0=no)	–0.003	–0.025
Ratio of agricultural families in the village	0.043	0.135
Ratio of male migrant workers in the village	0.212	0.557
Ethnic groups in the village (1=having more than one ethnic group; 0=other)	–0.020	–0.005
Ratio of medical experts living in the village	–1.247	–4.699
Main road condition in the village (1=asphalt; 0=other)	–0.003	–0.039
Availability of a commercial bank (1=having; 0= other)	–0.014	–0.003
Probability (y=j/x)	0.051	0.761

Source: Authors' calculation.

5.2 Determinants of ordered poverty experiences

In this sub-section, we will discuss determinants for multi-layered poverty – why some people experience poverty solely in the monetary poverty measurement while others experience poverty in both monetary and multidimensional poverty measurements. This analysis of ordered poverty experience is used to check the consistency and robustness of the

estimation result of the logit model (Eq. 1). The order of poverty experience is as follows: 0 = no experience of any of the poverty measurements; 1 = experience of monetary poverty; 2 = experience of both monetary and multidimensional poverty.

Household Characteristics

Households with a marriage status and having higher educational attainments tend not to be poor in either of the poverty categories. The probability of not being poor in either of the poverty categories increases by 0.02% following an increase in educational attainment (Table 10). Households with many family members tend to be poor in both categories of poverty. The probability of not being poor in either of the poverty categories decreases by 0.021% with an increase in the number of household members. The estimation results confirmed that households experiencing a positive shock, such as access to the government's credit program, tend not to be poor in either of the poverty categories. Having access to the government's credit program increases the probability of not being poor by 0.02%, and as expected, owning a larger house reduces the chances of being poor in either category.

Village Characteristics

The village characteristics of location (on flat land, or not, and adjacent to the sea, or not), the heterogeneity of ethnic groups, ratio of medical experts, main road conditions (asphalt/not), and availability of a bank significantly increase the probability of not being poor in either of the poverty categories. The probability of not being poor in either of the poverty categories increases by 1.29% with an increase in the ratio of medical experts living in the same village. This study also confirmed that infrastructure development is an effective policy for poverty alleviation. Having asphalt roads and a bank in the area will decrease the probability of being poor by 0.004% and 0.014%, respectively. On the other hand, the ratio of agricultural families and the ratio of male migrant workers decrease the probability of not being poor in both poverty categories. Having male migrant workers in the area decreases the probability of not being poor by 0.21%.

Table 9: Estimation results of ordered logit model of poverty experience

Variables	**Coefficient**	**Robust S.E.**
Household Characteristics		
Marital status of household head (1=married; 0=other)	0.085***	0.024
Educational attainment of household head (Completed schooling)	–0.348***	0.007
Number of household members	0.432***	0.004
Locational dummy (1=urban; 0=other)	–0.698***	0.022
Size of house (Log size of house [square meters])	–0.710***	0.014
Having government credit program (1=yes; 0=no)	–0.473***	0.027
Village Characteristics		
Village location (1=flatland; 0=other)	–0.371***	0.016
Directly adjacent to the sea (1=yes; 0=no)	–0.065***	0.018
Ratio of agricultural families in the village	0.808***	0.017
Ratio of male migrant workers in the village	4.368***	0.556
Ethnic groups in the village (1=having more than one ethnic group; 0=other)	–0.367***	0.018
Ratio of medical experts living in the village	–26.552***	3.281
Main road condition in the village (1=asphalt; 0=other)	–0.073***	0.016
Availability of a commercial bank (1=having; 0= other)	–0.301***	0.028
/cut1	**0.439**	**0.061**
/cut2	**0.582**	**0.061**
Wald Chi-Square	**33,341**	
Log Pseudo Likelihood	**–72,094**	
Pseudo R2	**0.188**	
Number of Observations	**253,280**	

Source: Authors' calculation

Table 10: Estimation results of partial effect (dy/dx) on ordered poverty experience (%)

Variables	Y=0	Y=1	Y=2
Household Characteristics			
Marital status of household head (1=married; 0=other)	–0.004	0.000	0.004
Educational attainment of household head (Completed schooling)	0.017	–0.002	–0.015
Number of household members	–0.021	0.003	0.018
Locational dummy (1=urban; 0=other)	0.033	–0.004	–0.029
Size of house (Log size of house [square meters])	0.034	–0.004	–0.030
Having poverty credit program (1=yes; 0=no)	0.019	–0.002	–0.017
Village Characteristics			
Village location (1=flatland; 0=other)	0.020	–0.002	–0.018
Directly adjacent to the sea (1=yes; 0=no)	0.003	0.000	–0.003
Ratio of agricultural families in the village	–0.044	0.005	0.039
Ratio of male migrant workers in the village	–0.212	0.026	0.186
Ethnic groups in the village (1=having more than one ethnic group; 0=other)	0.020	–0.002	–0.018
Ratio of medical experts living in the village	1.287	–0.156	–1.131
Main road condition in the village (1=asphalt; 0=other)	0.004	0.000	–0.003
Availability of a commercial bank (1=having; 0= other)	0.014	–0.002	–0.012
Probability (y=j/x)	0.949	0.007	0.045

Source: Authors' calculation

6. Concluding remarks

The nature of poverty is not a single phenomenon; it is diverse, dynamic, and multidimensional. In the context of Indonesia, which is socio-economically, demographically, and geographically diverse, the current measurement of poverty based on an expenditure approach cannot comprehensively represent the deprivation faced by the poor. This paper adopted Alkire and Foster's multidimensional framework to estimate poverty and to identify the poor in Indonesia. It has analyzed data on 10 indicators pertaining to three valuable dimensions of well-being: education, health, and standard of living. This study finds that around 73% of the population are categorized as being multidimensional poor. Exploring the relationship between monetary and multidimensional poverty, we found that there is around a 60 percentage-point difference in the poverty headcount ratio computed by applying the monetary and multidimensional poverty metrics. This evidence provides a clear message that the expenditure-based poverty calculation in Indonesia does not comprehensively represent the deprivation within society. This paper also simulated the change in the MPI before and after BPJS implementation (the JKN program) to measure the effectiveness of current policy in reducing the MPI. The simulation shows that at the national level, the MPI decreased by 23.5%, from 73.4% to 35.7%. Therefore, the universal health coverage program (the JKN program) would significantly reduce the MPI.

Applying logit and ordered logit model estimations, we noted no much difference between the determinants of monetary poverty and multidimensional poverty. The main determinants of poverty are educational attainment of the household head, number of household members, physical assets (house ownership), positive shocks (having access to the property credit program), house location, existence of migrant workers, existence of medical expertise, and the heterogeneity of ethnicity in society. This study confirmed that higher educational attainment of the household head leads to a higher probability of being non-poor. The probability of being categorized within the monetary and multidimensional poor will decrease by 0.02% and 0.14%, respectively, when the completed schooling of the household head is raised by one step.

Though the MPI is very sensitive to the chosen indicators and cutoffs, it can inform policymakers that human deprivation is multidimensional. This study suggests that dimensions and indicators should be related to the indicators of SDGs; therefore, it would be beneficial for policymakers to allocate resources effectively and efficiently to reduce poverty and achieve SDGs immediately.

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Impact of Foreign Direct Investment on Domestic Investment in Sudan: "Giving Hope Hypothesis"

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To interpret the role that FDI plays in promoting domestic investment, this paper proposes and provides an empirical test for "giving hope hypothesis". The postulated hypothesis states that, along with its widely recognized contributions in augmenting domestic investment in recipient countries, the presence of FDI could also increase growth in domestic investments by giving hope in domestic business environment. To validate this hypothesis, the paper utilizes time series data on Sudan covering the period from 1980 to 2013. The empirical analysis is performed using co-integration and error correction vector (VECM) econometric techniques. The findings indicate the existence of a complementary relationship between FDI and domestic investment in Sudan, supporting the argument of giving hope hypothesis. Moreover, and as expected, the rest of the variables included in the analysis have displayed the anticipated signs.

Key words: Sudan, Co-integration, Domestic investment, FDI

1. Introduction

The relationship between foreign direct investment (FDI) and domestic investment often represents a focal point for a huge number of studies. It has been argued in the existing literature that FDI inflows positively influences economic growth and promotes domestic investment through modern technologies diffusion, human capital formation, strengthening back and forward linkages between Multinational Corporations (MNCs) and domestic firms in recipient countries' underdeveloped sectors. Furthermore FDI has a potentiality to equip workers with managerial skills and connects local industries with foreign markets, etc. Though, a section of literature doesn't find empirical support for this contention i.e. there is an opposed belief that the expansion in FDI could possibly impede

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domestic investments, rather than promoting them. According to this argument, the presence of FDI in a certain country is likely to seize the domestic markets in which domestic infant industries sell their immature products and, therefore, stop them from acquiring benefits resulting from economies of scales. Moreover, since FDI usually pays higher prices for local inputs, transplanting new FDI projects would raise the costs of production of the local firms and, as a consequence, restrict their ability to expand.

In sum, these debatable views on the relationship between FDI and domestic investment have been professed in the so-called the crowding out and the crowding in hypotheses. Compatible with these conflicting hypotheses, the available empirical literature provides contrasting outcomes. Some studies, for instance, have supported the existence of a complementary relationship between FDI and domestic investment, while others do not. Owing to this disagreeing evidence, the attitudes of recipient countries towards hosting FDI has also became largely varying in accordance to policymakers' recognition to the impact that FDI could have on domestic firms.

Sudan, like other developing countries, is extremely undercapitalized and lacks sources of capital. The domestic savings of the country are far less than to cover the amounts of capital needed to put the economy on the track of sustainable economic growth. It is worth mentioning that the heavy reliance on agriculture, the failure to channel domestic savings into financial institutions and the dominance of customs that encourage luxurious consumption have also contributed in widening the gap between the capital needed by the country and domestic savings. Therefore, new sources of capital need to be attempted so as to supplement these insufficient domestic savings. However, due to unfeasibility of other capital sources (i.e. borrowing, aid and portfolio investment etc.), hosting larger amounts of foreign businesses in the form of FDI becomes representing one of the possible alternatives to fill this capital gap. Recently, after exploiting oil in commercial quantities, many MNCs have competed to establish businesses in Sudan. Consequently, all FDI measurements have seen significant increases. However, the stylized facts pertaining to Sudan economy reveal that domestic investments remain, to a large extent, stagnant and don't grow at speed that consistent with that of FDI. This unsatisfactory outcome in the performance of domestic businesses, combined with controversial theoretical and empirical

literature, makes the question about the impact of FDI on domestic investment in Sudan as one of the most pressing puzzles that need urgent answers. Thus, with these issues in mind, this paper endeavors to analyze the probable influence of FDI on domestic investment in Sudan by utilizing co-integration and vector error correction model (VECM) econometric techniques. Specifically, the study follows the lead of Feldstein (1994), Sun (1998), Lipsey (2000), and Agosin and Mayer (2000) by constructing an empirical model in which FDI has been introduced as one of the predictors for domestic investment in the country. The study is basically driven by the concern that the findings from cross-countries studies are powerless in detecting the nature of the relationship between foreign and domestic investments in each single country. Furthermore, the paper argues that, other than its well documented contributions in augmenting growth of domestic firms, FDI in a country like Sudan has a potentiality to promote domestic investments via tracking hope to domestic investors.

In our opinion, this paper makes several contributions to the existing literature on FDI in general, and to the limited body of evidence concerned with the impact of the FDI on Sudan economy in particular. First, Sudan has a long history in hosting FDI. However, to the best of the author's knowledge there is no a concrete evidence to provide policymakers with accurate information regarding the relationship between FDI and domestic investment. Second, in a country like Sudan, the growth of domestic investments represents one of the alternatives on which the nation depends on to achieve the desired economic transformations. This is because the country is well endowed with natural resources that their exploitation is largely depends on the availability of capital of which FDI represents one of its crucial sources. Finally, Sudan is similar to many developing countries in terms of economic and social characteristics. Accordingly, this study would serve as a mirror that reflecting the correct impact of FDI on domestic investment in these countries.

The rest of this paper proceeds as follows: Section 2 presents a brief overview on FDI in Sudan by emphasizing its potential relationship with domestic investments. Section 3 reviews the related literature. Section 4 constructs the empirical model, while Section 5 discusses methodology, variables and data used. Section 6 introduces empirical results and finally, the conclusion and policy implications are presented in Section 7.

2. The patterns of domectic and foreign invesments in Sudan

In order to get the right picture on the relationship between foreign and domestic investments, it is imperative to glance back at the stylized facts on the FDI and its interactions with domestic investment in Sudan. Table 1 sketches the routes of gross capital formation (GKF) and gross fixed capital formation (GFKF), gross domestic saving (GDS) and FDI as percentages of GDP in Sudan during 1976-2012. As seen in the table, GFKF, GKF and GDS (% of GDP) were almost stagnant over the period from1976 to 1980. Specifically, GKF (% of GDP) and GFKF (% of GDP) recorded an annual average of 21.16% and 22.04% for GFKF and 27.01% and 25.74% for GKF during the periods of 2001-2005 and 2006-2010, respectively. Putting things together, during that period, the patterns of FDI (% of GDP) did not diverge from that of capital indicators. Precisely, FDI (% of GDP) decreased from an annual average of 0.19% during 1981-1985 to -0.08% during 1986-1990. These facts indicate that over the 1980s, Sudan was not fitted to attract significant amounts of FDI compared to its economic size. Undoubtedly, this disappointing image was corrected after the country had adopted the privatization policies at the beginning of 1990's. Due to the implementation of this policy, FDI (% of GDP) moved up to an annual average of 0.18% during the first half of the 1990s and climbed further to its peak at 5.19% during 2001-2005. In the same vein, the ratio of domestic savings (GDS) to GDP was also negligible during 1970s and 1980s. As conveyed in Table 1, GDS (% of GDP) registered an annual average of 6.71% and 3.53% during 1976 - 1980 and 1981-1985, respectively. However, by the advent of the privatization policy, its annual average increased significantly from 11.55% during 1991-1995 to 23.28% during 2001-2005, to 24.66% in 2006-2010. Table 1 also displays domestic savings (GDS) as ratios to both GKF and GFKF together with FDI as a ratio to GFKF.

Table 1: Domestic capital formation, gross domestic saving and FDI in Sudan (1976-2012)

(1) Year	(2) GFKF/ (GDP) (%)	(3) GKF/ (GDP) (%)	(4) GDS/ (GDP) (%)	(5) FDI/ (GDP) (%)	(6) GDS/ (GKF) (%)	(7) GDS/ (GFKF) (%)	(8) FDI/ (GFKF) (%)
1976-1980	12.17	15.60	6.71	0.11	42	53	0.80
1981-1985	14.41	14.19	3.53	0.19	24	24	1.12
1986-1990	10.23	10.03	6.03	-0.08	49	54	-0.21
1991-1995	10.86	17.68	11.55	0.18	64	112	1.89
1996-2000	12.02	17.58	11.47	2.16	59	89	15.6
2001-2005	21.16	27.01	23.28	5.19	86	111	32.9
2006-2010	22.04	25.74	24.66	4.46	97	113	23.4
2011-2012	19.40	21.64	17.26	4.00	81	90	20.2
1976-2012	14.95	18.44	12.72	1.87	61	80	11.1

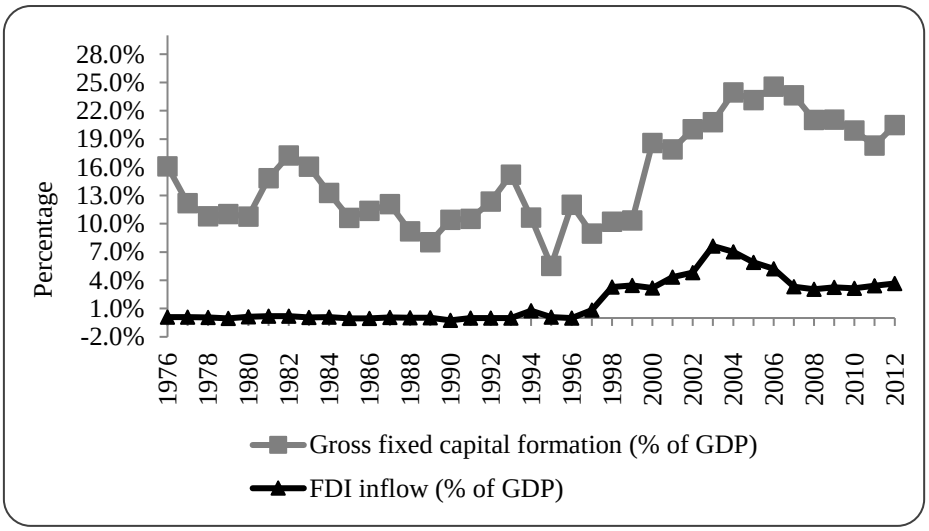
Sources: WB, World Bank Indicators, (2014) & UNCTAD, (2014)

From the figures displayed, it can be indicated that during 1976-1980, GDS was far less than to provide fund for domestic investments. Domestic savings covered only 42% from fund needed by investment sector (GDS/GKF = 42%). Moreover, the ratios of GDS to both GFKF and GKF contracted, respectively, from an annual average of 42% and 53% during 1976-1980 to 24% during 1981-1985 (see columns 6 and 7). This indicates that the gaps between domestic savings and both measures of capital formation have widened from -48 % (42-100) and -47% (53-100) during 1976-1980 to -76% (24-100) during 1981-1985. Interestingly, as can be observed in the table, FDI responded positively in filling the reduction in domestic savings during that period. This conclusion can be vindicated by the fact that GDS (% GFKF) increased from an annual average of 0.80% in 1976-1980 to 1.12% in 1981-1985. However, after the 1990s period, the gap between domestic savings and capital indicators began to narrow. As figures in columns 6 and 7 demonstrate, GDS/GKF and GDS/GFKF decreased, respectively, from an annual average of -41% (59-100) and -11% (89-100) during 1996-2000 to an annual average of -14% (86-100) and +11% during 2001-2005. Also, in the 1970s the picture was more dramatic when FDI inflows are compared with indicators of domestic capital. As Table 1 shows, FDI as a portion of GFKF were counted for an annual average of 0.80%, 1.1% and -0.21% during 1976-1980, 1981-1985 and 1986-1990, respectively. However, due to the

adoption of the privatization policy, this ratio improved sharply after the mid of the 1990s and onwards, registering an annual average of 1.89% during 1991-1995. These impressive increases were even more remarkable, reaching 15.6%, 32.9% and 23.4% during 1996-2000, 2001-2005 and 2006-2010, respectively.

To make the picture clear, Figure 1 illustrates the pathway of FDI and fixed capital formation (% GDP) in Sudan throughout 1976 - 2013. As can be observed, the fixed capital formation (% GDP) was relatively stagnant over the 1970s and the 1980s. In the second half of the 1990s, however, FDI inflows and gross fixed capital formation (both as percentages of GDP) rose dramatically compared to 1970s and 1990s. This might support the argument that FDI presence in Sudan encourages growth in domestic investments.

Figure 1: Gross fixed capital formation (% of GDP) and FDI flow (% of GDP) in Sudan (1976-2013)



Source: UNCTAD (2014)

On the whole, it can be inferred that both gross domestic capital and gross fixed capital formation in Sudan have, to some extent, positively influenced by FDI. However, concluding that FDI has a complementary relationship with domestic businesses based on the above descriptive facts

would provide uncertain conclusion. Therefore, the modern econometric techniques need to be utilized to ascertain this relationship.

3. Literature review

Researchers paid a great attention to the impact of FDI on domestic investment. Yet, those researchers did not come to a solid agreement regarding the nature and magnitudes of this impact. A large body of literature, for instance, confirms the positive role of FDI in stimulating growth in domestic investment, while, in contrast, there are countless empirical evidence of the view that the opposite is true. That is FDI presence has a possibility to exercise a crowding-in effects on domestic firms in recipient countries. Regardless of optimistic or pessimistic views, the literature proposes several channels through which FDI impact could be conveyed to domestic firms. First, FDI possesses a potentiality to create backward and forward linkages with domestic firms and, thus, boosting growth in domestic investment beyond the levels have been maintained before its entry (Van Loo, 1977; Lall, 1980; Martin S. Feldstein, 1995; Chen et al., 1995; Rodriguez, 1996; Markusen and Venables, 1999; Aitken and Harrison, 1999; Blomstrom et al., 1999; Agosin and Mayer, 2000 (cited by Quader, 2009); Lin and Saggi, 2004, and Isabel Faeth, 2006). The second possible channel through which FDI effect can be trickled to domestic sectors is embodied in the so-called the horizontal (intra-firm) and vertical (inter-industry) spillover effects (Borensztein E. et al., 1998; Hejazi and Safarian, 1999; Djankov and Hoekman, 2000, and Lin and Zhang, 2009). Third, the influence of FDI on domestic investment can be also viewed from market structure perspective as the presence of foreign firms causes changes in the levels of competition in domestic markets. According to the argument of market stealing hypothesis, which represents the core argument of market structure, the crowding-in effects occur if and only if MNCs construct new investments in downstream or upstream production that cannot take place in their absence (Caves, 1971; Jansen, 1995; De Mello, 1999; Apergis et al., 2006, and Sala and Trivin, 2014).

Summing up, the existing literature agreed that the probable impact of FDI on domestic investment can be mostly materialized through the physical contributions. Nevertheless, this literature has turned a blind eye to the psychological effects that could be diffused by FDI presence. That is to say FDI has a potentiality to encourage domestic investors to conduct new businesses, giving birth to further expansion in domestic firms.

Therefore, with this consideration in mind, this study proposes that the positive impact of FDI on domestic investment can also be channeled through psychological effects. This channel can be assembled in the hope, inspiration and enthusiasm that FDI gives to domestic investors by assuring that the national economy is promising and deserve launching new business ventures. This motivation to conduct new businesses can be stated in what is this study calls: "giving hope hypothesis".

3.1 Giving hope hypothesis

As stated above, there is a wide range of disagreements in the evidence on the probable relationship between FDI and domestic investments in recipient countries. Against these questionable outcomes, this paper seeks to investigate this debatable issue in the context of Sudanese business environment. The paper argues that in a country like Sudan, it is reasonable to think about the relationship between FDI and domestic investment in a manner and context that differ from attempts done for other countries. Alternatively stated, the paper proposes that the ambiguous results obtained by previous studies might be caused by ignoring the subjective sides of investment decisions. In this regard, the study suggests that FDI presence in Sudan will possibly elevate native investors' confidence in domestic business environment and, therefore, triggers expansions in domestic firms. It is well known that Sudan has been characterized by prolonged political instability, wars, ethnic tensions and vulnerability in international relations. These impediments block FDI entry and discourage domestic investments by local investors. This is what can be usually expected in the presence of such unfriendly business environment for potential domestic investment in general and FDI in particular. However, as discussed before, the stylized facts on Sudan reveal that both domestic and foreign investments have seen significant increases in spite of all these difficulties. Therefore, two questions may emerge here: (1) why does domestic investment expand in such unfriendly environment? (2) Does FDI stimulate native investors to increase investment spending? Providing accurate answers for these two questions is not an easy task in the light of the deficiencies in data needed to conduct a reliable empirical investigation. However, a precise motivation for the occurrence of a complementary relationship between FDI and domestic investment in Sudan can be advocated. Explicitly, this study argues that, along with its potential positive impacts on domestic firms, FDI can also

encourage growth in domestic investments through what can be called "giving hope hypothesis".

The proposed hypothesis states that the presence of FDI, especially in an unfriendly business environment such as that prevailing in Sudan, will give a hope to local investors to execute new investments. In other words, seeing foreigners who come cross political, social and economic borders to run businesses with a full hope in acquiring profits in the future will motivate native businesses to compete for getting share in the national economic pie. Furthermore, it could be argued that as a result of FDI presence, the capital flight undertaken by native investors is likely to stop and instead, a wide range of domestic investments will emerge. Definitely, this can intensify the benefits arising from agglomeration effects and, thus, restoring growth in domestic investments.

4. The model

To predict the level of domestic investment in Sudan and to test for giving hope hypothesis, the paper pursues the lead of Lipsey (2000), Sun (1998) and Agosin and Mayar (2000) by building a general model in which most of the variables included are vindicated by economic theory. According to those scholars, the domestic investment function in which FDI is used as an explanatory variable can be depicted in the following identity:

$$I_t = I_{d,t} + I_{f,t} \quad (4.1)$$

$$I_{f,t} = FDI \quad (4.2)$$

Where I represents total investment, I_d is domestic investment, I_f is investment conducted by foreign investors and t represents time. According to Agosin and Mayar (2000), domestic investment is represented by the stock adjustment variable that acts in response to the difference between the anticipated (desired) capital stock (K^*_d) and the actual capital stock (K_d). Hence, the basic investment model takes the following form:

$$I_{d,t} = \lambda(K^*_{d,t} - K_{d,t}) \quad (4.3)$$

Where λ represents the coefficient of adjustment to the difference between the two types of investments.

In the model tackled by this study, the stock of capital depends on GDP growth($GDPG$), domestic credit (CRD), real exchange rate ($REXR$),

inflation rate (INF), and trade openness ($OPEN$). These variables enter domestic investment function as follows:

$$K^*_{d,t} = \psi_0 + \psi_1 GDPG_t + \psi_2 CRD_t + \psi_3 REXR_t + \psi_4 OPEN_t + \psi_5 INF_t \quad 4.4$$

Now let us consider the law of motion of the capital stock:

$$K_{d,t} = (1-\delta)K_{d,t-1} + I_{d,t-1} \quad 4.5$$

Where δ denotes the rate of annual depreciation in domestic capital. By plugging 4.4 and 4.5 into 4.3 yields:

$$I_{d,t} = \lambda(\psi_0 + \psi_1 GDPG_t + \psi_2 CRD_t + \psi_3 REXR_t + \psi_4 OPEN_t + \psi_5 INF_t - ((1-\delta)K_{d,t-1} + I_{d,t-1}) \quad 4.6$$

$$I_{d,t} = \lambda\psi_0 + \lambda\psi_1 GDPG_t + \lambda\psi_2 CRD_t + \lambda\psi_3 REXR_t + \lambda\psi_4 OPEN_t + \lambda\psi_5 INF_t - \lambda((1-\delta)K_{d,t-1} + I_{d,t-1}) \quad 4.7$$

$$I_{d,t} = \beta_0 + \beta_1 GDPG_t + \beta_2 CRD_t + \beta_3 REXR_t + \beta_4 OPEN_t + \beta_5 INF_t + I_{d,t-1} \quad 4.8$$

Where $\beta_0 = \lambda(1-\delta)K_{d,t-1}$, $\beta_2 = \lambda\psi_2$, $\beta_3 = \lambda\psi_3$, $\beta_4 = \lambda\psi_4$ and $\beta_5 = \lambda\psi_5$

By substituting 4.2 and 4.8 into 4.1 (i.e. adding FDI to domestic investment model it will be transformed into total investment model) and taking the log will produce the following:

$$logDI_t = \beta_0 + \beta_1 GDPG_t + \beta_2 CRD_t + \beta_3 logRFDI_t + \beta_4 REXR_t + \beta_5 OPEN_t + \beta_6 INFL_t + \beta_7 PRIV_t + \varepsilon_{8t} \quad 4.9$$

Where $logDI_t$ is the natural logarithm of domestic investment; the subscript t represents time; the intercept value β_0 represents the expected value of domestic investment when each predictor is zero and $PRIV_t$ is a dummy variable employed to deliver the impact of adopting privatization policy on domestic businesses. It takes a value of 1 for the year 1992 and onward and 0 otherwise. The error term, which is supposed to be normally distributed, is denoted by ε_{8t}. The rest of the variables remained as defined before. The β is $1 \times K$ vector of unknown parameters

(β_1, β_2, β_3, β_4, β_5, β_6 and β_7) are the coefficients to be estimated. The log-log measurement is employed for variables in level in order to reveal the elasticity of the dependent variable with respect to each of the variable on the right hand side.

It is worth to mention that GDP growth has been included in the model to account for the so-called the principle of accelerator effect. According to this principle, changes in GDP are expected to induce changes in investment, but at more rapid rates than the rates of increases in GDP. Thus, the coefficient which conveys the effect of GDP growth on domestic investment ($GDPG_t$) is expected to carry a positive sign ($\beta_1 > 0$). Also, the model incorporates the effect of domestic credit availability on domestic investment. A financial system that supplies a credit at lower interest rates is predicted to promote domestic capital since the high accessibility to credit stimulates growth in domestic firms. Accordingly, the sign of domestic credit variable (CRD_t) is anticipated to be positive ($\beta_2 > 0$).

Turning to the variable of interest, the FDI stock, the empirical literature did not come to a complete consensus about the relationship between domestic investment and FDI. Thus, the impact of FDI on domestic investment remains indeterminate (β_3 =?). However, and as discussed before, FDI may influence domestic investment in a different manner than that described in previous literature. Specifically, FDI may stimulate native investors who were previously hesitated, due to the vulnerability of business environment, to run new businesses based on the argument of "Giving hope hypothesis". According to this hypothesis, the presence of FDI in a certain country, particularly the most disturbed and politically unstable one like Sudan, would trigger growth in domestic investments. The hypothesis argues that the positive effect of FDI on domestic investment is likely to occur due to many reasons, including the psychological assurance imposed by the presence of foreign firms, stopping capital flight from recipient countries and agglomeration effects. Therefore, a positive sign for the coefficient associated with FDI variable can be projected ($\beta_3 > 0$). In the same vein, since the level of domestic investment is highly affected by the price of intermediate imports through its direct effect on firms' profitability, real exchange rate is included as a proxy for the price of non-tradable goods in relation to imports (Fry, 1993). Thus, considering the volatility of exchange rate in Sudan, any

depreciation in real exchange rates is likely to be negatively correlated with domestic investment ($\beta_4 < 0$).

Additionally, this paper extends previous models by including trade openness and inflation rate in domestic investment function. For a variety of reasons, the connection between these two variables and domestic investment is quite evident. Based on the argument of free trade proponents, increases in exports represent a key factor in elevating economic growth. Therefore, domestic investment is anticipated to be an increasing function in trade openness ($\beta_5 > 0$). Likewise, a high inflation rate affects the cost of finance in the economy. Hence, the unpredictable rates of inflation are likely to exert a strong disincentive effect on domestic investors. In contrast, the high inflation rates may stand as an indication that government spends more on infrastructures and, thus, contributes in intensifying investments. Accordingly, the aggregate effect of inflation rate remains undecided ($\beta_6 = ?$). The privatization, which indicates the increase of private sector share in GDP, is also considered a crucial factor in shaping the path of domestic investment. The initiation of such policy can possibly enhance the levels of accountability in business environment by decreasing the role of public sector. Being a transfer of public capital to private sector, privatization acts as an obvious signal for domestic and foreign investors that the country is committed to the private ownership. Accordingly, the anticipated sign of the dummy variable conveying the effect of privatization policy is likely to be positive ($\beta_7 > 0$).

5. Econometric procedures

To make the objectives of this study achievable, the empirical analysis adopted co-integration and VECM econometric techniques. The estimation procedures begin with testing for the presence of unit roots in the data used. Two popular tests for the unit roots are applied: Augmented Dickey-Fuller (ADF) and Phillip-Perron (PP) tests. Accordingly, if the variables are found to be integrated of order one I(1), then the next step is to make sure whether they are co-integrated or not. This step will be carried out by using Johansen's co-integration procedures (Johansen, 1988 and Johansen & Juselius, 1992). Following this step, if the co-integration relationships are detected among variables, the study goes forward to estimate the long run relationships in VECM framework after adding an error correction term to correct for the short run deviations from the outcomes of long run. Based on this methodological procedure, the

VECM that is appropriate to the variables incorporated in the model illustrated by equation 4.9 can be written as follows:

$$\begin{aligned}\Delta\log DI_t = \psi_{01} &+ \sum_{i=1}^{n} \psi_{11}\,\Delta\mathrm{GDPG}_{t-1} + \sum_{i=1}^{n} \psi_{12}\,\Delta\,\mathrm{CRD}_{t-1} \\ &+ \sum_{i=0}^{n} \psi_{13}\,\Delta\log\mathrm{RFDI}_{t-1} + \sum_{i=0}^{n} \psi_{14}\,\Delta\mathrm{REXR}_{t-1} \\ &+ \sum_{i=0}^{n} \psi_{15}\,\Delta OPEN_{t-1} + \sum_{i=0}^{n} \psi_{16}\,\Delta INF_{t-1} + \psi_{17}\,\mathrm{PRIV}_t \\ &+ \delta_{11}\,ECT_{t-1} + \mu_{1\,t} \qquad (5.1)\end{aligned}$$

Where ψ_{0i} represents the constant growth in each independent variable, μ_{1t} are the white noise disturbance terms with mean zero and finite covariance, t denotes years, n is the lag order, Δ is the first difference operator required to induce stationarity for corresponding variable in the system, and the estimated coefficients of ψ_{ji} represent the short-run causality between the variables under consideration. ECT_{t-1} represents the error correction term lagged one period, whereas the coefficients δ_{ji}, measure the long run causality relationships in the co-integration framework ($-1 < \delta < 0$).

It is worth to mention that the error correction coefficient is very decisive in error correction model estimation because the greater coefficient represents a higher speed of adjustment towards the long-run equilibrium. Additionally, if (δ_{11}) is statistically significant in equation (5.1) but not significant in the other equations of the system, it means that $GDPG_t, RFDI_t, CRD_t, EXR_t, OPEN_t, INF_t, and\ PRIV_t$ are granger cause domestic investment in Sudan (DI_t). If the opposite takes place for any of the predictors variables, it means that the predictors variables among them is DI_t granger cause that variable. However, since the main purpose of this study is to identify whether FDI has a positive impact on domestic investment or not, the concern is directed to unidirectional relationship that run from FDI to domestic investment. This choice is driven by the aim to test the validity of giving hope hypothesis as proposed by this paper.

5.1 The data

Annual data spanning from 1980 to 2013 has been used to estimate the model under consideration. Part of this data is sourced from world development indicators (WDI) released by World Bank (2014). In addition, the basic source of data on FDI is the statistics published by United Nation Conference on Trade and development (UNCTAD). All monetary variables are converted to constant prices. The description of the variables and data sources is summarized in Table 2.

Table 2: Summary of variables' description and data sources

Variable	Description	Period	Source
DI	Real gross fixed capital formation	1980-2013	World Bank
GDPG	GDP growth	1980-2013	World Bank
CRD	Domestic credit	1980-2013	World Bank
REXR	Real exchange rate	1980-2013	World Bank
INF	Inflation rate	1980-2013	World Bank
OPEN	The sum of exports and imports (% of GDP)	1980-2013	World Bank
RFDI	Real foreign direct investment stock	1980-2013	UNCTAD

6 The empirical results

6.1 Testing the order of integration

The results reported in Table 3 are based on the ADF and PP unit roots tests for all variables included in the model under investigation. On the whole, the tests indicate that the null hypothesis, the series in their levels contain unit roots, with an intercept but without trend, cannot be rejected with exception of GDP growth (GDPG) and real exchange rate (REXR) series. This outcome implies that the rest of the series are all nonstationary. However, after differencing the data once, the tests statistics reject the null hypothsis for all series. Specifically, the results of the ADF and PP tests suggest that all varaibles are I(1) at level and log level but I(0) at first difference.

The existence of unit roots emphasizes the presence of non-stationarity in the varaibles and, consequently, ligitimates the use of varaibles' first differnces in estimating the model. However, the series that are integrated in the same order are likely to cointegrate in the long run. Thus, the Johansen-Juselius procedure of multivariate cointegration has been

justifiably used to determine the existence of the long run relationships between these series.

Table 3: Summary of ADF and PP unit roots tests for variables at both levels and first differences:

ADF test			PP test		
Variables	Test-Statistic		Variables	Test-Statistic	
	With intercept but without trend	With intercept and trend		With intercept but without trend	With intercept and trend
Log DI	-0.542	-2.629	Log DI	-0.299	-2.613
GDPG	-4.331***	-4.277***	GDPG	-4.345***	-4.281***
CRD	-1.634	-0.605	CRD	-1.465	-1.012
Log RFDI	-2.939	-2.525	Log RFDI	-1.586	-0.961
REXR	-2.984**	-2.917	REXR	-3.004**	-2.934
OPEN	-1.471	-1.609	OPEN	-1.666	-1.817
INF	-2.199	-2.298	INF	-2.253	-2.313
First difference			First difference		
ΔLog DI	-6.629***	-6.596***	ΔLog DI	-6.897***	-7.192***
ΔGDPG	-7.537***	-7.438***	ΔGDPG	-10.90***	-11.14***
ΔCRD	-8.245***	-8.521***	ΔCRD	-8.225***	-8.521***
ΔLog RFDI	-2.599	-3.066	ΔLogRFDI	-2.601*	-3.016*
ΔREXR	-6.975***	-6.923***	ΔREXR	-8.090***	-9.258***
ΔOPEN	-5.506***	-5.370***	ΔOPEN	-5.600***	-5.481***
ΔINF	-8.133***	-8.047***	ΔINF	-7.968***	-7.905***

Note: Δ denotes first difference operator. ⋆⋆⋆, ⋆⋆, ⋆ denotes the rejection of null hypothesis of unit root at the 1%, 5% and 10% significance levels, respectively.

6.2 Co-integration test results

After verifying that all variables are integrated of order one, the data series are further examined by using the Johansen and Juselius (1990) co-integration test. Both the trace (λ_{trace}) and maximum eigenvlaue (λ_{max}) tests statistics are used to determine the presence as well as the number of co integration relationships among variables. However, before conducting co-integration test, it is necessary to determine the appropriate lag length to be used. Six lag selection criteria have been used to identify the suitable lag length. Table 4 displays the lag length each criterion suggests. As can be seen, the used criteria suggest setting a lag length at 1. In the next step, the multivariate co-integration techniques are applied to detect the number of co-integrating vectors which bind the variables together.

Table 4: Lag Selection Criterion Tests

Lag length test	**LogL**	**LR**	**FBE**	**AIC**	**SC**	**HQ**
0	-486.76	NA	92416.0	31.298	31.93	31.510
1	-354.95	189.48⋆	581.63⋆	26.121⋆	29.007⋆	27.078⋆

Note: ⋆ indicates lag order selected by the criterion, (each test at 5% level).

The results for co-integration tests are reported in Table 5. These results suggest that the trace (λ_{trace}) test statistics rejects the null hypothesis for $r = 0$ at five percent level of significance. In particular, the hypothesis that $r = 0$ is rejected as the computed value of trace test statistic (298.2187) is greater than the critical value (125.6154). Similarly, the null hypotheses that $r = 1, r = 2, r = 3, r = 4, r = 5, r = 5, r = 6, r = 7$ are also rejected. In the same way, the null hypotheses that $r = 0, r = 1, r = 2, r = 3, r = 4$ are also rejected by the maximum eigenvlaue (λ_{max}) test as the computed values of the test statistic are greater than the critical values for the number of vectors suggested.

Table 5: Johansen tests for the number of co integrating (1980-2013)

Results of Trace co integration test				Results of the Maximum Eigenvalue test			
H_0	H_1	Test Stat.	5%	H_0	H_1	Test Stat.	5%
r = 0	r = 1⋆	298.2	125.6	r = 0	r = 1⋆	104.5	46.2
r <= 1	r = 2⋆	193.6	95.7	r <= 1	r = 2⋆	79.2	40.0
r <= 2	r = 3⋆	114.3	69.8	r <= 2	r = 3⋆	43.8	33.8
r <= 3	r = 4⋆	70.59	47.8	r <= 3	r = 4⋆	34.7	27.5
r <= 4	r = 5⋆	35.79	29.7	r <= 4	r = 5⋆	16.9	21.1
r <= 5	r = 6⋆	18.88	15.4	r <= 5	r = 6	10.6	14.2
r <= 6	r = 7⋆	8.196	3.8	r <= 6	r = 7	8.1	3.8

Note: ⋆ denotes rejection of the hypothesis at the 0.05 level; Trace and Max-eigenvalue tests indicate 7 and 4 co integrating equations at the 0.05 level, respectively

On the whole, the results of trace tests indicate that there are seven co-integrating vectors in the system in which the privatization has been treated as an exogenous variable. In contrast, the maximum eigenvalue test, the more influential test in small samples, suggests the existence of only 4 co-integrating vectors. This highlights an imporant point that the results of maximum eigenvalue and trace tests can disagree and, therefore, provide an evidence for different number of cointegrating vectors. In this

case, as Enders (1995) suggests, the maximum eigenvalue test is preferable since it has a precise alternative hypothesis. Accordingly, it can be concluded that there are at least 4 co-integrating relationships in the system.

6.3 VECM model results

After having verfied the co-integration relationships among variables, the VECM is applied to determine the long run and the short run relationships between these variables. Table 6 summarizes the results pertaining to Johansen and Juselius (1990) long run normalization outcomes. As can be read from the table, the majority of variables coefficients are accompanied with theoretically expected signs. For instance, the coefficient of FDI (RFDI), the variable of interest, is positive and statistically significant (t-ratio = 4.98212). This result suggests the crucial contributions of FDI in promoting domestic investments in Sudan. That is, with other things being equal, an increase in FDI stock by a one percent will correspond to, approximately, a 0.16 percent rise in domestic investment in the long run. This result confirms that investment by MNCs complements domestic investment in Sudan during the period studied. Furthermore, in the light of inhospitable business environment, such result demonstrates the validity of giving hope hypothesis. In line with accelerator principle, increases in GDP growth rates are found to be positively correlated with domestic investment. The variable has a positive and significant effects (t-ratio = 3.89732) on the dependent variable with estimated coefficient of 0.013285. Moreover, it is interesting to observe that the FDI, compared the GDP growth, has a larger elasticity with respect to domestic investment. Specifically, a one percent increase in GDPG boosts domestic investment by, approximately, 0.01 percent while, a one percent increases in RFDI elevates domestic investment by 0.16 percent.

Surprisingly, the results reveal that the availability of domestic credit (CRD) has no long run impact on domestic investment. However, this insignificant outcome can be justified based on many reasons. First, the size of credit offered by Sudanese banks is limited and mainly concentrated in trading activities. In other words, domestic banks are mostly restrict fund to businesses characterized by quick and secured returns and at the same time avoid granting loans to the long terms investments. Second, the majority of banks loans are devoted to consumption purposes. A related conclusion is that due to the exploitation

of oil in commercial quantities, Sudan economy has undergone through huge transformations in consumption patterns. Therefore, driven by these developments, a significant portion of credit granted by domestic banks has been directed mainly to satisfy consumption from luxurious goods.

Table 6: Long-run co integrating equation

Dependent variable: Δ Log(DI)				
Variable	Coefficient	t-statistic	Standard Error	P-value
Intercept	16.87			
GDPG(-1)	0.013⋆⋆⋆	[3.897]	(0.003)	0.0003
CRD(-1)	-0.004	[-0.534]	(0.008)	0.2989
LogRFDI(-1)	0.158⋆⋆⋆	[4.982]	(0.031)	0.0007
REXR(-1)	-0.180⋆⋆⋆	[-13.24]	(0.013)	0.0000
INF(-1)	-0.010⋆⋆⋆	[-20.96]	(0.000)	0.0000
OPEN(-1)	0.011⋆⋆⋆	[3.941]	(0.002)	0.0002

. Note: *⋆⋆⋆, ⋆⋆, and ⋆ indicate significance at the 1, 5 and 10 percent levels, respectively*

As expected, the long run coefficient on trade openness variable (OPEN) is found to be positive and statistically significant at 1 percent level, indicating that increases in trade openness stimulate growth in domestic firms. Keeping everything else constant, a one percent increase in the degree of trade openness will generate 0.01 percent increases in domestic businesses. In contrast, the reported results show a negative long run co-integrating relationship between real exchange rate (REXR) and domestic investment. The coefficient of the variable is negative and statistically significant. This negative and significant effect may attributed, in part, to the fact that the imports from both capital and intermediate goods become more expensive for domestic investors due to the deteriorated value of local currency. The results also show that the long run relationship between domestic investment and inflation rate (INF), as an indicator for financial risk and macroeconomic instability, is negative. The coefficient associated with the variable is large and statistically significant (t-ratio = -20.9630), demonstrating that the occurrence of inflationary pressures exercises adversative influences on domestic firms. In particular, a one percent increase in inflation rate reduces domestic investments by a 1.0% percent (0.010707), given that all else is same. This result agrees the profit's theory of investment which argues that the uncertainty created by hyperinflation in prices and costs reduces investment spending.

The estimation results of equation 4.9 as dynamic short run relationships are provided in Table 7. As can be noted, the short run results for most of the variables are diverging from the long run outcomes. For instance, the coefficient on the FDI turns out to be negative advocating that FDI presence has a discouraging short run effect on domestic investments. Yet, this short run negative outcome has many justifications. First, the potential spillovers effects of FDI such as innovations through workers mobility, forward and backward linkages and the transmission of managerial skills need a minimum incubation period to diffuse into domestic sectors. Second, to internalize the "hopefulness" offered by FDI, native investors need a recognition period that exceeds the short run. Thus, one can be able to conclude that the motivating psychological impact of FDI, as assembled in giving hope hypothesis, cannot be materialized in the short run.

Table 7: The VECM results (the short run relationships)

Dependent variable	ΔLog(DI)			
Variable	Coefficient	t-statistics	S. Error	P-value
Intercept	-0.732⋆⋆⋆	[-3.660]	(0.199)	0.0015
ΔLog(DI)(-1)	0.088	[0.483]	(0.181)	0.6336
ΔGDPG(-1)	-0.006	[-0.761]	(0.007)	0.4546
ΔCRD(-1)	0.033	[0.994]	(0.033)	0.3311
ΔLogRFDI(-1)	-0.375⋆⋆⋆	[-2.766]	(0.135)	0.0064
ΔREXR(-1)	0.074⋆	[1.798]	(0.040)	0.0742
ΔINF(-1)	-0.007	[-0.381]	(0.001)	0.7065
ΔOPEN(-1)	0.0025	[0.257]	(0.009)	0.7994
PRIV	1.103⋆⋆⋆	[4.044]	(0.272)	0.0006
ECT(-1)	-0.692⋆⋆⋆	[-4.109]	(0.168)	0.0005
R-squared	0.61			
Adjusted R-squared	0.45			
S.E. of regression	0.201			
Sum squared resid	0.846			
Log likelihood	11.83			
F-statistic	3.701⋆⋆⋆			
Prob(F-statistic)	0.006			

Note: ⋆⋆⋆, ⋆⋆, and ⋆ indicate significance at the 1, 5 and 10 percent levels, respectively.

In contrary to prior expectations, the short run coefficient of the GDP growth variable fails to preserve the same sign similar to that seen in the long run. By the same token, the insignificant coefficient associated with trade openness variable indicates that domestic investment is less

responsive to the temporary short run changes in trade policies. Surprisingly, the coefficient in front of real exchange rate variable shows that the domestic investment is positively and significantly affected by depreciation in national currency. Therefore, together with its negative long run impact, the depreciation in real exchange rates seems to be playing a significant role in shaping the path of domestic investment in Sudan.

The PRIV dummy variable captures the desirable effects of adopting privatization policy on domestic investment in Sudan. The coefficient of the variable is positive and significant (t-ratio = 4.04468), indicating that the implementation of this policy has contributed significantly in augmenting growth in domestic investments. Moreover, one should note that the value of the coefficient exceeds one which implies that the reinforcement of private sector generates significant increases in domestic investments.

As displayed in Table 7, the adjustment coefficient of the error correction term is -0.69, that is statistically significant and negative (t-ratio = -4.10941). It suggests that if disturbance from domestic investment long run equilibrium occurs, the error correction returns it to the equilibrium position with 69% speed of adjustment per year.

Last, the estimated model indicates a good fit to the data since the estimated value of Adjusted R^2 shows that 45% of the short run variations in domestic investment are explained by variables incorporated in the model. More importantly, the results on the diagnostic tests indicate that the model is well specified. Specifically, the results show that the residuals are normally distributed since Jarque-Bera statistics don't reject the null hypothesis of normality. The result also reveals the absence of serial correlation since the Langrage-Multiplier F-test (LM) show p-value of 0.2272. The model is also free from heteroskedasticity given that the results of Breusch-Pagan-Godfrey, ARCH, Harvey and White are strongly rejecting the null hypothesis of homoskedasticity. Finally, the model convincingly passes Ramsey Reset test for residuals stability.

Table 8: The residuals diagnostic tests

Diagnostic test	Estimated Value	P-value
Normality Test(Jarque-Bera)	0.182588	[0.9127]
Breusch-Godfrey Serial Correlation LM Test	[1]:F(01,20) = 0.350	[0.5607]
	[2]:F(02,19) = 1.279	[0.3012]
	[3]:F(03,18) = 0.833	[0.4928]
	[4]:F(04,17) = 0.897	[0.4869]
	[5]:F(05,16) = 1.560	[0.2272]
ARCH heteroskedasticity test	[1]:F(01,28) = 0.922	[0.3451]
	[2]:F(02,26) = 1.950	[0.1625]
	[3]:F(03,24) = 1.260	[0.3102]
Breusch-Pagan-Godfrey heteroskedasticity test	[1]:F(15,15) = 1.657	[0.1693]
White Heteroskedasticity test (with no cross terms)	F(09,21) = 0.9392	[0.9392]
Residuals stability test(Ramsey RESET Test)	[1]:F(01,24) = 1.640	[0.2126]

Based on this good performance of the model and the quality of diagnostic tests, it can be said that FDI exercise a positive impact on domestic investment in Sudan. The results, therefore, strongly support the argument of giving hope hypothesis.

7. Conclusion and policy implications

This paper argues that the role of FDI in boosting domestic investment in recipient countries should not be restricted to the traditional contributions such as establishing new plants, diffusing sophisticated technologies and transferring modern managerial skills to firms. This is because, beyond its widely recognized contributions, FDI may also lift growth in domestic businesses by motivating native investors to launch new investment in home land. The paper resembles this FDI's intangible contribution in what can be called "Giving hope hypothesis". To give validity to this hypothesis, the paper formulates domestic investment function for Sudan incorporating, along with FDI stock, all the variables that their inclusion is theoretically and empirically justified. A time series data set on Sudan economy covering the period from 1980 to 2013 has been used to carry out the empirical analysis. The paper adopts the methodology of co-integration and vector error correction model (VECM) to overcome the econometric problems (i.e. endogeneity, imprecise estimates, and spurious regression) that could possibly come with the application of OLS method.

The empirical findings show that, most of variables' coefficients are statistically significant, accompanied with correct signs, and are of interpretable magnitudes. Specifically, the findings indicate that FDI presence exercises a positive impact on domestic investment in Sudan. Obviously, such result supports the argument suggested by giving hope hypothesis proposes. Alternatively stated, the presence of FDI in a hostile business environment like the one prevailing in Sudan is likely to offer hope for domestic investors to execute businesses and, as a result, boosts growth in domestic firms. Expectedly, the findings show that there is a positive long run relationship between GDP growth and domestic investment. Similarly, in a full agreement with the beliefs of free trade proponents, trade openness is found to play a positive role in increasing domestic investments. Most importantly, the findings indicate the decisive role of privatization policy in furthering growth in Sudanese domestic firms. In contrast, and as expected, the findings demonstrate that increases in inflation rate and the depreciation in real exchange rate exert a significant negative impact on the performance of domestic businesses.

Based on these findings, policymakers in Sudan might find it beneficial to encourage the integration between domestic and foreign investments. This goal can be accomplished by taking up many policy actions. First, the interdependence between foreign and domestic businesses can be well-maintained by stimulating inflows of MNCs that supplement domestic firms with raw materials, bring in sophisticated technologies and increase accessibility to foreign markets. Second, the desirable complementary relationship can be also reinforced by promoting domestic investment that have a wide range of forward and backward linkages with FDI projects. In the end, adopting such policy action would lower the costs of production for both domestic and foreign firms, giving birth to multiple increases in domestic investments. Finally, a third policy option could be added. In particular, this option embodies in attracting the type of MNCs that supports growth in domestic firms and at the same time have a potentiality to stimulate inflows of diversified FDIs.

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Evaluating the Effect of Ownership Structure on Firm Performance: Evidence from Saudi Arabian Listed Companies

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The study aims to evaluate the relation between ownership structure and firm performance; the sample included 171 firms from all the sectors in (Kingdom of Saudi Arabia) KSA for two years, 2013–2014. Two dimensions of ownership structure were studied, concentration and identity of owner, which was subdivided into foreign, managerial, family and institutional ownership. One major financial tool was used to measure firm performance: return on assets (ROA). The study evaluated this relation using several control variables which are: firm size, firm age, financial leverage and industry sector. Ownership concentration was found to have a positive, statistically insignificant effect on company performance. Institutional ownership was found to have a positive effect on company performance. Managerial ownership did not have a significant effect on company performance; however, managerial ownership had a positive effect on performance. Foreign ownership was found to have a negative, statistically significant effect on firm performance, and family ownership was found to have a positive and statistically insignificant effect on firm performance. Other results were revealed by the study regarding company age, size, leverage and sector. The study contributes to the debate about agency theory and the separation that exists between shareholders and management. The study may benefit many interested groups in the KSA and other countries in making business decisions concerning this topic and other related decisions.

Keywords: Ownership structure; Firm performance; Concentration of ownership; Institutional ownership; Foreign ownership; Managerial ownership; Family ownership; Agency theory.

Introduction

The ownership structure and its effects on the firm performance have been an important topic for researchers during the last decades, producing an

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ongoing debate in the corporate finance literature (Abu-Serdaneh et al, 2010). Many possible ways exist for a firm to build its ownership, and the type of ownership structure that a firm chooses to adopt is shaped by the vision and mission of the company itself. The ownership structure is defined as: "the distribution of equity with regard to votes and capital as well as the identity of the equity owners" (Jensen & Meckling, 1976). This structure is important in corporate governance, as it determines the incentives of managers and thus the economic efficiency of the corporations that they manage (Jensen & Meckling, 1976).

Agency theory is the starting point for this analysis; the problem of inducing an agent to work on behalf of the principal's welfare is a general phenomenon. It is apparent in all organizations, at every level of management, in universities, in mutual companies, in cooperatives, in governmental authorities and bureaus, in unions and in relationships normally classified as agency relationships (Jensen & Meckling, 1976). As noted by Imam and Malik (2007), the framework of corporate governance is an important control mechanism because it encourages the efficient and optimal use of corporate resources and ensures accountability for the management of those resources.

Numerous researchers have studied this fundamental conflict that exists among self-interested managers (agent) and owners (principal), in which the agent has the control of the firm but the latter bears most of the wealth effects. Adam Smith (1776) indicated that if an economic company is controlled by one person or a group of persons other than the company's owners, the objectives of the principal are more likely to be diluted than ideally fulfilled. This throws light on the importance of various incentive mechanisms to deter the agent from practicing such behavior and to act in a way that better affects the decision making of managers and owners, that is, whether they will take more or fewer actions that will enhance the performance and therefore maximize the firm value. Indeed, even after the numerous empirical studies that have proposed to mitigate the fundamental agency problem, it remains contentious. Berle and Means (1932) were the earliest researchers to study this topic; they argued that there is a significant relationship between ownership structure and company performance. On the opposite side, Fama and Jensen (2000) argued that high ownership concentration (of any kind of owner) will lower the financial performance because it increases the firm's cost of

capital as a result of decreased market liquidity or decreased diversification opportunities on behalf of the investor.

The Saudi Stock Exchange (Tadawul) is the largest stock market in the Middle East; only the biggest financial institutions, such as banks, brokers and fund managers, are allowed to trade on the KSA Stock Exchange (Gillespie, 2015). The KSA Stock Exchange is supervised by the Capital Market Authority and it lists 171 publicly traded companies (as of October 1, 2015); it was formed in accordance with Article 20 of the Capital Market Law establishing it as a joint stock company, which was approved on March 19, 2007 by the Council of Ministers. A considerable proportion of Saudi firms are owned by families, including the royal family. Public companies are listed on the KSA Stock Exchange. Historically, the equity markets of the KSA have been largely closed to non-Saudi (foreign) investors, with foreign access limited to indirect exposure via the derivatives market (Atwill, 2014). However, they opened to foreign investment for the first time in June 2015 due to the low oil prices and the increasingly aggressive and costly foreign policy of the Kingdom (Cabural, 2015). The Saudi market provides investors and companies with enough playing ground. The core issue that most researchers and stakeholders would like to tackle is to demonstrate how a change in the ownership structure may affect the performance of returns, profitability and growth. This study therefore tries to determine the effect of the ownership structure on Saudi listed companies.

Research Problem and Objectives

Different types of ownership structure affect the agency problem differently, so it is important to have an understanding of the efficiency of alternative forms of ownership to demonstrate the nature of the agency problem and to determine the costs associated with it and how firms' performance and value might be affected by it. Moreover, the effect of the ownership structure on performance is an ongoing debate in the corporate finance literature. While authors like Berle and Means (2002) found a negative correlation between shareholdings and firm performance, Demsetz and Villanonga (2001) noted that the ownership structure of a firm should be seen as an endogenous outcome of related decisions that reflect the influence of shareholders and trading on the market shares. The ownership structure, whether concentrated or disparate, influences the

performance of the firm and the profit – maximizing the interest of the shareholders.

The main objective of the researcher is to evaluate the effect of the ownership structure on the firm performance and therefore on the value of the listed companies on the Saudi Stock Exchange, using the return on assets (ROA) as a tool to measure the firms' performance and different ownership structure dimensions to understand how exactly these factors affect the firms' performance and how Saudi and other investors can use this information to their benefit and make the optimal investment decision. Therefore, the following specific objectives were developed: To evaluate the nature of the relation between the ownership structure of the KSA Stock Exchange listed companies and their performance on the Stock Market; To evaluate how the patterns of firm ownership affect firms' performance on the Stock Market; and to provide a future direction and recommendations from the results of the study.

Literature Review

The ownership structure and its effect on the performance of the firm is one of the important topics that have attracted the attention of many researchers in the corporate finance literature, as they were concerned about the firm performance and what makes one entity more valuable and more successful than another firm.

However, it is useful to note that researchers from various countries around the world have found conflicting results, and that could be because of the difference between these papers in the measurement tools used to evaluate the ownership structure or the dimensions and forms of the ownership structure that were studied or simply because they approached the issue from different perspectives. For example, some works have shown a linear relation between the ownership structure and the corporate performance (Cole & Mehran, 2004), whilst other studies have found a non-linear relation (Morck et al, 1988; McConnell & Servaes, 1990). On the other hand, according to Demsetz and Lehn (1983), all structures are equal, as they noted that the performance has no relationship with the ownership structure and it is dependent on the internal and external environment. Therefore, we considered it better to classify the types of ownership structure that were studied according to the dimensions in

which they were studied and then review the previous research that studied the ownership structure in various countries around the world.

Concentration of Ownership

The ownership concentration refers to the total percentage of shares held by an owner relative to the total shares of the shareholding of the firm. This dimension of the ownership structure focuses more on the ability of the owner to monitor and control managerial discretion. On the other hand, it does not take into consideration the investment preferences of the owner(s) and how they influence the priorities and strategies of the firm (Shleifer & Vishny, 1986). However, the ownership concentration is considered to be an important factor that affects a firm's health (Zeitun & Tian, 2007). In this respect, an important issue arises in that concentrated ownership might lead to another form of agency problem, that is, conflicts of interest between large shareholders and small shareholders. Major shareholders have incentives to use their controlling position to extract private benefits at the expense of small shareholders (Lee, 2008). While some empirical research has noted that there is a positive relationship between the ownership concentration and the firm performance, others have suggested that concentrated ownership does not necessarily produce better firm performance. Among others, Wu and Cui (2002) found that there is a positive relation between the concentration of ownership and the accounting profits, using measurement indicators like the return on assets (ROA) and return on equity (ROE), but the relation is negative with respect to market value measurement indicators, like the price to earnings ratio and market price to book value ratio. Moreover, Xu and Wang (1997) studied this relation in publicly listed companies in China. They noted that there is a significant relation between both mixed and concentrated ownership and the performance of stock companies. In addition, Leech and Leahy (1991) noted that concentrated ownership provides improved monitoring incentives, which lead to superior performance. Finally, Hill and Snell (1989) studied this relation in US firms by taking their productivity as an indicator of performance; they found a positive relation between ownership concentration and performance. On the opposite side, many researchers have found a negative relationship between these two variables. Among others, McConnell and Servaes (1990) found no support for a direct relation of large shareholders with firm value. Moreover, Lehmann and Weigand (2000) studied this topic in German firms and found a negative

relationship between the two variables. In addition, Mudambi and Niclosia (1998) noted a negative relation between these two variables in their study on British firms. Another study, by Prowse (1992), evaluated this structure of ownership in Japanese corporations in the 1980s and found no relation between the ownership concentration and the profitability. Finally, Chen and Cheung's (2000) study results also showed a negative relation between concentrated ownership and firm value for a sample of 412 Hong Kong publicly listed companies from 1995 to 1998.

Institutional Ownership

This dimension of ownership can be defined as the amount of a company's available stock owned by mutual or pension funds, insurance companies, investment firms, private foundations, endowments or other large entities that manage funds on behalf of others. Various researchers have studied the role of institutional investors as corporate monitors. This is because of the high cost of monitoring; only large shareholders, such as institutional investors, can achieve sufficient benefits to have an incentive to monitor them (Grossman & Hart, 1980). Large shareholders may have larger incentives to monitor managers than members of the board of directors, who may have little or no wealth invested in the firm. Moreover, large institutional investors have the opportunity, resources and ability to monitor, discipline and influence managers (Shleifer & Vishny, 1986). McConnell and Servaes (1990), Nesbitt (1994), Smith (1996) and Del Guercio and Hawkins (1999) all concluded that firm monitoring by institutional investors can lead to managers focusing more on the firm performance and less on opportunistic or self-interest behavior. On the other hand, Maug (1998) asserted that the ability of institutions to influence firm decisions depends on the size of their shareholdings. If institutional investors' shareholdings are high, the shares are less marketable and thus are held for longer periods, so there is a greater incentive to monitor a firm's management. However, when institutional investors hold few shares in a firm, they can easily liquidate their investments if the firm performs badly and therefore there is less incentive for monitoring. In addition, some studies have looked for a direct effect of institutional ownership on firm performance. McConnell and Servaes (1990) concluded that the percentage of institutional investor ownership has a positive relation with the firm's Tobin's Q. Nesbitt (1994), Smith (1996) and Del Guercio and Hawkins (1999) also found a positive relation

between institutional ownership and various measures of firm performance. Khamis et al., (2015) investigated this relation in listed companies in Bahrain for the period from 2007 to 2011. They found that institutional ownership has a positive, statistically significant effect on performance using the T'Q indicator. However, using the ROA indicator, the effect was negative with statistical insignificance. However, Agrawal and Knoeber (1996), Karpoff et al (1996), Duggal and Millar (1999) and Faccio and Lasfer (2000) all concluded that there is no such significant relation. Thus, the effect of institutional ownership on firm performance is still unclear.

Research Methodology

This part describes the method used for this study. It explains the sample size and the data resources, the measurement of variables, the hypothesis development and the development of the study model.

Sample Size and Data Resources

This study examines the ownership and performance measures used for companies listed on the KSA Stock Exchange. We use a balanced panel data set to observe 171 listed firms and cross-sectional data that resemble a group of companies in a 2-year period (2013–2014). Panel data are considered as one of the best and most used types of data, consisting of two types.

Measurement of the Variables

The selection of variables is based on previous empirical studies; Table 1 shows the dependent variable, the independent variables and the control variables used for the model in this study.

Hypotheses' Development

Various researchers have been interested in searching for the influence of the ownership structure on the firm value, but the findings differ widely. The paper explores the effect of the ownership structure on one dependent variable, which is company performance. Thus, the hypotheses may be shaped according to the ownership dimension and will be analyzed as follows:

H1: There is a positive and statistically significant relationship between ownership concentration and performance among Saudi companies.

H2: There is a positive and statistically significant relationship between foreign ownership and performance among Saudi companies.

H3: There is a positive and statistically significant relationship between institutional ownership and performance among Saudi companies.

H4: There is a positive and statistically significant relationship between management ownership and performance among Saudi companies.

H5: There is a positive and statistically significant relationship between family ownership and performance among Saudi companies.

Table 1: Labels and Measurement of the Variables:

Variable	Label	Definition and Measurement
Dependent variable: Firm performance:		
Return on Assets	ROA	The ratio of the net income to the total assets.
Independent variables: Ownership structures:		
Ownership Concentration	Concen	This ownership structure dimension can be measured by the ratio of concentration/dispersion in a way that is similar to the method followed in the previous studies. It is the percentage of shares held by the largest three shareholders to the total number of shares.
Foreign Ownership	Foreign	This is the percentage of total shares held by foreign shareholders to the total number of shares or the proportion of stocks owned by foreign investors.
Institutional Ownership	Institutional	Institutional ownership can be measured by the proportion of equity owned by institutional investors to the total number of shares.
Managerial Ownership	Managerial	In many studies, such as Morck et al (1988) and Chen et al (2003), directors' shareholdings were used as a proxy for managerial ownership, which is measured by the total percentage of shares held directly by executive directors.

Family Ownership	Family	Family ownership can be measured by the fractional equity ownership of the founding family and (or) the presence of family members on the board of directors to identify family firms (Ronald et al, 2003).
Control Variables:		The main objective of the study is to measure the effect of the ownership structure on the corporate value. It is expected that the corporate value is affected not only by the ownership structure dimensions but also by other variables, which were chosen according to previous studies and have been used extensively (e.g. Berger, 2003 ; Kumar, 2003; Nadia, 2004).
Firm Size	Size	The natural log of the total assets. This variable has been studied widely in previous studies and it has been found that larger firms mostly have a higher value, which may be explained by their experience, efficiency due to their economy of scale, ability to employ skilled managers and ability to reach a wider range of customers and diversify their operations.
Firm Age	FirmAge	The firm age is related to the shareholders' distribution as companies with older ages have entered many business cycles and have a greater shareholder distribution. The date of incorporation is taken rather than the date of listing the stock on the market.
Financial Leverage	Leverage	The ratio of total debt to total assets. It affects the firm's ability to borrow money and the cost of doing so, which affect the firm's profitability and value due to the increase in the interest rate and the financial obligations of the company.
Industry Sectors	Industry	Companies that belong to different sectors differ in their free cash issues and as a consequence in their dividends. In our study, the KSA Stock Exchange contains 15 different sectors. They are represented by dummy variables from 1 to 15, for example banks and financial services sector = 1, petrochemical industries = 2, … and so on.

Study Model

The study's main objective is to evaluate the effect of the ownership structure on the firm performance. Thus, the types of ownership structure are considered as independent variables and the firm performance as the dependent variable. To measure the relation between the different ownership structures and the return on assets (ROA), the study estimates the following linear regression model:

$$ROA_{i,t} = \beta_0 + \beta_1 Concen_{i,t} + \beta_2 Foreign_{i,t} + \beta_3 Institutional_{i,t} + \beta_4 Managerial_{i,t} + \beta_5 FirmSize_{i,t} + \beta_6 FirmAge_{i,t} + \beta_7 Leverage_{i,t} + \beta_8 Industry_{i,t} + \varepsilon_i$$

Where: $ROA_{i,t}$ is a continuous variable, the dependent variable, and it is the firm value measured by the return on assets for company (i) in year (t). β_0 is the constant. $\beta_{1..8}$ is the slope of the independent and control variables. $Concen_{i,t}$ is the ownership concentration for company (i) in year (t). $Foreign_{i,t}$ is the percentage of foreign ownership for company (i) in year (t). $Institutional_{i,t}$ is the percentage of institutional ownership for company (i) in year (t). $Managerial_{i,t}$ is the percentage of managerial ownership for company (i) in year (t). Firm $Size_{i,t}$ is a continuous variable, company size, for company (i) in year (t). Firm $Age_{i,t}$ is a continuous variable: it is the number of years since the establishment of company (i) in year (t). $Leverage_{i,t}$ is a continuous variable, financial leverage: it is the ratio of total debt to total assets for company (i) in year (t). $Industry_{i,t}$ is the type of sector for company (i) in year (t). Ei is the random error.

1 DESCRIPTIVE STUDY:

The researchers compare the relative performance across two ownership dimensions: the concentration of ownership and the owner identity. The firm performance is measured in terms of a major financial tool, the return on assets (ROA), as it has been proven to be a representative indicator and related to the firm performance (Khamis et al, 2015). This is the main variable of the statistical measurement. Table 2 summarizes the descriptive statistics of the dependent, independent and control variables. The company performance is measured using the ROA measurement. The mean value for the ROA is 0.047 and the standard deviation is 0.117, which means that little difference exists between companies in achieving returns on their assets. The lowest score is -0.775 and the highest is 0.720.

Regarding the ownership concentration structure, we observe from table 4.1 that the percentage of ownership for the first stockholder in Saudi companies exceeds 25% and in some companies the percentage exceeds 95% of the shares, which may be considered a high concentration of ownership. The mean values of ownership percentages for the second stockholder are lower: on average 10% with a maximum of 37%. The same may be said about the third stockholder of ownership concentration as the ownership percentage declines to 3.5%. In general, the top three

stockholders in the Saudi Arabian stock companies own more than 38% of the stocks, which indicates high levels of ownership concentration.

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2 DESCRIPTIVE STUDY

The researchers compare the relative performance across two ownership dimensions: the concentration of ownership and the owner identity. The firm performance is measured in terms of a major financial tool, the return on assets (ROA), as it has been proven to be a representative indicator and related to the firm performance (Khamis et al, 2015). This is the main variable of the statistical measurement. Table 2 summarizes the descriptive statistics of the dependent, independent and control variables. The company performance is measured using the ROA measurement. The

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Table 2: Descriptive Statistics:

Variables/Statistics	**Mean**	**Std. Deviation**	**Minimum**	**Maximum**
Dependent Variable: Firm Performance:				
Return on Assets	0.047	0.117	-0.775	0.720
Independent Variables: Ownership Structure Types:				
Ownership Concentration:				
Top 1	25.754	16.531	5.000	95.000
Top 2	9.593	8.151	0.000	37.500
Top 3	3.560	5.827	0.000	50.000
Foreign Ownership	5.358	10.230	0.000	54.200
Institutional Ownership	33.515	23.941	0.000	83.770
Managerial Ownership	1.180	5.288	0.000	53.000
Family Ownership	3.160	8.621	0.000	53.000
Control Variables:				
Firm Size'000'000	20,772	6	44	434,878
Firm Age	23.260	15.126	2.000	61.000
Financial Leverage	0.491	0.290	-0.027	2.501

From the same table 2, it is apparent that the foreign ownership mean is 5%, which is considered to be low, because the Saudi Arabian equity

markets have been largely closed to non-Saudi investors, with foreign access limited to indirect exposure via the derivatives market (Atwill, 2014). However, they opened to foreigners for the first time in June 2015 due to the low prices of oil and the increasingly aggressive and costly KSA foreign policy (Cabural, 2015).

The institutional ownership mean in the above table is more than 33%. In some companies, the percentage exceeds 83%. This percentage indicates high levels of institutional ownership in the KSA equity market. High levels of institutional investors can result in managers paying more attention to the corporate performance and less to opportunistic or self-interested behavior (McConnell & Servaes, 1990; Nesbitt, 1994; Smith, 1996; Del Guercio and Hawkins, 1999).

The Saudi market may be characterized by low managerial ownership of its companies; the mean percentage is 1% and the standard deviation is high, while in some companies' managers own 53% of the shares and other companies show 0% managerial ownership, according to the measurement tool used in our paper. We can say here that the market has a large agency problem as the managerial ownership falls. In particular, when managers decrease the fraction of their holdings, they tend to gain a large amount of firm resources in the form of perquisites and reduce their efforts because they will gain from only a fraction of the associated net income (Jensen & Meckling, 1976). Family ownership is also considered to be low in the Saudi Arabian market; it is about 3%, as shown in table 2. The existing literature supports the finding that family-owned firms can be less productive than publicly held firms. Family-owned firms would have a high rate of interest, as their rate of risk would be higher because of the concentrated resources of such a business within the firm (Demsetz & Lehn, 1983).

Advanced Descriptive Analysis

In table 3, the firms are divided into firms with high ownership and firms with low ownership based on the median calculated. Both the mean and the standard deviation are calculated for both categories. To assure the significance in the variance between the means of the two samples, the parametric t-test and the non-parametric Mann–Whitney test are performed.

From table 3, we notice that the ROA is higher in companies with high ownership concentration, as the ROA of companies with high ownership concentration is 0.0528, whereas the ROA in companies with low ownership concentration is 0.040. This difference is statistically insignificant at the 5% level according to both tests (t-test and z-test). This can be an indication that concentrated ownership contributes to improving the company performance in Saudi markets. Regarding foreign ownership, it is noticeable from table 4.2 that the ROA is lower in companies with a higher percentage of foreign ownership (0.028%), while the ROA is high in companies with a low percentage of foreign ownership (0.065%). That difference is statistically significant at the 5% level for both tests (t-test and z-test), by which we can indicate that foreign ownership and performance have a negative relationship. Foreign ownership can be seen in two ways. First, this dimension of the ownership structure can improve the performance due to the ability of foreign investors to transfer their financial and technological resources and experience to firms (Huang & Shiu, 2009; Gurbuz & Aybars, 2010; Romalis, 2011). Second, this dimension can damage the performance of the firm as foreign investors are far away from the real workplace and have no control over the firm (Sarac, 2002; Kumar, 2003). Moving to institutional ownership, the relation is clear in table 4.2 as we notice that the ROA is high with low institutional ownership 0.053 and low with high institutional ownership 0.047. This difference is statistically insignificant for both tests (0.645 – t-test and 0.372 – z-test) at the 5% level. For managerial ownership, table 4.2 shows that the ROA is higher in companies that have high levels of managerial ownership (0.122%) than in companies that have a low level of managerial ownership, for which the ROA is only 0.043. This is statistically significant at the 5% level for both tests.

Table 3: Company Performance Depending on the Characteristics of the Company:

The independent variable, which is the ownership structure, is divided into two categories: firms with high ownership and firms with low ownership – based on the value of the calculated median and these are compared with firms' ROA. Significance at: *10%; **5% and ***1% levels.					
Statistics ROA	**Ownership Structure:**				
	Ownership Concentration	**Foreign Ownership**	**Institutional Ownership**	**Managerial Ownership**	**Family Ownership**
Mean of High Level	0.053	0.029	0.047	0.123	0.089
Mean of Low level	(0.040)	(0.065)	(0.053)	(0.044)	(0.041)
Difference in Mean	0.012	-0.037	-0.006	0.079	0.048
t-statistic	0.976	-2.903***	-0.461	3.468***	3.098***
p-value (t-test)	(0.330)	(0.004)	(0.645)	(0.001)	(0.002)
z-statistic	-1.203	-2.936***	-0.892	-4.276***	-4.375***
p-value (z-test)	(0.229)	(0.003)	(0.372)	(0.000)	(0.000)

Finally, the ROA is high with high family ownership, which is 0.089, compared with the ROA for low family ownership, which is 0.040. It is statistically significant at the 5% level for both the t-test p-value 0.002 and the z-test 0.000.

Table 4: Pooled Fixed-Effect Regression Model Results:

This study was conducted using panel data which may be tested using firm fixed-effect FE approach or random effect approach. Choosing one of these approaches is done by knowing the result of applying Hausman Test. We noticed that Hausman test result was statistically significant thus fixed-effect FE approach FE should be applied. VIF values are less than 5 for all the independent and control variables, which indicates that the study model does not suffer from Multicollinearity problem. D-W for the study model is located in the range between 1.5 and 2.5 which means that there is no autocorrelation in the study model. t-Critical: at df 341, and confidence level of 99% is 2.326 and level of 95% is 1.645 and level of 90% is 1.282. F-Critical (df for denominator n-β-1 = 342-9-1 = 332) and (df for numerator =β =9 and confidence level of 99% is 2.79 and confidence level of 95% is 2.09 and confidence level of 10% is 1.77. Significance at: *10%; **5% and ***1% levels.

Variable	**Label**	**VIF**	**β**	***t*-statistic**	***p*-value**
(Constant)			0.114	5.445***	0.000
Independent Variables: Ownership Structure:					
Ownership Concentration	Cons	3.230	5.082	0.104	0.917
Foreign Ownership	Foreign	4.590	-0.001	-2.371**	0.018
Institutional Ownership	Instit	1.335	0.001	1.962**	0.041
Managerial Ownership	Manag	2.998	0.002	1.630	0.104
Family Ownership	Family	1.897	0.001	0.925	0.356
Control Variables:					
Firm Age	FirmAge	1.302	0.001	3.067***	0.002
Firm Size	Size	2.385	-0.173	-8.488***	0.000
Financial Leverage	Leverage	1.925	-7.924	-0.748	0.455
Industry Sector	Industry	2.222	-0.005	-2.942***	0.004
R	0.541				
R-squared	0.293				
F-statistics	13.660***				
p-value (*F*-statistics)	0.000				
Hausman Test (Chi^2)	30.230***				
p-value (Chi^2)	0.000				
Durbin-Watson stat	2.097				

EMPIRICAL ANALYSIS AND TESTING OF THE HYPOTHESES:

The data of the study are considered as panel data that combine time (2013–2014) and cross-sectional data (171 companies). Thereby, a pooled regression model (fixed-effect model) is used and the result is presented in table 4.

As shown in table 4, the R calculated is 54.1%, which shows the percentage of the correlation between the independent, dependent and control variables. The degree of effect of the independent variables and control variables on the firm performance (R-squared) is 29.3%, which is the degree of changes in the dependent variable caused by the independent and control variables. The p-value (F-statistic) calculated is 0.000, which is less than 0.050, which determines that the study model is acceptable and therefore the study hypothesis can be concluded.

The study hypothesis may be tested according to the ownership dimension that will be studied as follows:

Testing the Relation between Ownership Concentration and Company Performance

It can be seen from table 4 that the percentage of concentrated ownership has a positive effect on the performance with statistical insignificance at the 5% level using the ROA. This causes us to reject the hypothesis that ownership concentration has a positive and statistically significant effect on the ROA. That means that companies that have high ownership concentration will have a high ROA, but the model failed to find a statistically significant effect on performance. This result is consistent with Wu and Cui's (2002) study on Chinese firms, which shows a positive effect of concentration on the firm performance using the ROA and ROE. The insignificant results of the concentration variables in the ROA equation could conclude that the Saudi equity market is inefficient or there could be other variables that influence the market performance measure, which were missed in our model. This result is also consistent with Hill and Snell (1989) and Leech and Leahy (1991). However, our results contrast with the findings of Abuserdaneh et al., (2010), who found a negative and statistically significant relation between ownership concentration and performance in the Jordanian market.

Testing the Relation between Foreign Ownership and Company Performance:

In table 4, we notice that the effect of foreign ownership on performance using the ROA is negative and statistically significant at less than 5%, which allows us to reject that hypothesis. This result is consistent with studies like those of Sarac (2002), Kumar (2003) and Solung and Nor (2008). However, we join this result with Majumdar's (1997) statement that firms "are prone to inertia, and the bureaucratic ossification that goes along with age," which may make foreign firms unable to cope with the changes in the Saudi competitive environment, leading to poor performance. Moreover, foreign firms are subjected to a certain kind of learning process, as they are working in an unfamiliar environment and they are competing locally with more informed and experienced domestic firms (Louri, 2003).

Testing the Relation between Institutional Ownership and Performance

The pooled regression model in table 4.3 shows that there is a positive and statistically significant relationship between institutional ownership and performance using the ROA at 5%. This allows us to accept the third hypothesis above. The result is consistent with the findings of the study by Abuserdaneh et al., (2010) in which the influence of the institutional ownership structure on the firm performance was positive using the ROA measure.

Testing the Relation between Managerial Ownership and Company Performance

The relation between managerial ownership and performance is positive but not statistically significant. Thus, the fourth hypothesis may be rejected. This can be justified by the lower percentage of managerial ownership that exists in the Saudi equity market. The finding may not show the actual situation. It is also consistent with the findings of researchers like Severin (2001) and Kumar (2003). This dimension is related to the agency theory, as it suggests that the management should own shares in the company to prevent it from working for its own interests. However, when the management owns a large proportion of the company, it is also expected to work in its own favor.

Testing the Relation between Family Ownership and Performance

In table 4, we notice that the effect of family ownership on the performance using the ROA is positive and statistically insignificant at less than 5%. This allows us to reject the hypothesis. This result is consistent with studies like that of Maury (2006), which found a positive relation between these two variables in relation to Western European corporations.

Conclusion

The main objective of the study was to evaluate the relationship between the ownership structure and the firm performance through the listed companies in the Kingdom of Saudi Arabia. Five factors of ownership structure were selected and believed to be important variables that influence the firm performance. The research started with the agency theory, which suggests that an efficient alternative form of ownership structure should be available to identify the nature of the agency problem and the costs arising from it and how the firm performance and value could be affected by this issue.

Berle and Means (2002) were the first researchers to study the effect of the ownership structure on firms' performance. It is useful to know what really influences the company performance in this area and whether the ownership structure really affects performance. The study also aimed to investigate the most common types of ownership structure in the Kingdom of Saudi Arabia's market. It also considered giving investors some hints about the most advisable selection of companies in which to invest to accomplish the best performance according to the statistical analysis conducted by the study.
Many studies have been conducted on measuring the relationship between the ownership structure and the firm performance by various researchers around the world (e.g. Demsetz & Lehn, 1983; Morck et al, 1998; McConnell & Servaes, 1990; Agrawal & Knoeber, 1996; Cho, 1998; Himmelberg et al, 1999; Holderness et al, 1999; Demsetz & Villanonga, 2001; Andersson et al, 2004; Hu & Izumida, 2008; Ezazi et al, 2011; Izumi Ohno, 2015; Khamis et al, 2015).

The sample of the study consisted of 171 listed companies in the Kingdom of Saudi Arabia. In collecting the data from various online annual reports

published by Saudi Stock Exchange listed companies, two conditions were developed: all the data were available over a period of two years (2013–2014) and the companies were not closed or merged with any other company during the study period.

The ownership structure was measured as the independent variable using two dimensions – the degree of concentration and the identity of the owner – which was also divided into sub-dimensions: institutional ownership, foreign ownership, managerial ownership and family ownership. Firm performance was selected as the dependent variable using the return on assets (ROA) as an indicator to measure this variable; it has been used in many previous studies and has been proved to be a more representative indicator and more related to the firm performance than the T'Q indicator (Khamis et al, 2015). The study also took into consideration four different control variables: firm age, firm size, financial leverage and industry sector. Five different hypotheses were developed for the study; they aimed to ascertain the significance of and measure the relation between the different types of ownership structure selected in the study and the firm performance. The ownership dimensions selected were concentration, foreign, institutional, managerial and family ownership.

Ownership concentration was found to have a positive but not statistically significant effect on performance using the ROA measurement. Firms with high ownership concentration are firms with a high return on assets, which is an indication that this dimension of ownership in the Saudi market contributes to improving the firm performance. Foreign ownership was found to have a negative, statistically significant effect on the firm performance. Saudi firms with a high percentage of foreign ownership achieve a lower return on assets, which proves that this dimension can damage the performance of a firm as foreign investors are far away from the real workplace and have no control over it. Institutional ownership was found to have a positive and statistically significant effect on the firm performance as the outside institutional investors overcome the problem of controlling managers. Managerial ownership was found to have a positive and insignificant effect on the firm performance. Companies with a high percentage of managerial ownership were found to attain a higher return on assets than companies with a low percentage of managerial ownership; when the owners are the managers who control, they are expected to work in the interest of the firm, thus improving the firm's

performance and not wasting or abusing the firm's resources. Family ownership was found to exert a positive and insignificant effect on the firm performance. Saudi firms with a high percentage of family ownership were found to achieve a higher return on assets as incentive alignment will occur, whereby the conflict between the owners and the management will be reduced, so the agency costs will be reduced too.

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Online Financial Disclosure, Board Characteristics and Performance of Islamic Banks

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This paper aims to investigate the association between online financial disclosure, board characteristics and performance of listed Islamic banks in the gulf cooperation council bourses. A checklist of 90 items was adopted to measure the level of online financial disclosure for the Islamic banks that are listed in Gulf Cooperation Council bourses. The findings indicate that there is a positive relationship between the level of online financial disclosure and performance indicators. Accordingly, the study recommends that regulatory bodies should develop a guideline of disclosing information through the internet in order to enhance the transparency and performance among Islamic banks leading to sound decision making.

Keywords: Online Financial Disclosure; Islamic Banks; Performance; Voluntary Disclosure; GCC Countries

1. Introduction

The disclosure of financial information is inevitable to the success of businesses, as firms depend on transparent and accurate information to help investors in decision-making, and influencing potential investors (Lipunga, 2014). Based on the signaling theory, companies disclose comprehensive information to the market when their performance is better, than when they hold bad news, to avoid their shares from being under-valued. It assumes that managers want to signal that they are pursuing shareholders' wealth maximization and that they are efficient. There are several ways used by managers to transmit such signals to investors (Dehmir and Badhir, 2014).

Some of these ways include the conventional disclosure method, where information is disclosed through printed annual reports that can only be

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accessed through libraries or analyst reports. Since the conventional way is costly, managers tend to use a more contemporary method for voluntary disclosure known as online financial disclosure (OFD). Recently, OFD is regarded as one of the most important tools used by firms around the world to disclose information to potential investors. The growth in the number of internet users and the level of information disclosed has had a major impact on the performance of different legal, economic and global frameworks (Aqel, 2014). Additionally, since its growth, and despite attracting the interests of researchers, OFD remains vague (Lipunga, 2014)

The Internet dilutes the conventional boundaries that once existed between users of financial information and firms, thus creating better opportunities for publishing symmetrical, transparent and timely information. Jain & Kumar (2013) claim that information can be presented efficiently and effectively through the Internet. Therefore, through OFD financial information can be disclosed in real time, where it is easily displayed, without restriction, current, has high interaction capabilities, and unlimited access to greater volume of data.

Nevertheless, there are differences between firms regarding the volume and level of information disclosed. Increasing level of financial information disclosed, and implementing good governance practices (i.e. board characteristics), would increase the demand on its stock, which would simultaneously enhance its performance in the long run. However, the huge volume of disclosed information would confuse investors' ability to evaluate the real performance of firms. While the studies by Al Shaar et al. (2015), Jullobol & Sartmool (2013), and Dima et al. (2013) argued that there is a positive relationship between the level of financial reporting and performance, Coram (2010) concluded that, the level of disclosure had no effect on performance. Thangatorai et al (2013) added that board composition is one of the most important elements that promotes good governance which would in turn promote more transparent disclosure on company websites

Along similar lines, in the last decades, the Islamic banking system has been attracting the attention of many researchers and investors. As explained by Dusuki (2008) the Islamic banking system involves banks that offer products and services that are compatible with the Islamic doctrine. This allows individuals and firms with religious concerns to

have access to finance, and thus brings financial services to a wider population (Al-Sartawi & Sanad, 2015). As a result, Islamic banks are under greater scrutiny as opposed to traditional banks, and are demanded to disclose more information to fulfill the Sharia's (Islamic law) ethics and principles. Majid & Ismail (2008) argued that insufficient disclosure leads to wrong decisions and mitigates the performance of Islamic banks. Therefore, in order to overcome such disclosure issues, OFD can be used to provide the users of financial information with adequate and useful information for making sound decisions.

The Gulf Cooperation Council (GCC) is considered as a hub for the Islamic banking industry. As the GCC countries are calling for economic diversification, they strive to move beyond their oil-based economies by attracting investors and global businesses. They have recently introduced their own corporate governance codes to enhance the social and regulatory environments, hence attracting more investors by encouraging voluntary disclosure. The GCC, a financial center, has become an intended destination for many foreign investors. These investors ask for financial information and carry on certain decisions whether to continue with a certain company or not, and this is provided through OFD.

A limited number of studies have undertaken the relationship between OFD and the performance of Islamic banks in the GCC countries, so it is interesting to test this relationship from such a perspective. Therefore, the research objectives can be summarized as research questions of:

1. What is the level of OFD by the GCC listed Islamic banks?
2. What is the relationship between OFD, BC and the performance of Islamic banks in the GCC?

This paper further proposes recommendations that might aid AAOIFI standard setters and regulatory bodies in the GCC to institute strategies that would encourage the implementation of OFD to attract investors and to enhance the performance of Islamic banks. This research is not only significant for preparers and users of financial information, but also raises concerns regarding the regulations in the GCC and how they impact economic decisions. Managers may realize the importance of information disclosure and learn the determinants of better disclosure practices, resulting in a reduction in monitoring costs. This will increase

the chance of making healthier and economically sound decisions regarding their investing activities.

2. Literature review

Chapra (1985) has outlined the following as distinctive features of Islamic banks, abolition of interest, adherence to public interest, catalyst for development, promotion of economic wellbeing, establishment of social and economic justice, and equitable distribution of income. Individuals or firms that share the same religious views seek such financial institutions (Al-Sartawi, 2015 and Al-Sartawi, 2013). Therefore, in order to attract a wider population, managers need to disclose comprehensive and transparent information to overcome the problem of information asymmetry. Majid and Ismail (2008) added that Islamic banks required fulfilling the concept of accountability and ethics, thus the duty to disclose and the extent of disclosure should be greater as opposed to conventional banks.

The recent financial crisis has raised many concerns over the effectiveness of financial reporting, accounting standards, corporate governance and accountability around the world (Kiel & Nicholson, 2003). Therefore, countries have started paying more attention to improving their regulations to boost the economy by attracting more investors and by encouraging the companies to keep a powerful internal control system and promoting accurate and timely disclosure of all material matters related to the performance (Ramadhan, 2014).

Thus, improving regulations would lead to increasing the level of disclosure to interested users, thus, lowering the companies' capital cost, improving the marketability of shares and gaining investors' confidence (Ramadhan, 2014). Similarly, Basuony & Mohamed (2014) argued that firms tend to disclose more information causing a reduction in information asymmetry and agency costs. Also, their study showed that large companies prefer to disclose information using the internet because they can take advantage of disclosing timely information at lower costs, as these companies have the resources to do so.

The rise of the Internet has resulted in the evolution in the way firms communicate with stakeholders. Many companies in developed and developing economies have websites dedicated to communicating

financial information to investors (Yap & Saleh, 2011). OFD is advantageous as it allows companies to disseminate information to unidentifiable consumers, contrary to the paper-based financial reports. The internet has become one of the most popular sources of getting the information. Consequently, traditional financial reporting is becoming less effective when compared with OFD as electronic-based reporting removes the restrictions of paper based reports (Almilia, 2009).

Online financial disclosure can therefore be defined as the use of the firms' websites to disseminate information regarding their financial performance (Poon & Yu, 2012). OFD can also be defined as the public reporting of financial and operating data by a business enterprise by the related Internet-based communications medium (Hunter and Smith, 2010). Moreover, other authors explained OFD as the disclosure of the financial statements reporting through the use of technology such as multimedia and Web tools analysis (Lizzcharly et al., 2013).

Different studies have determined the factors that affect OFD. For instance, Almilia (2009) used firm size, profitability and leverage in order to uncover the factors that affect the use of online financial disclosure. Majid & Ismail (2008) and Basuony & Mohamed (2014) added more factors that would affect OFD such as capital adequacy ratio, firm size, and return on assets, leverage, and industry and auditor type. Sanad & Al-Sartawi (2016) argued that corporate governance and the level institutional investor ownership have a limited effect on the level of OFD. Thangatorai et al. (2013) added that board composition is one of the most important elements that promotes good governance which would in turn promote more transparent disclosure on company websites. Other determinants for the practice of OFD are the board characteristics including the proportion of independent directors and ownership (Xiao et al., 2004). Moreover, Thangatorai et al. (2013) found that board independence, financial experts on board, family members on board and director ownership have a significant influence on the level of OFD. Another study by Elsayed et al. (2010) concluded that board size and ownership diffusion are positively associated with OFD, while institutional ownership is negatively associated with OFD. Kamalluarfin (2016), on the other hand, found that there is a significant negative relationship between board independence and OFD.

Furthermore, a lot of studies testing the effect of voluntary disclosure on performance use different indicators of performance such as market value, stock price, return on assets and Tobin's Q such as (Jullobol & Sartmool, 2013; Al Shaar et al., 2015) who argued that there is a positive relationship between reporting and performance. However, there are limited studies on the association between OFD and performance, specifically from an Islamic banking perspective.

Due to the openness of the economies of the GCC countries with the global economy, the inter-connectedness of the foreign markets, the growing presence of Islamic financial products and international firms in the region, increasing number of western expatriates in senior management positions and the increasing integration of GCC countries and adoption of international standards and Islamic standards, the GCC countries are being more concerned about the attributes that could attract investors such as clear regulation, corporate governance, transparency and technological infrastructure. Accordingly, this study would be an important contribution in filling the gap in the current literature by determining whether there is a relationship between OFD of the Islamic banks that are listed in the GCC Bourses and its performance measured by market value add (MVA); returns on equity (ROE); returns on assets (ROA); earnings per share(EPS).

3. Methodology

3.1. Sample Selection

The empirical study of the current research depends on a sample which consists of all the listed Islamic Banks in the GCC bourses for the year 2015. However, the required data were gathered from 48 banks out of 52 banks listed as Islamic banks. Table(1) shows the sample distribution according to country.

Table 1: Sample distribution according to country

Country	Total	Excluded	Sample	%
KSA	12	(1)	11	23
KUW	5	(1)	4	8
BAH	9	(1)	8	17
QAT	6	0	6	13
OMA	6	0	6	13
UAE	14	(1)	13	27
Total	**52**	**(4)**	**48**	**100**

The researcher used the banks' websites and the GCC Bourses websites to gather the data required for this study. Some of the banks were excluded from the study because their website was not functioning while some of them did not hold the data required. Table(2) shows the reasons for excluding banks from the sample selected.

Table 2: Reasons of Excluded Banks

Item	Number	Percentage
Listed Islamic banks in GCC Bourses under financial sector	52	100%
Bank's website was not working	(3)	(0.6%)
No investors relations section in the company's' website	(1)	(0.2%)
Total companies included in the sample	**48**	**92%**

3.2. Measuring Online Financial Disclosure and Performance Indicators

This research divided the study variables into control variables and an independent variable. The independent variable included the level of OFD. On the other hand, as mentioned in the literature review certain board characteristics were controlled to study the influence of OFD on performance. The control variables in this study included: board size, board independence and ownership.A checklist used by Al-Sartawi

(2016) consisting of 90 items (71 items for content and 19 items for presentation) was adopted to measure the level of OFD. Therefore, the OFD index is based on binary, that is, if a bank reported an item which was included in the checklist it received a score of 1 and if the bank did not report an item, a score of 0 was allocated. Accordingly, the Index for each bank was calculated by dividing the total earned scores of the bank by the total maximum possible scours appropriate for the bank. Below formula shows the way of calculating the OFD index.

$$OFD = \sum_{i=1} \frac{di}{n}$$

Where:

di: ***disclosed item*** equals One if the bank meets the checklist item and Zero otherwise.

n: equals maximum score each bank can obtain.

The main objective of this study to measure whether there is a positive association between OFD and the performance indicators. Accordingly, the following four indicators were used:

1- **Market value added (MVA):** is the difference between a company's market value and the capital that bondholders and shareholders have contributed to it. MVA reflects management's performance and calculated as:

Market value added = Company's Market Value – Invested Capital

2- Return on Equity (ROE): Return on equity (ROE) is the amount of net income returned as a percentage of shareholders equity. Return on equity measures a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested. ROE is expressed as a percentage and calculated as:

Return on Equity = Net Income/Shareholder's Equity.

3- **Return on Assets (ROA):** This ratio indicates how profitable a company is relative to its total assets. The return on assets (ROA) ratio illustrates how well management is employing the company's

total assets to make a profit. The ROA ratio is calculated by comparing net income to average total assets, and is expressed as a percentage and calculated as:

Return on Equity = Net Income/ Average Total Assets.

4- **Earnings per share (EPS):** is the portion of a company's profit allocated to each outstanding share of common stock. Earnings per share serve as an indicator of a company's profitability and calculated as:

Earnings per share = (Net Income –Dividends on Preferred Stock)/ Average Outstanding Shares.

3.3. Hypotheses Development

Many studies have been conducted regarding the relationship between voluntary disclosure and firms' performance. Majority of the studies revealed that a positive relationship between voluntary disclosure and performance, measured by ROA and Tobin's Q such as (Chau & Gray, 2002 and Hossain & Hammami, 2009). On the other hand, some of the previous studies found no relation between them such as Akhtaruddin, et al. 2010; Barako, et al., 2006; Camfferman & Cooke, 2002. OFD as a part of voluntary disclosure indicates firm quality and value to the investors. This indication will reduce the information asymmetry between investors and preparers of financial information, lowering the agency cost and well-directing the future decisions which improve the firm performance in the long run.

However, based on the review of the relevant literature the researcher found that there are negligible studies in GCC that actually examine the performance in relation to OFD. Accordingly, this study will investigate the relationship between OFD and performance of GCC listed Islamic banks. Based on the empirical and theoretical literature, this paper anticipates that companies with high level of OFD will have a good level of performance. Therefore, this paper establishes the main hypothesis and the sub-hypotheses as:

H_1: There is a relationship between OFD and the performance of the Islamic banks listed in GCC Bourses.

H1-a1: There is a relationship between OFD and MVA of the Islamic banks listed in GCC Bourses.

H1-a2: There is a relationship between OFD and ROE of the Islamic banks listed in GCC Bourses.

H1-a3: There is a relationship between OFD and ROA of the Islamic banks listed in GCC Bourses.

H1-a4: There is a relationship between OFD and EPS of the Islamic banks listed in GCC Bourses.

3. 4. Regression Models

In order to assess the relationship between the dependent and independent variables, the following multiple linear regression models were incorporated into the data, while table (3) explains the variables.

Model 1:

$$MVA_i = \beta_0 + \beta_1 OFD_i + \beta_2 DB\_DUAL_i + \beta_3 BD\_SIZE_i + \beta_4 BD\_INDP_i + \beta_5 \text{BD\_ONT}_i + \beta_6 \text{BD\_TTSONF}_i + \beta_7 BD\_TSONT + \varepsilon_i$$

Model 2:

$$ROE_i = \beta_0 + \beta_1 OFD_i + \beta_2 DB\_DUAL_i + \beta_3 BD\_SIZE_i + \beta_4 BD\_INDP_i + \beta_5 \text{BD\_ONT}_i + \beta_6 \text{BD\_TTSONF}_i + \beta_7 BD\_TSONT + \varepsilon_i$$

Model 3:

$$ROA_i = \beta_0 + \beta_1 OFD_i + \beta_2 DB\_DUAL_i + \beta_3 BD\_SIZE_i + \beta_4 BD\_INDP_i + \beta_5 \text{BD\_ONT}_i + \beta_6 \text{BD\_TTSONF}_i + \beta_7 BD\_TSONT + \varepsilon_i$$

Model 4:

$$EPS_i = \beta_0 + \beta_1 OFD_i + \beta_2 DB\_DUAL_i + \beta_3 BD\_SIZE_i + \beta_4 BD\_INDP_i + \beta_5 \text{BD\_ONT}_i + \beta_6 \text{BD\_TTSONF}_i + \beta_7 BD\_TSONT + \varepsilon_i$$

Table 3: Study Variables

Code	Variable Name	Operationalization
Dependent variable		
MVA	Market value add	Bank's Market Value – Invested Capital
ROE	Return on equity %	Net Income/Shareholder's Equity
ROA	Return on assets %	Net Income/ Average Total Assets
EPS	Earnings per share	(Net Income –Dividends on Preferred Stock)/ Average Outstanding Shares
Independent Variables		
OFD	Online Financial Disclosure %	Total scored items by the bank/Total maximum scores
Control Variables		
DB_DUAL	CEO non-duality	A binary variable wherein 0 indicates that the chairperson and CEO are the same and 1 otherwise
BD_SIZE	Board size (Not more than 15)	A binary variable wherein 0 indicates that the size of the board less than 15 and l otherwise
BD_INDP	Board independence	A binary variable wherein 0 indicates that there is no non-executive directors in the board and l otherwise
BD_ONT	Directors ownership is between 1% and 20%	A binary variable wherein 0 indicates that directors did not owned between 1% - 20% and 1 otherwise
BD_TTSONF	The ownership of top 3 stockholders (Not more than 50%)	A binary variable wherein 0 indicates that the top three stockholders owned more than 50% and l otherwise
BD_TSONT	The ownership of top stockholders (Not more than 20%)	A binary variable wherein 0 indicates that the top stockholders owned more than 20% and l otherwise
εi	Error	

4. Data analysis

4.1. Descriptive statistics

As mentioned earlier, the level of online financial disclosure is measured by dividing the total score of every bank by the maximum probable scores. In general, the maximum score of OFD level was 90 items where the content dimension contributed 71 items, while the presentation dimension contributed 19 items. The results shown in table 4 suggest that the level of online financial disclosure by Islamic banks differed among the GCC Countries. The highest level of total online financial disclosure was 81% by KSA banks, and the lowest was 54% by Bahraini banks.

Table 4: level of internet financial reporting

Country	**N.**	**OFD**	
		Mean	**S.D**
KSA	11	.8121	.03161
Kuwait	4	.7194	.25311
Bahrain	8	.5417	.21844
Qatar	6	.8093	.10218
Oman	6	.6148	.29005
UAE	13	.7778	.13937
Total	**48**	**.7250**	**.19276**

On the other hand, the results show that the overall level of online financial disclosure by Islamic banks was 72.5% which is considered as a good level of reporting by the GCC Islamic banks. Additionally, the descriptive statistics for dependent and control variables in table 5 show that the level of MVA is high and ranges from-1130 million to 6042 million with a mean of 411.57 million, indicating that Islamic Banks are attractive to investors and they somehow have strong leadership and governance. Moreover, the mean of ROE and ROA are 0.19 and 0.06 respectively and they are low compared to the total assets invested in Islamic banks industry because of the limitation in Islamic contracts used in GCC. Finally the average EPS was 10. With regards to the control variables, the mean of CEO duality was at 0.83, board size at

0.94, board independence at 0.85, director's ownership between 1% and 20% at 0.81, the ownership of top 3 stockholders at 0.77, and the ownership of top stockholders 0.73. These figures indicate that the Islamic banks are highly adhering to corporate governance mechanisms.

Table 5: Descriptive statistics for Dependent and Control (Dummy)Variables

Variable	N.	Min.	Max	Mean	S.D
MVA*	48	-1130	6042	411.57	1166.213
ROE	48	-.16	.89	.1949	.24038
ROA	48	-.54	.28	.0564	.13219
EPS	48	-53.66	137.07	9.9986	31.75430
DB_DUAL	48	0	1	.83	.377
BD_SIZE	48	0	1	.94	.245
BD_INDP	48	0	1	.85	.357
BD_ONT	48	0	1	.81	.394
BD_TTSONF	48	0	1	.77	.425
BD_TSONT	48	0	1	.73	.449
*Millions					

4.2. Validity

With regards to the validity test, the data was checked for multicollinearity which involved conducting the Variance Inflation Factor (VIF). The VIF scores are reported in table 6, indicating that no score exceeds 10 for any variable in the models. It was, therefore, concluded that no problems were found with regards to collinearity.

Table 6: Collinearity Statistics Test

Model	Tolerance	VIF
OFD	.818	1.222
DB_DUAL	.143	6.975
BD_SIZE	.869	1.151
BD_INDP	.141	7.078
BD_ONT	.863	1.159
BD_TTSONF	.552	1.810

BD_TSONT	.654	1.528

Additionally, as reported in table 7, the Durbin Watson (D-W) value of the models was (1.668) for model 1 which is related to the MVA, (1.577) for model 2 which is related to ROE, (1.742) for model 3 which is related to the ROA and (2.159) for model 4 which is related to the EPS. As a result, we can conclude that there is a positive autocorrelation in 3 models because the (D-W) values of the models were beyond the d-statistic range which is less than the minimal range. In order to overcome this problem, (Lag 1) has to be considered when testing the models of the study.

Table 7: Autocorrelation Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.461	.213	. 175	2.09701	1.668
2	.582	.339	.223	.21184	1.577
3	.412	.170	.025	.13053	1.742
4	.581	.247	.132	32.64163	2.159

4.3. Testing Hypotheses

Table 8 reports the findings of the regression analysis of the study models. From the point of view of the researcher OFD will overcome the asymmetry problem, which will enhance the predictions and the decision-making quality of the investors, therefore the demand on firms' stock will increase resulting in an increase in the stock prices. The results of this study indicate that there is a positive yet insignificant association between OFD and MVA. This is consistent with Al-Sartawi (2017) and Al Shaar et al. (2015).

Furthermore, the findings revealed a positive and significant relationship with CEO duality, director’s ownership between 1% and 20%, and the ownership of top stockholders. Also, there is a negative and significant relationship between MVA board independence.

With regards to the control variables, the mean of was at 0.83, board size at 0.94, board independence at 0.85, at 0.81, the ownership of top 3 stockholders at 0.77, and 0.73. These figures indicate that the Islamic banks are highly adhering to corporate governance mechanisms MVA and bank's size and age.

Moreover, the results reported that there is a positive significant relationship between ROE, ROA and OFD. Our findings support the notion, that Islamic banks managers in GCC adopt the signaling theory by disclose information to justify their compensation packages, and attracting more investors which will enhance future performance (Hamrouni et al., 2015). Therefore, it is expected that banks with higher profits (ROE) and higher performance (ROA) are more likely to increase their level of disclosures (Al Shammari et al., 2011). With regards to board size, director's ownership between 1% and 20%, and the ownership of top 3 stockholders, the findings found a positive significant relationship between these board characteristics and ROE.

Finally, the results reported a weak relationship between EPS and OFD and all the board characteristics.

Table 8: Regression analysis Models

		OFD	DB_DUAL	BD_SIZE	BD_INDP	BD_ONT	BD_TTSONF	BD_TSONT	R^2	A. R^2	F	Prob. (F)
MVA	**Beta**	.161	.670	-.016	-.863	.275	-.233	.309	.213	. 175	1.54	.180
	t-statistics	1.039	1.809	-.107	-2.312	1.818	-.1237	1.781				
	Sig.	.305	.078	.916	.026	.077	.223	.083				
ROE	**Beta**	.155	.302	.235	-.210	.393	-.273	.453	. 339	. 223	2.93	. 014
	t-statistics	2.094	.889	1.707	-.614	2.838	-1.580	2.850				
	Sig.	.004	.379	.095	.542	.007	.122	.007				
ROA	**Beta**	.188	.238	.150	-.137	.223	-.272	.343	.170	.025	1.93	.051
	t-statistics	1.982	.627	.971	-.358	1.43	-1.404	1.815				
	Sig.	.041	.534	.337	.722	.158	.168	.061				
EPS	**Beta**	.140	.191	.093	-.112	.167	-.285	.275	.247	.132	.640	.720
	t-statistics	.842	.482	.579	-.281	1.03	-1.412	1.48				
	Sig.	.405	.632	.566	.781	.308	.166	.146				

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Consequently, we can summarize that the level of OFD by the GCC Islamic banks has a positive relationship with its performance measured by MVA, ROE, ROE and EPS. This is because Islamic banks in the GCC disclose more comprehensive information when they achieve higher profits to signal stakeholders that they are pursuing shareholders' wealth maximization and that they are efficient. In Islam, the Amanah (trusteeship) concept states that there needs to be complete transparency between firms and their stakeholders. Therefore, Islamic banks disclose more information compared to their conventional counterparts to discharge their duty of Amanah. This is consistent with Dehmir and Badhir (2014) and inconsistent with Akhtaruddin et al. (2010), Barako et al. (2006) and Camfferman & Cooke (2002)

5. Conclusion and Recommendations

The Internet dilutes the conventional boundaries that once existed between users of financial information and firms, thus creating better opportunities for publishing symmetrical, transparent and timely information through online financial disclosure. Accordingly, the current research shed the light on the relationship between OFD and performance of the listed Islamic banks in GCC bourses. Four indicators were used to express firm performance MVA, ROE, ROA and EPS. Also, the OFD level measurement depended on a checklist used by Al-Sartawi (2016). Based on the results, the level of OFD – 72.5%- has a significant impact on one of four performance indicators MVA. Consequently, it can be concluded that the listed Islamic banks in the GCC countries bourses present a good level of OFD (more than 50%) according to the Wallace (1988) index disclosure classification and this level positively impacts its market value added.

This current research extends the previous studies conducted in the GCC Countries by focusing on Islamic banks, adopting a wider checklist, and using four indicators for performance as dependent variables. From a theoretical perspective, this paper is important as it seeks to contribute to the literature regarding the relationship between the level of OFD and performance. From a practical perspective, this research is significant to Islamic industries around the world as it provides empirical evidence to interested parties of the Islamic banking industry- users, preparers, regulators and researchers- with regards to the importance and benefits of online financial disclosure in enhancing performance and in

maintaining the rights of the users and the shareholders of financial information. Consequently, the research recommends that the GCC Bourses should develop a formal guideline for OFD to create harmony in disclosing information since the level of OFD disclosed varies through Islamic banks.

However, the research was conducted using the Islamic banks listed in GCC Countries, thus, the sample size is small compared to the total listed companies. In addition, some of the bank's websites were not functioning while others did not contain investors' relations section and hence, the information was not provided. Therefore, the study findings may not be generalized. Moreover, a study by Hossin et al. (2012) had discovered that some companies' characteristics such as profitability, complexity, size and age had an effect on voluntary disclosure using the internet. Therefore, the researcher suggests investigating whether such characteristics would have an effect on the current level of online financial disclosure performed by GCC Islamic banks. Furthermore, the researcher suggests having a study that investigates the relationship between OFD and audit quality in Islamic banks.

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Internal and External Determinants of Turkey-Kazakhstan Energy Collaboration

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A number of academic studies have covered Turkey's energy relations with Kazakhstan, overwhelmingly in the context of Turkey's energy cooperation with Caspian Sea or Central Asian countries. But, since there is a great potential of energy collaboration between Ankara and Astana, this collaboration deserves to be analysed exclusively. Hence, by covering the energy partnership between Turkey and Kazakhstan, this study attempts to fill in this significant gap in the academic literature on Turkish-Kazakh energy ties. In addition, the existing studies have rarely applied IR theories to describe these ties. Through explaining Ankara's energy cooperation with Astana in the framework of Realism and Liberalism, this paper seeks to fill in this gap. The analysis made in this context shows that Turkey's energy security concerns; its aspiration of becoming an energy hub; the economic and business partnerships established between Turkey and Kazakhstan; the close political, historical and cultural links between the two countries; and regional issues such as the aspiration of the EU to reduce its dependence on Russian gas and the competition among Russia, Turkey, Iran, China and the EU control over the Caspian energy resources, including those of Kazakhstan, are the main determinants of Turkey-Kazakhstan energy cooperation.

Keywords: energy security; (inter)dependence; energy collaboration; complex interdependence; national interests

Introduction

Turkey has one of the largest energy markets in Europe. The significant growth in its economy, population, urbanization and industrialization has recently caused a rapid increase in the energy demand of the country. The average annual increase rate in its energy need since 1990 is 4.6%

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(Çalıkoğlu, 2012). The annual energy need of the country is envisaged to double in 10 years and to grow annually 4.5% until 2030 (BOTAŞ, 2013). Since the country does not have sufficient domestic energy resources to meet its energy demand, it has to import around 75% of its energy demand. To be more specific, the country needs to import around 98% and 90% of its gas and oil supplies, respectively. While, some volatility has been observed in the oil and gas imports parallel to the economic growth of the country, Turkey's oil and gas imports have been augmenting.

Turkey's total gas imports in 2016 were 46.352 million cubic meters (Mcm), originating mainly from Russia (52,94%), Iran (16,62%), Azerbaijan (13,98%) and other countries (16,45%) (EMRA, 2017a). On the other hand, the country imported 40,064 million tons of petroleum in the same year, mainly from Iraq (23,09%), Russia (19,38%), Iran (17,32%) and other suppliers (40,21%) (EMRA, 2017b). These figures indicate that Turkey is highly reliant on Russia and Iran to meet its energy need.

Turkish leaders are not worried that much about the security of the oil supplies due to the existence of global oil markets and thereby various possibilities and routes to import oil. Nonetheless, they are greatly concerned about the security of gas supplies due to several causes. First, the country needs to import almost all its gas demand. Second, gas has the high share in its electricity generation and is growingly utilized in the industrial sector. Thus, any disruption of natural gas flows might importantly jeopardize the Turkish economy. Third, natural gas exporters have more inclination of utilizing their gas exports as weapon in bilateral contacts because of the inflexible manner of gas transit, which includes permanent infrastructure and long-term gas deals. Hence, Turkey's high dependence on external natural gas suppliers can limit its foreign policy manoeuvres.

Thus, Turkey's external oil and natural gas strategy aims at meeting the increasing energy demand of the country, reducing its high reliance on Russian and Iranian gas and turning the country into an energy hub between energy producing countries and European markets. Considering that Kazakhstan holds large oil and gas reserves, it might significantly help Turkey to achieve the targets of its foreign oil and natural strategy. The country has the ranking of 13th in the world in terms of proven

recoverable oil reserves and gas condensate, 15th in natural gas and 26th in the production of hydrocarbons (Energy Charter, 2013). According to BP figures (2017), Kazakhstan's proved oil reserves are around 30 thousand million barrels, or 3.9 thousand million tonnes. Natural gas has become a growingly significant energy resource for Kazakhstan. Proven reserves of gas are around 1.0 trillion cubic meters (Tcm), or 34.0 trillion cubic feet (Tcf) (BP, 2017), and possible reserves increase to 6–8 Tcm (Energy Charter, 2013). The country seeks to export its oil and gas resources to European and world markets. Therefore, energy goals of Turkey and Kazakhstan seem to overlap and complete each other. This paper seeks to examine the determinative elements of and the state of affairs in the Turkish-Kazakh energy collaboration.

The collaboration has received an important attention from academia (for example see Abbasov 2015; Aslan and Bozyiğit, 2014; Babalı, 2010; Misiagiewicz, 2014; Balcer, 2012; Hardin, 2012; Mutlu, 2012; Nurgaliyeva, 2016; Öğütçü, 2006; and Shaffer, 2006) and four main arguments are highlighted in the existing studies. First of all, most of the academic studies underline the fact that Ankara has been trying to develop a strong energy cooperation with Astana. For instance, Shaffer (2006) argues that Turkey is exploring the importation of natural gas from Kazakhstan and Turkish Petroleum Corporation (TPAO) has already invested in this country. Secondly, the academic studies on Turkey-Kazakhstan energy relations acknowledge that both Turkey and Kazakhstan can importantly benefit from their energy collaboration. For example, Nurgaliyeva (2016) claims that "The BTC [Baku-Tbilisi-Ceyhan Crude Oil Pipeline] pipeline, which bypasses Russian territory, has been vital to Kazakhstan improving its bargaining position with Russia ... Moreover, by diversifying its routes, Kazakhstan can strengthen its energy security." In addition, Misiagiewicz (2014) argues that as Turkey's energy need has been increasing and it lacks necessary resources, Kazakhstan is one of the most important exporters of energy resources for Turkey, in addition to Azerbaijan and Turkmenistan. Thirdly, the academic studies assert that while there is a great potential of developing firm energy collaboration between the two countries, they have managed to achieve only limited collaboration so far and the majority of investments by Turkish businessmen in Kazakhstan is in non-energy sectors. For instance, Kanbolat (2011) draws attention to the fact that Turkey has the highest number of foreign-owned firms in Kazakhstan and is the fourth biggest investor in terms of the amount of capital, but

these are mostly in non-energy sectors. Finally, the existing academic works generally emphasize that Russia has until now played a restrictive role in the extension of the energy cooperation between the two countries. For example, Cohen (2009) states that Russia presses for maintaining control over energy transportation routes and objects to any projects that could give Europe alternative energy supplies.

Still, there are two important gaps in the existing academic literature on Ankara-Astana energy cooperation. First of all, the majority of the academic studies have covered Ankara's energy relations with Astana *in the context of Turkey's energy relations with Caspian Sea or Central Asian states*. However, considering the importance and the potential of the energy relations between Kazakhstan and Turkey, it is necessary to cover these relations separately in order to be able to understand the relations comprehensively. Thus, as an attempt to fill in this important gap, this paper focuses exclusively on Turkey-Kazakhstan energy relations. Secondly, the existing studies on the energy relations are overwhelmingly policy-based. That is, they have seldom explained the Ankara-Kazakh energy cooperation in the framework of international relations theories. Through describing this cooperation in the context of Realism and Liberalism, this paper attempts to contribute to filling in this significant gap. This theoretical analysis is the original dimension and the difference of this study as to the existing academic studies on Turkey-Kazakhstan energy relations.

The paper uses the qualitative method. This method aims to understand some aspect of social life and generally generates words, rather than numbers, as data for analysis (Patton and Cochran, 2002). Thus, the method refers to "the meanings, concepts, definitions, characteristics, metaphors, symbols, and descriptions of things" (Berg, 2001). This method was chosen due to its capacity enabling to explain Turkey-Kazakhstan energy relations by describing, analyzing and interpreting concepts and characteristics of the relations.

The analysis is based on extensive literature studies and official sources. The author uses a number of databases such as Google Scholar, Elsevier ScienceDirect, Ebscohost, JSTOR, Taylor & Francis Online, ProQuest Political Science and Social Science Research Network in order to obtain relevant and key information on Turkey-Kazakhstan relations. The author also benefits from some websites of official Turkish and Kazakh

institutions including the Ministry of Foreign Affairs of Turkey, the Ministry of Foreign Affairs of Kazakhstan and the EdgeKZ magazine of Kazakhstan. Besides, several (annual) reports of key organizations like British Petroleum (BP), Petroleum Pipeline Company (BOTAŞ) of Turkey and the Energy Market Regulatory Authority (EMRA) of Turkey are used in this paper. During the research, a number of key words such as "Turkey Kazakhstan energy relations", "Turkey Kazakhstan energy cooperation" "Turkey energy profile", "Kazakhstan energy profile", "Turkey-Kazakhstan relations", "TPAO Kazakhstan" and "BTC pipeline" are used.

The research has an inductive and bottom-up approach. In this approach, main argument is to be built at the end of study after analysing data and looking for considerable patterns. By using this approach, the author's goal is to firstly provide important relevant data on Kazakhstan-Turkey energy relations, then analyse this data and finally to arrive a general argument on the relations. This paper is the author's first study on Turkey-Kazakhstan energy partnership.

The paper is organized in five sections. First, it covers the theoretical framework based on which Turkey-Kazakhstan energy partnership will be described. The second section gives an overview of Kazakhstan's energy outlook. The third section looks at Ankara's bilateral relations with Astana. The fourth section explores the areas and challenges of Turkey-Kazakhstan energy cooperation and the state of affairs in their energy interdependence. Moreover, this section attempts to explore how the bilateral relations between the two countries shape their energy partnership. Finally, the paper concludes with an overview and assessment of the findings by explaining Turkey's energy relations with Kazakhstan in the context of Realism and Liberalism.

1. Theoretical Framework

This paper chose the realist and liberal paradigms to analyse Turkey's energy relations with Kazakhstan due to their strength in explaining under which conditions countries collaborate or confront in the field of energy and how power and bilateral relations of countries affect their energy collaboration and vice versa.

1.1 Energy in the Context of the Realist Paradigm

Theoretical principles of Realism "draw from deeper historical traditions of thinking about international politics" (Dannreuther, 2010). It includes the tradition of *realpolitik* developed from Machiavelli onwards, which attaches priority to the interests of the sovereign, and where the main target of statesmen aiming to maintain international steadiness is to contain the inevitable drive for power by states, and the disputes which this inescapably creates, by maintaining a lasting balance of power (Dannreuther, 2010).

From the point of view of Realism, adequate energy resources translate into economic and political power in the international arena. Thus, their lack (especially oil and gas) brings about an existential menace for the survival of the actors in terms of their economy, transport and military requirements (Özcan, 2013). Besides, according to realists, since energy resources are becoming more insufficient and more insecure, states will growingly contest for access and control over these resources (Dannreuther, 2010). As a result, dispute and war over the resources are growingly possible, if not unavoidable (Dannreuther, 2010).

Realists consider that due to augmenting conflicts within energy regions, limited sources of supply, and the wide degree of state interference in energy markets, the issue of energy has become gradually linked to security concerns and regarded as an existential menace to the state sovereignty (Özcan, 2013). Thus, energy security is a part of national security and must be preserved by all available means (Alsaad, 2014).

In a realist world, since energy is one of the main elements of power, countries concentrate on how much energy power they hold relative to each other. It is significant not only to possess a considerable amount of power in the energy relations, but also to make sure that energy partners do not change the balance of power in their favour.

Because of the importance of energy for the power and growth of the country, states are not eager to give control over energy resources to international energy firms, free market mechanisms or supranational organizations (Česnakas, 2010). For realists, states – via strategic thinking and competition in order to control resources – can best guarantee energy

security (Alsaad, 2014). Thus, the state and the state-owned companies need to possess the exclusive control on this field (Iozzi, 2014).

The unequal supply of energy and demand for energy products generates a situation of dependency among 'producers', 'consumers', and 'transit' states. However, any type of dependence is a defect which menaces sovereignty of state's policies and national interests (Özcan, 2013). The goal of energy security is to provide self-sufficiency, which would make bilateral ties less required to the survival of each individual state, as a result reduce their interdependence and the probability of external menaces, and result in greater national security (Özcan, 2013). Thus, it is good to have alternatives for refraining from that one of energy suppliers' endeavours to take advantage of that dependence and utilizing it for political goals or for economic benefits from its position of relative monopoly (Chifu, 2014).

In the context of the realist paradigm, energy geopolitics, which is defined as the study of the supply of oil and natural gas from a geopolitical approach (Mitchell cited in Dimitrov, 2015), helps to analyse the interaction between geographical location, energy and power of states. In energy geopolitics, political actors participate in cross-border activity to gain access to energy resources in order to meet energy demand of their countries and keep their economies functioning, which is vital for their regional and global standing, military capability, security, territorial integrity and independence.

Considering that states are inclined to increase their power and energy is vital for economy, military and sovereignty of countries; energy security is considered as a zero-sum game: more energy security of a state means less energy security of the other state.

Transit countries, due to the importance of their geographic location, play a key role in the energy transportation from energy producing states to importing ones. Transit states use their geographic positions as leverage in order to promote their national interests. Similarly, energy exporting states favour to utilize their energy resources as a tool in order to promote their external policy targets. The increasing contest between importers over energy resources enables exporting state to enhance its relative power (Česnakas, 2010).

1.2 Energy in the Context of the Liberal Paradigm

Liberalism is a theoretical approach which stresses international norms, interdependence among states, and international collaboration (Korab-Karpowicz, 2010). It has focused on tackling with issues of international relations, on the significance of justice, equality and freedom of the press, civil rights, freedom of religion, free trade and investment, and a right to life, liberty, and property, as principal ways of succeeding a society ruled by international peace and international morality and justice (Kant cited in Alsaad, 2014).

According to Liberalism, energy is another commodity traded in the market (Sulejmanovic, 2014). Besides, from the point of view of Liberalism, energy firms act in accordance with the rules of the market and make their business decisions for increasing their gains (Iozzi, 2014).

From the point of view of liberalists, energy policies of states are influenced by the underlying identities, interests, and power of individuals and groups who encourage policy makers to work towards policies in compliance with their preferences. In this regard, for instance, international behaviour of states in field of energy can be shaped by domestic companies as their material interests may encourage states to conduct energy partnerships with some supplying states instead of others. Similarly, energy policies of states can be affected by ideas - including worldviews, threat perceptions and norms - of energy decision-makers. These ideas may, to a certain extent, determine attitude of policy makers towards energy relations with other countries.

2. Kazakhstan's Energy Outlook

Kazakhstan has an open door policy in the hydrocarbon production sector. A great number of multinational and national energy companies from around the World participate in the exploration, production, service and other activities of the Kazakh energy sector (Energy Charter, 2013). Following years of foreign investments into the oil and natural gas sectors in Kazakhstan, the landlocked country has recently started to realize its vast output capacity (Ministry of Foreign Affairs, MFA, of Kazakhstan, n.d.) The country views multiple pipelines as key to its efforts to ensure that no regional power can exercise strategic control over its energy routes and its broader economic and political ties to Western, Mediterranean,

and Asian partners. Kazakhstan's expanding cross-border energy linkages to Russia, China, other Central Asian countries, and possibly westward to Europe via Turkey will likely enhance its independence, economic development/diversification and geopolitical standing (Öğütçü, 2006).

2.1 Oil Reserves

Kazakhstan has large oil fields including Tengiz, Karachaganak and Kashagan. Tengiz and Kashagan are among the biggest oil fields in the world. Furthermore, Kazakhstan possesses the largest confirmed oil deposits in the Caspian Sea (39,8 billion Bbl) (Ismailova, 2011). The development of the oil sector in the future is reliant on developing the Kazakh sector of the Caspian Sea, where anticipated resources are expected to last for over 50-60 years (Kazenergy cited in Karatayev and Clarke, 2016).

Total oil output of the country was around 79.3 million tonnes in 2016 (BP, 2017) (See Figure 1). The Kazakh oil resources are exported to the world markets by pipelines to the Black Sea via Russia; by barge and pipeline to the Mediterranean through Azerbaijan and Turkey; by barge and rail to Batumi, Georgia on the Black Sea; and by pipeline to China. The main importers of Kazakh oil comprise China, Italy, the Netherlands, France, and Austria (Aitzhanova et al., 2015).

Figure 1: Kazakhstan's Gas and Oil Production (2006-2016)

	2006	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
Gas*	13.4	13.8	16.1	16.5	17.6	17.3	17.2	18.4	18.7	19.0	19.9
Oil**	65.1	67.2	70.7	76.5	79.7	80.1	79.3	82.3	81.1	80.2	79.3

*Bcm, ** million tonnes
Source: The figure is based on data provided in BP, 2017.

2.2 Natural Gas Reserves

Natural gas consumption of the country has been stagnant because the infrastructure and cost necessary to link Kazakhstan's largely dispersed population to production centres in the country's northwest have

prevented development (EIA, 2015). As Figure 1 shows, Kazakhstan's gas production has been increasing. In 2016, the country produced 19.9 Bcm of gas (BP, 2017).

Kazakhstan became a net gas exporter in 2003. The country has two principal export pipelines for natural gas. They are the Central Asia-Center (CAC) pipeline, which crosses the western edge of Kazakhstan on its way to Russia and points further west, and the Turkmenistan-China pipeline, which passes through the southern edge of the country on its way to China (IBP, 2015). Kazakhstan's export markets are traditional and do not importantly affect the global commodity markets of natural gas (Energy Charter, 2013). 10-22 Bcm of natural gas per year might be available for export by 2020 (Smeenk, 2010). Kazakh natural gas is exported to European countries via Russia. But, the country desires to send its rich oil and natural gas resources to the world market through non-Russian corridors too (Avcu, 2013). In 2016, the country exported 16.6 Bcm of gas to Russia and China. It also imported 3.6 Bcm, 1.1 Bcm and 1.5 Bcm of gas from Russia, Turkmenistan and Uzbekistan, respectively (BP, 2017).

3. Turkey-Kazakhstan Relations

Turkey was the first country that set up complete diplomatic ties with Kazakhstan after it gained the independence (Sieff, 2015). In March 1991, the two countries signed "the Agreement on Cooperation" in which they demonstrated their desire for further strengthening of their bilateral collaboration in political, trade-economic, scientific-technological, environmental, cultural, humanitarian, informational and other spheres in the long-term (Ametbek and Amirbek, 2014). Moreover, in September 1991, the Turkish and Kazakh Presidents signed the declaration including the principles and goals of bilateral ties (Aslan and Bozyiğit, 2014). With the signing of a deal on strategic cooperation in October 2009, the Kazakh-Turkish relations have been evolving in a dynamic manner. Also, during the formal visit of the President of Kazakhstan to Turkey in 2012, the two countries established the High-Level Strategic Cooperation Council (Sieff, 2015). In the first meeting of this Council, Nazarbayev called Turkey "one of the closest strategic partners" and stated that "There are no unresolved issues between Kazakhstan and Turkey" (Astana Calling quoted in Weitz, 2012). Mutual high and top-level exchanges have been instrumental in furthering development of the partnership

between the two states (MFA of Kazakhstan, n.d.) During the visit of President of Turkey Recep Tayyip Erdoğan to Kazakhstan on 8-10 September 2017, several protocol and memoranda of understanding were signed, including the Turkey-Kazakhstan Intergovernmental Joint Economic Commission 10th Term Meeting Protocol, the New Synergy-Joint Economic Program, which was established under the auspices of the Turkish and Kazakh presidencies, and the 2017-2020 Action Plan Protocol (Daily Sabah, 2017). These agreements are expected to boost the bilateral relations between the two countries.

Turkey and Kazakhstan have developed strong political relations and support each other at national, regional and international levels. For instance, President of Kazakhstan mediated between Russia and Turkey during their tense relations after Turkey's downing of the Russian jet in 2015. In this regard, Turkish Prime Minister Binali Yıldırım said that "The ice in relations of the two countries has melt, thanks to the contribution of our fraternal countries - Kazakhstan and Azerbaijan - who exerted every effort to normalize the relations between Turkey and Russia. We express our gratitude to these countries" (quoted in Kazinform, 2016). Additionally, Nazarbayev was the first leader who visited Turkey after the coup attempt of 15 July 2016 in the country.

In addition, Kazakhstan and Turkey, along with Azerbaijan and Kyrgyzstan, are members of regional institutions that promote the idea of generating a unity via historical, linguistic, and ideological relations like International Organization of Turkic Culture (TURKSOY, founded in 1993), the Parliamentary Assembly of Turkic-Speaking Countries (TURKPA, founded in 2008), the Turkic Culture and Heritage Foundation, and the Turkic Business Council (Öğütçü, 2017).

Even though economic and cultural relations dominate in the bilateral relationship, recent years have seen a grown stress on foreign policy coordination and security collaboration (Weitz, 2012). In the field of security, the two states concluded "Agreement on Cooperation in the field of military education" in 1993, "agreement on cooperation in the field of military education, science and technology" in 1994, and "agreement on cooperation in the field of technology and defence industry" in 1996 (Öğütçü, 2017). Turkey also provides technical assistance and trainings to Kazakh security and law enforcement forces. The collaboration among private and semi-private firms is also developing. The two countries

established Kazakhstan Aselsan Engineering in Kazakhstan in 2011, with the total amount of the investment approximately $44 million, half of which covered by the Kazakh government and the other half by the Turkish government (Öğütçü, 2017).

The economic relations between the two countries constitute an important part of their bilateral relations. Even whenever the endeavours of Turkish state were not sufficient, the Turkish investors had the great influence on the ties between the two nations (Yılmaz, 2014). Turkish businessmen have been instrumental in Kazakhstan's development since the beginning of the independence of the country, with around 600 Turkish firms registered in Kazakhstan (MFA of Turkey, 2016a). As of June 2015, there are 482 Kazakh-capitalized firms in Turkey (MFA of Turkey, 2016b). Turkey is the 17th biggest investor in Kazakhstan, in terms of capitalization and the 4th biggest country regarding the investments excluding energy (MFA of Turkey, 2016b). According to Turkish Minister of Economy Nihat Zeybekçi, the worth of the Turkish business world in Kazakhstan and that of Kazakhstan in Turkey is about $2 billion and $1 billion, respectively (the Foreign Economic Relations Board of Turkey (DEİK), 2017). The total trade volume between the two countries is around $1.7 billion (DEIK, 2017). According to the Turkish Ministry of Foreign Affairs of Turkey, the goal of the two countries is to augment their bilateral trade volume to $10 billion (MFA of Turkey, 2016b).

The convergence of the ancient historical issues and contemporary shared economic interests make the partnership a greatly significant one (Goto cited in Sieff, 2015). According to Ministry of Foreign Affairs of Turkey, Kazakhstan has become one of the most important political and economic partners of Turkey in the region (MFA of Turkey, 2016b). Considering the political and economic development of Kazakhstan, it can be argued that Ankara sees this country as a gateway to Central Asia (Hafızoğlu, 2015). In this regard, the outcome of Turkey's role and existence in Kazakhstan might be instrumental in Ankara's increasing collaboration with other states in the region (Almen, 2013). On the other side, from the perspective of Kazakhstan, Turkey is a central pillar of its multi-vector foreign policy, alongside the Russia-centred Eurasian integration, important relationships with China and the West, and opening moves to new frontiers such as the Persian Gulf and Southeast Asia (Voloshin, 2015). From the very initial of Kazakhstan's developing bilateral ties with Turkey, Astana saw Turkey as a counter-balancing power to Russia.

Several of the subsequent external soft balancing endeavours regarding Russia's overpowering impact, for instance involvement of Kazakhstan in the BTC project and turning to Turkey as a possible partner and ally in the Customs and Eurasian Unions[2], appear to have already reaped more useful benefits in preventing Russia from obtaining dominance in the Central Asian and Caspian regions (Nurgaliyeva, 2016). However, overall, bilateral ties are yet to reach a satisfying level and still need to be further increased, considering the ostensibly prospective potential of social and political affairs between the two countries (Mutlu, 2012).

4. Turkey-Kazakhstan Energy Cooperation

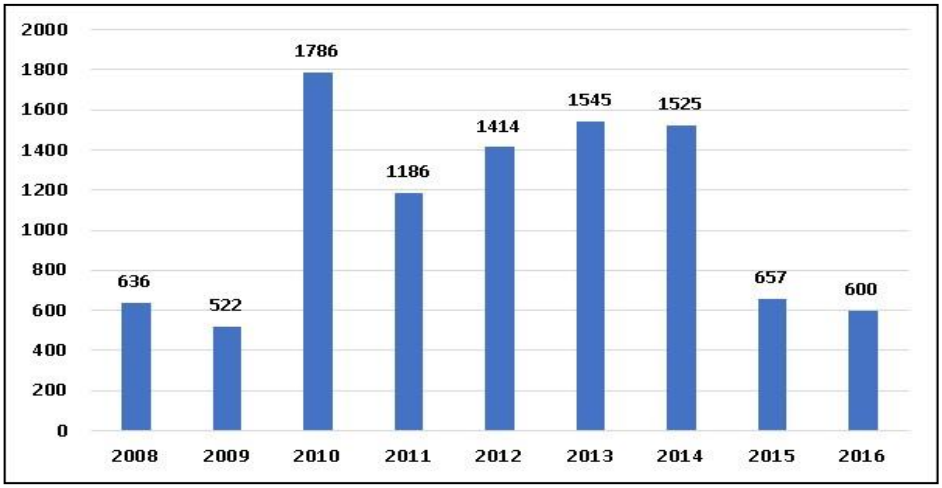
Turkey's increasing energy demand, target of diversifying its energy suppliers, and ambition of becoming an energy hub and Kazakhstan's desire to export its gas and oil via multiple routes – including Turkey – seem overlapping and complementary goals. Turkey invested $263 million in the development of oil and gas fields in Kazakhstan (Chebotarev cited in Nurgaliyeva, 2016). Turkish energy companies have conducted energy operations in the country. Similarly, Kazakhstan has been investing in the Turkish energy market. In this regard, Erdoğan stated that he was glad due to the growing Kazakh investments in the Turkish oil sector (Hurriyet Daily News, 2012).

4.1 Oil Collaboration

Turkey imports both crude oil and oil products from Kazakhstan. Crude oil imports from the country help Turkey meet its oil needs. In 2016, the country imported around 600 thousand tonnes of crude oil from Kazakhstan, which signified 1,5% of its imported petroleum (see Figure 2 and Figure 3). Turkey's share in oil exports of Kazakhstan was around 1.7% in 2015 (the Observatory of Economic Complexity, n.d.).

[2] The Customs Union was created by Russia, Belarus and Kazakhstan in 1995. The Eurasian Economic Union is an international organization for regional economic integration. Its members are Armenia; Belarus, Kazakhstan, Kyrgyzstan and Russia. For further details on the Unions see Nurgaliyeva, 2016.

Figure 2: Turkey's Crude Oil Imports from Kazakhstan 2008-2016 (thousand tonnes)



Source: The figure is based on data compiled from EMRA's annual oil market reports. The reports are accessible at http://www.epdk.org.tr/TR/ Dokumanlar/Petrol/ Yayinlar Raporlar/Yillik

Besides, Turkey is a transit country for the Kazakh oil resources given that they are exported to global oil markets via the BTC pipeline. The pipeline is a great domain in the Turkish-Kazakh energy cooperation. It was 1995 when the Turkish authorities for the first time attempted to acquire the consent of Kazakh leaders for attendance in the project (Almen, 2013). In November 2002, the Kazakhstan's oil company, "Kazmunaigaz", and Azerbaijan's SOCAR launched negotiations on Kazakhstan's possible involvement in the project. In 2006, Baku and Astana signed the deal on the promotion and support of oil transportation from Kazakhstan to international markets through the Caspian Sea and Azerbaijan via the BTC pipeline. This agreement not only opened up a new way to export Kazakhstan's energy, but also encouraged for a close relationship with Turkey (Nurgaliyeva, 2016). In 2008, Kazakhstan began to send its first oil through the BTC to the world markets. Kazakhstan's attendance was vital for the pipeline to work with the complete capacity (Almen, 2013). The share of Kazakh oil deliveries through the BTC is 10%. In addition to the BTC, a large part of Kazakh oil is also shipped by tankers via the Turkish Straits (Balcer, 2012).

Figure 3. Share of Kazakhstan in Turkey's Crude Oil Imports

Year	Percentage (%)
2008	3
2009	4
2010	11
2011	7
2012	7
2013	8
2014	9
2015	3
2016	3

Source: The figure is based on data compiled from EMRA's annual oil market reports.

There are a set of reasons of Kazakhstan's participation in the BTC. First of all, this participation can be justified by Turkey's geopolitical position (Chebotarev cited in Nurgaliyeva, 2016), which enables Kazakhstan to export its oil to world markets via the Turkish territory. Secondly, Turkey limited the numbers of oil tankers passing through the Turkish Straits with its regulation of 1994, which forced Kazakhstan to export its oil resources via the BTC pipeline. Thirdly, Turkey has been one of largest investors in Kazakhstan, which motivates the two countries to extend their strong partnership into new areas, including energy. Fourthly, Kazakhstan and Turkey have similar approaches to many international and regional matters, in addition to the common roots in language, history and culture (Hardin, 2012) and this stimulates the both states to enhance their cooperation in various fields, including energy. Fifthly, the BTC pipeline has been crucial for Kazakhstan to ameliorate its bargaining power with Russia (Nurgaliyeva, 2016(. Sixthly, for Kazakhstan, rail and pipeline routes economically can be more attractive compared to the Transneft routes (Hardin, 2012). Last but not least, Kazakhstan can guarantee its energy security through diversifying its export routes (Nurgaliyeva, 2016(.

Both Realism and Liberalism enable to describe and analyse Kazakhstan's motivation and role in the BTC. From the realist perspective, Astana desires to counterbalance Russian power and enhance its bargaining power with Moscow by diversifying its oil exports options and reducing its reliance on Russia to export its oil resources. From the

liberal point of view, Kazakh leaders have supported the project as it allows Kazakhstan to export its oil resources to European and world markets via Turkey, which, of course, provides significant economic benefits.

Turkey has also great advantages of transiting the Kazakh oil through the BTC pipeline. In addition to providing Turkey with oil supplies, the Kazakh oil exports via the BTC enable Turkey to receive transit fees. Moreover, throughout this pipeline, Turkey forms a direct link with the region and this assists with the problem of region's geographical farawayness. The passage of the pipeline through Turkey also strengthens Turkey's importance for European energy security, as a result contributes to Turkey's EU accession process. Astana is already pleased with the alternative of further evolvement of the dialogue with Brussels, with the active involvement of Turkey, including the development and execution of joint projects for the shipment of oil and gas to Europe (Aslan and Bozyiğit, 2014). In this regard, Nazarbayev asserted that "We may invest more as Turkey wants to be a transit point between Asia and Europe. It will be beneficial to transit Kazakh oil and gas via Turkey" (Hurriyet Daily News, 2009).

Both realist and liberal paradigms are useful in explaining Turkey's desire to conduct oil cooperation with Kazakhstan in the context of the BTC pipeline project. From the realist point of view, Turkey considers its energy security as an existential issue as the lack of necessary energy resources menaces its economy, military power, security and national power. Thus, it tries to ensure its energy security by importing oil resources via the BTC from Kazakhstan. In addition, Ankara seeks to reduce its high energy dependence on Russia and Iran, the two countries with which Turkey has clashing policies on regional matters. In fact, Turkey and Iran are already regional rivals. Therefore, Turkish leaders perceive the high energy reliance of the country on Russia and Iran as an existential threat. In this regard, diversifying energy suppliers is vital for Turkey. Thus, oil imports from Kazakhstan enable Ankara to diversify its oil suppliers, thereby reduce its dependence on Russia and Iran. Furthermore, Turkish policy-makers aim at turning the country into an energy hub in order to increase the importance and power of the country in the region. In this regard, the transit of Kazakh oil resources through the BTC enables Turkey to strengthen its position as an energy hub. On the other hand, from the liberal perspective, Turkey has important

economic motivations in the context of the BTC. The country receives transit fees, investment opportunities and economic benefits by transporting the Kazakh oil via the BTC pipeline. Additionally, the BTC project provides economic benefits to the countries it passes through, including Turkey and Georgia, as well as to oil supplying countries. This, of course, contributes to the economy of the region, thereby increase peace and stability there. Hence, the BTC provides economic and political interdependence among supplying, importing and transit countries.

4.2 Natural Gas Cooperation

At the moment, Turkey does not import natural gas from Kazakhstan. However, Turkey is highly interested in the construction of the Trans-Caspian pipeline and the shipment of the Kazakh and Turkmen gas to Turkey and to Europe via this pipeline. The formation of such links would contribute to the vision of Turkey serving as an energy hub for the wider region, hence strengthening its global importance (Wheeler, 2013). It would also importantly contribute to Turkey's energy security.

The Trans-Caspian pipeline provides a promising outlet for the Kazakh gas. It would enable Kazakhstan to diversify its downstream markets beyond its dependence on Moscow (Cason, 2015). In this respect, during Nazarbayev's visit in October 2009 to Turkey, Ankara and Astana concluded a "Strategic Partnership Agreement" demonstrating Kazakhstan's intention of participating in the South Caucasus pipeline (Reuters cited in Babalı, 2010), which is also known as the Baku-Tbilisi-Erzurum pipeline and transports gas from Azerbaijan sector of the Caspian Sea through Georgia to Turkey.

Both Realism and Liberalism allow to scrutinize and explain reasons of Kazakhstan's desire to carry out gas cooperation with Turkey. From the realist perspective, the county works towards reducing its reliance on Russia and China and diversify its gas export markets. From the liberal perspective, exporting gas to European markets via Turkey would enable the country to monetize its gas resources and strengthen its economy.

Similarly, both realist and liberal paradigms are useful in describing Turkey's willingness to collaborate with Kazakhstan in the context of transporting Kazakh gas to European markets. From the realist point of view, Turkish decision-makers consider that transporting Kazakh gas to

European consumers via Turkey would increase the potential of the country to become an energy hub. As said before, emerging such a hub would importantly foster Turkey's power in energy geopolitics, which, in turn, would contribute to its national power. Besides, in the future Kazakh gas could also be imported by Turkey and increase its energy security by diversifying its gas suppliers and reducing its dependence on Russian and Iranian gas. On the other hand, from the liberal perspective, similar to oil transportation, gas transit via Turkey would provide Turkey with economic benefits and boost the Turkish economy. Furthermore, gas exports from Kazakhstan to European markets via Turkey would provide economic and political advantages for all involved countries, augment interdependence between them and contribute to stability and peace in the region.

4.3 Challenges in Turkish-Kazakh Energy Cooperation

4.3.1 Lack of the Involvement of Turkish Firms in the Kazakh Energy Sector

In Kazakhstan, Turkey is not participating in important projects of hydrocarbon. Until very recently, the biggest Turkish investor in Kazakhstan was TPAO. The company carried out its activities with the majority share in the KazAktürkmunay (KTM) Company, which was set up as a joint-venture between TPAO and KazakhOil in 1993. TPAO possessed 49% share in the KTM, which held seven exploration and operation licenses for four oil fields in Kazakhstan (Yılmaz, 2014). However, in 2002 the KTM was fined $9.5 million by the Kazakh Finance Ministry (Unlu, 2002). According to a TPAO official (cited in Unlu, 2002), this fine was against the bilateral agreement between Turkey and Kazakhstan. With the intervention of the Ministry of Foreign Affairs of Turkey, the problem was resolved. However, with the new tax law entered into force in Kazakhstan in 2009, the KTM was once again charged with the same amount in 2011. The Turkish company rejected to pay this fine. Afterwards, TPAO applied to the International Centre for Settlement of Investment Disputes (ICSID), bringing its claims in under the Energy Charter Treaty and the Turkey-Kazakhstan bilateral investment treaty. On 30 June 2014, a share agreement was reached between TPAO and KazakhOil. The Turkish company received $204,5 million as a compensation of its share in the KTM. With the ICSID decision and the

share deal between the two companies, TPAO's all rights and liabilities related to KTM activities were ended as of 1 January 2014 (TPAO, n.d.).

4.3.2 Russia's High Influence in the Kazakh Energy Sector

Throughout the last two decades, Russia and Kazakhstan have developed close, multi-faceted relations. It has enabled their political and economic elites to enjoy close ties dating back to the Soviet era (Kusznir, 2015). Kazakhstan's economy maintains to be reliant on Russia for the transportation of its oil and gas (Zabortseva, 2016). At the present, natural gas from Kazakhstan is delivered to European customers via Russia through the CAC pipeline network. Besides, over 75% of Kazakh crude exports still pass through Russia (including via the CPC pipeline, rail, and Transneft supplies). Yet, unlike during the Soviet period, Russia is no longer the final destination for most of these exports (Hardin, 2012). The country is also a transit state for Russian gas imports from Turkmenistan via the CAC gas pipeline, which is controlled by Gazprom (Kusznir, 2015). Russia will long stay Kazakhstan's major export route for access to both Russian and international markets (Öğütçü, 2006). Additionally, Russian energy firms participate in the exploration of many of Kazakhstan's oil and gas fields and collaborate in refining (Kusznir, 2015). Thus, Moscow is an important energy partner of Kazakhstan.

Russia's firm dominance in the Kazakh energy sector has the important potential of impeding good energy collaboration between Turkey and Kazakhstan. It is not likely that Ankara and Astana will ostensibly confront their northern neighbour (Almen, 2013). Russia objects to development of the Trans-Caspian Pipeline. Any corridor under or across the Caspian would deprive Moscow's control over Turkmenistan's gas exports, along with the important impact over the country's domestic and foreign policies that such control provides (Center for Energy Economics, n.d.). Therefore, it is not surprising that Russia has made obvious its resoluteness to prevent a Trans-Caspian pipeline (Blank, 2012). Similarly, the Russian president pressured Kazakhstan for the impediment of the probable extension of the BTC project, menacing it with economic and military measures, which became more influential particularly following the Georgian crisis in 2008 (Almen, 2013). Consequently, Kazakhstan did not construct a pipeline from Aktau to Baku and instead transports its oil to the BTC pipeline by tankers across the Caspian Sea. This, of course, has limited Kazakhstan's participation in the pipeline. Therefore,

Astana's strong relationship with Moscow has prevented Turkey and Kazakhstan from fully benefiting from their bilateral energy cooperation.

The realist paradigm is useful for describing the roles and motivations of Kazakhstan, Turkey and Russia and the competition between them. As highlighted above, Ankara seeks to turn Turkey into an energy hub in order to enhance the power of the country in the region. For this, the country needs diverse suppliers which are eager to export their oil and gas resources via Turkey. In this regard, Kazakh oil and gas resources are of course vital for Turks. Thus, Turkish leaders try to convince their Kazakh counterparts to make Turkey an important transit country for Kazakh oil and gas resources. Similarly, Kazakh policy-makers are working towards decreasing the dependence of the country on Russian energy transportation systems in order to increase the bargaining power of Kazakhstan against Russia. In this context, Turkey is one of key transit countries which could help Kazakhstan to achieve this goal. On the other hand, Russia seeks to keep its control and access to energy resources of Central Asian countries, including Kazakhstan, in order not to lose its dominance in European markets, which provides it with strong power against European states.

5. Assessment and Conclusion

Based on the empirical data presented in this study, it can be concluded that the paradigms of Realism and Liberalism can enable to describe Turkey's energy strategy towards Kazakhstan. On the one hand, Liberalism is helpful in explaining some behaviours of Turkey in its energy collaboration with Kazakhstan. First of all, Ankara has a cooperative strategy towards this country because Turkish leaders prioritize cooperation over conflict and focus on win-win energy projects with Kazakhstan. Besides, in addition to the Turkish state, Turkish business groups play a key role in strengthening Turkey's bilateral (energy) relations with Kazakhstan. In addition, social issues such as similar culture, religion and identity have enabled Turkey and Kazakhstan to develop strong bilateral relations, which have positively affected their energy relations. Additionally, ideational issues such as beliefs, visions and norms of Turkish leaders have positively contributed to the establishment of energy cooperation with Kazakhstan. Turkey sees its historical responsibility to develop relations with Caspian Sea / Central Asian countries, including Kazakhstan. Moreover, Ankara seeks for

developing strong economic interdependence with Astana since it will not only provide economic benefits for the two countries, but also increase stability and prosperity in the region. Furthermore, for Turkey, even though the Turkish-Kazakh energy cooperation causes some challenges, it still maintains this cooperation since Ankara concentrates on absolute gains instead of relative ones in the cooperation.

On the other hand, Realism can be instrumental in scrutinizing certain policies of Turkey in its energy relations Kazakhstan. For instance, the Turkish state is the key player in these relations. Mostly Turkish bureaucrats negotiate and conclude energy contracts with Kazakhstan. Additionally, with the encouragement and guidance of the Turkish state, Turkey's state-owned energy companies have carried out their energy operations in Kazakhstan in order to help the country to achieve its major energy targets, namely meeting its increasing energy need and making the country an energy hub. Besides, as Turkey does not have enough domestic energy resources to meet its increasing energy need, it has to import increasingly large volumes of oil and gas. The majority of these imports comes from Russia and Iran. Consequently, Turkey highly depends on the two countries, which are mainly seen as its regional rivals and have clashing policies with Ankara on several regional issues. This high reliance, to a certain extent, restricts Turkey's foreign policy choices in its relations with Moscow and Tehran. Turkey is concerned over its high dependence on Russia and Iran and over its energy security, which has vital importance for the Turkish economy, security and national power. Therefore, Turkey seeks for diversifying its oil and gas supplying states. In this respect, substantial oil and gas resources of Kazakhstan are significant for the country. Importing its energy resources does not only enable Turkey to meet its growing energy need but also to obtain leverage against Russia and Iran when discussing the terms of its energy contracts. It also allows Turkey to implement a more independent foreign policy since the Kazakh oil (and maybe gas in the future) resources relieve Turkey's reliance on Russian and Iranian energy resources. Additionally, Turkey's role in the transit of energy resources of Kazakhstan to world markets increases the significance of the country in energy geopolitics, thereby contributes to its regional power and global standing.

Still, for Ankara, the energy collaboration with Kazakhstan is not cost-free. First, there is a strong competition among Turkey, Iran, the EU, China and Russia for access to and control over the Kazakh energy

resources. This has resulted in conflicts in Turkey's bilateral relations with some of these players given that they and Turkey have divergent interests. For instance, Russia, the key player in the region, seeks for keeping its access to and control over energy resources of Kazakhstan and its dominance over European energy markets. But, Turkey aims to further its energy cooperation with Astana not only to reduce its reliance on Russia and but also to deliver the Kazakh oil and gas resources to European markets. Thus, substantial energy collaboration with Kazakhstan might damage Turkey's energy partnership with Moscow. Due to the Russian pressure, Turkey has so far managed to develop only limited energy collaboration with Kazakhstan. Kazakhstan exports its oil to world markets via Turkey. However, this amount is not substantial given that the current share of Kazakh oil deliveries through the BTC is only 10%. Turkey's share in Kazakhstan' crude petroleum exports is around 1.7%. Today, there are no natural gas exports from Kazakhstan to Turkey. But, Kazakh crude oil and oil products are exported to Turkish market. Nevertheless, the share of Kazakhstan in Turkey's oil supply is low. Still, increasing their energy collaboration will be in the interest of both countries given that such collaboration will enable Turkey to diversify its oil and gas suppliers and thereby increase its energy security and augment its potential to become an energy hub, while the collaboration will help Kazakhstan decrease its high reliance on Russian transport routes. Especially with the materialization of the Trans-Caspian pipeline, energy partnership between the two countries may considerably augment.

Due to its significant location between the Kazakh gas reserves and European markets, Turkey's importance and power vis-à-vis Astana might increase in the future with the export of Kazakh gas resources to Europe. Similarly, if these gas resources are exported to Turkey, the significance of Kazakhstan for Turkey will even further augment.

Kazakhstan's oil and gas resources will continue to be important for Turkey, especially for it to emerge as an energy hub. Becoming such a hub will allow the country to enhance its energy security, boost its economy, increase its regional power and augment its leverage towards the EU, Russia and energy exporting states in the region.

Even if Turkey could not manage to establish strong energy partnership with Kazakhstan, their close political, economic and cultural relations

motivate them to strengthen their energy collaboration. That is, Turkey's strong partnerships with Kazakhstan in non-energy areas positively influence its energy relations with this country.

To sum up, Turkey's energy security concerns; its aspiration of becoming an energy hub; the economic and business partnerships established between Turkey and Kazakhstan; the close political, historical and cultural links between the two countries; and regional issues such as the aspiration of the EU to reduce its dependence on Russian gas and the competition among Russia, Turkey, Iran, China and the EU for access to and control on the energy resources of Caspian Sea states, including those of Kazakhstan, are the main determinants of Ankara's oil and gas strategy towards Astana.

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