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DOES PRIVATE SAVING OFFSET PUBLIC SAVING IN PAKISTAN: AN EMPRICAL EVIDENCE

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Abstract

The aim of this study is to analyze the effectiveness of fiscal policy in Pakistan. Specifically, the study measured the potency of fiscal policy via the relationship between private saving and public saving as a share of Gross Domestic Product (GDP). For estimation purposes, the study used annual data over the period 1973-2018. The study utilized the threshold autoregression (TAR) model to determine the long-run relationship between policy variables in case if adjustment process is nonlinear and the Momentum threshold autoregression (M-TAR) in the case to adjust larger changes in the policy variables. The magnitude of offset coefficient (ranges between -0.51 to -0.63) between private and public saving is estimated through Ordinary Least Square (OLS), Dynamic Ordinary Least Square (DOLS), and Fully Modified Ordinary Least Square (FMOLS). Since the result suggests very small fiscal multiplier, therefore any effort of fiscal authority to run a surplus budget and raise public saving is impotent.

Keywords: Fiscal policy, public saving, private saving, offset co-efficient.
JEL Codes: E6, H6.

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1. Introduction

The purpose of analyzing the potency of fiscal policy is to know how the private sector reacts to changes in the fiscal stance. For example, the discretionary fiscal policy amplifies the budget deficit through a cut in income taxes and an increase in government expenditure, including tax bonuses and an increase in transfers to counter short-term recessions. The government to increase private consumption and aggregate demand precisely adopts policies that lower public saving on the assumption that most of the amounts will be spent by households.

Pakistan also explicitly increases national savings during the 1980s and 2000s in order to have less reliance on foreign funding for investment requirement. Such type of fiscal policy objectives is similar to famous Keynesian consumption function which presumes that consumption depends on disposable income and because of the invariant nature of private saving; public saving is not offset by private saving. Higher domestic savings increase the level of investment which is crucial to the growth process in the developing world. On the other hand, in advanced economies, higher saving is promoted because the portion of the population which is growing old requires higher saving for their retirement.

The budget as a macroeconomic policy tool has been challenged on many academic and practical grounds (Cochrane et al., 2009). According to fiscal activism, aggregate demand is directly or indirectly changes by public expenditure and revenue. Nevertheless, if the private sector changing its saving behavior in response to changes in fiscal stance then the fiscal multiplier will not be larger in the case of the fiscal spur, representing that fiscal spur is less effective. In another way round, if there is an inverse relationship between the private sector and public sector saving during normal growth times, such fiscal strategy indicates that national saving is ineffective. The strength of fiscal policy can be assessed in both cases by the amount that private saving offsets public saving. This study is an attempt to explain and resolved empirically the importance of how and why these offsets may occur.

The purpose of the study is to inspect whether private saving offsets public saving or not in Pakistan over the period 1973 to 2018. To estimate the size of the offsets coefficient, time series method like Dynamic Ordinary Least Square (DOLS) and fully modified ordinary least square (FMOLS) along with Threshold Autoregressive (TAR) and Momentum Threshold Autoregressive (M-TAR) is used in this study.

The rest of the study is structured as follows. Following the introduction, the second section presents the collection of important literature on the topic, consisting of both theoretical and empirical studies. The justification and issues related to estimation methods such as Threshold Autoregressive (TAR) and Momentum Threshold Autoregressive (M-TAR) are discussed in the third section. The data section defines the proposed variables and sources of these variables. Descriptive analyses and interpretation of results are provided in section four while section five concludes the study and provides some policy suggestions.

2. Literature Review

The evidence in favor of Ricardian equivalence which states that a permanent rise in government saving fully offset by a decline in private saving is empirically tested mostly in developed countries (Bernheim, 1987; Masson et al., 1998; Hemming et al., 2002). Moreover (Edwards, 1995) find non-proportional offsets in 36 developing countries, where the estimation was based on instrumental variables methods. Literature does not demonstrate any clear evidence regarding the relationship between pension wealth and saving. This is because according to the life-cycle model presumption that increases in pension wealth is offset by a decrease in non-pension wealth by the household.

The (IMF, 2008) report also suggest that the effect of fiscal policy in the Keynesian framework on fundamental of the macroeconomy (like consumption and saving) is not the same but different in magnitude and sign. Some studies like (Blanchard & Perotti, 2002) predict that expansionary fiscal policy has the effect of the larger and positive fiscal multiplier, while (Alesina et al., 1998) and [1](Auerbach, 2002) do not support the Keynesian proposition.

Briefly, the relationship between private and public saving is studied extensively in the literature by using the foundation of the Keynesian and non-Keynesian approach. The proposed study is aimed to approach this specifically by utilizing Pakistani data. Evidence of a high offset coefficient between private and public saving would suggest that fiscal policy has non-Keynesian effects on the fundamentals of the economy, while a low offset coefficient will defend the fiscal activism i.e. the Keynesian viewpoint.

3. Relations between Public and Private Saving

The essential condition of the standard Keynesian consumption function demonstrates how public and private savings are interlinked. Consider the conventional specification in the form

$$C = \bar{C} + cY^d \quad (1)$$

The notation is defined usually as private consumption (C), Autonomous consumption ($\bar{C}$), propensity to consume c and disposable income (Y^d) respectively.

Disposable income is defined as:

$$Y^d = Y - T + T^r \quad (2)$$

Where Y is national income, T is taxes and T^r is income transfers. The propensity to save, s, is defined as $1 - c$.

Private Saving S^p , which is the difference between disposable income and private consumption is defined as :

$$S^p = [Y - T + T^r] - [\bar{C} + c(Y - T + T^r)] \quad (3)$$

Differentiating with respect to Y, T and T^r, we get:

IMF, 2008) report 1 https://www.imf.org/external/pubs/ft/ar/2008/eng/pdf/ar08_eng.pdf

$\frac{dS^p}{dY} = 1 - c$ = s, $\frac{dS^p}{dT}$ = -s, $\frac{dS^p}{dT^r}$ = s

Government saving, S^g is defined as the difference between government tax revenue, fewer transfers, and government consumption spending, G, as follows

$$S^g = (T - T^r) - G \quad (4)$$

$\frac{dS^g}{dT}$ = 1, $\frac{dS^g}{dT^r}$ = -1, $\frac{dS^g}{dG}$ = -1

1. The propensity to consume and save is commonly assumed in macroeconomics textbooks around 0.6 and 0.4 or less (Littleboy & Taylor, 2009) respectively. The extreme case (c = 1, s = 0) suggests that public saving rises/fall is not offset by private saving, while the opposite extreme case (c = 0, s = 1) suggest that private saving fully offset public saving rise/fall and hence total national saving is unchanged. In the former case, an expansionary/contractionary fiscal policy successfully raises private consumption/saving, whereas the latter extreme case suggests that fiscal policy is ineffective.

More specifically, the Keynesian theory predicts that the fiscal policy aims to encourage private consumption through tax credit and transfers by reducing government saving. The decrease in government saving will not raise private savings substantially because of the presumption of a high propensity to consume. Hence the fiscal multiplier is high in the first round. Contrary, if the household saves all the income received from tax bonuses and transfer, then the rise in private saving will offset fully the fall in government saving and hence fiscal policy is completely ineffective i.e. fiscal multiplier is zero.

Non-Keynesian theories also provide a basis that how private saving behaves in response to the budget deficit. For example, as opposed to the Keynesian consumption function the life cycle consumption theory of (Modigliani, 1986) and the permanent income consumption theory of (Friedman, 1957) suggest that in response to a temporary increase in income household consumption will not rise equally.

4. Methodology

4.1 Estimating the Public-Private Saving Offset Co-efficient

Algebraically the relationship between private and public saving is defined as follows

$$S_t^p = \alpha + \beta S_t^g + \mu_t \quad (5)$$

Where S_t^p and S_t^g is private and public saving as a proportion of GDP respectively, whereas public-private offset is measure by β, which may be zero (no offset) or minus one (fully offset).

For estimation the annual data of Pakistan over the period 1973 to 2018 is used. The data on private and public saving in million rupees are obtained from the State Bank of Pakistan (Handbook of statistics on Pakistan economy). Before approaching to modeling procedure, we should keep in mind the following possibilities. On the first hand, there is strong evidence of co-integration between private and public saving which is to be determined empirically as depicted in figure 1 below. This first step is very pivotal because if in fact, the series are cointegrated then it will necessitate estimating the offset coefficient both in the short and long run.

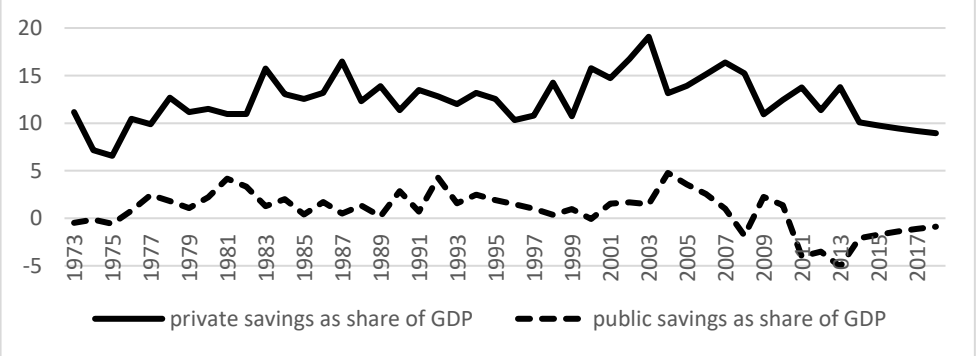
Table 1: Descriptive Statistics

Variables	Obs	Mean	Std. Dev.	Min	Max	Coef of Variation (%)	Jarque-Bera
Private saving	46	12.4	2.54	6.56	19.08	20.48	0.228(0.89)
Public saving	46	0.83	2.07	-5.09	4.76	249.49	4.80(0.08)

Note: values in () are p-values

The results of descriptive statistics including the mean, standard deviation, minimum, maximum, coefficient of variation and Jarque-Bera for each variable is provided in table 1. Results show that for both the variables, the Jarque-Bera test is insignificant which means the particular series is normally distributed.

Figure 1: Private and Public Saving as a share of GDP



Source: Authors calculation based on data from World Bank

The empirical testing encompasses three stages. The integration properties of the data which is a pre-condition for testing of co-integration are tested in the first stage. For this purpose, the (Ng & Perron, 2001) test, which suggests four test statistics based on generalized least squares (GLS) are applied to each series. The results described in table 2 propose that both the series are stationary.

Table 2: Ng and Perron (2001) unit root test for the government and private saving

Government Saving	MZa	MZt	MSB	MPT
Test Statistics	-16.23	-2.84	0.17	1.51
CV-1%	-13.80	-2.58	0.17	1.78
CV-5%	-8.10	-1.98	0.23	3.17
CV-10%	-5.70	-1.62	0.27	4.45
Private Saving				
Test Statistics	-3.53	-21.32	0.37	6.92
CV-1%	-13.80	-2.58	0.17	1.78
CV-5%	-8.10	-1.98	0.23	3.17
CV-10%	-5.70	-1.62	0.27	4.45

The possibility of Co-integration between the two series is tested through (Engle-Granger's, 1987) methodology in the second stage. To establish the long-run relationship between variables through this technique, equation 5 is first estimated through OLS and the residuals obtain are subject to unit root test in the next step. For the variables to be co-integrated, the order of integration of residual series must be less than the actual series. The specification of the (Dickey & Fuller, 1979) unit root test is as follows

$$\Delta\hat{\mu}_t = \rho_1\hat{\mu}_{t-i} + \sum_{i=1}^{p}\gamma_i\,\Delta\hat{\mu}_{t-i} + \varepsilon_t \qquad (6)$$

A null of a unit root is rejected because the test statistic value is -4.96 which is significant at 1%. We have only intercept in the model and one lag is selected by Schwartz information criteria. Thus we have strong evidence (based on test result) of co-integration between public saving and private saving in the case of Pakistan.

Ender and Siklos (2001) were of the view that the linear relationship between variables is misspecified if the adjustment process is nonlinear. Therefore the given study also tests the possible existence of nonlinear co-integration between private saving and public saving through threshold autoregression (TAR), by using the following specification.

$$\Delta\hat{\mu}_t = I_1\rho_1\hat{\mu}_{t-i} + (1 - I_t)\rho_2\hat{\mu}_{t-i} + \varepsilon_t \qquad (7)$$

Where I_t is indicator function such that

$$I_t = \begin{cases} 1\ if\ \hat{\mu}_{t-i} \geq \tau \\ o\ if\ \hat{\mu}_{t-i} < \tau \end{cases} \qquad (8)$$

Where ρ_1 and ρ_2 are the coefficient to be tested for stationarity, for which the necessary and sufficient condition according to (Petrucelli & Woolford, 1984) is $\rho_1 < 0$, $\rho_2 < 0$ and $(1+\rho_1)(1+\rho_2) < 1$ for any value of τ.

Sometimes policymakers are aiming to adjust large changes in the policy variables. The Momentum threshold (M-TR) model in which the threshold depends on the previous period's change $\hat{\mu}_{t-i}$ are likely to be an appropriate technique instead of simple Threshold

auto regression (Enders & Granger, 1998; and Caner & Hansen, 1998). Algebraically the M-TAR model is specified as follows

$$\Delta\hat{\mu}_t = M_t\rho_1\hat{\mu}_{t-i} + (1 - M_t)\rho_2\hat{\mu}_{t-i} + \varepsilon_t \quad (9)$$

Where indicator function is

$$M_t = \begin{cases} 1\ if\ \Delta\hat{\mu}_{t-i} \geq \tau \\ o\ if\ \Delta\hat{\mu}_{t-i} < \tau \end{cases} \quad (10)$$

To make the residual white noise appropriate lags are selected based on Schwartz information criteria. The negative value of both ρ_1 and ρ_2 suggest that convergence is possible in which case the value of the t-max statistic is used. When only one of ρ_1 and ρ_2 value is negative then the joint hypotheses of ρ_1=$\rho_2 = 0$ is tested through F-statistics to determine whether the two variables are co-integrated or not.

Table 3 report the results of point estimation of ρ_1 and ρ_2 for TAR and M-TAR beside t-max and F-statistics. The result shows that both the coefficient ρ_1 and ρ_2 are negative and significant for TAR and M-TAR models. The t-max statistic value for both TAR and M-TAR model is -4.19, -2.93 respectively which is greater than (Enders & Siklos, 2001) critical values of -2.64 and -2.57 at 1% and hence we reject the null of no co-integration between private saving and public saving. Similarly the, F,,-statistic value of 11.72 and 12.16 for TAR and M-TAR are both greater than the critical values at 1% extracted from (Enders & Siklos, 2001) which also suggest that the two series are co-integrated.

Table 3: Threshold co-integration test

	Threshold	Momentum Threshold
ρ_1	-3.08 (-4.19)	-2.14 (-2.93)
ρ_2	-4.13 (-4.79)	-3.19 (-3.34)
Threshold value	-0.624	-0.066
T-max value	-4.19	-2.93
F-joint(phi) $\rho_1 - \rho_2 = 0$	11.72	12.16

We then estimate in the third step the coefficient of β by three different estimators i.e. ordinary least square (OLS), dynamic ordinary least square (DOLS) suggested by (Stock & Watson, 1993), and fully modified ordinary least square (FMOLS) proposed by (Phillips & Hansen, 1990) to examine the impact of government saving on private saving. Which estimation procedure to be used to avoid spurious regression is to be determined by the time-series properties of the variables under consideration? If the order of integration of the series is 0 i.e. I(0) then the O LS estimation procedure is the appropriate technique. However, if all the series are integrated of order one i.e. I(1), then for estimation of a single cointegrating vector describing the long-run relationship among the series, dynamic OLS is the appropriate choice.

In the literature, different studies use different estimation procedures to test threshold co-integration, which is based on the assumption that residuals are identically and

independently distributed (i.i.d). In the case when residuals are weakly stationary, FM_OLS is likely to be an appropriate estimation procedure to provide estimates of threshold co-integration which are free from endogeneity. Originally the fully modified estimator is aimed to estimate co-integrating relation by adjusting conventional OLS for the problems of endogeneity and serial correlation.

The results of all the three regression are given below, where the coefficient of β ranges between -0.82 to -0.95.

Table 4: Measuring offset coefficients: Results based on OLS, DOLS, and FMOLS

Estimation method	Estimated equation
OLS	$S_t^p = 11.01 - 0.51S_t^g$
	(16.07) (-2.01)
DOLS	$S_t^p = -14.55 - 0.59S_t^g$
	(-15.96) (-16.8)
FMOLS	$S_t^p = 0.28 - 0.63S_t^g$
	(0.33) (-1.93)

Note: The t-statistics are in () parenthesis. To compute the long-run variance matrix Newey-West automatic bandwidth selection is used in FMOLS estimation. For leads and lags selection in DOLS, the AIC criteria are used.

The above result shows that offset is partial i.e. public saving offset private saving with a very reasonable magnitude. The t-values in parenthesis are greater than the critical values at 5% at the 2-t rule of thumb and hence is significant.

5 Conclusion

The central idea to analyze the potency of fiscal policy is to know how the private sector reacts to changes in the fiscal stance. For example, the discretionary fiscal policy amplifies the budget deficit through a cut in income taxes and an increase in government expenditure, including tax bonuses and an increase in transfers to counter short-term recessions. The government increases private consumption and aggregate demand precisely adopt policies that lower public saving on the assumption that most of the amounts will be spent by households. Pakistan also explicitly increases national savings during the 1980s and 2000s to have less reliance on foreign funding for investment requirements. Such type of fiscal policy objectives is similar to the famous Keynesian consumption function which presumes that consumption depends on disposable income and so because of the invariant nature of private saving, public saving is not offset by private saving.

The result of this study is partially compatible with the non-Keynesian effects. Broadly speaking the result neither supports the full Ricardian equivalence nor full Keynesian. Now the question arises that which viewpoint is good to explain the offset, is a future research task. As for the implication of this study (based on result) is concerned, the suggestion for

fiscal authority is that during a recession either to adopt an expansionary fiscal policy or reduce the budget deficit and leave the task of raising national saving for some other times. Both policies are ineffective in attaining their projected goals. Moreover, this also means that raising national savings through the surplus budget in good times is also impotent.

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THE IMPACT OF MERGERS AND ACQUISITIONS ON THE OPERATIONAL PERFORMANCE OF COMPANIES IN EMERGING CAPITAL MARKETS

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Abstract

Modern trends in economic development, characterized by increased competition and globalization of markets, lead to a significant increase in mergers and acquisitions (M&A). Companies from emerging capital markets are beginning to play an increasingly significant role in these processes. It is very necessary to identify whether M&A deals create value for companies or are they just a convenient way for management to expand and strengthen its position. The article presents the results of a study of the effectiveness of transactions for the transfer of corporate control on a sample of companies from the BRICS countries in the period from 2009 to 2012. Based on the method of analysis of financial statements, we found an increase in the operating indicators of companies (EBITDA / Sales) as a result of mergers and acquisitions two years after their completion. The main determinants of the effectiveness of transactions initiated by companies from the BRICS countries are: deal size of acquitting company, friendly focus of the transaction and the stake share.

Keywords: Mergers and acquisitions, BRICS, capital movement, emerging markets.
JEL Codes: G34, F21.

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1. Introduction

One of the forms of business restructuring, expressed in reorganization changes in order to increase the company or create added value, value are mergers and acquisitions. Mergers and acquisitions of companies spread in the United States in the late 19th century, when American industry began to move from small and medium-sized enterprises to multinational corporations.

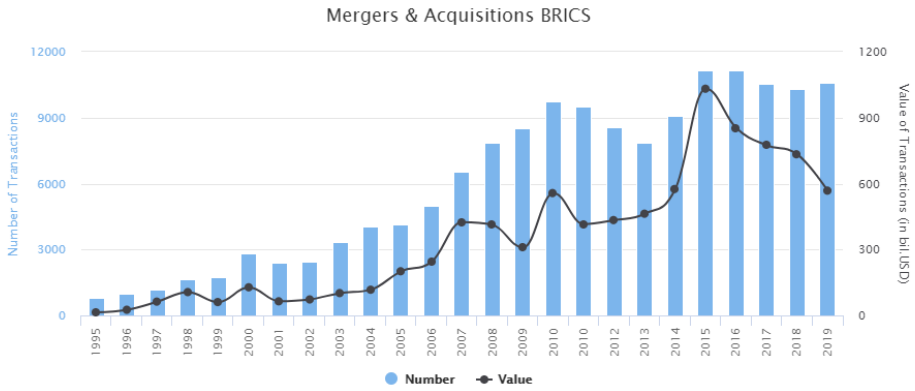
Merger - an operation that merges two or more companies. Takeover - the acquisition of control over a target company by purchasing more than 50% of its shares. The term is most used when referring to a hostile takeover. Acquisition - an operation as a result of which one company acquires another or part of it.

The problem of mergers and acquisitions is actively discussed in the academic literature. In recent years, it has gained relevance due to the growing uncertainty in the financial markets, as well as due to unprecedented global investment deals, many of which have failed. At the same time, emerging markets, and especially the markets of the BRICS countries, are becoming the main center of activity. Currently, companies from emerging markets are involved in every fourth M&A deal (Boston Consulting Group, 2013), and representatives of the BRICS countries, primarily Chinese, are the leaders (Sehgal et al., 2015).

In recent years, the global M&A markets have seen some decline. Analysis of the effectiveness of mergers and acquisitions by the Boston Consulting Group (BCG) agency (Boston Consulting Group, 2017), based on the excess return method, showed that, in general, the acquisition of another public company by a public company led to the destruction of the value of the acquiring company, both in the short term and in the long run. But it can also create substantial returns to the companies. According to BCG study destruction analysis are generally made with respect to acquirers' shareholders. But if to consider the targets' investors 1.8% of combined gain can be found from 56% of deals that create values. 2019 BCG report on M&A summarizes 2018 data like the value created by global M&A increased by 7%, but volume of transactions declined by 3%, and reach to 35,800 transactions during the year.

According to the World Bank report for 2018 the total population's 40% and total world GDP's 24% (20.2 trillion) is contributed by BRICS countries. Since the end of 2014 the role of the BRICS countries in merger and acquisitions is constantly growing (Thomson Reuters, 2014). The undoubted leader is China: 43% of the total number of transactions. India ranks in the second place with 27% of total deals, Russia is in the third place with 14%. Brazil ranks fourth in the ranking with 11 % and South Africa respectively in fifth rank with 5%. Total deals by BRICS can be recorded as 10565 deals with the value of $567.94805 in 2019. (See graph 1) (BCG report,2019)

Graph 1. BRICS- Merger and acquisitions statistics



Source: IMAA database

There are several reasons for the high activity of companies from the BRICS countries in mergers and acquisitions. First, it is the high rate of return inherent in emerging markets. Secondly, high rates of economic growth of relatively developed markets, which promotes mergers and acquisitions, have three key investment motives: access to energy and natural resources; access to fast-growing consumer goods markets; and the desire of BRICS companies to gain access to management and manufacturing technologies in developed markets. According to Khanna and Palepu (2009), the diffusion of skills, processes and technologies in the global market brings together developed markets and high-growth economies, but as long as this gap exists between those countries, it offers additional incentives for companies to develop.

In addition to access to technology, BRICS acquirer companies may have specific incentives to pursue M&A deals. Thus, for Chinese and Indian companies, access to premium brands of companies from developed countries may be an important motive for completing a transaction, which allows them to differentiate from competitors (Sehgal et al., 2015). An example of such a deal was the 2010 acquisition of the premium Swedish manufacturer Volvo from Ford Motor Company by private Chinese automaker Geely. The deal was intended to increase the company's competitiveness in the Chinese market, which was dominated by state-owned enterprises, and to promote its internationalization. For Russian companies, a common motive for acquiring companies is the benefits of vertical integration, as well as the opportunity to invest accumulated cash in undervalued assets. (Musatova, 2011)

2. Literature Review

A review of scientific research conducted on data from companies with developed capital markets highlights the following methods used to assess the effectiveness of M&A: event study analysis, accounting studies, surveys of executives, analysis of specific situations (Bruner, 2001; Lu, 2008). To conduct empirical research, the first two methods are most

often used. The accumulated excess return method is based on studying the reaction of the stock market to announcements of mergers and acquisitions and makes it possible to assess the impact of transactions on the value of companies in the short term. The analysis of financial statements involves the comparison of financial indicators of the companies participating in the transaction for a certain period before and after its completion, i.e. allows you to determine the operational efficiency of M&A transactions in the long term (usually more than one year). The main source of information in this case is not the stock market, but the financial statements of companies according to certain financial reporting standards. The most commonly used financial indicators are OCF / TMV (operating cash flow / total market value of assets), ROA (return on assets), ROE (return on equity), EBITDA / Sales (profit before interest, taxes and depreciation / revenue) and others.

The results of foreign studies based on the accumulated excess return method indicate that target companies, as a rule, benefit from M&A deals. The values of accumulated excess returns in the most recent works vary from 5 to 45% (Schwert, 1996; Eckbo, Thorburn, 2000; Campa, Hernando, 2004). The profitability for acquirer companies differ depending on transactions and in different studies their values can be either positive or negative or equal to zero (Baker, Limmack, 2002; Moeller et al., 2007; Bradley, Sundaram, 2006; Hackbarth, Morrelec, 2008; Hamza, 2009).

The reason of discrepancies between the studies can be explained by number of samples, the observation period, and method used for predicting normal stock returns. The recent investigation on the operational efficiencies of M&A deals were based on the method of analyzing financial statements. Studies using companies as financial indicators - indicators based on cash flows, as a rule, indicate an improvement in the operating efficiency of companies as a result of M&A transactions, while studies based on indicators like profit and profitability of companies (ROA, ROE , EPS, etc.), prove its decline as a result of commenced transactions. The other reasons for the discrepancy between the results of empirical studies can also be differences in the economic situation of the countries of the companies participating in the transaction, dissimilarities in accounting and tax accounting in different countries, the size of the studied sample, in the time period of the study, the selected financial indicators and the applied research methodology (Bruner, 2001).

In general, the authors of the studies assessing the market reaction to announcements of mergers and acquisitions in the BRICS countries conclude that this information has a positive effect on share prices. For example, Wong et al. (2009), examines excess returns in 95 M&A deals and 563 acquisitions in Asian capital markets, including Chinese, in the time frame from 2000 to 2007 before, during and after the deal was announced. The author concludes that in the period prior to the announcement of the acquiring company's CAAR (Cumulative average abnormal returns) deal, it is already positive (2.72%) and is statistically significant at the 10% significance level. This means that investors overestimate its effectiveness at the time of rumors about the deal and are inclined to buy up shares before the official announcement. As new information about the terms of the deal or the financial statements of its participants becomes available, many investors change their position, which is reflected in the value of the average accumulated return - at the time of the announcement of the deal, it becomes insignificant. However, after the announcement of the deal, CAAR peaks at 9.2%, which is statistically significant at the 1% level. And this in turn means that in the short term, information about the transaction

has a positive impact on the yield of shares of Asian companies involved in mergers and acquisitions.

In the article by Grigorieva and Petrunina (Grigorieva, Petrunina, 2013), the authors applied both approaches: the assessment in the short term was carried out using the event analysis method, and in the long term, based on financial statements. Analyzing a sample of 80 deals made by firms in emerging capital markets between 2002 and 2009, the authors conclude that deals erode the acquirer's value. The analysis of long-term performance showed a negative relationship between financial performance before and after the transaction. For EBITDA / Sales the difference was -3.3%. Results for a short-term assessment of the impact of deals on company value showed that the announcement of the deal results in high returns for acquired companies, while for acquirers, returns vary depending on the length of the event window.

The sample size in contemporary works ranges from 20 transactions (Tsung-Ming, Hoshino, 2000) to 859 (Heron, Lie, 2002). If earlier studies mainly analyzed data for the United States, then more and more works built based on data from companies in Europe and other countries have been observed recently. The observation time has also gradually increased due to the improvement in the regularity and accuracy of statistical data - from 1 to 10 years. Although the latter is rather an exception to the rule, the bulk of research has been carried out for 3-5 years.

Studies of the effectiveness of mergers and acquisitions have been conducted mainly in developed capital markets, while the effects of transactions in emerging markets have been studied much less. According to Khanna and Palepu (Khanna, Palepu, 1997, 2000), the integration strategy can be more effective in these markets due to the underdeveloped institutional environment. Only a few academic works based on data from Slovenia, Poland, China, India and Turkey have been devoted to testing this hypothesis (Pawaskar, 2001; Trojanowski, 2002; Beena, 2004; Gregoric, Vespro, 2009; Pop, 2006; Changqi, Ningling, 2010 ; Ho-Mou Wu, 2009; Mantravadi, Reddy, 2008).

The study of the impact of M&A transactions on the operational efficiency of companies is presented in the work of Mantravadi, Reddy (2008). Based on a sample of 118 M&A deals initiated by Indian companies between 1991 and 2003, the authors concluded that mergers and acquisitions, on average, lead to lower return on capital employed (ROCE) indicators for companies - buyers three years after the completion of transactions. Authors also found that the industry affiliation of companies affects the change in the studied financial indicators.

Studying the reaction of the stock market to the announcements of 128 M&A deals in the period from 2000 to April 2008 in emerging capital markets, E.V. Chirkova, E.V. Chuvsvina (Chirkova, Chuvsvina, 2011) found that the market reacts differently to transactions for the acquisition of public and private companies, while assessing the acquisition of the latter more favorably. The authors also tried to explain the reasons for the difference found by studying the influence of various factors on the indicators of accumulated excess returns: the activity of the corporate control market, the method of financing the transaction, the acquired share of the target company, and others.

The work of Ho-Mou Wu (2009) is devoted to the simultaneous use of the event method and the analysis of financial statements. The author examines M&A transactions of 1,086

companies (1,363 transactions) between 2004 and 2005, listed on the Shanghai and Shenzhen Stock Exchanges. In addition to considering the efficiency directly, the author tries to identify the determining factors of the latter: the state of the stock market, the ownership structure, the year of the transaction. The negative values of accumulated excess returns obtained by the author in 2004 indicate the destruction of the value of companies as a result of M&A transactions. When dividing the sample into transactions carried out by public and private companies, it was found that the accumulated excess returns are negative for the former and positive for the latter. In 2005, excess returns are positive for both state-owned (1.83%) and private companies (1.11%). The efficiency of M&A transactions in 2005 also confirms the growth of financial indicators of the companies participating in the transaction.

The opposite of the conclusions of empirical works, a small number of studies based on data from individual developing countries, necessitate further study of the effectiveness of M&A transactions, as well as identify the factors that determine it.

3. Data and Methodology

The empirical analysis is based on the method of analysis of financial statements that allows to evaluate the effectiveness of M&A transactions on a long-term horizon. Thus, this work develops the study of the impact of M&A transactions on the performance of companies in the BRIC countries (but considering South African countries as well), presented in the work of S.A. Grigorieva and performed using the accumulated excess return method. To measure the operational efficiency of M&A transactions, the EBITDA / Sales ratio was used. EBITDA has been chosen as a proxy for operating cash flow, which has been studied in most studies in developed capital markets (Grigorieva, 2011).

Financial statement analysis method involves comparing the studied indicator before and after the integration of companies. The accounting statements of the companies were reviewed for two years before and after the completion of the transaction, so the research was done for four years, [-2; +2].

To assess the effectiveness of M&A transactions, this study uses an industry adjustment model proposed by Healy et al. (1992).

$$\left(\frac{EBITDA}{SALES}\right)^{ind}_{after,i} = \alpha + \beta\left(\frac{EBITDA}{SALES}\right)^{ind}_{synthetic(before),i} + \varepsilon_i$$

where:

$\left(\frac{EBITDA}{SALES}\right)^{ind}_{after,i}$-Industry-adjusted EBITDA / Sales of combined company i, two years after completion of the transaction;

$\left(\frac{EBITDA}{SALES}\right)^{ind}_{synthetic(before),i}$-industry-adjusted synthetic value EBITDA / Sales for the acquiring company and the target company two years before the M&A transaction;

α - reflects the change in EBITDA / Sales of companies (abnormal EBITDA / Sales, not

depending on the value of EBITDA / Sales before the transaction) - the criterion of the effectiveness of M&A transactions;

β - reflects the correlation between EBITDA / BV (book value) Assets before and after the M&A transaction.

This model will contirubte in testing the hypothesis stating that M&A deals in the BRICS countries do not lead to a decrease in the operating efficiency of the companies participating in the deals. So:

$$\left(\frac{EBITDA}{SALES}\right)^{ind}_{after,i} \geq \left(\frac{EBITDA}{SALES}\right)^{ind}_{synthetic(before),i}$$

The five most promising growing emerging markets - Brazil, Russia, India, China, South Africa countries (BRICS) were selected for making analysis. Data is obtained from IMAA institute database and Bloomberg database, meanwhile PrivCo, database ZEPHYR from Bureau and Corporate Affliation databases are used. The studied sample included M&A transactions completed in the period from 2009 to 2012.

The main criterias that were considered reagrding merger and acquisitions transaction can be summarized below:

1. Deal condition: Mainly the completed deals are included to the analysis.
2. The volume of the transactions. The volume of the completed transaction is of great importance in the analysis of mergers / acquisitions. A priori inclusion of "small" deals in the study would lead to an insignificant impact of the transaction on the operating performance of the companies. For this study the optimal threshold value is the size of the transaction, which is at least 10% of the capitalization of the buying company.
3. The size of the purchased company. The final sample included transactions, as a result of which a controlling stake (50%) was consolidated, giving the undeniable right to manage the company's financial flows.
4. Characteristics of the companies participating in the transaction. The sample included public companies whose financial statements were in the public domain and the data that can be obtained from above-mentioned databases. Excluded companies that were excluded include: Firms operating in the financial sector and regulated companies (since this type of evaluation method is not appropriated for them), companies involved in several major M&A deals.
   During the selected time period, 365 M&A transactions were completed in the

BRICS countries, meeting criteria 1-3. Due to the lack of data on the analyzed indicators, the sample was reduced to 82 M&A transactions. It turned out that 66 transactions (80% of the total sample) are friendly transactions within the same industry.

The result of analysis of oerational efficiency of the M&A transactions during stated period in BRICS is stated in the Table 1.

Table 1. Result of analysis of oerational efficiency

	α	β	R^2	*Significance F*
Industry-adjusted operating efficiency 2 years after M&A				
EBITDA/SALES	0,064	0,711	0,46	0,01
p values	(0,03)	(0,01)		

*** the result is significant at the 1% level

** the result is significant at the 5% level

* the result is significant at the 10% level

Source: Compiled by the author

As can be seen from the result stated in Table 1, the value of α is positive for a four-year period, [-2; +2] years, and statistically significant at the 5% level. The obtained result testifies to the growth of operating efficiency of companies as a result of M&A transactions. Thus, tested hypothesis cannot be rejected at the 5% significance level for mergers and acquisitions initiated by companies from the BRICS countries.

The next step of analysis will be the identification the main determinants that influence the effectiveness of M&A transactions. As possible determinants of the effectiveness of M&A transactions in the scientific literatures, usually considered: the method of financing the transaction, Tobin's Q value, financial leverage, ways of payment, transaction size, level of investment in research and development, types of the deal, acquiring industries' industry profile, the friendliness of the transaction, the connectedness of the businesses of the merging companies, as well as various indicators of corporate quality, company management and etc. (Swanstorm, 2006; Moeller et al. 2007, Glegg et al., 2010). The following Table 2 summarizes the M&A research antecedent (Opoku-Mensah et.al, 2019).

Table 2. M&A research antecedent

BRICS M&A	
Value creation	*Leadership*
Competitive advantages (technology, entrepreneur, managerial expertise)	CEO's direct experience
International exposure	CEO's national pride
Expansion	*Environment*
Firm characteristics	Industry factors
Location	Cultural distance
Age and previous acquisitions experience	Institutional environments
Industrialized level of firms	environmental uncertainties
The level of R&D	*Managerial self-interest*
Others (Ownership of target firms, firms valuation, capital structure, Issues of human resource management)	Agency conflict between managers and owners
	Due diligence
	Cultural audit

Source: Opoku-Mensah et.al, 2019

This study examined the impact of characteristics of M&A deals on their effectiveness. Based on the collected information, the following final model was tested in the work:

$$\left(\frac{EBITDA}{SALES}\right)^{ind}_{after,i} = \alpha + \beta\left(\frac{EBITDA}{SALES}\right)^{ind}_{synthetic(before),i} + \beta_2(\text{DEALSIZE}) + \beta_3(\text{FREN}) + \beta_4(\text{DATE}) + \beta_5(\text{ACQSTAKE}) + \varepsilon_i$$

The explanatory variables, which are possible determinants of operational efficiency, are summarized in Table 3.

Table 3. Determinants of operational efficiency

Determinant	Description and calculation method
DEAL SIZE	Trading size. Calculated as the ratio of the transaction value to the market capitalization of the buying company
FREN	A dummy variable that takes the value 1 if the deal is friendly, and 0 if not
DATE	A dummy variable that takes on the value 1 if the deal was completed in the same year in which it was announced, and 0 otherwise
ACQSTAKE	A dummy variable that takes on the value 1 if more than 50% of stakes of company was acquired and 0 otherwise

Source: Compiled by the author

The model that is proposed was testes for the presence of multicollinearity using and heteroscedasticity using the White and Glaser tests. For all regressors, the VIF values were less than 4, this in tern implies that there is no precense of multicollinearity. Conducted tests for heteroscedasticity at a significance level of 0.05 did not reveal it.

The results of the regression analysis presented in Table 4 indicate two factors that have a statistically significant effect on the operational efficiency of transactions - DEAL SIZE (value -0.21) at the 10% significance level, FREN (value +0.11) at the level significance of 10%.

Table 4. Summary results

Variable	***Coefficient value (t-statistics)***
Intercept	0,11 (1,96**)
$\left(\frac{EBITDA}{SALES}\right)^{ind}_{synthetic(before),i}$	0,753 (7,64***)
DEALSIZE	-0.13 (-1,93*)
FREN	0.11 (1,98*)
DATE	-0,08 (-1,62)
ACQSTAKE	1.45 (2.15**)
Sample observations 82	
R^2 0.69	

*** the result is significant at the 1% level

** the result is significant at the 5% level

* the result is significant at the 10% level

Source: Compiled by the author

A negative relationship between DEALSIZE and operational efficiency may indicate a systematic overpayment by buying companies in mergers and acquisitions. The costs of integrating the acquired company into the activities of the initiating company is more thatn any gains from growth opportunities and economies of scale, and overpayments by acquirer companies. Acquisitions of relatively small companies are easier to carry out, and this increases the probability of positive outcome.

The positive relationship between the FREN indicator and the operational efficiency of transactions indicates that in friendly transactions, the buying companies, as a rule, have more complete information about the activities and financial condition of the company - the goals, in addition, the managers of the company do not interfere with the transaction, which saves significant funds the acquired company and has a positive effect on the company's operations after the transaction.

The positive relationship between stakeacquisiton 50% more and operational efficiency indicates that with majority stake acqusition the likelyhood that the merger will be successful and operationally efficicien is higher.

4. Conclusion & Result

Empirical research on a sample of BRIC companies found that mergers and acquisitions lead to increased operational efficiency companies participating in the transaction. The results are consistent with the findings of the study by Ramaswamy and Wegelein, who investigated the long-term post-merger financial performance and found a negative relationship between operational efficiency and deal size, and a positive relationship with the friendly nature of the merger (Ramaswamy, Waegelein, 2003). Firms acquiring rather big firms have a more complicated time absorbing those firms and in efficiently resembling them into the acquirer firm’s operation. Firms with long-term compensation plans have more positive post-merger financial performance.

The results are also consistent with the findings of several studies based on data from companies in developed and emerging capital markets (Healy et al., 1992; Switzer, 1996; Powell, Stark, 2005; Pawaskar, 2001). The following factors were identified as factors that have a significant impact on the operational efficiency of transactions: the size of the transaction and the friendly orientation of M&A.

Due to the small number of observations in the sample, the existence of a certain amount of subjectivity in its formation and the limited information required to identify the factors of the effectiveness of M&A transactions make research not so complete and detailed. General focus was made on the operational efficiency of M&A transactions over a long time horizon, through studying the financial reporting of companies participating in the transaction. An improvement in the operating efficiency of companies does not mean an increase in its value in the long run.

As a rule, the leading role in mergers and acquisitions is played by more efficient companies that have the necessary resources to expand their business. integration into the structure of the buying company. This is partly due to both Roll's "theory of pride" and the high information barriers that prevent an objective assessment of the effectiveness of acquiring a particular business. Incomplete information about the deal also leads to the fact that a significant part of mergers and acquisitions is incorrectly assessed by the market.

Despite this, mergers and acquisitions, subject to a number of conditions, contribute to an increase in the performance of both individual industries and the economy as a whole due to the transfer of assets from less efficient to more efficient owners and corporate structures.

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ARE SMALL STOCKS ILLIQUID? AN EXAMINATION OF LIQUIDITY-IMPROVING EVENTS

Ahmad Al-Haji [1]

Abstract

I study the introduction of decimalization in U.S. stock markets and the implementation of the Hybrid system on NYSE, and I examine the impact of these two events on liquidity, conditionally on firm size. I argue that such liquidity-improving events offer more pronounced benefits to the typically-illiquid small stocks. The basis of this conjecture lies in the notion of diminishing marginal utility. That is, the benefit from improvement in liquidity is more pronounced at stages where illiquidity is higher. Consistent with my conjecture, I find that the improvement in liquidity post decimalization and Hybrid is an inverse function of firm size. I also find that the documented positive association between size and liquidity is rendered weaker after these two events. It seems that such liquidity-improving events reduce the overlap between size and liquidity, and help make them two distinct features. The framework of this paper can be utilized in the pursuit to explain the variation of the size effect over time, by examining whether recent market changes has "cleaned" the small-size premium from the illiquidity component.

Keywords: Decimalization, Trade Automation, Liquidity, Size Effect.
JEL Codes: G12, G14.

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1. Introduction

Trading floors around the world witnessed significant modernizations that have reshaped and facilitated the way trading takes place in these venues. This modernization process has coincided with various regulatory changes that also aimed at improving the trading quality[1]. Several academic studies examined the impact of the implementation of such events on various market quality aspects, such as efficiency of pricing and liquidity of trading, with mixed evidence[2]. One potential reason for this disagreement of evidence is ignoring the differential effect that these market events could have on securities, based on their characteristics. In this paper, I also examine the impact of such events on liquidity, but conditional on firm size. One objective of this analysis is to shed light on the interaction between the size and liquidity attributes of stocks.

In this study, I examine the impact of two equity market events in the U.S. that are expected to have implications for liquidity: Decimalization—the reduction of the minimum tick size to one penny in 2000; as an example of a regulatory change event, and the implementation of the Hybrid system on New York Stock Exchange (NYSE) in 2006; as an example of a technological change event[3]. The Hybrid system allows traders the option to automatically process trades of up to one million shares per trade. I study the impact of these two events on market liquidity, generally and conditionally on firm size, where size is measured by market capitalization.

Liquidity, an important determinant of stock returns (e.g. Liu, 2006) and trading costs (e.g. Amihud and Mendelson, 1986), is related to size, which is in turn another return determinant. Banz (1981) documents the so-called size effect, in which small stocks earn a higher risk-adjusted return than large stocks do, on average. Banz (1981) states that it is unknown "whether market value per se matters or whether it is only a proxy for unknown true additional factors correlated with market value." Later studies confirm Banz's doubts and suggest that a relationship exists between the size and liquidity characteristics of stocks, and that the small-size premium is partially a compensation for the illiquidity of such stocks. Pastor and Stambaugh (2003) find in their liquidity-augmented pricing model that portfolios of small size have the highest loadings on the liquidity factor. Amihud (2002) finds that illiquidity, measured by price impact, along with illiquidity premium, are negatively related to size, concluding that size "may be a proxy for liquidity." The last two findings suggest that the size effect can partly be subsumed by liquidity risk and liquidity level, respectively.

Given the above interaction between size and liquidity, one might argue that liquidity-changing events have some implications for the size-liquidity relation and for the size effect. I conjecture that liquidity-changing events have affected stocks differently based on their size, and that the liquidity of small stocks has enjoyed a more pronounced

[1] Next section reviews major recent regulatory and technological changes in U.S. equity markets.
[2] For instance, a number of studies examined the effect of trade automation without reaching a consensus. Examples of studies that support the move for trade automation include Jain and Johnson (2006), Stoll (2006) and Gutierrez and Tse (2009). In contrast, Venkataraman (2001) and Hendershott and Moulton (2011) document various disadvantages associated with trade automation..
[3] In the robustness checks discussed below, I explain that qualitatively similar results are obtained when other market events are considered.

improvement than that of large stocks. There is a basis to believe that the trading cost and trading volume aspects of liquidity, at least, would exhibit the conjectured pattern[4].

At the front of trading cost, many regulatory and technological events are expected to benefit small stocks in a more pronounced way. This cost reduction argument is obvious -and somewhat mechanical- in the case of the decimalization event. The pre-decimalization minimum tick sizes of sixteenths (6.25¢) may have imposed an artificially wider spreads for small stocks whose prices are relatively low[5], translating into a sizeable proportional trading costs. This suggests that proportional spreads of small stocks; which represent the cost aspect of liquidity, would respond to the decimalization with the highest decrease.

Similar arguments can be made about cost-saving that technology-related events bring. With technology, trading costs are reduced sharply. Modern exchanges function very efficiently at a low profit margin in a way that resembles utility firms. Technology-adopting exchanges can handle a large trading capacity for a relatively fixed running cost, which translates into a lower per-trade cost. Trading cost discount relative to the dollar volume traded is also expected to be the highest for small stocks.

The lower trading volume aspect of the illiquidity of small stocks is partly due to their unpopularity among investors. However, I argue that investors would have a smaller incentive to avoid small stocks after certain modernization events. Small firms might be disregarded by investors due to the large extent of information asymmetry adherent to them (Merton, 1987). Technology alleviates this problem for small stocks through improved information dissemination. Although improved information dissemination is a privilege that stocks of all sizes enjoy, I argue that the benefit is more effective for small stocks, because they depend heavily on these modern mechanisms. In the absence of such mechanisms, one would expect such small firms to be in oblivion. Technology and automated trading platforms help make markets a more level playing field for stocks of all sizes. They allow small stocks to enjoy the privileges that are reserved for large stocks, and to some extent for medium-sized stocks, in a traditional setting.

Recent regulations and trade automation also help liquidity provision, by delegating market-making to a broader base, which is also expected to help small stocks in a particular way. If the relatively lower trading volume of small stocks is related to investor behavior (e.g. Gompers and Metrick, 2001) where investors shy away from small stocks due to their risk of liquidation, then recent regulations and market changes, such as consolidating cross-market orders; automated trading; and granting foreign investors direct access to trade against local investors, could have come to the rescue of small stocks. Again, although all stocks enjoy such benefits from liquidity-improving events, but small stocks have a relatively small trading activity, and the rule of diminishing marginal utility helps us imagine that the benefit of improvement is expected to be the highest for small stocks.

There are analogies that can be made with findings in other fields, such as administrative sciences, marketing, and economics. In essence, small stocks can be considered as the counterparts of small retailers that started recently to have a significant presence in the

[4] My argument is about the direct impact that some market events might have on trading volume. Trading volume can also be indirectly affected by events through their impact on trading cost.
[5] In my sample, the correlation coefficient between firm's size and stock price is about 0.5.

market through technology companies such as Amazon. Amazon and similar companies help all retailers; small to large ones. However, the benefits that such technology solutions offer to small retailers are detrimental compared to the extent of benefits realized by large and well-established companies. A number of studies in the marketing and management information systems fields (e.g., Hsieh and Lin, 1998) find that electronic commerce and automated business applications offer a competitive advantage to small businesses in particular by removing barriers faced by small firms that cannot effectively compete against "big fishes" in a traditional brick-and-mortar market. In economics, researchers observe a "catch-up" or "convergence" effect in which less developed economies grow at a rate faster than that in more developed economies (Abramovitz, 1986). Economists argue that small economies start to enjoy advanced technologies and start to share the use of common platforms and resources at some point in time.

The first part of this study investigates the overall effect of decimalization and Hybrid events on the state of liquidity. Examining the overall impact of these two events is not novel, but given the lack of consensus in extant literature, it is important to establish the overall effect of these events in the context of my methodology, before the test proceeds to subsequent hypotheses. Liquidity is multidimensional and therefore, it is proxied by multiple measures to incorporate its different facets. Liquidity measures used are trading volume, Amihud's price impact measure, quoted spread, and effective spread. In line with the findings in many studies, my results show that decimalization and Hybrid events are associated with an overall improvement in liquidity[6]. For instance, proportional quoted spreads dropped from 1.21% to 0.91% after decimalization, and from 0.53% to 0.51% after the implementation of the Hybrid system.

My second test is about whether the liquidity improvement associated with the two events is more pronounced for small stocks, as my main hypothesis predicts. Most of my results show that this is the case, indeed. For example, the decrease in quoted spreads following decimalization is by 0.92% for smallest quintile of stocks but by only 0.07% for the largest quintile. Moreover, I find that the percentage of stocks that experience liquidity improvements post-events is often highest for small stocks, and it decreases in stock size.

The third and final aspect of this study examines the implication of this asymmetric liquidity improvement. Given that small stocks have benefited the most from these two liquidity-changing events, then the well-documented association between size and liquidity is expected to be weaker post-events. My results support this conjecture as well. For instance, the correlation between size and liquidity dropped significantly post-events. Moreover, there are fewer stocks that are small *and* illiquid after, than before the events. In addition, the extent of increase in liquidity between neighboring size-ranked portfolios is weaker after the events, that is; the trend of liquidity increase across size-ranked portfolios seems to be weaker and less systematic.

This investigation directly deals with a concern raised in the literature that there is a need to better understand the interaction between the size and liquidity characteristics of individual stocks. For example, in his survey paper about the size effect, van Dijk (2011) states that the way in which "the size effect and liquidity interact is an important area of future research." Moreover, the framework of this paper is probably capable of explaining

[6] Bessembinder (2003) and Jain and Johnson (2006) are examples of studies that offer evidence in favor of decimalization and automation, respectively.

the interaction between stock characteristics, and thereby helps us to better understand the evolution of asset pricing determinants. An extension of this study can examine the asset pricing implications of this weakening relation between size and liquidity that I document in this paper. Such a study would shed light on variations in the size premium and might relate its recent decrease (van Dijk, 2011) to the partial disappearance of the illiquidity component of the size premium as small stocks benefit the most from liquidity-improving events.

The remainder of the paper is organized as follows. Section 2 describes some of the major changes in financial market design on the NYSE and Nasdaq. Section 3 outlines data sources and measures. Hypotheses are tested and test results are presented in Section 4. Section 5 offers concluding remarks.

2. Changes in financial market design

This section briefly reviews recent technological and regulatory changes that are expected to have implications for the liquidity of stocks listed in the two most prominent stock markets in the United States: NYSE and Nasdaq. My focus is on events that are aimed at streamlining the trading process and at reducing the number of trade intermediaries, because those are the types of events that are expected to be associated with improvements in liquidity, through increased trading volume and reduced trading cost. Automation and relaxed regulations help reduce trading cost (Stoll, 2006) and entice more people to trade, including foreign investors who can directly access U.S. markets through automated platforms solely.

My hypotheses are tested using the decimalization event (as an example of a regulatory market change) and the implementation of the Hybrid system (as an example of a technological market change). These two events are chosen because they represent major milestones in the timeline of market changes, as shown in this brief review of the major market changes leading to these two events. For robustness reasons I test two events rather than one only, and the two events are of different nature and have affected different stocks. The Hybrid system was implemented in the NYSE, whereas decimalization affected stocks listed at both the NYSE and Nasdaq markets.

Nasdaq was established in 1971 as a purely electronic system used for information dissemination purposes only. In subsequent years, Nasdaq started to resemble a formal exchange; starting to offer stock listing and a full range of trading services[7]. Unlike Nasdaq, NYSE is known for its open outcry trading floor and its dependence on human intervention and face-to-face mechanism for trading[8].

Despite maintaining the central role of its specialists in trade intermediation, NYSE has experienced significant technological developments, especially in recent decades. In 1976, the automated Designated Order Turnaround (DOT) system was launched to electronically route small orders to specialists. The system was later upgraded to Super DOT, enabling even larger orders to be routed electronically. Traditionally, orders were routed to the market where traded stocks were listed. In 1978, NYSE was equipped with systems to

[7] This is available at: https://www.britannica.com/topic/NASDAQ.
[8] This is available at: https://www.fxcm.com/uk/insights/new-york-stock-exchange-nyse/.

connect to other exchanges in the U.S. to compare if better quotes exist and to route orders to the market with the best quote. During the 1990s, NYSE witnessed significant expansions in network capacity to handle larger trading volume (Jain and Johnson, 2006).

Even after the implementation of multiple technological systems, NYSE was still far from being an automated exchange since trade executions continue to be at the full discretion of the exchange specialists. While most of the trading process takes place electronically, trade execution is still dependent on human intervention. A market is considered automated only when the actual matching of trades takes place automatically. The turning point in the NYSE history took place in 2000, when the market introduced the Direct+ system which can execute relatively small trades involving up to 1,099 shares. This feature was further augmented with the launch of the Hybrid Market System in 2006 which can electronically execute large trades as well; those involving up to one million shares[9]. Both the Direct+ and the Hybrid systems are similar in nature. However, the implementation of the Hybrid system is expected to have a market-wide impact, given its large magnitude, and therefore it is seen as a better candidate for this study.

The NYSE was under pressure to accelerate the pace of technology adoption and to offer automatic execution options to market participants, as explained above. The NYSE competed with alternative trading venues, such as regional exchanges as well as Electronic Communication Networks (ECNs) that were rising at the time (Freund and Pagano, 2000; Stoll, 2006). These technologically-advanced alternatives were a serious threat to a traditional NYSE, because they offer fast automatic trade executions. ECNs played an important competitive role because they allow natural trades to be matched at a minimal cost, threatening the role of specialists or market dealers who interfere in the process of order matching and place themselves on one side of each trade. This traditional role of market-makers slows down trade executions and increases the overall cost of trading through extra fees and wider spreads.

Increasing trading volume has also driven the need for more trade automation, because automated trading systems can handle large loads efficiently. New regulations also played an indirect role in accelerating the trend of automation. For example, the Securities and Exchange Commission (SEC) has introduced the so-called "Order Protection Rule" (OPC), which requires execution at the best quote available across markets, something that is virtually impossible to achieve in absence of automated trading real-time systems (Hendershott and Moulton, 2011). To comply with the OPC regulations, markets shifted increasingly towards automated systems to make quotes visible and accessible by all market participants.

The above describes the important changes that revolutionized trading style in U.S. stock markets, especially the NYSE. Such changes are expected to support the position of traders because they provide them with an abundance of options and venues to execute their trades. In the meantime, those changes are expected to limit the powers of specialists, because with them specialists face more competition and they no longer enjoy a full discretion about trade execution. This decreased power of specialists translated into lower exchange seat prices in recent years (Stoll, 2006). Seat ownership represents the right to

[9] This is available at the NYSE website: http://www.nyse.com.

trade on the market floor. Therefore, falling prices of seats demonstrate the diminishing value of traditional trading methods.

Several regulatory and market structure changes accompanied technological changes to further facilitate trading and help reduce its cost. Three regulatory and market structure events are mentioned here as examples. The first example is the two-stage minimum tick reduction that was ordered by the SEC. In 1997, the first stage took place to reduce the minimum tick size to sixteenth from eighth. In the second stage of this event, which took place in 2000, minimum tick was further reduced to one penny, an event that is commonly referred to as decimalization[10]. Bid-ask spreads can never be smaller than the minimum tick size. Therefore, the removal of such artificially-wide spread boundaries allows spreads to better reflect their fundamental determinants. Spreads are expected to decline after this event if previous bigger minimum tick sizes were unnecessarily large for some stocks. Several studies (e.g., Bessembinder, 2003) find that spreads have significantly declined after decimalization.

The second example of regulatory changes is the reduction of the minimum order size by the SEC. The minimum order entry size of a Mid-Point Passive Liquidity Order "MPL Order"[11] was reduced from 1000 to 100 shares in 2007, and further to one share in 2011[12]. Lowering minimum order size enables investors to trade a small number of shares with exchanges directly, without the need to involve intermediaries who profit from unbundling large orders to small individual investors, which results in additional costs for small trades. This reduction might also increase trading volumes, since odd-lot traders (small traders who trade less than 100 stocks) are no longer inhibited from trading with flexibility.

The third and final example is related to changes in the NYSE market structure. While the number of individual specialists is relatively stable over time because it is proportional to the number of listed stocks, the number of specialist firms to which specialists are affiliated has shrunk from 67 in 1975 (Stoll, 2006) to only seven in recent years[13]. The clustering of specialist firms reflects the improving economies of scale in this business, which could also get reflected into lower trading cost. This industry consolidation may explain the emergence of discount brokerage services that charge substantially lower commission fees than those charged by traditional brokerage houses.

While specialists in NYSE enjoy monopoly power in handling the entire market-making activities of their designated stocks, there are at least two dealers per stock to handle order flow for Nasdaq-listed stocks. The Nasdaq market structure is designed to increase competition among dealers, with the hope that this will result in lower cost and better service for traders. Nevertheless, a number of academic studies (e.g., Christie and Schultz, 1994) show that Nasdaq spreads were usually higher than the minimum tick size (one-eighth at that time), and that the inside spread for a large number of stocks was at least $0.25. These results point to a potential coordination between Nasdaq dealers. In fact, this finding led to strict measures to be taken by the Nasdaq administration to reduce spreads.

[10] This is available at the NYSE website: http://www.nyse.com.
[11] NYSE defines an MPL order as "an undisplayed limit order that is priced at the midpoint of the Protected Best Bid and Offer (PBBO)". MPL orders can generally match with any other order regardless of its type. This is available at: https://www.sec.gov/rules/sro/nysearca/2015/34-74415-ex5.pdf.
[12] This is available at: http://www.sec.gov/rules/sro/nysearca/2011/34-64523.pdf.
[13] This is available at the NYSE website: http://www.nyse.com.

Spreads dropped dramatically shortly after those measures came into effect (Christie et al., 1994).

These competition-increasing measures taken by the Nasdaq administration were followed by a series of rules in 1997 that were aimed at fostering inter-dealer competition (Chung and Van Ness, 2001). For example, the order handling rules (OHR) were introduced gradually during the period from January-October 1997; a set of practices that market makers are ordered to follow to ensure that the best order execution is offered to traders.

The above-described trend at the technological and regulatory fronts continues in subsequent years as well. However, I did not consider very recent market events, because a sufficiently large window of time is needed around events used in the tests. For robustness purposes, I conduct my tests on events other than decimalization and the Hybrid. For instance, I examine the impact of the Direct+ and that of the first-stage minimum tick size reduction in 1997. My findings remain unchanged, though the Direct+ results are weaker than those of the Hybrid[14].

3. Data and measures

At the end of 2000 the NYSE began trading stocks in decimal price increments, ending a two-century old tradition of trading in eighths and sixteenths. Decimal pricing has been first implemented on seven stocks only on August 28, 2000. Stocks have been added gradually to the new system afterwards. By January 29, 2001, the system has been fully implemented for all NYSE-listed stocks[15]. On Nasdaq, the pilot phase of the switch to decimalization was launched on March 26, 2001 including 15 stocks, and full conversion took place on April 9, 2001[16].

The Hybrid system was also rolled out gradually on the NYSE between October 6, 2006 and January 24, 2007 (Hendershott and Moulton, 2011). The relatively short four-month period that took the Hybrid system to be fully implemented makes the event suitable as a subject for this study, because changes from before to after the Hybrid are less likely to be attributable to other factors that are unaccounted for. Automation events usually takes a longer period for implementation. For instance, the implementation of the Computer-Assisted Trading System (CATS) on Toronto Stock Exchange started in 1977 continued for two decades before including all stocks[17].

In testing both events, I exclude the roll-out periods. In making comparisons from the pre-event period to post-event period, I use the six-month period prior to the start of the event and the six-month period after the full implementation of the event, excluding the month immediately after the implementation. This exclusion is made in consistence with a common practice in the literature where the thirty-day period immediately following events are excluded, thereby allowing market participants enough time to learn new practices and to develop new trading patterns in accordance with the market change (Chakravarty et al. (2004); Jain (2005); Jiang et al. (2011), etc.)[18]. Therefore, I consider

[14] Those results are unreported, but they are available from the author upon request.
[15] This is available at the NYSE website: http://www.nyse.com.
[16] This is available at: https://money.cnn.com/2001/03/12/markets/nasdaq_decimals.
[17] This is available at: http://www.economywatch.com/stockexchanges/canadian.html.
[18] The effect of this exclusion on the results is only minor.

the trading days in the six-month period from February 28, 2000 to August 27, 2000 prior to decimalization (thereafter, pre-decimalization) and the six-month period from May 10, 2001 to November 9, 2001 subsequent to decimalization (thereafter, post-decimalization). Similarly, the pre-Hybrid period is April 6, 2006 to October 5, 2006; and the post-Hybrid period is February 25, 2007 to August 24, 2007. For the sake of robustness, I vary the length of this six-month test window to three months, one year, and three years. Results based on these robustness windows are not reported, but I comment on their similarities and differences where warranted.

My data set includes common stocks listed on the NYSE and Nasdaq, and can be matched in both the Center for Research in Security Prices (CRSP) and the Trades and Quotes (TAQ) databases. Market volatility is proxied by the Volatility Index (*VIX*), whose daily closing values are obtained from the Chicago Board Options Exchange (CBOE) Website.

I clean my CRSP data set as follows. Stocks with non-continuous observations or with fewer than 50 observations within a six-month window are removed from my data set for that sample[19]. I also exclude observations pertaining to non-ordinary categories of stocks since trading characteristics of these stocks are different than those of ordinary ones[20]. At the stock level, I obtain the following variables at the daily frequency from CRSP: Closing price (*PRC*), return-excluding-dividends (*RET*), trading volume in terms of number of shares (*VOL*), and number of shares outstanding (*SHROUT*).

I take the following steps in cleaning the TAQ data set (Holden and Jacobsen, 2014). Trades and quotes outside hours are excluded. I drop trades if the correction indicator shows that they have been revised; that is, I keep trades if the correction indicator equals "00". I also drop trades with non-positive or missing prices. I exclude quotes with abnormal modes, non-positive or missing bid or ask prices, negative spreads on the same exchange, spreads larger than $5, or non-positive or missing depth. Finally, stocks are not included in the post-event window unless they are present in the pre-event window.

Several measures are created using the daily dataset. Firm size is the natural log of market capitalization—price multiplied by the number of shares outstanding. Firm size is denoted by $Size_{it}$, where *i* and *t* denote firm and day, respectively. Turnover (TO_{it}) is trading volume divided by the number of shares outstanding. In each month *m*, stocks are ranked into quintiles based on *Size* as of the last trading day in month *m-1*, where quintile 1 (5) corresponds to smallest (largest) stocks.

Liquidity is multidimensional in that it reflects trading quantity, trading speed, trading cost, and price impact (Liu, 2006). I consider a number of liquidity measures in order to incorporate different facets of liquidity. I consider first both proportional quoted bid-ask spreads (*QSPD*) and proportional effective bid-ask spreads (*ESPD*). The former measures the difference between the best bid and offer quotes, whereas the latter captures the actual cost of a round-trip trade using actual prices at which trades take place. Despite similarities between the two measures, important differences exist between them. For instance, Chalmers and Kadlec (1998) find that effective spreads are almost 50-70% of quoted

[19] This filter targets small and very illiquid stocks whose trading might be of an irregular pattern. This exclusion biases results against my findings.
[20] Non-ordinary categories are as follows: Certificates, ADRs, shares of beneficial interest, units, companies incorporated outside the U.S., Americus Trust components, closed-end funds, preferred stocks, and REITs.

spreads, and that the average correlation between them is 31% only. I use the methodology of Holden and Jacobsen (2014) to calculate both spreads for each trade, then I find average quoted and effective spreads for each stock in each day, i.e. $QSPD_{it}$ and $ESPD_{it}$. Holden and Jacobsen (2014) correct for liquidity measurement problems encountered when the regular whole-second TAQ database is used (which applies to my case), where observations' exact times are rounded to the nearest second. This procedure involves the following steps: adjusting for withdrawn quotes rather than deleting them, using the order of quotes in each second to infer the millisecond, and deleting NBBO quotes and trades when the NBBO is "crossed" or "locked."[21] *QSPD* is then calculated as follows:

$$QSPD_{it} = \frac{\sum_{s=1}^{S} \frac{BestBid_{its} - BestOffer_{its}}{\frac{BestBid_{its} + BestOffer_{its}}{2}}}{S}$$

Where *s* refers to the order of the trade of stock *i* at day *t*, and *S* refers to the stock's total number of trades considered during the day. *ESPD* is calculated as follows:

$$ESPD_{it} = \frac{\sum_{s=1}^{S} \frac{\left(\left|PRC_{its} - \frac{BestBid_{its} + BestOffer_{its}}{2}\right|\right) * 2}{\frac{BestBid_{its} + BestOffer_{its}}{2}}}{S}$$

In addition to quoted and effective spreads, I consider TO_{it} to measure the trading quantity aspect of liquidity, and Amihud's measure (Amihud, 2002) to capture price impact. I refer to Amihud's measure by $Amihud_{it}$, and it is calculated for each stock on a daily basis as $\frac{Trading\ Volume_{it}}{|Return_{it}|}$. Note that the original price impact measure of Amihud is inversed to represent liquidity rather than illiquidity. My final data set includes 6,621 (6,494) stocks in the pre-decimalization (post-decimalization) window, and 2,616 (2,528) stocks in the pre-Hybrid (post-Hybrid) window.

4. Tests and results

This section contains three parts. In subsection 4.1, I examine the general impact of decimalization and the Hybrid system on liquidity. In subsection 4.2, the impact of these two events on liquidity is examined, conditionally on firm size. Finally, the interaction between the size and liquidity attributes of stocks are discussed in subsection 4.3.

4.1 General impact on liquidity

As presented thus far, financial markets have undergone continual changes in regulations and technology in recent years. This continuous modernization process, which coincided with an ongoing trend for centralization and consolidation in the financial services industry, facilitated trading and liquidity provision (Lhabitant *et al.*, 2008).

On balance, the evidence in extant literature supports a positive relationship between decimalization and trade automation on one hand, and trading liquidity and quality on the other hand (e.g., Bessembinder (2003) and Jain and Johnson (2006)). However, it is important to formally test the relationship between these events and liquidity within the

[21] An observation is considered "crossed" ("locked") if the bid quote exceeds (equals) the ask quote.

context of my methodology and data, because the overall impact established in this subsection is the basis for the analysis in the size-conditioned test in the following subsections. As explained above, my conjecture is that these two events are accompanied by an overall improvement in liquidity.

Table 1 contains univariate analysis of changes in liquidity measures around the two events by making a comparison between the pre-event and post-event windows, including tests for the significance of pre-post differences. Each of the four daily liquidity measures are averaged at the stock level within each window, then cross-sectional averages are presented in Table 1. Panel A of the table presents results related to the decimalization event for NYSE and Nasdaq stocks, whereas Panel B presents results related to the implementation of the Hybrid system for stocks listed on NYSE; where the Hybrid system got implemented.

Most of the results in Table 1 are in favor of my conjecture that liquidity generally improved post events. The first row of each panel presents average liquidity measures before and after each event for the whole sample. We can quickly see that both quoted and effective spreads dropped after both events, indicating that liquidity (in terms of transaction costs) has improved post these two events. However, the magnitude of decrease in spreads is substantially higher in the case of decimalization than in the case of the Hybrid system. In terms of quoted spreads, the drop is by 0.30%; from 1.21% to 0.91%, compared to a drop of only 0.02% following the implementation of the Hybrid system; from 0.53% to 0.51%. A similar trend is observed when effective spreads are considered. On average, they dropped by 0.24% after decimalization, but only by 0.03% after the Hybrid system. One reason behind this difference between the two events is that the decimalization event is directly related to spreads, and therefore it is expected that it exerts a more pronounced effect on them.

Amihud's price impact measure increased after both events as well, but given that the Amihud's measure used is inversed, this increase indicates a lower price impact, and therefore, improved liquidity. More trading means higher liquidity, thus higher turnover means higher liquidity as well. The extent of decrease in price impact is also slightly higher with decimalization than in the case of the Hybrid system. In the case of decimalization, the inversed Amihud's measure increased by about 25%; from 324 to 404. The increase in the case of the Hybrid system is by about 10% only; from 276 to 303. When measured using the one-year window around events, the improvement in Amihud's measure is about 16% (28%) in the case of the Hybrid system (decimalization)[22]. The reduced gap in improvement obtained with the one-year window indicates that the Hybrid system might be different from decimalization in the period needed before its full impact on liquidity is materialized.

Turnover results are mixed; they show that it increased after the implantation of the Hybrid system (7.98 to 8.45), but contrary to my conjecture, it decreased after decimalization (7.81 to 6.91). One reason behind this decrease can be the timing of the post-event window (May 10 – November 9, 2001) which encompasses two months of the period following the 9/11 attacks; a time of a potentially irregular trading activity. The robustness checks that use three-month windows (and thereby avoid the post-9/11 period) do not indicate

[22] Results from robustness checks using three-month and one-year windows are omitted in the interest of brevity, but they are available from the author upon request.

this decrease in turnover after decimalization. Other results from the three-month and one-year windows are in the same direction with the presented results.

To formally test the conjecture of overall liquidity improvement post-events, I estimate the following regression model:

$$LIQ_{i,t} = \alpha + \beta\ Event_t + \gamma_{VIX} VIX_t + \gamma_t RM_t + \delta_{SIZE} SIZE_{i,t} + \varepsilon_{i,t} \quad (1)$$

The dependent variable in Equation (1) is $LIQ_{i,t}$, which refers to one of the four liquidity measures used, for stock i at day t: quoted spreads (*QSPD*), effective spreads (*ESPD*), inversed Amihud's price impact measure (*Amihud*), or turnover (*TO*). The main variable on the right-hand side of the equation is *Event*; a dummy variable that takes the value of 1 (0) after (before) decimalization or the implementation of Hybrid system. The remaining right-hand side variables are included as controls, and they include: daily closing volatility index value (*VIX*), equally-weighted average market return (*RM*), and the natural log of market capitalization value (*SIZE*).

For each event, I estimate Equation (1) at the stock-level first, then cross-sectional average coefficients are provided along with the t-stat of the average. I estimate this regression equation, as well as the rest of the regression equations in this study, using this method. A number of similar studies also report cross-sectional statistics about coefficients obtained from time-series regressions. For instance, Chan and Fong (2000) and Chordia and Subrahmanyam (2004) report the cross-sectional average coefficients obtained from time-series regressions. In addition to mean coefficients, I also consider but do not report median coefficients, the proportion of coefficients that are statistically significant, and the proportions of significant coefficients that are positive/negative. I find that these additional statistics are predominantly in the same direction of average coefficients that I report.

Panel A of Table 2 presents the results of estimating Equation (1) for the decimalization event, whereas Panel B of Table 2 presents results related to the implementation of the Hybrid system. The variable of interest is *Event*, and its average coefficients indicate that spreads have dropped after decimalization (-0.032 for quoted spreads and -0.026 for effective spreads) and post-Hybrid (-0.0009 for quoted spreads and -0.001 for effective spreads), though the extent of decrease in the case of Hybrid is significantly smaller than that in the case of decimalization. Smaller price impact is also found after both events. This is evident in the statistically- and economically-significant average coefficients of 13.69 in the case of decimalization and 18.56 in the case of the Hybrid. Finally, average turnover coefficient is statistically-insignificant in the case of decimalization, and marginally significant in the case of Hybrid, indicating a slight increase in turnover (average coefficient is 0.008). In sum, the univariate analysis in Table 1 and regression results in Table 2 point to a significant improvement in liquidity following both the decimalization and the implementation of the Hybrid system events.

4.2 Size-conditioned impact on liquidity

This subsection examines whether recent changes in financial markets, specifically decimalization and the implementation of the Hybrid system events, offered different relative liquidity benefits to stocks based on their market capitalizations. My conjecture is that the liquidity of small stocks has benefited the most from such events. Preliminary evidence in support of this conjecture can also be found in Table 1, which also presents average liquidity measures before and after decimalization (Panel A) and Hybrid (Panel

B) for each size quintile. As explained in the data section, stocks are ranked into size quintiles in each month *m* based on the market capitalization as of the last trading day in month *m-1*.

Size-based results in Table 1 show that stocks across all size quintiles have benefitted from both events, with an exception in the case of turnover after decimalization. However, the extent of liquidity benefit for small stocks seem to be bigger, and in many cases it decreases in size. For instance, average quoted spreads fall after decimalization by 0.92% (from 2.31% to 1.39%) in size quintile 1, whereas they fall only by 0.07% (from 0.39 to 0.32) in size quintile 5. Even proportionally, quoted spreads fall by about 40% for size quintile 1 and by about 18% for size quintile 5. Even in the case of turnover after decimalization, while turnover generally falls slightly after decimalization and in size quintiles 2-5, the change in turnover for size quintile 1 is statistically-insignificantly different from zero (it changes from 1.75 to 1.76).

Results related to the Hybrid system (Panel B) depict a similar picture, though the magnitude of the effect is significantly smaller than that in the case of decimalization. For instance, quoted and effective spreads fall each by 0.07% in size quintile 1, but the change is neither statistically- nor economically-significant for size quintile 5. Size quintile 5 is the only quintile where effective spreads remain unaffected at 0.22%.

Another piece of preliminary evidence can be found in Figure 1, where the percentage of stocks that experience liquidity improvement are plotted for each size quintile. Decimalization results are presented in Figure 1.A and the Hybrid results are presented in Figure 1.B. Size quintile membership are generally defined monthly. But in this test, I consider only the stocks that do not change size quintile within the six-month pre-event window. I then track these stocks after each event and calculate the percentage of those that experience improvement in liquidity in the post-event six-month window. In many instances, we can find that this percentage decreases in size quintile, which means that the number of small stocks that benefited from the two events in terms of liquidity is higher than that of large stocks. The percentage decrease is monotonic in the case of Amihud's measure in Figure 1.B, and near monotonic in the case of turnover (Figures 1.A and 1.B) and spreads (Figure 1.A).

Formally, the hypothesis to be tested in this subsection is as follows (Hypothesis 1):

H_0^1: *Decimalization and Hybrid events result in similar liquidity improvements for all stocks regardless of their size.*

H_A^1: *Decimalization and Hybrid events result in a more pronounced liquidity improvement for smaller than for larger stocks.*

To test the above hypothesis, I estimate a regression equation similar to Equation (1) but augmented by the interaction of *Event* and *Small*—another dummy variable that takes the value of 1 for stocks in the smallest quintile or 0 otherwise. Specifically, the equation is as follows:

$$LIQ_{i,t} = \alpha + \beta\, Event_t + \lambda\, Event_t * Small_{i,t} + \gamma_{VIX} VIX_t + \gamma_t RM_t + \delta_{SIZE} SIZE_{i,t} + \varepsilon_{i,t} \quad (2)$$

The interaction term is designed to identify the incremental effect of liquidity-changing events for smallest stocks, and therefore it is our variable of interest. Panel A of Table 3 presents the results of estimating Equation (2) for the decimalization event, whereas Panel B of Table 3 presents results related to the implementation of the Hybrid system. All average coefficients for this interaction term come with a sign that is consistent with my hypothesis. Nevertheless, statistical significance is lacked in the case of turnover in Panel A (significance is only marginal in Panel B), and quoted spreads in Panel B. We can also notice that the introduction of the interaction term to the equation does not take away the significance from average coefficients of *Event*; β. To summarize, results in Table 3 show that decimalization and the Hybrid system benefited all stocks in terms of liquidity (except for decimalization when liquidity is measured by turnover), but the benefit in most cases is more pronounced for small stocks.

4.3 Changes in the size-liquidity relationship

A number of studies relate the size and liquidity characteristics of stocks. For instance, some studies have explained abnormal returns of small stocks by their relative illiquidity. A paper by Stoll and Whaley (1983) is an example of this line of research. The authors find that small stocks experience higher returns due to their difficulty of trading and their higher trading costs. Similarly, Pastor and Stambaugh (2003) find that small stocks have the highest loadings on the liquidity factor that the authors construct. A study by Amihud and Mendelson (1986) goes further by stating that the firm size is a proxy for liquidity.

The analysis presented in the previous subsection shows that small stocks have gained additional liquidity improvement subsequent to decimalization and the implementation of the Hybrid system. Given this disproportionate shift in liquidity and given the association between size and liquidity documented in the literature, one would expect that liquidity-changing events to have implications for this size-liquidity association. In this subsection I test the conjecture that decimalization and the Hybrid events helped disentangling these two characteristics and reduced the overlap between them.

I conduct three tests to that effect. First, I look at the correlation between size and liquidity, before and after the two test events. Size, measured by market capitalization, is paired on a monthly basis at the stock level with each of the four liquidity measures, then Pearson's correlation coefficient is calculated across stock-months within each of the four windows (pre-decimalization, post-decimalization, pre-Hybrid, and post-Hybrid). Panel A of Table 4 presents the results for the pre- and post-decimalization windows, whereas Panel B of the table presents the results for the pre- and post-Hybrid windows.

We first notice that correlation coefficients are generally high; they range between 0.27 and 0.55. This relatively high level of correlations is evident of the association between size and liquidity attributes of stocks, as documented in the literature. Consistent with my conjecture, I find that correlations between size and liquidity have dropped in seven out of the eight cases. The exception is also observed for the turnover measure around decimalization, in which the correlation coefficient increases slightly from 0.41 to 0.42. The most notable decrease in correlations can be seen for spreads around decimalization; correlation between size and quoted (effective) spreads have dropped from 0.55 to 0.42 (0.52 to 0.43). Note that the exception of results for turnover in this test correspond to the exception observed for turnover results in the previous subsection. While the exception, per se, is contrary to my conjecture, the alignment of results assures that the change in

correlations documented in this subsection is an implication of the disproportionate pattern of liquidity change, shown in the previous subsection.

In the second test, I look at the number and proportion of stocks that are both small *and* illiquid. Lower association between size and liquidity imply that a smaller percentage of small stocks are expected to remain illiquid after liquidity-changing events, and that illiquid stocks become more scattered across stocks of different sizes. To conduct this test, I rank stocks in each month into size and liquidity quintiles independently. I then consider in each month the percentage of stocks that are present in both size quintile 1 and liquidity quintile 1 (i.e. smallest *and* most illiquid stocks), where liquidity is measured by one of the four measures at a time. Finally, I calculate the average of this percentage over the months within each window.

Panel A of Table 5 presents the results for the pre- and post-decimalization windows, whereas Panel B of the table presents the results for the pre- and post-Hybrid windows. Note that the maximum values for these percentages is 20%, which is obtained if all stocks in size quintile 1 happen to be in liquidity quintile 1. I find that these percentages have dropped in all cases by varying degrees, except in the case of turnover after the Hybrid system, where percentage of small stocks that are also illiquid slightly increased from 8.47% to 8.51%. Therefore, the results in Table 5 indicate that there are generally fewer small stocks that are also illiquid after the two test events.

The third and final test involves observing the extent of increase in liquidity measures between adjacent size quintiles in the pre- and post-event windows. If liquidity-changing events helped reduce the association between the size and liquidity attributes of stocks, it is expected that the differences in liquidity between neighboring size quintiles to get smaller post-events. In other words, we expect to find the variation of liquidity across size quintiles to be moving a step away from being systematically increasing in size quintile, and moving a step towards becoming random and less systematic.

To conduct this test, I rank stocks in each month into size quintiles. Then, I calculate in each month the difference in average liquidity measure between adjacent quintiles (i.e. average liquidity measure in size quintile 2 minus that in quintile 1, quintile 3 minus that in quintile 2, quintile 4 minus that in quintile 3, and quintile 5 minus that in quintile 4). Finally, I average those differences across the four windows (pre-decimalization, post-decimalization, pre-Hybrid, and post-Hybrid).

A positive (negative) figure, when liquidity is measured by *Amihud* or *TO* (*QSPD* or *ESPD*), indicates that liquidity shows improvement when size increases. I find that figures do indicate that liquidity generally improves as we move from smaller to larger quintiles (few exceptions in quintile 5-4 and 4-3). I do find that the improvement in liquidity between neighboring size quintiles slightly attenuates post-events, but the decrease is statistically-insignificant. The overall results in this subsection support the conjecture that the association between size and liquidity attributes of stocks decreased after decimalization and the implementation of the Hybrid system.

5. Conclusion

Recent years have witnessed an intensified pace of developments in financial markets, both in terms of technology and regulation. These changes are designed to expedite and facilitate the trading process. For instance, a number of exchanges have either fully or

partially transformed from traditional outcry trading floors to automated platforms in the last two decades. A number of regulatory changes have also been introduced to make the trading experience fairer and more transparent.

In this study, I focus on two such changes in stock markets in the U.S.: Decimalization in 2000; as an example of a regulatory change, and the implementation of the Hybrid System on the NYSE in 2006; as an example of a technological change. In particular, I examine the impact of these two events on market liquidity, where liquidity is measured by quoted spreads, effective spreads, Amihud's price impact measure, and turnover. I find out that these two events are followed by significant overall improvements in liquidity.

I then conduct my analysis conditionally on firm size, where firm size is measured by market capitalization. Even though stocks of all sizes benefit from liquidity-improving events, I argue that these events offer a particular benefit to smaller stocks than it does for larger stocks. The basis of this conjecture lies in the diminishing marginal utility notion. Small stocks, known to be the most illiquid, are expected to benefit in a more pronounced way from such events. For instance, without these advancements in markets, trading costs would be inhibitingly high for small stocks, and small firms would suffer from extreme information asymmetry in absence of modern information dissemination technologies. Recent market changes come to the rescue of small stocks by offering significantly cheaper trading solutions and by disseminating information effectively. I argue that these offerings are dramatically more beneficial for small stocks than they are for large stocks. These changes help make financial markets a more level playing field for all stocks.

Consistent with my conjecture, I find that decimalization and the implementation of the Hybrid system brought more pronounced liquidity improvements for small stocks. I continue this investigation by considering the possible implications of this disproportionate change in liquidity on the well-documented size-liquidity association. I also find that there is less association between these two characteristics after the two test events. In a way, such liquidity-changing events reduce the overlap between size and liquidity, and help make them more distinct features.

The size-liquidity relationship has preoccupied a significant part of the literature. In his survey paper, van Dijk (2011) mention that the way "the size effect and liquidity interact is an important area of future research". I argue that this paper sheds light on this association. It also shows that liquidity-changing events are not always a rising-tide-that-lifts-all-boats, because their effect can be more pronounced for certain subsets of stocks. In fact, implicitly assuming that such events have an across-the-board effect might be the reason why the evidence on these events is still inconclusive in the literature. Another way that this study can be examined, is by conditioning the impact of liquidity-changing events on the level of liquidity itself, rather than on size. If the liquidity improvement is also found to be an increasing function of illiquidity, for instance, then the implication of such finding would be that the variation of liquidity across stocks is diminishing.

Another way that this study can be extended is by examining the asset pricing implications of my findings. Small stocks are known to enjoy higher returns, and one explanation for this phenomenon is that small stocks exhibit this premium due to their illiquidity. In this case, given that the liquidity of small stocks experienced the most significant improvements post liquidity-changing events, then one would expect the size premium to diminish. This is because the component of the size premium that compensates for

illiquidity is shrinking after such events. In fact, this could explain the finding in many papers (e.g., Chan *et al*., 2000; Dimson and Marsh, 1999) that the size effect has dropped in the recent decades. Generally, this type of asset pricing tests might prove capable of explaining the patterns of variation that return determinants exhibit over time.

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Table 1: Univariate analysis of liquidity change

Univariate analysis for changes in quoted spreads (*QSPD*), effective spreads (*ESPD*), inversed Amihud's price impact measure (*Amihud*), and turnover (*TO*). Measures are presented separately for the period before and the period after of both the decimalization event (Panel A) and the implementation of the Hybrid system on the NYSE (Panel B). Statistics are presented for the overall sample (NYSE and Nasdaq in the case of decimalization, and NYSE in the case of the Hybrid) as well as for size quintiles, where quintile 1 (5) contains smallest (largest) stocks. Measures are averaged at the stock level in each window, then the cross-sectional averages are presented in the table. The pre-decimalization (post-decimalization) window includes trading days in the period from February 28, 2000 to August 27, 2000 (May 10, 2001 to November 9, 2001). The pre-Hybrid (post-Hybrid) window includes trading days in the period from April 6, 2006 to October 5, 2006 (February 25, 2007 to August 24, 2007). Amihud's measure is multiplied by 10^3 whereas turnover is multiplied by 10^{-5}. Significance of mean differences is tested and significance levels are indicated by *, **, and *** (next to post-event averages), which denote significance at 10%, 5%, and 1% levels, respectively.

Panel A – Decimalization

Sample		*QSPD*		*ESPD*		*Amihud*		*TO*	
		Pre	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**
All (NYSE and Nasdaq)		1.21	0.91***	1.02	0.78***	324	404***	7.81	6.91**
Size Quintiles	**1**	2.31	1.39***	2.04	1.28***	188	246***	1.75	1.76
	2	1.64	1.15***	1.4	1.01***	216	260***	4.71	4.48*
	3	1.15	0.96***	0.93	0.74***	298	365***	6.88	6.13***
	4	0.86	0.69*	0.59	0.58*	385	429**	9.76	8.35**
	5	0.39	0.32**	0.31	0.28	546	591***	13.93	13.46***

Panel B – The Hybrid system

Sample		*QSPD*		*ESPD*		*Amihud*		*TO*	
		Pre	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**
All (NYSE)		0.53	0.51**	0.46	0.43***	276	303***	7.98	8.45***
Size Quintiles	**1**	0.92	0.85***	0.88	0.81**	167	257***	2.12	2.54***
	2	0.71	0.68***	0.69	0.64***	263	294***	5.22	5.71***
	3	0.52	0.48**	0.51	0.46**	291	311***	8.58	8.74***
	4	0.38	0.38	0.32	0.31	332	378***	9.45	9.71*
	5	0.25	0.24*	0.22	0.22	448	485***	14.87	14.92

Table 2: Estimation of Equation 1

$$LIQ_{i,t} = \alpha + \beta\ Event_t + \gamma_{VIX} VIX_t + \gamma_t RM_t + \delta_{SIZE} SIZE_{i,t} + \varepsilon_{i,t}$$

Where $LIQ_{i,t}$ refers to one of the four liquidity measures used, for stock *i* at day *t*: quoted spreads (*QSPD*), effective spreads (*ESPD*), inversed Amihud's price impact measure (*Amihud*), or turnover (*TO*). Each of these liquidity measures are regressed on *Event*; a dummy variable that takes the value of 1 (0) after (before) decimalization or the implementation of Hybrid system, daily closing volatility index value *VIX*, *RM*; which refers to the equally-weighted average market return, and the natural log of market capitalization value (*SIZE*). The above equation is estimated for two events: decimalization (Panel A) and the implementation of the Hybrid system on the NYSE (Panel B). A time-series regression is estimated first for each stock, then cross-sectional average coefficients are presented in the table. The pre-decimalization (post-decimalization) window includes trading days in the period from February 28, 2000 to August 27, 2000 (May 10, 2001 to November 9, 2001). The pre-Hybrid (post-Hybrid) window includes trading days in the period from April 6, 2006 to October 5, 2006 (February 25, 2007 to August 24, 2007). Amihud's measure is multiplied by 10^3 whereas turnover is multiplied by 10^{-5}. The t statistics (t-stat) are those of cross-sectional averages.

Variable	*QSPD*		*ESPD*		*Amihud*		*TO*	
	Estimate	t-stat	Estimate	t-stat	Estimate	t-stat	Estimate	t-stat
Intercept	0.004	21.69	0.001	14.62	-0.912	-17.78	0.009	8.71
$Event_t$	-0.032	-3.71	-0.026	-4.72	13.69	7.41	0.018	1.14
VIX_t	-0.002	-1.97	0.017	2.92	1.33	2.12	-0.093	-6.54
RM_t	0.017	2.92	0.001	6.76	2.74	0.87	0.167	5.78
$SIZE_{i,t}$	-0.002	-2.77	-0.0001	-1.45	1.48	5.62	0.082	3.71

Panel B – The Hybrid system

Variable	*QSPD*		*ESPD*		*Amihud*		*TO*	
	Estimate	t-stat	Estimate	t-stat	Estimate	t-stat	Estimate	t-stat
Intercept	-0.002	-34.73	-0.0004	-12.66	0.715	12.56	0.017	7.19
$Event_t$	-0.0009	-9.45	-0.001	-13.48	18.56	9.89	0.008	2.14
VIX_t	0.001	1.41	-0.022	-0.89	0.82	4.97	-0.178	-8.43
RM_t	0.012	3.5	0.008	4.65	3.51	1.41	0.103	6.75
$SIZE_{i,t}$	-0.001	-3.49	-0.0001	-2.11	1.24	6.47	0.053	4.05

Table 3: Estimation of Equation 2

$$LIQ_{i,t} = \alpha + \beta\ Event_t + \lambda\ Event_t * Small_{i,t} + \gamma_{VIX} VIX_t + \gamma_t RM_t + \delta_{SIZE} SIZE_{i,t} + \varepsilon_{i,t}$$

Where $LIQ_{i,t}$ refers to one of the four liquidity measures used, for stock *i* at day *t*: quoted spreads (*QSPD*), effective spreads (*ESPD*), inversed Amihud's price impact measure (*Amihud*), or turnover (*TO*). Each of these liquidity measures are regressed on *Event*; a dummy variable that takes the value of 1 (0) after (before) decimalization or the implementation of Hybrid system, the interaction of *Event* with *Small*; where *Small* is also a dummy variable that takes the value of 1 if stock *i* is in the smallest quintile of stocks or 0 otherwise, daily closing volatility index value *VIX*, *RM*; which refers to the equally-weighted average market return, and the natural log of market capitalization value (*SIZE*). The above equation is estimated for two events: decimalization (Panel A) and the implementation of the Hybrid system on the NYSE (Panel B). A time-series regression is estimated first for each stock, then cross-sectional average coefficients are presented in the table. The pre-decimalization (post-decimalization) window includes trading days in the period from February 28, 2000 to August 27, 2000 (May 10, 2001 to November 9, 2001). The pre-Hybrid (post-Hybrid) window includes trading days in the period from April 6, 2006 to October 5, 2006 (February 25, 2007 to August 24, 2007). Amihud's measure is multiplied by 10^3 whereas turnover is multiplied by 10^{-5}. The t statistics (t-stat) are those of cross-sectional averages.

Panel A – Decimalization

Variable	*QSPD*		*ESPD*		*Amihud*		*TO*	
	Estimate	t-stat	Estimate	t-stat	Estimate	t-stat	Estimate	t-stat
Intercept	0.004	20.56	0.001	14.64	-0.918	-17.07	0.009	8.45
$Event_t$	-0.026	-3.98	-0.023	-3.55	11.56	4.17	0.009	1.56
$Event_t * Small_{i,t}$	-0.021	-2.78	-0.029	-4.78	5.78	6.79	0.012	1.18
VIX_t	-0.002	-1.91	0.018	2.97	1.31	2.32	-0.093	-6.35
RM_t	0.016	2.97	0.001	6.89	2.61	1.02	0.171	4.91
$SIZE_{i,t}$	-0.001	-2.07	-0.0001	-1.38	1.36	3.32	0.071	2.68

Panel B – The Hybrid system

Variable	*QSPD*		*ESPD*		*Amihud*		*TO*	
	Estimate	t-stat	Estimate	t-stat	Estimate	t-stat	Estimate	t-stat
Intercept	-0.003	-31.62	-0.0005	-11.39	0.713	13.51	0.017	7.49
$Event_t$	-0.0012	-7.45	-0.0006	-11.45	15.78	9.11	0.008	1.81
$Event_t * Small_{i,t}$	-0.0004	-1.45	-0.001	-2.56	8.46	6.72	0.003	1.68
VIX_t	0.001	1.4	-0.029	-1.13	0.82	4.95	-0.174	-9.64
RM_t	0.011	3.41	0.007	4.49	3.11	1.62	0.104	5.77
$SIZE_{i,t}$	-0.001	-3.63	-0.0001	-2.38	1.01	4.78	0.031	2.78

Table 4: Correlation between size and liquidity

This table presents the correlation between size, measured by market capitalization, and each of the four liquidity measures: quoted spreads (*QSPD*), effective spreads (*ESPD*), inversed Amihud's price impact measure (*Amihud*), and turnover (*TO*). Panel A presents correlations in the pre- and post-decimalization windows, whereas Panel B presents correlations in the pre- and post-Hybrid windows. The pre-decimalization (post-decimalization) window includes trading days in the period from February 28, 2000 to August 27, 2000 (May 10, 2001 to November 9, 2001). The pre-Hybrid (post-Hybrid) window includes trading days in the period from April 6, 2006 to October 5, 2006 (February 25, 2007 to August 24, 2007). Size and liquidity measures are paired monthly at the stock-level, then Pearson's correlation coefficient is calculated across stock-months within each window.

Panel A – Decimalization

Correlation between market capitalization and:							
QSPD		*ESPD*		*Amihud*		*TO*	
Pre	Post	Pre	Post	Pre	Post	Pre	Post
0.55	0.42	0.52	0.43	0.36	0.33	0.41	0.42

Panel B – The Hybrid system

Correlation between market capitalization and:							
QSPD		*ESPD*		*Amihud*		*TO*	
Pre	Post	Pre	Post	Pre	Post	Pre	Post
0.44	0.42	0.47	0.43	0.28	0.27	0.36	0.33

Table 5: Percentage of small-and-illiquid stocks

This table presents the average percentage of stocks that are small-and-illiquid. In each month, I independently rank stocks into quintiles based on their size, measured by market capitalization, and each of the four liquidity measures: quoted spreads (*QSPD*), effective spreads (*ESPD*), inversed Amihud's price impact measure (*Amihud*), and turnover (*TO*). Then I calculate the percentage of stocks that are in both size quintile 1 (smallest) and liquidity quintile 1 (most illiquid), where liquidity is measured by one of the four liquidity measures at a time. Finally, I average these percentages across the six months in each of the four windows. Panel A presents results for the pre- and post-decimalization windows, whereas Panel B presents results for the pre- and post-Hybrid windows. The pre-decimalization (post-decimalization) window includes trading days in the period from February 28, 2000 to August 27, 2000 (May 10, 2001 to November 9, 2001). The pre-Hybrid (post-Hybrid) window includes trading days in the period from April 6, 2006 to October 5, 2006 (February 25, 2007 to August 24, 2007).

Panel A – Decimalization

Percentage of stocks present in both size quintile 1 and liquidity quintile 1, where liquidity is measured by:							
QSPD		*ESPD*		*Amihud*		*TO*	
Pre	Post	Pre	Post	Pre	Post	Pre	Post
15.60%	13.12%	16.91%	14.61%	12.78%	11.43%	9.56%	9.34%

Panel B – The Hybrid system

Percentage of stocks present in both size quintile 1 and liquidity quintile 1, where liquidity is measured by:							
QSPD		*ESPD*		*Amihud*		*TO*	
Pre	Post	Pre	Post	Pre	Post	Pre	Post
11.18%	10.59%	10.54%	9.73%	10.68%	10.74%	8.47%	8.51%

Figure 1: Percentage of stocks with improving liquidity

Percentage of stocks witnessing improved liquidity (i.e. smaller quoted or effective spreads, higher turnover, or smaller price impact). Figure 1.A (Figure 1.B) presents this percentage in each size quintile by each liquidity measure for the decimalization (the Hybrid) event. Stocks (NYSE and Nasdaq stocks in the case of decimalization event and NYSE stocks in the case of the Hybrid) are classified monthly into size quintiles in the pre-event window. Stocks are included if they do not change quintile from one month to another during the pre-event window. Stocks are then tracked post-event to find the percentage of those showing improvement in liquidity. Quintile 1 (5) includes smallest (largest) stocks.

Figure 1.A - Decimalization

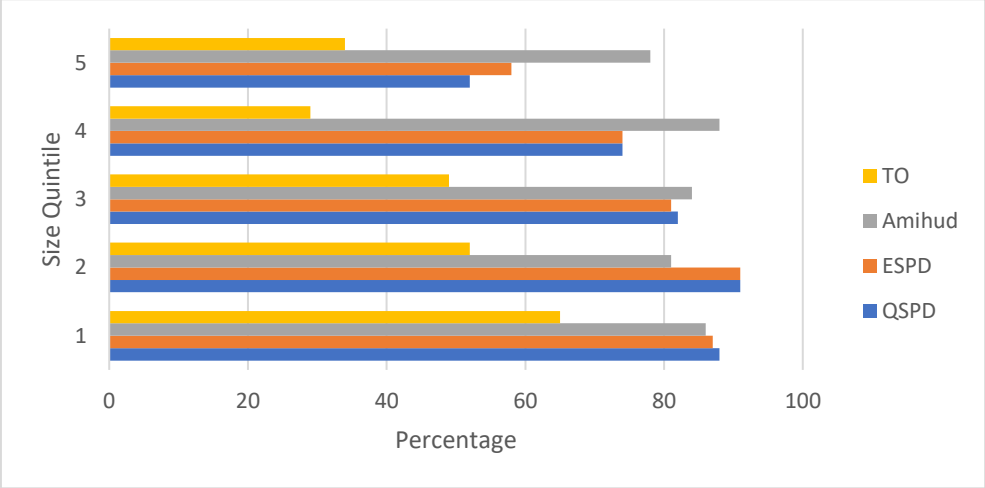
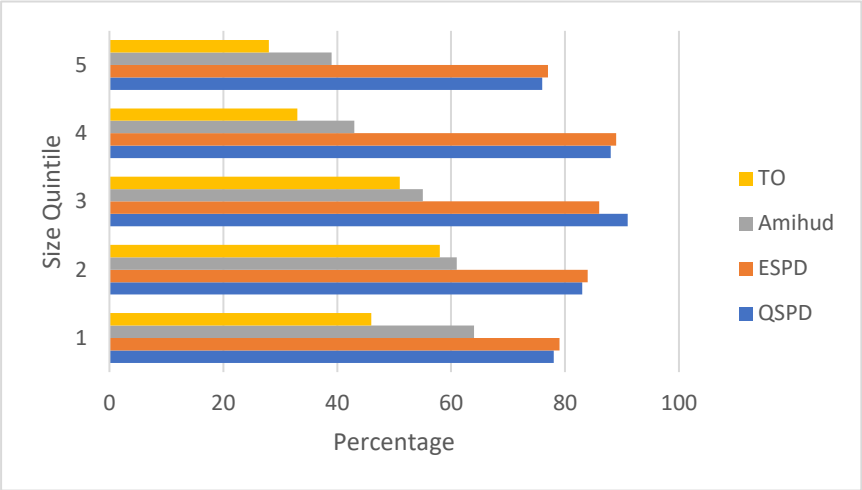


Figure 1.B – The Hybrid system



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GLOBAL TRADE OF COFFEE AND ITS ECONOMIC EFFECT IN THE VALUE CHAIN

José G. Vargas-Hernández [1]

Abstract

The purpose of this work is to analyze the economic-cultural effects that globalization has in each link of the value chain in the commercialization of coffee in the world. Starting from the fact that coffee is the second most consumed beverage globally after water, in the same way it is the second most exported product after oil, the economic influence that has due to the fact that it is a grain that can grow simultaneously in the tropical belt around the world and because the coffee farmer tends to be poor. We will address its influence and contribution to the world economy by analyzing the process from the coffee farmer to the industrialization, uncovering the industrial supply chain to the different distribution channels that reach and delight the final consumer.

Keywords: Value chain, commercialization, culture, globalization, chopped coffee segment.
JEL Codes: D46, F10, M21.

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1. Introduction

The consumption of coffee in a globalized way is through history, an important engine of development for the world economy and of the producing countries. Where in each era, region and with each generation the way and the costumes of preparing it evolves. Causing economic impact and cultural changes, the commercialization of this grain, developed a value chain where a series of businesses are activated around the grain, and starts with the coffee farmer, the merchant who sells to the industrialists, so that these in turn distribute it around the world.

The phenomenon of globalization plus technological development in equipment for the preparation of coffee is undoubtedly a determining factor that currently causes the increase in per capita consumption around the world. However, this increase in grain consumption is not reflected in the coffee farmer's economy, but in the large corporations that are left with the highest profit.

The average coffee farmer obtains a minimum amount that is estimated at $ 300.00 USD per month, the transnationals and the rest of the value chain being the big winners, who keep the producers that give life to such an important industry in poverty (Lora, 2019).

2. Objective & Background

To point out and list the problems that cause an uneven distribution of wealth in the value chain generated by this industry, because it is very important for subsistence, based on the prices remaining stagnant for many years, as well as problems like plagues. To prevent the continuous switch of coffee regions around the world to other types of more profitable crops and to raise awareness to large corporations dedicated to the coffee trade, which requires a fair payment for their crops based on the final price of each cup, since it makes no sense that the increase in coffee consumption generates an increasingly deep wealth gap and poverty in the value chain that makes it possible for us to finally have a cup of coffee on the table.

The coffee trade represents an important source of income in the world economy and there is a value chain around this industry, made possible by the final consumer, who leaves a trail of benefits, but also a damage because the income of the producer is way below the cost of production. Sometimes below the cost of production. Since its origin, in coffee growing areas that include the Tropic of Cancer to the Tropic of Capricorn around the world, this belt being the most climate-friendly for the development of the plant that gives the grain. This plant of the Rubiaceae families is a family of plants normally called the blonde, white gallium, or coffee family (Sanders and Motz, 2019).

These plants have a worldwide distribution; however, they are much better represented in terms of shapes and number of species in phytogeographical areas of the Neo-Tropic. The coffeee plants are native to Abyssinia in Ethiopia and were discovered by a shepherd, legend has it that he discovered them because of his goats' strange behavior after having consumed the leaves and fruit that were similar to the cherries of a certain bush, the goats were jumping around very excited and full of energy. Seeing this, the shepherd consumed them and soon felt full of energy (Mehari, et al. 2016).

He decided to take them to the monastery and tell the Abbot the story, he put the branches and cherries in water but the result was a very bitter drink that he immediately threw into the fire. When the cherries fell on the fire, they began to boil, the green beans inside the cherries were roasted producing a delicious aroma that made the Abbot think about making a drink based on the roasted grain and that is how the coffee drink was born.

3. Method

This paper is methodologically based on documentary research using a theoretical procedure for its structure and development, which allows us to address the issue in a structured way and carrying out its development with a qualitative scientific sense, basing it on mostly indirect sources of information, such as bibliographies, essays, journals and books.

According to the International Coffeee Organization (ICO) in the global economy, it is estimated that coffee sales exceed 200,000 million dollars annually. Coffee is the second most commercialized product worldwide after oil and the second one most consumed after water, which would make us believe that coffee producers are in economic abundance enjoying a standard of living well above what they actually are today, the reality of coffee farmers is that they barely receive between 6 and 10% of the profit, which does not allow their families to even send their children to school in some cases, these being the link in the chain that remains submerged in poverty exploitation and underdevelopment with a profit of $ 300 per month within the thriving business in this lucrative activity.

If we imagine this situation as a line where zero is the point of equilibrium, where you do not win or lose, but that their reality is always to be at a negative extreme point practically in misery, contrasting the situation, on the other end of the imaginary number line with the large multinational companies that their profit has no end, generates in this activity in the value chain a chasm between the actors on the one hand the coffee farmers with a minimum profit that barely allows them subsistence and on the other the multinationals the most economically benefited because they are the ones that keep the biggest slice.

These companies, both US and European multinationals are the ones that generate the highest consumption. They get to sell a cup of coffee at 3 dollars, in Germany, New York and Paris, while the producer is paid at $ 2.50 dollars on average per kilo and the yield is 60/100 cups per kilo, that's where the huge difference is generated (Figueroa-Hernández, Pérez-Soto & Godínez-Montoya, 2019).

A long time ago farm products used to be commercialized directly from the farmers to the consumers, without intermediaries, which was an advantage for the costs to be accessible to the final consumer and when the product got to the market, it used to have a reasonable price, generating a profit for the farmer who was guaranteed a livelihood with access to different kinds of goods and services.

As time went by, merchants would impose an intermediation business, hoarding the production, finding here a business opportunity that had very little or no risk and taking over the production, focusing on warehousing, where the production could be stored, speculation starts and the supply and demand concepts control the prices on the market.

Gomez, (2019). Says that controlling the coffee market was not an easy task, due to the fluctuation in prices and the risks associated with production and transportation, in the 1870's the physical market of coffee collapses in on itself giving laying the foundations that have been historically damaging the producer because in that same year in the City of New York 112 merchants gathered and created the New York coffee bag with the objective of protecting each other through the creation of a market where buyers, distributors, roasters and merchants were protected from price fluctuations, where they created ´´ future contracts ' which is an agreement , where the parties are obliged to buy or sell goods or securities, in this case, coffee on a certain date and with a previously established price (Gómez, 2019).

Adopting the strategy known as " risk transfer ", which consists of foreign creditors who reside in a country experiencing an inability to pay due to lack of money. In the same way they agreed on the development of standards of the types of coffee that would be commercialized, setting prices according to supply and demand. This is how the coffee economy is born as a commodity traded in the stock market.

Speculation price of coffee comes from futures contracts on the value that will be determining it, by factors such as calculating dates that countries will release the product to the market and determine the possible price that will have coffee then.

In New York, when this coffee stock was created in order to give security to investors and attract money to the market, it ends up distributing the benefits more unfairly in the coffee economy, because the speculators in the economy of coffee are the ones who earn the most without having the grain physically. Speculation is precisely where they are willing to take risks high in exchange for an attractive future profit, shedding contracts before the expiration date is met.

This way, they gamble for a huge profit margin without coffee even having passed through their hands. The benefit that these speculators keep, is the first moment in which small producers have been losing money unfairly until today, given that when international production is high, prices plummet, this uncertainty over the years has caused many coffee farmers to change to other crops, risking the income of hundreds of thousands of families that continue betting on the crop even though pests also limit their yield.

We can see that the wealth generated by coffee and its profit in the stock market only benefits a few investors, speculators who play buying and selling while they make a profit on any purchase or sale movement without adding any value to the product. On the contrary, the producer has a production cost of $ 1.10 USD per pound, losing $ 0.18 USD since its origin, since the New York Stock Exchange is trading at $ 1.02 USD, from this perspective we cannot talk about fair trade in coffee.

The costs of production in the labor force in the farms worked by the same family members, must be applied to the final cost of the product so as to measure the situation of economic delay of the producing families and this must reflect in the cost of the grain, being necessary to calculate and apply the costs of the hours of work used in the farms by the family, to obtain the real cost of production of the grain.

The traditional consumer of coffee hardly wonders where coffee comes from, but today in the face of globalization and the grain trade is no exception, today they have focused on knowing its origin, so the American Starbucks since Year of 1971 to date has been the pioneer in the classification of types of grain, roast and origin.

Until then they had high-quality roasted coffee beans and spices emulating European coffee shops. When he joined the sales team in 1984. Howard Schütz as director of operations, they only had 4 stores and on one of his trips around the world he visited Italy, arriving in the city of Milan where he would change his luck by living and discovering an experience of a relationship between coffee retailers in stores with customers, a tradition for coffee known as espresso, convincing members to return to serve latte coffee in 1984.

This was one of the factors that gave it a differentiation and a competitive advantage compared to their rivals, who were first in the American Union, allowing its expansion all over the continent and subsequently the rest of the world. Table 1 has the world's main coffee producers, according to information from 2018.

Table 1: The world's main coffee producers.

1.- Brazil	6.- Etiopía
2.- Vietnam	7.- India
3.- Colombia	8.- Uganda
4.-Honduras	9.- México
5.- Honduras	10.- Perú

Source: Gómez, 2019.

Figure 1: Biggest producers of coffee worldwide.

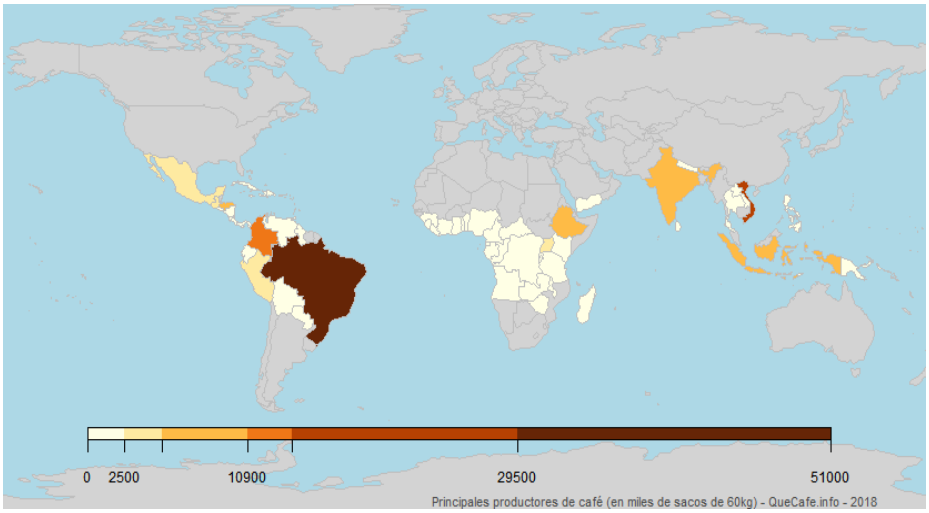


Figure 1 shows a world map of the most important coffee producers (Gómez, 2019).

Source: Gómez, 2019.

Figure 2: Biggest consumers of coffee worldwide.

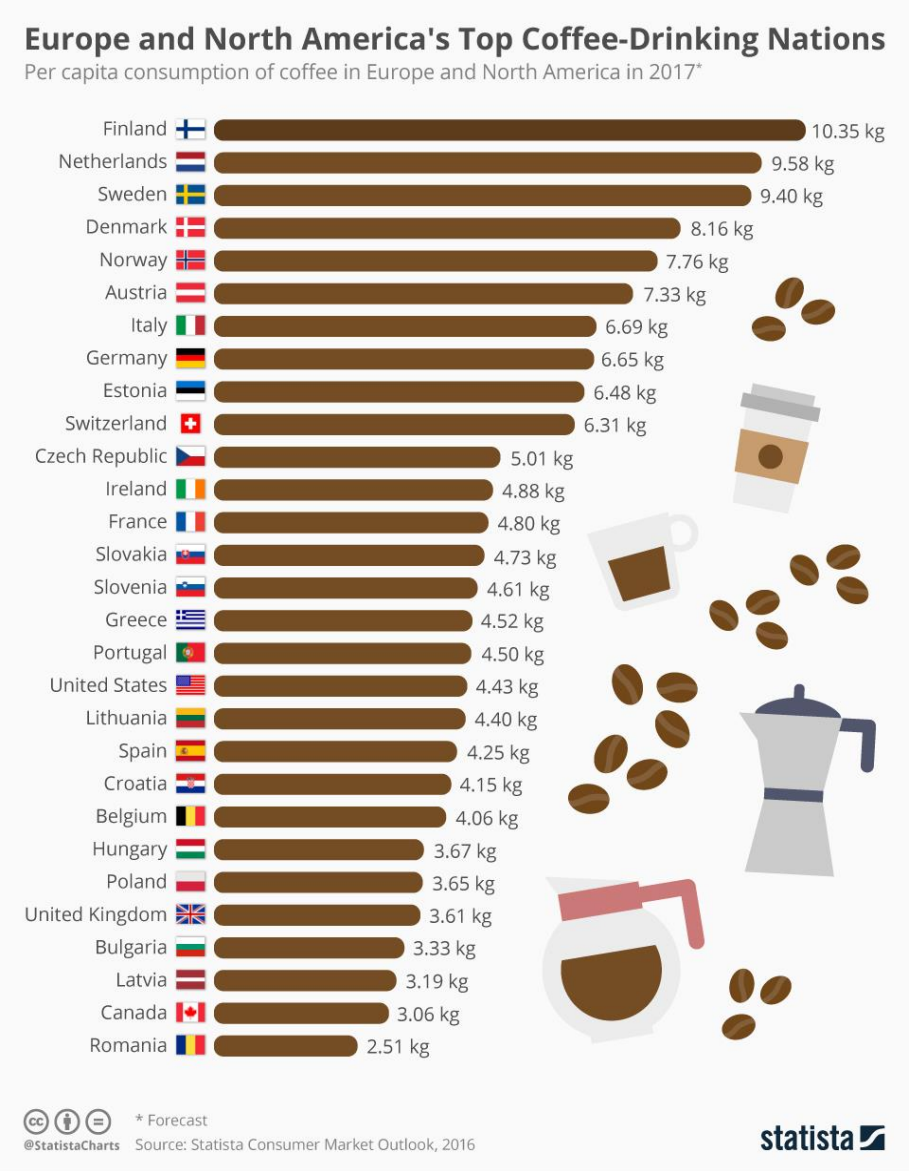


Figure 2 shows the per capita consumption of coffee in the first world in the year 2017.

Source: *Statista Consumer Market Outlook, 2016.*

At this point it is essential to clarify where the profits obtained from the coffee economy will end, if only 6 to 10% of the field remains with the farmers, we are clear that a pound of good quality, roasted and ground Colombian coffee costs an average of $ 15 USD per

pound and out of that, only $ 0.92 USD goes to the farmer, the rest goes to the large multinationals.

So far we have focused on what happens in the global economy between the producing countries and the main consuming countries and a small historical review of one of the world 's leading coffee brands, but let's see what happens in Mexico where consumption has had a sustained growth over the last two decades, the economic behavior of the coffee trade is interesting, given that internal consumption and its per capita rise, isn't very different from what is happening all over the world, given that there is an existing value chain where the coffee farmer is in poverty.

It should be noted that the culture of consumption has had a change and has caused an evolution in the consumer, where paradigms of yesteryear have been broken, that consumption occurred at home, so much so that the sayings like when they invited you to have some coffee, the answer was ´´no, , I'm not an old man´´, or when they tried to introduce Frappe coffee machines to the local market, that the client answered ´´you are crazy, who is going to drink iced coffee?´´ well, this is how the new way of drinking coffee is propelling innovative technology , a determining factor that invites to consume.

Another factor is the development of coffee-based products such as Frapuchino, hot cappuccino, American coffee on the rocks, among others, changing habits and trends. And so, supply of coffee in different roasts, origin and preparations to go, open a distribution segment that generates growth on bars and coffeehouses that we will identify from now on as the cupped coffee segment.

In Mexico, there are several national brands among the best known are the Poblana, The Italian Coffee, Punta del Cielo Coffee from Mexico City, the Sonoran Caffenio (formerly known as Café Combate) who bet on the diversification of the sale of coffee in different concepts the markets traditionally exploited through the history of consumption of coffee as restaurants, grocery, convenience stores, etc., where it was creating an environment that transformed habits, creating a culture from which thoughts and changes emanated, and they were adopted for the big companies.

Oxxo commercial chain, seeing the opportunity and making its slogan effective 'Always ready, always there', implemented a coffee bar in its fast food area in alliance with the Sonoran coffee of the Pacific, who at that time was known for its commercial brand in the north of the country as Café Combate, which was a regional brand covering the states of Sinaloa, Sonora, Chihuahua, Baja California and Baja California Sur, making this alliance at one of its worst moments since its foundation in Chihuahua, in the year 1923. Today Caffenio is an important company in the FEMSA group.

The success of this alliance since 2000 has been practically a benchmark where a different history begins at the national level in the per capita increase in coffee consumption, because Oxxo stores currently cover approximately 18,000 stores in the whole country, putting a glass or a thermos of coffee in the hand of the consumer managing to increase consumption creating a need.

In the case of the consumption of coffee in Sinaloa historically there were two companies that disputed the market for green bean coffee and coffee roasted with sugar, being the Café El Marino company located in the city of Mazatlán, Sinaloa and Café del Pacífico, from Sonora. They competed through marketing their brands, making their sales strategies

with promotions and giveaways to stay in the market, in the same way by relying on the tasting of their products within the self-service stores with the support of a sales promoter, who would offer a cup of coffee to taste its flavor and practically convinced the customer to take the bottle of soluble or roasted coffee.

There is currently a problem with theft of ideas, brands and intellectual property. Café el Marino was born in a rural community called El Verde, located a few kilometers from the city of Mazatlán, Sinaloa and its main product was green coffee in the presentation of 250gr. Which was known at that time in the small shops as green coffee, to roast it in a traditional way at home in a burner to later add sugar. In those years, the sonoran company Café Combate wasn't yet in the sinaloan market, which also produced and marketed green coffee in the 250 gr presentation; The fact is that upon entering the sinaloan market and realizing that coffee in that presentation is known as green, referencing the origin of the rural community from which the Café El Marino came. Café Combate registered the green trademark, thus remaining with the name original name of the Café El Marino company, where there is no record of this action for being a painful and shameful affront which is commented on in the field as urban legend.

It is such the case as theft of ideas and names between the businesses in order to obtain monetary gain at the cost of the lack of ethics in a globalized business world, where there is no such concept. It is really important to mention that in Sinaloa, particularly in the north of the state in the city of Los Mochis, there have been for several years, three companies dedicated to roasting, development of formulas, packaging and marketing made from coffee, who seek to position themselves in the regional market and are working hard on their strategic planning to enter the national and international market in the future.

These coffee companies are "La sobredosis", which is owned by Pedro Soberanes, "Piano Negro", commanded by Bernardo Balderrama, and a family business called "Kaféetane", whose name is of Yoreme mayo origin and means "I am coffee", directed by Edmundo Valle. These three companies have a great challenge to get involved in the value chain, first at a national and then to internationalize.

The fact is commercialization of coffee is evolving in consumption, which has developed a culture where the consumer dares to look for the origins of the grain and is willing to pay a greater amount for the final product, this opens a new segment that can be referred to as "cupped coffee segment". This term has been used internally by the Café del Pacífico company known today as Caffenio, where they don't really pay for the coffee itself, but for the concept that breeds status and a sense of belonging, a new segment that is different to the traditionally known segments of the industry and the entire value chain.

Today the consumer dares to break paradigms and sayings where they leave home with their mug or thermos in their hand, and they fill them at a bar or vending coffee to go, at Oxxo or Caffenio, among other businesses. These businesses have established their market since they opened their doors, revolutionizing sales through points of distribution of prepared coffee, earning this segment in the dynamic coffee industry. A market with a sustained development, whose value is still incalculable, highly attractive, which is why it is appropriate to add it to the graph of traditional segments of roasted, ground and soluble coffee. Chart 2 shows the three most important segments for the sale of coffee.

Table 2: The three segments for coffee and its participation in Mexico

Soluble coffee	Retail, sales of coffee to the public for home consumption in supermarkets and stores.	Participation in the Mexican market. 54.2%
Ground coffee	Food service. Sales to businesses, such as coffee shops, restaurants, bars, etc.	40.5%
Roasted coffee	Institutional. Sales of coffee to formal institutions, including hotels, offices, public and private organizations, etc.	5.3%

Source: Own elaboration with data from Gómez 2019.

The segment of *cupped coffee* already exists in the consumer market for coffee in different forms, it just has not been detailed in scope and dimension. Its characteristics must include the millennial generation that has been its engine of development, who in the search for identity and as in all the generations that have passed, have left their mark on history causing a change of habits in consumption and culture, marking this step and leaving its seal. It should be noted that INEGI does not have this segment of coffee in a specific line, it has it added in a generic section where there are furs, coffee shops and ice cream shops in a group.

We argue that it should have its own special place because of the economy it generates and what it represents for both the internal and the exports market, and for the generation of foreign revenue. The economic and cultural impact globally is considerable, because the annual value for 2017 was 200,000 million dollars worldwide and in Mexico it is no exception, given that the market value for coffee was 10,000 million pesos in the same year, with a 20 to 25% annual growth.

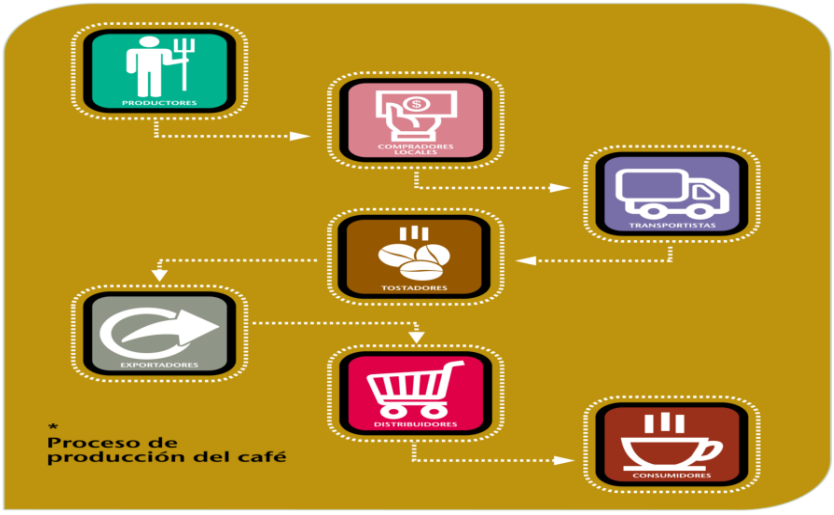
In summary, while the coffee farmers in the field all over the world are characterized by a low price on their yield, in a locked world on their crops, there is a globalized world, paralleled in which the invisible hand of markets and big capital operate a supply and demand law, manipulated so that the gap between poverty and wealth remains abysmal, where profit predominate, and the lack of awareness profiting with the farmer's need and poverty. It is incredible that almost 200 years after the coffee stock was created in New York, the scope of its empire and its impact continue to prevail in the world, with the same practices seeking profit at the expense of the coffee farmer's misery.

It is important to mention that coffee entered the international movement known as fair trade, a movement that was created in the 40's-50's in the United States and from there the idea was shared to different countries of the world such as the Netherlands and then Germany, Switzerland, Austria, France, Sweden, Great Britain and Belgium. This movement fights for the justice of the marketing of products made under fair conditions. Fair trade denounces the outrages, which originate poverty and inequality where political opinions come in, which also seeks an alternative trading system.

Fair trade looks for the rights of the peoples to be protected and that they are part of the economic activity, guaranteeing, among other things, fair treatment, respect for human rights and the environment. In the fair-trade network in the world there are more than 2000 organizations in Africa, Asia and Latin America which contain producers and working people, agreeing on prices and seeking counseling to improve their marketing existing in the world more than 4000 stores specializing in fair trade.

However, in the field of coffee, fair trade does not conform this scheme even when the grain is within the organization, due to the economic interests that it represents for transnational corporations which speculate on production, prediction, commercialization and the final price paid to the coffee farmer.

Figure 3: Green coffee bean value chain within the producing country



The figure 3 shows the value chain of the green coffee bean.

Source: Gómez, 2019

The coffee value chain starts from the coffee field with the cherry harvest, where the green coffee beans are obtained, this is the beginning with the producer, then it passes to the buyers, carriers, distributors, roasters, exporters, arriving to the industrialist who subjects it to different processes for different presentations and markets, which leads us to this study, that tries to open up a panorama that sensitizes the position of the farmer from the field to the final consumer, generating an industry and an economy, which affects and benefits people inside and outside of the business.

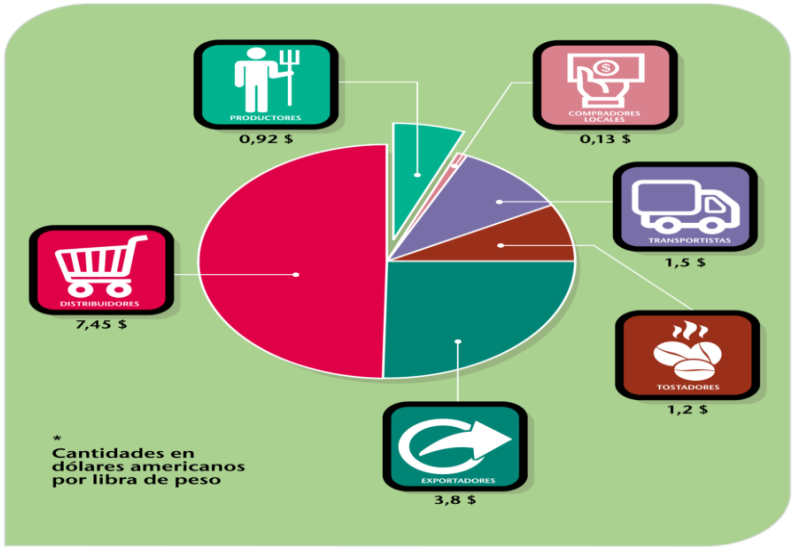
In some countries like Mexico coffee industry provides sufficient foreign exchange to support the economy and has become important generator of revenue to the national economy after oil, money sent by workers abroad and tourism. Therefore, it is important in many countries of the world, which generate foreign exchange and economic support

in countries and regions that this industry predominates such as in Vietnam, Colombia, Brazil among other grain producing nations.

This work has the purpose of exposing the importance of coffee consumption in the global economy and pointing out who makes each sip possible, through the different presentations of the type beverages made with coffee, it is clear that in order for global trade of grain happens, many strategic alliances need to happen between governments, industries and producers. The millennial generation has been the fundamental engine because of its high purchasing power, and it has revitalized the industry and new concepts have been created by companies dedicated to the retail of prepared coffee (Gapper, 2018).

It is worth mentioning that over time the old alliances last and are valid, as is the case with the coffee stock in New York that almost 200 years after its foundation still handles the threads of power to define the price of grain worldwide, that from there with speculation the coffee farmer loses money generating a gap of inequality in obtaining profit. Figure 4 shows the value chain outside of the country of origin, explaining that out of 15 dollars spent on coffee, only 92 cents go to the original farmer and most of the rest stays with the big companies and retailers.

Figure 4: The value chain of coffee outside the country of origin



Source: Gómez, 2019

4. Conclusion

Along this paper we have exposed the economic and cultural effects of the coffee trade for its study and analysis, due to the fact that globalization and trade of products such as coffee, in this case, which causes social, economic and political situations with both positive and negative results, depending on the approach used.

Coffee is the second most consumed beverage in the world after water, and it generates a percentage of GDP globally generating jobs throughout the value chain and in Mexico is no exception since the market value is 10,000,000 million pesos annually.

The change in habits generated by the consumption of coffee is an effect that is due to several factors, in which the millennial generation participates, these being the ones that currently have the most purchasing power and the multinationals that bet on infrastructure investment through the creation of new concepts adapting them to the search for a sense of belonging of said generation in a globalized way.

The coffee trade represents an important source of income in the world economy and there is a value chain developed around this industry. The coffee trade makes the world smaller because it makes it possible to have access to all the grains of each of the coffee regions from the geographical point where we find everything thanks to the existing value chain. And this is currently happening since the consumer is specializing in the origin of the product, the same supply is being made by experts since they have entered the grain research, in the history of the chain that is a frequent customer, every day it is more common to meet consumers who question the quality of what they buy because, as usual, consumers are interested in reading what they consume.

The per capita consumption in Mexico is currently 1.3 kg of coffee where a very promising path is seen in the growth of this market because the largest consumer in the world is Finland with almost 12 kilos per person in that country. This is why a promising future is seen with the growth of coffee consumption at levels never seen before in a globalized way, so that the world coffee trade will continue to be a source of foreign revenue for the countries that produce the grain.

In the case of Mexico, the growth in domestic consumption which has increased from .300 gr. to 1.3 kg Per capita is seen as an opportunity as consumption grows every year generating jobs at the points of sale of the coffee chains that sell it through the segment of cupped coffee, which are the Oxxo coffee bar, Caffenio, coffee Punta del Cielo, The Italian Coffee, and a number of local companies such as Black Piano and Kaféetane.

In Mexico, INEGI does not yet consider to the economic dimension that this industry represents and what it contributes to the GDP since they only focus on the field, in the primary activity and the importance of the internal market of the final consumer, in which currently through the segment of cupped coffee is where a gradual increase in per capita coffee, is detected. At this time is vitally important that INEGI will give coffee market the status in all its dimensions, in traditional and emerging markets such as retail stores, and business concepts that offer prepared coffee to take away and classify it in such a way that apart from the roasted, ground and soluble coffee segment, it includes the cupped coffee segment since it is the engine that makes growth of consumption in the population possible. (Gómez-Posada, 2019).

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DEVELOPMENT OF BRAND HATE THROUGH ELECTRONIC MARKETING

Muhammad Taqi[1]

Abstract

The internet has become one of the most important and influential aspects of human lives, which cannot simply be parted away. The virtual world, which is accessed through the internet, has changed the lives of people throughout the world. It has shaped people's opinions related to everything around them and most importantly, of consumer goods and services. These opinions can take form both in positive or negative emotional messages which show the type of consumer-brand relationship that exists. The consumer-brand relationship which has its two extremes, on the positive side of the spectrum is the emotion of Love and on the other end of the spectrum lies the emotion of Hate which is one of the most extreme negative forms of emotion. It is a similar emotion like other emotions that are built over time, but at times, can be a result of spontaneous reaction towards an event. The current conceptual study aims to explore how e-marketing and social media platforms participate in the development of brand hate in consumers. The study goes over various forms of online marketing tools to show how they aid in developing brand hate in consumers. The study concludes that online marketing and social media do aid in developing brand hate and other negative emotions towards a brand.

Keywords: Brand Hate, Negative Emotions, Online Marketing, Brand Relationship, Consumer-Brand Relationship
JEL Codes: D1, M30,31,37,39.

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1. Introduction

Consumers tend to feel an emotional bond towards a brand whose products or services they consume the most or wish to acquire. These emotions can be either of Love (positive) or Hate (Hate) depending on the consumers' feelings towards them. There at times are mixed emotions towards a brand in which a consumer might love and hate the brand at the same time (Tugrul and Taqi, 2018). Consumers' behavior is affected by these mixed emotions (Lunardo and Saintives, 2017; Watson and Spence, 2007). Nonetheless, when reviewing the literature on consumer behavior, there has been great emphasis on the positive aspect of the consumer-brand relationship (Bagozzi et al., 1999; Laros and Steenkamp, 2005; Richens, 1997), such as brand love (Albert et al., 2008; Batra et al., 2012; Rossiter, 2012), brand passion (Albert et al., 2013), brand devotion (Pichler and Hemetsberger, 2007). Whereas, the negative side of the consumer-brand relationship spectrum has not been given as much importance (Zarantonello et al., 2016). Brand Hate lays on the far extreme of the negative side of the consumer-brand relationship spectrum which needs to be emphasized due to the impact it can have not only on the brand itself but also on the consumer. It holds great importance for the marketers as it would enlighten them regarding marketing practices which could harm the brand (Hogg and Banister, 2001; Lee, Conroy, and Motion, 2009; Tugrul and Taqi, 2018). Prior studies which have studied the emotions from the psychological aspect have greatly emphasized how negative information delivered to the consumers has more significant impact than the positive information (Folkes and Kamins, 1999; Herr et al., 1991; Maheswaran and Meyers-Levy, 1990; Skowronski and Carlston, 1987). In the context of marketing, emotions which are the result of negative information are obtained through many different means, but the internet (e-marketing) is one of the greatest factors which plays a vital role in shaping consumers' behavior in today's technological world (Lodhi and Shoaib, 2017). There are many e-marketing tools and platforms available today through which marketers market their products and services to the consumers (Hooda and Aggarwal, 2012). Since the inception of the web, there have been many online platforms which have been introduced, survived, and vanished. As of today, there are well over 4.38 billion internet users throughout the world, out of which 3.48 billion are active users of social media (Smart Insights, 2019). Currently, there is a lack of research which looks into the extreme negative (brand hate) end of the consumer-brand relationship spectrum (Zarantonello et al., 2016; Tugrul and Taqi, 2018). Therefore, this conceptual study looks in the formation of brand hate as an extreme negative emotion through electronic marketing and social media platforms. The study also shadows upon the results for consumers' and brands which are the cause of brand hate emotion.

2. Literature Review

2.1. Brand Hate

Brand hate as a concept in marketing a relatively new concept (Taqi et al., 2019). It was first studied and conceptualized by Gregoire et al. (2009). Negative aspects of relationship among consumer and brand have recently come to the attention of marketing academia (Fournier and Alvarez, 2013; Park et al., 2013). Another set of literature which has pointed out the negative emotion which takes form in the shape of groups (Hollenbeck and Zinkhan, 2010), where consumers come together to form "hate groups" to show and share

with other consumers the hatred, negative emotions, and experiences towards the brands which they have (Krishnamurthy and Kucuk, 2009). According to Gregoire et al. (2009), hate is a desire in the form of revenge and avoidance towards the brand. They define revenge as "customers' need to punish and cause harm to firms for the damages they have caused", and avoidance as "customers' need to withdraw themselves from any interactions with the firm" (p. 19). Brand hate is defined as "an intense negative emotional affect toward the brand" (Bryson et al., 2013: p. 395); where Hegner et al. (2017) define it as "a more intense emotional response consumers have towards a brand than brand dislike" (p.3). Another form of negative emotions or feelings towards a brand is termed as brand dislike which is defined as "the negative judgement expressed by the consumer and/or implied in the choice not to buy" (Dalli et al., 2006: p. 87). Prior studies have found that in some instances when consumers feel that brand has damaged them in any way, they might turn against the brand and might harm, punish (desire for revenge) and/or stop any relations (desire for avoidance) with the brand (Gregorie et al., 2009). Moreover, a study carried out by Zarantonello et al. (2016) found three main factors which are linked with various negative behavioral outcomes that result in brand hate. These factors are corporate wrongdoings and violation of expectations which leads consumers to spread negative word-of-mouth, complaints, protests; and negative perceptions towards a brand resulting in patronage reduction/termination. Hegner et al. (2017) found the prior negative experience, symbolic incongruence, and ideological incompatibility to be determinants of brand hate, and brand avoidance, negative word-of-mouth, and brand retaliation are the outcomes of brand hates.

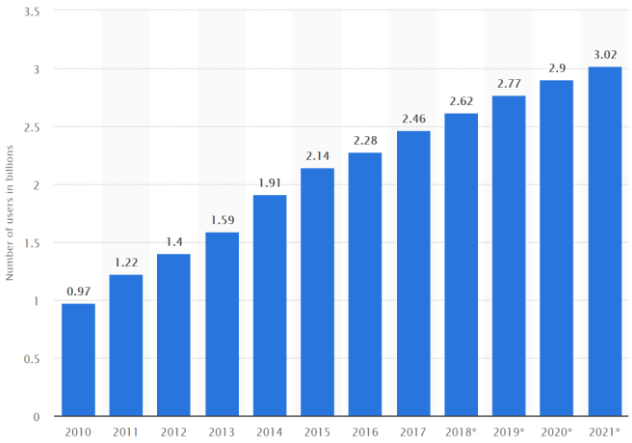
2.2. Electronic Marketing (e-Marketing)

Electronic marketing goes by terms such as online marketing or digital marketing; today, it is known as one of the most effective and efficient means of communicating with consumers. Traditional marketing still plays an important role, but due to technological advances, e-marketing has been prioritized by most of the businesses around the world. The increase in technology in the past decade has caused businesses throughout the world to spend more on e-marketing than compared to traditional marketing (Howard, 2011). E-marketing is conducted via the web (internet) on various platforms which are social media platforms, blogs, chat forums, and general forums (Javed, 2013). It can be defined as the marketing of goods and services through electronic tools (Meng, 2009). It is not only easy to target the consumers but allows to target a large number of consumers at the same time, and hence it is cost-effective. A study by Al and Al (2014) shows online shopping is easy to use, enjoyable and allows consumers to learn information regarding the goods and services such as product characteristics, features, and other consumers reviews right from the website. Another study carried out by Tayyab et al. (2012) found that consumers feel more comfortable and relaxed while browsing the products and services online. Statics show that as of 2018, about 82% of the U.S. population feels satisfied with online shopping due to a greater number of options and sellers (Statista, 2019c). This boom in e-marketing has brought changes in the cybernetics societies in a way that it has changed the consumers, society, and corporate sector into information hubs due to the information shared by them (Krishnamurthy and Sin, 2014).

As of today, there are various tools for carrying out online marketing, such as mobile marketing, social media networks, blogs, websites, search engines, e-mail and among others. Social media network platforms are known to be one of the most essential and

effective platforms when it comes to targeting consumers. Social media is defined as "websites and applications that enable users to create and share content or to participate in social networking" (Dollarhide, 2019). According to Statista (2019a), in 2010 there were just 0.97 billion users of social media networks worldwide, and this number has changed to 2.77 billion in 2019, and it is expected to increase to 3.02 billion in 2021 (see Figure 1). These figures show the increase not just in the users but also the spread of technology throughout the world and the awareness of it.

Figure 1- Number of social media users worldwide - 2010 to 2021 (in billions)



Source: Statista, 2019a

Social networking sites which are most commonly used by users all over the world are Facebook, YouTube, WhatsApp, Facebook Messenger, WeChat, Instagram, QQ, Skype, Viber, among others (Statista, 2019b). Nonetheless, other online sources such as blogs, brand communities, brand forums, search engines, vlogs, among others which are used today as online marketing tools. As there is a positive side of online marketing which allows ease of access to marketers to target a large number of consumers and in creative ways, yet, online marketing also holds the dark (negative) side to it.

Brand Hate as a Descendant of Electronic Marketing (e-Marketing). Electronic marketing, without a doubt, has saved companies around the world billions and brought ease to marketers. Nevertheless, it has a negative side to it as well. Online forums, blogs, social media networks and other forms of online platforms has given the freedom to users to share their experiences and thoughts regarding goods and services which they have consumed or which to consume. The internet has been stormed with information with literally any possible topic. Consumers have created communities for the brands, products, services, or product categories which they love hence, "brand love" (Ahuvia, 2005), and these consumers tend to show resistance towards negative information (Batra et al., 2012). Whereas, the consumers who have felt any negative experience or feelings towards a brand or product have established anti-brand communities or "hate groups" (Hollenbeck and Zinkhan, 2010). Some examples of anti-brand communities are KillerCoke, Anti-Apple Community, AppleHaters, Starbucked, ihatestarbucks, Anti-McDonald's, and others. Anti-branding can be described as an action taken by the consumer, where they reject the

brand and do not consume any product or service provided by the brand (Dessart et al., 2016). Whereas, Brand hate refers to "an intense negative emotional affect toward the brand" (Bryson et al., 2013: p.395). When consumers looking for information regarding a product or service are faced with negative information available online, it causes them to establish negative view regarding the brand which might cause them to write negative information or take negative actions against the brand. Negative word-of-mouth plays a vital role in online marketing. When most influential online community members speak negative of a brand, the rest of the herd (members) follows (Holt, 2002). Another aspect which has led people to hate brands is the intense use of advertisement and marketing material on websites, forums, mobile applications, and social media networks. Following are comments of consumers posted online on various online platforms which make the connection between online marketing and brand hate, and how brand hate is developed through online marketing.

> "If all my friends stop using it, I might delete it," says Cameron. He is a user of Twitter: "I just hate the amount of ads on Facebook. It's become unusable." (Consumer comment, The Guardian , 2018)

The comment above shows that the consumer is only holding on the usage of Facebook due to his friends; otherwise, he would stop using it as he hates the amount of advertisement.

> "I go on social media to see and know what my friends are doing. I don't want to see ads clutter my news feed. If I'm interested in a product or service, I know where to look. Social media is a place for us to connect with our friends, not be attacked by advertisements" (Consumer comment, VisualFizz , 2018)

Another comment by a consumer is showing how advertisement on social media impacts their view on social media. It shows that intense advertisement towards consumers can cause consumers to turn against the brand or product and act against them by speaking ill of them either online or in person.

Another user expresses how advertisement makes them feel bad about what they cannot buy or do not need. And that advertisement follows us everywhere we go.

> "I think the reason people hate ads is because there are just too many of them. Everywhere we go, everything we do is bombarded with ads for services and goods we don't need, don't want and probably can't afford." (Consumer comment, StartWithWhy Blog, 2010)

Internet is full of such negative comments from the consumers who have started to hate a brand due to mass advertisement marketing intelligence tools and automation marketing. Such tools allow marketers to follow internet users to see what they do online and which products they are interested in. This has caused negative feedback from users due to privacy issues. Recently, Facebook faced such problem where data of 87 million users was used for marketing political campaigns (Winder, 2019). This caused a large sum of users to close their social media accounts. Bloomberg statistics showed that well over half of adult Facebook users from the U.S. have updated their privacy settings on the social media network and that over 42 per cent users have temporarily closed their accounts, and about 26 per cent have completed deleted the Facebook app from their smartphones. The act of

deleting the app and encouraging others (negative word-of-mouth, complaints) to close or delete the account is because of the Hate towards the brand, and it is due to the corporate wrongdoings, and violation of expectations. This type of action is regarded as patronage reduction/termination (Zarantonello et al., 2016).

3. Discussion

E-marketing has led the marketers to easy access to the data of consumers throughout the world. It has brought the consumers to their doorsteps to directly market their products and services and build a relationship with them. But along with it, it has made consumers more informative, smarter, and has awakened the consumers to act against the brands. Consumers are no more willing to accept information which marketers push towards them; instead, they rely on other consumers (Gershoff et al., 2006). Marketers have used different tools for online marketing which have caused consumers to hate marketing and brands due to the mass advertisement, which follows them on each website or social media network they open.

Along with that, consumers have even gone to the extent where they would pay to have the advertisement removed from the online services they use. As of today, most mobile applications and other services offer an ad-free premium version of their services at a specific price. This has happened before with radio and television advertisement, and now it is an online advertisement. Brand hate in consumers has started to spread more than ever before due to access to mass information available online on websites, social media, forums, brand communities and other forms of platforms (Johnson et al., 2011). Online platforms (online websites, social media networks etc.) on the internet should allow the consumers to choose whether if they want to see advertisements or not and must give them a choice of advertisement which they would like to see and how often.

4. Conclusions

The current study contributes to the literature of feelings of Hate towards a brand (Zarantonello et al., 2016). It demonstrates the development of negative feelings and emotions which turn into Hate towards a brand is explicitly formed through e-marketing and social media platforms. Prior studies have shown that Hate towards a brand has a significant impact on consumer behavior. Nonetheless, to the author's knowledge, there is no study which conceptualizes the development of brand hate through electronic marketing and social media platforms. Though, limited research has been done on brand hate as a negative outcome of consumer-brand relationship (Zarantonello et al., 2016; Fournier and Alvarez, 2013; Part et al., 2013; Bryson et al., 2013; Krishnamurthy and Kucuk, 2009). This study supplements the literature by proposing the development of brand hate in consumers from information which consumers access on the internet through various websites, forums, brand communities, and social media networks. Moreover, the study also contributes to the literature of emotions by showing how mass advertisement targeting consumers causes them to develop negative emotions and feelings resulting in brand hate by conceptualizing the development of brand hate from electronic marketing. For future studies, it is recommended to carry out an empirical study on the current topic

and explore different aspects of brand hate emotion which are triggered through online marketing.

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Review of Socio-Economic Perspectives **Mnongya, R., pp. 75-93**
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PERFORMANCE EVALUATION OF INDUSTRIAL CLUSTERING IN TANZANIA

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Abstract

This study was conducted as a performance evaluation to examine the impact of clustering on the growth of individual firms in an agrarian economy with the case of Tanzania under study. Specifically, it focused on how the employment levels differ across individual firms that are located inside the industrial clusters and across those located outside existing industrial clusters; and how the age of firms influences their growth in clusters and in isolation. It is a critical study that brings answers to questions relating to the current state of Tanzania's industries in terms of clustering of firms and growth of industrial clusters and contributes to policy geared towards growth of the industrial economy. Significant findings confirm that the employment level is high in firms operating in clusters than in the firms operating in isolation. It confirms that a manufacturing firm existing alone in an agrarian economy grows at a slower rate compared to the one operating in a cluster, which highlights the importance of clusters. The study revealed that a firm's age has a positive influence on its growth regardless of whether in a cluster or not in the short-run, but the long run, old firms in isolation can perform well or grow than the old firms in clusters. Key recommendations revolving around good cluster policies and initiatives that encourage clustering of firms to contribute to regional and national economic growth were outlined by the research.

Keywords: Age of firms, employment, firm growth, industrial clusters, isolation.
JEL Codes: L2, L6, D22, J3.

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1. Introduction

Porter (1990) terms a cluster as a collection of firms involved in a similar economic activity or linked economic activities in a given economy. In majority of the cases, such firms are closely located but in others, they appear to be more isolated. Porter's view depicts a belief in the beneficial relationships within two or more industries as the making of a cluster and therefore does not take geographical proximity as a distinct definition of clusters. Other researchers defined clusters a bit differently, but not drifting much from Porter's definition. Rosenfeld and Porter (2000) described industrial clusters as concentrations of interdependent firms such as manufacturers, suppliers, users, and traders who have located in a certain geographical area to manufacture same goods or goods which are closely related.

1.1. Background of the Research

Industrial clusters have rapidly gained substantial attention from research institutions, academicians, and economists due to their role growth of economies. Many studies have found a direct positive link between clustering and up-and-coming industrial growth (Sonobe and Otsuka, 2006; Hayami, 2009; Schmitz and Nadvi, 1999).This points out to the fact that despite the economic times (whether historically or currently), the growth of nations' economies can be globally attributed to firms locating and operating in industrial clusters.

1.2. Global Outlook of Industrial Clusters and Growth of Industries

For the last decade, the world's economy has significantly improved. Developing nations are currently doing well and they continue to contribute more to the global product output. The USA, China and Japan account for around 45 per cent of the world's economy with the United States standing as the biggest economy at an estimated value of $18 trillion. The second biggest contributor is China following at $11 trillion, with Japan following in third position with 4.4 trillion worth of an economy (The World Bank Group, 2016).

China has very large industrial clusters which locate in the most industrialised regions of China. The majority of China's clusters are found in engineering field, banking and finance, information and technology (I.T.), clothes and chemical and pharmaceutical products. Moreover, the country has a network of science parks meant for innovation and technology contributing to an almost unrivalled technological expertise in the country's manufacturing sector (Naughton, 2017). The United States has large industrial clusters manufacturing chemicals, transportation equipment, computers, electronics, instrument-making, textile and non-electrical machinery (Watts, 2019). Japan's economy is export-oriented and has major industrial clusters in the automotive sector and aircraft, food manufacturing, consumer electronics, Information Communications and Technology, energy, iron and steel, bio-industry, pharmaceuticals, advertising companies and shipbuilding industries. Other leading economies that attribute their economic power to industrial clusters include Germany, India, and the United Kingdom, South Korea, France, Israel and Italy. In some countries, all industries operate in clusters. In a country like Taiwan, it is challenging to find any manufacturing industry operating as a single firm away from other manufacturing companies (Sonobe and Otsuka, 2006). In other countries, different companies producing completely different products form clusters to benefit from shared resources such as infrastructure, nearness to financial services, and the domestic

market. Two leading industries in Bangladesh, for example, producing garments and pharmaceuticals, respectively, operate as a cluster (Motteleb and Sonobe, 2011; Amin and Sonobe, 2014).

1.3. Regional Outlook of Industrial Clusters and Growth of Industries

Industrialization in Africa mainly depends on the capacity of the local manufacturing companies to compete with the consumer imported products (Murphy, 2007). However, among the developing nations in Africa, only a few countries have managed to create institutional settings of the right kind, such as financial systems, basic infrastructure to link industries and suppliers/markets, human capital development through appropriate education systems, and training programs for workers. These are the countries that are giving more attention to an upgrade of their production systems to be able to meet domestic demand and foreign demand (Newfarmer *et al.,* 2018). These efforts have proved to be beneficial to the development of industries in these countries. The most notable countries that have backed the promotion of clustering in Africa include South Africa, Morocco, Nigeria, Kenya, Zambia, and Ghana (Lall, 2015).

1.4. Tanzania's Perspective on Industrial Clusters and Growth of Industries

The evolution of the economy of Tanzania is unique, and therefore, it is irrational to categorize its cluster trends among the developed, mixed market, and capitalistic economies. Despite continued efforts by the Tanzanian government to implement some measures of creating a mixed economy, the country has never fully attained a mixed economy status because of the agrarian sector dominance. Majority of processing industries process agricultural products while the majority of manufacturing firms manufacture foodstuffs, which is one attribute of Tanzania that makes the country unique (KPMG, 2018).

Modern clustering approach in Tanzania has been set to inform the SIDP (Sustainable Industrial Development Policy), IIDSMP (Integrated Industrial Development Strategy, the Master Plan), among other strategies and policies in the identification of the enterprises in clusters; analyzing the growth of these enterprises; understanding the linkages or the dynamics of the firms in these clusters; analyzing the trends of growth of clusters and therefore informs the review of policy on industrialization.

1.5. Problem Statement

The existing and emerging literature has majorly focused on clusters in which industrial firms are very near located in mixed economies. Therefore the majority of research has overlooked the consideration that modern clusters are integrated into broader structures beyond their location for them to form building blocks of individual country's economy. Moreover, such studies have not been adequately done in the economies that depend on one or two sectors. For the last few decades, Tanzania has untiringly struggled to achieve the growth of the industrial sector. Nevertheless, knowledge gaps still exist concerning the initiatives of industrial clusters; the link between clustering and growth of individual firms in a cluster as compared to firms in isolation. The latest waves of random trials validate that many of Tanzania's policymakers have inadequate acquaintance regarding the fundamental practices in management that would lead to enforcing important strategies and policies of industrial sector growth. Consequently, critical issues in industrial clusters

and about firm growth across the workers and the owners of firms and workers have not been addressed adequately in Tanzania yet. Insufficient empirical proof of the positive connection between the growth of firms, clustering, and economic growth of a nation has meaningfully contributed to weak and inadequate industrial strategies and policies that have failed to cater to the specific needs of industrial clusters.

1.6. Research Objectives

The overall objective of this study was to examine ways in which industrial clusters enhance individual firms' growth in Tanzania. Specifically, the study intends:

(i) To examine how the rate of growth of employment varies across firms located inside and outside of industrial clusters, and

(ii) To determine the influence of the age of a firm in a cluster and that of a firm in isolation on their growth.

1.7. Significance of the Study

This study primarily aimed at bridging the existing knowledge gap due to insufficient empirical evidence on the link between clustering and firm growth. The findings of this research sought to further inform stakeholders of industrial development and policymakers about the connection between the growth of firms and the clustering of industries. For legislators, clusters can be used as a basis of collecting data and assessing the performance of the regional economies and making necessary recommendations concerning different initiatives of industrial development. With a good background knowledge of the dynamics of firms in clusters, cluster targeting will become manageable, and better strategies and policies of industrial development with the capacity to hasten the growth of firms among firm proprietors and workers at cluster levels will be made.

Knowledge about clustering will be of immense importance to the industries themselves as it will foster solutions to shared problems such as training and modernization of production in individual firms. The paper also contributes to the literature on agglomeration economies by providing a vivid general explanation of the industrial situation in Tanzania about government actions, and actions of other actors in cluster development.

2. Literature Review

From the theoretical literature part, the study majored on Alfred Marshal's Classical Agglomeration Theory. The model describes how economic activities become concentrated owing to the external economies of scale. Marshall claimed that localized concentration of economic activity emanates from three sets of agglomeration advantages: availability of specialized inputs and services, spillovers of technology, and the pooled market for workers. Agglomeration economies give rise to economies of scale at the level of an industry rather than at the level of an individual firm and induces firms to localize near one another (Marshall, 1920). He describes the concept of external economies of scale to expound on the increases in productivity attributable to factors external to individual enterprises. According to Marshall, the producers enjoyed external advantages when costs of shared resources such as infrastructure and services, skilled labour pools, and a specialized supplier pool are shared. When different enterprises of industries relating to

each other cluster, the costs of production might go down because many firms located together require many suppliers who compete with one another, moreover, they become more open to benefit from a pool of highly specialized labor force (Theo and Norberg-Bohm, 2005). Firms benefit more because the cluster in which they operate can attract more suppliers and customers than any single firm could on their own when they exist in isolation (McCann and Folta, 2008). Bekele and Jackson (2006) described the merits of agglomeration, including minimization of transport costs and distance, transport costs, cheap labor, and lessening of risk. The most recent studies describe different linkages that enhance a cluster, including production and marketing connections that exist among industries. Perroux (2017) attributes effective economic policies to those whose focus is investing at a limited number of locations and sectors and those whose objectives are to encourage economic activities that lead to industrial clustering.

From the empirical literature review, the researcher focused on ways in which industrial clusters facilitate regional economic development. The reviewed literature provided some of the reasons such as heightened competitiveness, increased productivity, and stimulation of entrepreneurial partnerships and opportunities. Employment and clustering was discussed. Bathelt (2007) indicates that employment of more workers intensifies the demand for the product in a cluster and triggers demand for labourers among the company's suppliers. He further provides that the employment multiplier in clusters tends to be considerably higher than in non-cluster areas. Many studies linked to the benefits of industrial clustering do not provide a specific link between clustering and reduction of unemployment levels, but most emphasize on the findings that clustering accelerates growth of employment. The empirical review also included a discussion of the power of industrial clusters. Various studies done have discovered the power of clusters as measured by own-sector employment (employment in a company's single two-digit sector within its region), other-sector employment (employment in a company's all other two-digit sectors within its region), and a few other variables such as employment diversity among others (Swann and Prevezer, 1996), (Swann *et al.,* 1998); (Baptista and Swann, 1999); (Beaudry and , Swann 2009); (Pandit *et al.*, 2001), and (Cook *et al.*, 2001). Rosenthal and Strange (2003) noted that the owners of firms have a conviction of being well off when they exist in clusters as compared to when they scatter all over and operating alone. This is because their firms benefit from inter-firm sales, subcontracting, acquisition of inputs, purchase of raw materials, shared technology, shared infrastructure, marketing and sales of goods, and availability of cheap labor for workers all of which contribute to the emergence of more firms and growth of industrial clusters.

The research ends the empirical review by an assessment of the situation of industries in Tanzania, and the economy of the Peoples' republic of Tanzania at large. The research provides that the economy of Tanzania is mainly agrarian, and almost the entire GDP of Tanzania is attributed to agriculture. Tanzania's manufacturing industry is dominated by processors of agricultural produce and the substitution of imports (Pallotti, 2008). The industrial sector in Tanzania is fairly small and the country remains as a low-income country and among a number of African nations with low levels of GDP per capita. As per the World Bank (2019), its GDP in 2019 was worth 63.18 billion US dollars. Despite such a lowly figure, the overall macroeconomic performance of Tanzania has been on an upward trajectory for the last decade, and the country has enjoyed stable economic growth rates in recent years. In Tanzania, cluster effects are most active in the manufacturing

industry as it contributes to around 13% of the country's GDP. The primary challenges that Tanzania faces in its quest to embrace 21st-century manufacturing include inadequate power supply, inadequate research, poor infrastructure, and inadequate policies on clustering.

Currently, a few non-governmental institutions are taking gradual measures to uplift the industrial clusters available in the country. The Tanzania Private Sector Foundation Cluster Competitiveness Programme (TPSF-CCP) is the largest multi-donor trust fund that has significantly contributed to improved competitiveness of the Tanzanian economy, particularly in food processing clusters and horticulture clusters. TPSF-CCP has provided grants to different industries in Tanzania, and has offered industry-specific capacity building to different associations about local competitiveness and capacity of industrial clusters (Kostech, 2016). The government of Sweden has been in constant economic support as it created a partnership with the government of Tanzania to develop Tanzania's economy and lower its reliance on aid from foreign nations. This support is actualized through a Swedish development agency called SIDA (Swedish International Development Cooperation Agency) and it has supported cluster organizations in Tanzania for close to 15 years through an Innovation Systems and Cluster development Program in Tanzania (ISCP-TZ). More than 85 clusters had received support as at the end of 2018. This project has connected clusters to institutes of research and development, and also to technology development centers to add innovation to their daily manufacturing practices. It has helped industries with funds for commencement of different activities that support establishment of clusters. The project has also linked many clustered firms to financial institutions such as banks to help them get access to credit in order to fund production (COSTECH, 2016). Some of the clusters that have largely benefited from this project include the Zanzibar seaweed cluster, Eastern region's mushroom cluster, and Morogoro's rice processing cluster.

Research evaluating the performance of clusters and collaborations of different actors within all clusters included in ISCP-TZ was conducted by Ida Stanberg (2016). The study revealed a gap between firms by finding low levels of collaboration between firms inside clusters. The study also revealed a lack of collaborations and partnership between different industries on one side, and Research and Development institutions, and the members of academia on the other. Low levels of collaborations between the government and the firms were also revealed. For this reason, they have not created links to lobby for enablers such as infrastructure from the government (Stanberg, 2016). Ida further found a capital gap as the findings revealed an average level of collaboration with financial institutions which could provide finances for the development of firms and clusters, and their subsequent growth. This research found the academia gap as well in that there existed an average collaboration between firms in industrial clusters and the academic actors who include universities and bodies of research and development.

3. Methodology

3.1. Econometric Model & Estimation Model

The econometric model used to analyze the growth of firms inside clusters in this study is the lifetime growth model of entry of firms in clusters used by Rosenthal and Strange (2003) to analyze the entrance of new firms, employment and lifetime growth of firms within industrial clusters. This econometric model estimated industrial success using employment as a measure of cluster strength and growth. The model attempts to identify whether firms located in active industrial clusters grow faster than private firms operating in isolation.

The traditional lifetime growth estimation model followed in this study was adopted from Swann (1998), and is outlined as follows:

$$\boldsymbol{ln\, e_{n\in\{1:c\}} = \alpha + \beta age_n + \gamma_1 ln\left[\sum_{i\epsilon\{1:c\}} e_i\right] + \gamma_2 ln\left[\sum_{j\epsilon\{-1:c\}} e_j\right] + u} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

$$\boldsymbol{\beta = 1 + \sum_{c=1}^{c-1} d_c\, D_c + \sum_{i=1}^{l} d_i\, D_i} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

Where,

$\boldsymbol{e_{n\in\{1:c\}}}$ is the employment in firm n from an industry I at cluster c, $[\boldsymbol{C_{ie}Emp}]$

$\boldsymbol{age_n}$ is the age of firm n, **[Age]**

$\left[\sum_{i\epsilon\{1:c\}} \boldsymbol{e_i}\right]$ is total employment in an industry I in cluster C, [**OwnEmp**]

$\left[\sum_{j\epsilon\{-1:c\}} \boldsymbol{e_j}\right]$ is the total employment in all industries other than I at cluster C, $[\boldsymbol{OtherEmp}]$

$\boldsymbol{D_c}$ represents cluster dummy variables coded 1 for firms located within a cluster and coded 0, otherwise.

$\boldsymbol{D_i}$Industrial dummy variables coded 1 for firms within industries and coded 0, otherwise.

$\boldsymbol{u}$ is the disturbance term

The modified model is as follows:

$$\boldsymbol{ln C_{ie}\, Emp = \alpha + \beta Age_i + \gamma_1\, ln\,(OwnEmp_i) + \gamma_2\, ln\,(OtherEmp_i) + u} \quad \ldots\ldots\ldots\ldots\ldots\ldots (3)$$

3.2. Definition and Measurement of Variables

Own sector employment (OwnEmp) corresponds to the amount of workforce in the region where the manufacturing firms operate and those operating in the same sector as the manufacturing firms. On the other hand, Other-Sector (OtherEmp) reflects all other employees in the selected region except those employed in the manufacturing industry in Tanzania. In this analysis, the most critical variable in the model is the own sector (OwnEmp) and other sectors (OtherEmp) in a given cluster. Own-sector illuminates localization or Marshall-Arrow-Romer externalities and is measured using the number of employees in a firm S, relative to the sectorial number of employees in the chosen cluster.

The variable measured by the sum of the employees in all sectors in the given cluster other than the number of employees in firm S.
The beta (β) variables estimate the trend of growth of a firm that exists alone (in table 1) and the firm that is in a cluster (in table 2). Each of the betas is a coefficient of a given growth variable that explains the growth path of firms in manufacturing. The variables γ illuminate the influence of a company's growth by the availability of similar firms. γ1 represents the presence of same sector firms (ownemp), while γ2 represents different sector firms (OtherEmp).

3.3. Testable Hypothesis

To achieve the specific objectives, the study tested the following hypothesis:
(i) Industrial clusters impact the growth of employment in individual firms positively in Tanzania
(ii) The age of a firm has an influence on its growth

3.4. Type of Data and Sources of Data

This study entirely made use of secondary data. This data was extracted from the National Bureau of Statistics (NBS) in Tanzania for the year 2018. Two types of variables which were identified include Employment which represents the size of a firm and represents the most accurate measure of growth; and data on the number of years that firms have been operating in the market (which represents the age of firms).

3.5 Target Population and Sample Size

The study targeted the major manufacturing and processing firms located in different parts of the entirety of Tanzania's mainland. The study sample was determined by the Fisher formula (Privitera, 2015) given by

$$n = \frac{Z^2 \times p \times (1-p)}{e^2}$$

Where: n is the sample size, z is the normal distribution under a 95% confidence interval, p is the proportion of the major manufacturing firms that have more than 50 employees (Unknown, and therefore 50% will be assumed), and e is the level of precision (10%)

Therefore sample size will be:

$$\text{n} = \frac{1.96^2 \times 0.5 \times (1-0.5)}{0.1^2} = 96.04 \approx 100 \text{ firms}$$ (Rounded off to the nearest 100)

The survey looked into a hundred manufacturing and processing firms with 50 or more workers in Tanzania Mainland. The highest concentrations of such firms are in Dar es Salaam (25), Arusha (17), Mwanza (18), Singida (12), Tanga (13), Kagera (10) and Kilimanjaro (5). The study considered manufacturing to be the same sub-sector with processing. Within this sector, 75 firms engage in the "manufacture of food products, beverage, and tobacco" clusters, with 60 firms solely in food manufacturing clusters. Other clusters include "manufacture of vegetables, animal oils and fats" (15), and "manufacture of grain mill products" (10).

3.6. Methods of Data Analysis

This study uses an econometric technique called Ordinary Least Square (OLS) method, which is applied to equation three (3) to analyze the data. This method was used in this study because it presents the best linear unbiased estimator. The analysis was complemented by descriptive analysis

4. Results, Data Analysis and Discussion

Column 1 in Table 1 shows a simple regression. Column 2 shows regression after adding another employment variable. Column 3 displays the results of regression after adding the age of a firm, and column 4 shows regression results after the inclusion of dummy variables representing the type of ownership.

Table 1. Variable Coefficients for a Firm that is alone in Tanzania

	(1)	(2)	(3)	(4)
VARIABLES	Lnownemp	Lnownemp	lnownemp	Lnownemp
Sgroup	0.791	0.750	0.750	0.748
	(0.00463) ***	(0.00877) ***	(0.00877) ***	(0.00815) ***
Lnother		-160.4	-160.4	-159.7
		(35.82) ***	(35.82) ***	(32.52) ***
o5				0.127
				(0.0259) ***
o6				0.0976
				(0.0618) ***
Constant	0.201	1,814	1,814	1,806
	(0.0116) ***	(405.0) ***	(405.0) ***	(367.8) ***
Multicollinearity		1.41	1.27	1.17
Observations	6,126	6,126	6,126	6,126
R-squared	0.906	0.912	0.912	0.913

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

In table 1, each report presents the results of a single regression. There are four regressions with different combinations of dependent variables. In the first column, we have log (sGroup), which is a simple and bivariate factor in the size of the sGroup and the independent variable. The second regression column incorporates variables for other employment. The third regression includes the age of the firm, while the fourth regression populates data on the ownership of dummy variables. Each of the regressions has 6126 observations obtained from a survey of different regions in Tanzania.

Column1- In the first column, there is one independent variable, which is the number of employees of a firm (which represents its size).
The model has estimated in the first regression is:
$(emp)=\beta 0+ \beta 1(ownemp)+\varepsilon$……1

Where Ɛ represents an error term.
Taking the expected values on both sides and conditioning the independent variable(s)
E[ln (emp)| sGroup]= β0+ β 1(ownemp)+0…….2
Note: in linear regressions, there is an assumption that the expected value of the error term (E(Ɛ|sGroup)=0
Taking the partial derivatives (δ) on both sides,

$$\frac{\delta E(\ln emp|sGroup)}{\delta sGroup}=0+$$

β1=β1…….3

From the table, β1=0.791, exponentiation of β1 yields 2.15. The expression implies that the single company's growth keeps increasing for each year of operation by a factor of 2.15. The stars (*) illuminate the significance of the test (H1: B1=0). Three stars (***) represent the p-value p<0.01, which implies that the result is significant. The number in the parentheses below the coefficient (in this case, 0.00463) is a representation of the t-statistic. Given that the t-statistic<2 in this column, we fail to reject H0 at 5% significant level, implying that the result is insignificant.

The constants 0.201 and (0.00116) *** represent the expected value of ln (emp|sGroup) when the independent variable(s) =0. In other words, they represent β0. From equation (1), when the company is not operating in the respective region, its size will be ln 0.201. The exponential of 0.201=0.5464, which implies that the firm is likely to have a size of 0.5464 immediately after beginning to operate in the respective region. The three equations are critical in the understanding of how a firm operates as a single business rather than a cluster in the region.

Column 2- In the second column, another employment variable is added to the first model. So the model becomes;

ln (emp) = β0 + β1 (ownemp)+ B2 (otheremp) +Ɛ

Taking the partial derivative of the conditional expected value;

$$\Delta'E\left[\frac{\ln emp}{other\ emp}\right] = \beta2=-160.4.$$

The exponent of β2 is -157.7, which suggests that the presence of other firms have a significant positive impact on the growth of the firm that exists alone in a region.

Column 3- In the third column, another variable is added to the model. This variable represents the age of the firm.
As stated earlier, the growth path is given by:

ln (emp) = β0 + β1(OwnEmp) + β2(OtherEmp) + β3(age) +Ɛ

Using the procedure above, the expectation (E) of the partial derivative with respect to β3 is 0.0003. The exponentiation of the new coefficient yields 0.0008, which indicates that age has a small, positive significant marginal growth effect to a firm that exists alone.

Table 2. Variable Coefficients for a Firm that is in an active Cluster in Tanzania

	(1)	(2)	(3)	(4)
VARIABLES	Lnownemp	Lnownemp	Lnownemp	Lnownemp
Sgroup	0.749	0.751	0.744	0.750
	(0.00875) ***	(0.00880) ***	(0.00915) ***	(0.00879) ***
Lnother	-160.4	-160.6	-164.0	-160.6
	(35.74) ***	(36.08) ***	(37.13) ***	(35.92) ***
d7	-0.0484			
	(0.0143) ***			
d12	0.0387			
	(0.0211) *			
d19		0.0109		
		(0.00638) *		
d22		0.0709		
		(0.0223) ***		
d23		-0.0476		
		(0.0173) ***		
d24			0.0790	
			(0.0228) ***	
d25			-0.0976	
			(0.0352) ***	
d27			-0.0977	
			(0.0183) ***	
d28				0.0602
				(0.0183) ***
d32				-0.0483
				(0.0182) ***
Constant	1,814	1,817	1,855	1,816
	(404.2) ***	(408.0) ***	(419.9) ***	(406.2) ***
Multicollinearity	1.14	1.16	1.19	1.14
Observations	6,126	6,126	6,126	6,126
R-squared	0.912	0.913	0.913	0.912

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table description: shows regression results when adding cluster dummy variables by regressing them into a group of four in each column. *** p<0.01, ** p<0.05, * p<0.1
The regression model for the growth path in a cluster is as follows;

ln (emp)=B0+B1(ownemp)+B2(inother)+...+Ɛ

In column 1 of table 2, the coefficients imply that the partial derivatives of the model with respect to β1= 0.749, β2= -160.4, β3= -0.0484 and; β4= 0.0387. Exponentiation of each of the coefficients gives 2.04 for β1, -157.68 for β2, 0.1316 for β3, and 0.11 for β4.
In column 2 of table 2 the coefficients imply that the partial derivatives of the model with respect to β1= 0.751, β2= -160.6, β3= 0.0109, β4= 0.0709, β5= -0.0476. Exponentiation of the beta coefficients gives 2.04 for β1, -157.88 for β2, 0.023 for β3, 0.193 for β4, and

2.67 for β5. The negative coefficient in the log of β5 indicates a negative marginal effect of entry of a new firm into the cluster.
In Column 3, the coefficients imply that the partial derivatives of the model with respect to β1= 0.744, β2= -164.0, β3= 0.0790, β4= -0.0976, β5= -0.0977. Exponentiation of the factors yields 2.022 for β1, -161.3 for β2, 0.213 for β3, 0.265 for β 4 and 0.266 for β5.
In column 4, the coefficients imply that the partial derivatives of the model with respect to β1= 0.750, β2= -160.6, β3= 0.0602, β4=-0.0483, β5=1.816. Exponentiation of each of the coefficients yields 2.04 for β1, -157.88 for β2, 0.164 for β3, 2.67 for β4 and 4.94 for β5.

4.1. Employment and Growth

The two tables in chapter 3 (Table 1 and 2) posit that the strength of a firm is a function of its age, employment, and other variables specific to the firm. There is a scenario where own-sector employment's coefficient is positive while the coefficients of the other sector remain negative in both tables, implying that the majority of the firms are in the bottom right quadrant despite existing alone or in clusters. The positive coefficient of the own-sector employment suggests a high growth rate of a firm regardless of the cluster it operates in. It means that a firm can be in a generally weak cluster but still have a high growth rate. The Jacobian is negative, which suggests that there is no adverse effect of locating a firm in or out of the cluster, no matter the strength of a cluster or dominance of other sectors. Such an adverse effect is ordinarily associated with intensive competition and congestion in overcrowded clusters. That is to say, firm growth tends to be affected negatively by urbanization.

The two tables demonstrate the magnitude of each parameter's coefficient. To draw reliable conclusions from the results of regression, it is vital to consider both the absolute magnitude and their statistical significance. In table 2, R^2 indicates that the model predicts 95% of the industry. The value obtained after the exponentiation of beta 1 in Table 2 reveals that a single company's growth keeps increasing for each year of operation by a factor of 2.15 indicating that the link between the growth of a firm and its sector employment is positive whenever a firm exists alone in Tanzania's manufacturing sector. Column 2 of Table 2 illuminates the impact of the presence of other firms in the cluster S. Exponentiation of the log of beta 2 yields -157.7, which suggests a substantial negative impact on the growth of a firm. Since the coefficient is negative, it means that the marginal size of the firm decreases when other firms (s) are factored into the growth model of a detached processing or manufacturing firm in this area. Factoring in other firms makes the equation less biased. The negative sign in the second β suggests that factoring in other companies' sizes, irrespective of the sector they belong, drives down the size of the stand-alone firm.

Table 2 presents the growth path of a manufacturing firm operating in a cluster in Tanzania. In the first column, exponentiation of the beta coefficients yields 2.04 for β1, -157.68 for β2, 0.1316 for β3, and 0.11 for β4. The decimal results suggest that firms in a highly active cluster grow at a significantly slower rate in Tanzania. In column 2 of Table 2, the beta coefficients are 2.04 for β1, -157.88 for β2, 0.023 for β3, 0.193 for β4, and 2.67 for β5. Here, the magnitude of the localization coefficients is higher than in the previous

model. It can be deduced that entrance of new firms into a cluster significantly intensifies the rate of growth of a firm in a cluster.
Another vital pattern to note is the trend of the urbanization externalities in the two firms. In table 2, the Jacobian remains stable despite factoring in the age of the firm and the ownership dummy variables. However, in the second table, the coefficient of the Jacobian reduces when more variables related to the firm in cluster S are incorporated into the model. When the own sector employment effect is positive, it implies that the localization externalities (Marshall-Arrow-Romer) are positive. A positive other sector-employment effect is taken as proof for Jacobian externalities or the urbanization scale. In other words, the urbanization rate implies a negative impact on the growth of a single firm. The vice versa still applies. The trend reveals that the localization externalities are higher among firms that operate in clusters as compared to the ones that operate in isolation.

4.2. The Age of a Firm and Growth

To provide the timeframe in the firm growth estimate, the age of the respective firms was calculated from the years they had been operating. In the third column of Table 1, the age of each firm is accounted for in the growth path. The exponentiation of the new coefficient yields 0.0008. The coefficient of time is significantly low relative to the previous ones. The result indicates that age has a positive significance on the marginal growth of a firm that exists alone. However, age-associated growth is negligible in the early years of firms in a cluster and also for those outside clusters up to a point when the aging firms in isolation begin to grow than the aging ones in a cluster. In the third column in table 1, the age of the firms is factored into the growth equation of a firm in an active cluster. The resultant betas are as follows: 2.022 for $\beta 1$, -161.3 for $\beta 2$, 0.213 for $\beta 3$, 0.265 for $\beta 4$ and 0.266 for $\beta 5$. Here, the coefficients of the tables are still rising in this case, which suggests that as a firm grows older in a cluster, its growth rate rises as well. This growth applies uniformly for the firm existing in a cluster and also for the firm operating in isolation. However, this growth continues up to a certain point where the firm in isolation begins performing better than the firm in a cluster, which points to a challenge in clusters in the form of competition from the new and the more innovative firms entering the market.

4.2.1. T-test Analysis

The researcher used a t-test analysis to determine whether there was any difference in the growth of employment between different firms based on the year they started to operate. The test for descriptive statistics investigated the characteristics of the data based on the measures of central tendency and dispersion. The researcher grouped 60 firms into two equal sets. One set had firms that had only been in the market for the last ten years. These were, therefore, firms that began operations from 2008 and were considered to be new. The other set had firms that had been in the market for more than the last ten years. These were firms that began operations before 2008 and were considered to be old firms. The researcher studied the number of employees each set of these firms had employed by 2014 and also by 2019 to identify the difference in the number and the trend.

Different values were seen as recorded in table 3 below. The firms with more than ten years in the industry by December 2014 had a mean of 53 employees, while those that had operated for less than ten years had a mean value of 63. The standard deviations in these

two situations remained high when compared to the mean values indicating that the data values had a big spread.

Table 3. Data Output on Employment Levels as of December 2014

More than ten years		*Less than ten years*	
Mean	53.43333	Mean	61.83333
Standard Error	6.262401	Standard Error	8.34832
Median	43	Median	49
Mode	43	Mode	60
Standard Deviation	34.30058	Standard Deviation	45.72563
Sample Variance	1176.53	Sample Variance	2090.833
Kurtosis	0.807411	Kurtosis	4.234193
Skewness	1.079085	Skewness	2.06107
Range	138	Range	189
Minimum	12	Minimum	11
Maximum	150	Maximum	200
Sum	1603	Sum	1855
Count	30	Count	30

As of December 2019, different values were as recorded in table 3.

According to the t-test analysis done, it is clear that the number of employees for all the companies had increased when compared to the values posted in 2014. It is indicated that all manufacturing firms in clusters and those outside clusters had grown as indicated by them having more employees than in 2014 at a similar time. For the firms that had operated for more than ten years (those that began operations before 2008), their number of employees increased to a mean of 63. For the firms that had operated for less than ten years (those that began operations as from 2008), their number of employees increased to a mean of 90. The mean values show that the number of employees in the new firms (firms that had operated for less than ten years) increased by 29 (from 61 to 90) while the mean values show that the number of employees in the old firms (firms that had operated for more than ten years) increased by only 10 (from 53 to 63).

Table 4. Data Output on Employment Levels as of December 2019

More than ten years		*Less than ten years*	
Mean	63.3	Mean	90.16667
Standard Error	6.289592	Standard Error	14.41065
Median	56.5	Median	62.5
Mode	25	Mode	23
Standard Deviation	34.44951	Standard Deviation	78.93039
Sample Variance	1186.769	Sample Variance	6230.006
Kurtosis	-0.89335	Kurtosis	1.208379
Skewness	0.465465	Skewness	1.494438
Range	121	Range	278
Minimum	15	Minimum	12
Maximum	136	Maximum	290
Sum	1899	Sum	2705
Count	30	Count	30

The study further tested the null and the alternative hypothesis that helped in addressing one of the specific objectives of this study. The null and the alternative hypothesis for this study were as follows:

Null Hypothesis: There is no significant difference between the number of employees for younger and old companies and firms in Tanzania, and therefore, there is no difference in growth between young firms and old firms.

Alternative Hypothesis: The young companies have a high number of employees than the older companies in Tanzania and therefore grow faster than the old firms.

Test result for Firms as at 31st December 2014:

According to the analysis, it was clear that as of December 2014, the value of the t-test was -0.8049, with a p-value of 0.212204. The analysis was done at a 95 percent level of significance, which means that the p-value was compared to 0.05 level of alpha. In this case, the obtained p-value was greater than the alpha value (0.2122>0.05). As a result, there was no sufficient evidence to reject the null hypothesis. Therefore, it was concluded that as of December 2014, there existed no significant difference between the number of employees in both young firms and the old firms. It is worth noting that this being the initial platform for comparison, no difference had been recorded, and therefore, there was

no means through which data on employment could be compared across firms based on their age.

Table 5. T-test: Two-Sample Assuming Unequal Variances for Companies on 31st December 2014

	More than ten years	*Less than ten years*
Mean	53.43333	61.83333
Variance	1176.53	2090.833
Observations	30	30
Hypothesized Mean Difference	0	
Df	54	
t Stat	-0.8049	
P(T<=t) one-tail	0.212204	
t Critical one-tail	1.673565	
P(T<=t) two-tail	0.424408	
t Critical two-tail	2.004879	

Test result for Firms as at 31st December 2019

According to the analysis done, different results from the last test were obtained. At this stage, the study was also carried at alpha 0.05. The t-statistic value was -1.7087, with a p-value of 0.043628. The comparison showed that the calculated p-value was less than the level of alpha (0.043628 <0.05). As a result, this gave the researcher adequate evidence to reject the null hypothesis. A conclusion was therefore made that there existed a significant difference in the number of employees between the young and the old companies as at 31st Dec 2019. This was statistically supported by the fact that the young firms had employed more employees than the old companies by 31st December 2019. Following employment as the best growth indicator in this research, the researcher noted that young firms in Tanzania are growing at a faster rate than the old firms.

Table 6. T-test: Two-Sample Assuming Unequal Variances for Companies on 31st December 2019

	More than ten years	*Less than ten years*
Mean	63.3	90.16667
Variance	1186.769	6230.006
Observations	30	30
Hypothesized Mean Difference	0	
Df	Nv 40	
t Stat	-1.7087	
P(T<=t) one-tail	0.043628	
t Critical one-tail	1.683851	
P(T<=t) two-tail	0.095256	
t Critical two-tail	2.021075	

According to the analysis done, it is clear that the value of the mean employees kept changing. The mean number of the employees in the companies with less than ten years in the market was higher than that of the companies that have operated for over ten years. The values increased as the years went by, and in 5 years, the young companies had a more significant increase in the mean than the old companies.

5. Conclusion

This research confirms that the employment level is high in individual firms operating in clusters than in the individual firms operating in isolation. The research has revealed that a manufacturing firm that exists alone in an economy grows at a slower rate compared to its peers that operate as a cluster. This highlights the importance of locating a firm in an industrial cluster. Despite this study being conducted in a mostly agrarian economy, the researcher concluded that the type of the economy does not matter, and the individual firms in a cluster will show a high level of growth as compared to the individual firms located away from industrial clusters. It is also concluded that a firm's age has a positive influence on its growth regardless of whether in a cluster or not. Specifically, the study found that new and younger firms are employing more individuals than old companies and are growing faster than the older firms, as indicated by their higher employment levels as compared to the old firms. The researcher found one cause of the higher levels of employment among the younger firms than the old firms to be the pressure created by the need to scale up in terms of employment, production, revenue, and size. The second cause was the ability of young to rapidly adapt their strategies to the dynamic conditions of the market as opposed to the old firms. Older firms in Tanzania were found to be very bureaucratic, and the majority have their decision making processes codified lowering

their flexibility. This means that they cannot be able to respond to market changes promptly. The old firms have adopted the strategy of operating 'quietly' whereby they avoid too many risks associated with restructuring, conflicts with their workers, and rigours of research and development, which has resulted in the majority of them lowering their level of performance and losing their competitive advantage, which negatively impacts their growth.

The study recommends promotion of locally produced goods in local businesses to promote growth of local industries; raising of policymakers' awareness on the benefits of developing clusters; exchange of knowledge in and out of the clusters; development of Tanzania's cluster policy and pertinent cluster programs; development of a unique and robust infrastructure; creation an enabling environment for local and foreign investors; strengthen research capacity through initiation of research departments in all industries and capacity building of researchers and cluster management workforce; establishment of a cluster league so that the government matches the support it offers to clusters with their appropriate levels; improved quality labeling; and launching of pilot cluster programs in different regions to revolutionize the clustering of industries and contribute to regional and national economic growth. The researcher identified other aspects of industrial clusters that could be looked into in Tanzania. The study further indorses studies to be undertaken to explore the opportunities available for diversification of the predominant agrarian cluster industries in Tanzania.

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IMPACT OF JAPANESE FOREIGN AID: AN ANALYSIS ON ECONOMIC DEVELOPMENT OF NEPAL

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Abstract

The role of foreign aid in economic development remains debatable in economic literature. Some studies empirically proved its positive impact on economic growth, while some studies emphasized its undesirable effects. In Nepal, several economists have tried to find out the non-optimal utilization of foreign aid in the economic development of Nepal. The focus of the study is an analytical component of the impact of Japanese support and its role on the economic development of Nepal. Recently, the government's development slogan 'Prosperous Nepal and Happy Nepali' would definitely positive with the proper use of Japanese aid on the economic development of Nepal. The goal of this study is to analyze the impact of Japanese help on the overall economic development of Nepal. The methodological tool has been totally based on secondary data and verified quantitatively with the statistical test of significance. The result of the study has been positively analyzed. This research article concludes that the impact of Japanese aid in the economic development of Nepal, which would be definitely constructive for the economic growth of Nepal.

Keywords: Foreign aid, debatable concept, optimal utilization, positive impact, economic goal, economic development.
JEL Codes: F 35, F 63.

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1. Introduction

Foreign aid is money, capital, or technologies that one country voluntarily transfers to another, taking the form of a gift, a grant, or a loan. Many countries in the world accept foreign assistance and get different benefits. Foreign aid has been given different meanings by different schools of thought concerning its structure, its factors such as interest rate determination, repayment period, and other modalities.

Foreign aid is concerned with the economic and social progress of the country. The key purpose of aid to developing countries is to accelerate their pace of economic development up to a point where a satisfactory rate of growth can be achieved on a self- sustaining base. The function of aid for a development program is not directly to improve the standard of living in the recipient countries but to impart them to transition from economic stagnation to self- sustaining economic growth. From the economic history of various countries, it may be envisaged that almost every advanced state of the modern world had to rely on foreign aid for upgrading the pace of economic development.

Domestic resources are not sufficient to meet the financial requirements of economic development in developing countries like Nepal. The present level of capital formation of these countries is too low. Any substantial increase in saving is not possible due to the extremely stumpy level of income and widespread poverty. Public borrowing and taxation have got their limitations. Deficit financing is also discarded because of its inflationary impact on the economy. At this juncture, the only alternative to pull the economy remains foreign aid. Income saving and investment of the developing countries are too low. Without increasing the rate of these three vital components, no countries can achieve stable growth. The overall aid of foreign aid is not to equalize income in different countries but to provide every country with an opportunity to achieve steady growth. That aid should not be discontinued when a certain income level is reached in developing countries but not only after those countries can mobilize a level of capital formation adequate for self-sustaining growth. Thus, foreign aid is advantageous for the acceleration of growth mechanisms in these underdeveloped countries.

Until 1951, Nepal was under the feudalistic, exploitative regime that kept the country isolated from external influences, efforts to modernize the country started only after the expulsion of the Rana Regime. British technical experts in hydropower were Nepal's first experienced in foreign aid. United States' (US) assistance in agriculture, education, health, and transport was another main area. India became another major donor country and showed a keen interest in assisting Nepal. Nepal obtained many more opportunities to have aid in later years form the Union of Soviet Socialist Republics (USSR), Japan, China, the United Kingdom (UK), France, Germany, Canada, etc. to contribute considerably in Nepal. After the late 1970s, Nepal has been obtaining foreign aid from other bilateral donors and multilateral agencies.

Japan is one of the developed courtiers in the world. Nepal receives much aid from outside, and one major donor is Japan. Japan is also interested inflowing the assistance an overall development to Nepal. Nepal and Japan established their friendly diplomatic relationship in 1956, and the respective embassy was opened in Tokyo and Katmandu. In 1970, Nepal-Japan has established the Nepal Japan Friendship and Cultural Association (NJFCA). Japan provides official development assistance to ensure the efficient and fair distribution of resources and good governance in Nepal. Nepal has been obtaining Japanese aid in the

financial as well as technical terms. Japanese aid comes for the construction of many projects for the development proposes on the various sector of the economy to Nepal and to enhance the relationship between Nepal and Japan. Japan is one of the key source countries of foreign direct investment (FDI) in Nepal. The total FDI amount from Japan up to FY 2017/18 was approximately $ 30 million, and in the FY 2017/18 alone, it remained almost $ 4.33 million (Economic Survey, 2018/19). Therefore, we can certainly see among the bilateral donors from Asia, Japan has emerged as a main development partner of Nepal.

The question of foreign aid has been a subject of debate and discussion among academics, policymakers, and intelligence. Opinions have differed. The relation between foreign aid and economic development is far from being straight. Many fell that there is no escape from foreign assistance for a developing country, which suffers from a chronic shortage of resources if it wants to achieve a significant level of development.

Japanese Agencies Assisting of Nepal:

i) Japan International Cooperation Agency (JICA): In Nepal, JICA was established in August 1970. It executes government-sponsored technical cooperation for developing countries and as the agent to administer emigration service. After the establishing JICA in 1970, Japan is mainly providing technical assistance to Nepal through its executing organ and effective organization.

ii) Japan Overseas Cooperation Volunteers (JOCV): JOCV was established in Nepal in 1970 as the eleventh host country. Over the years, JOCV has played an active role as a partner in Nepal's socio-economic development process, which can be the main reason for the increasing demand for Japanese volunteers year by year. The office of JOCV in Nepal was amalgamated into the roof in 1983.

iii) Overseas Economic Cooperation Fund (OECF): Overseas Economic Cooperation Fund (OECF) was established in 1961 and is responsible for providing yen loans in public cooperation. The objective of OECF is to contribute to the industrial development and economic stability of the developing countries. The fund is considered with a bilateral loan on the government level.

iv) Export-Import Bank of Japan (EIBJ): EIBJ was established in 1951 in Japan, which a public cooperation oriented bank. The bank extends loans with a grant element to less than one percent to a foreign government. The objective of the bank is to promote economic exchange between Japan and other countries. It assists both developing and developed countries for the economic cooperation only parts of business undertaken by the bank.

v) Scholarship Program: The government of Japan has provided scholarship programs to Nepali students for education in Japan. The government of Japan provides Monkukagasho scholarships to students from across the world every year. More than 100 Nepalese students have already received this kind of scholarship and pursued their higher studies in Japan, and they are now contributing to the task of nation-building in Nepal.

vi) Other Organizations: Besides JICA, OECF, EIBJ, there are also other organizations there are namely; The Overseas Fisheries Cooperation Foundation

(OFCF), Japan Overseas Development Cooperation (JODC), and the Metal Mining Agency of Japan (MMAJ). There are also some private organizations, which are the Association for Promotion of Industrial Cooperation (APIC), International Development Centre of Japan (IDCJ), Association for Overseas Technical Scholarship (AOTS), and Internal Management Association of Japan (IMAJ), etc.

Japanese Financial Aid to Nepal

Nepal has been receiving foreign aid from both the bilateral and multilateral sources. Present, Japan is in the top position in providing foreign assistance to Nepal. ANNEX-1 shows that the increasing trend of Japanese aid inflow in Nepal, leaving apart some fluctuation. Total Japanese aid to Nepal was Rs. 231.8 million in FY 1984/85 and moved up to Rs. 6928.3 million in FY 1994/95, Rs. 4146.1 million in FY 2004/05, Rs. 4077.1 million in FY 2014/15 and Rs. 10834.5 million in FY 2017/18. During the period (FY 1984/85 to 2017/18), it is calculated that the total Japanese aid inflow is 137562.5 million of total aid to Nepal during that year. During 34 years from FY 1984/85 to 2017/18, the overall Japanese foreign aid to Nepal of average is 4045.957. During the study period of FY 1984/85 to 2017/18, Japanese support covered the average percent from full external assistance received by Nepal is 13.80 with these periods.

Some of the major projects completed during these periods under Japans aid are Kulekhani Hydropower Project I and II, Udaypur Cement Plant, TU Teaching Hospital, National Tuberculosis Centre, modernization of Tribhuvan International Airport, and Gongobu Bus Park. Ongoing projects that are completed include Kaligandaki 'A' Hydropower, Benepa Sindhuli Bardibas Road, Bagmati Irrigation Project, Tinkune Kathmandu to Bhaktapur Suryabinayak Road, and so on. Japan has also provided loan assistance to the Melamchi Water Supply Project, which will reduce the problems of water supply in the Katmandu valley.

i) Grant Assistance to Nepal: In the phase of thirty-four years, out of total aid inflow in Nepal is Rs. 996594.7 million aids is a foremost component. It took a big area in the platform of foreign aid. The ANNEX-1 shows that the total amount of Japanese grants assistance to Nepal is 137562.5 million from 1984/85 to 2017/18, which 12.79 percent out of the total external funding. The data reflects that in FY 1984/85, Nepal received Rs. 68.1 million grant assistance from Japan sharing out of full foreign grant assistance, which moved up to Rs. 5326.3 million in FY 2001/02 and Rs. 6241.01 million in 2017/18, covering 49.02 percent of total grant inflow in Nepal, which was the maximum share of Japanese grant to total grant.

ii) Loan Assistance to Nepal: Japan started to provide loan assistance to Nepal in March 1970. At present, Japan is one of the top donors to Nepal is involved in every vital sector of the economy.

Japanese loan assistance is a recent phenomenon. Japanese loan assistance is only a direct bilateral loan provided by the government, and it is usually called Japan's Official Development Assistant (ODA) loan. ODA loan is classified as a form of ODA under the criteria of the Development Assistance Committee (DAC) of the Organization for

Economic Cooperation and Development (OECD), and it fulfills most of the following prerequisites (APIC, 1989).

Now we can analyze the Japanese loan assistance comparatively with the total loan assistance received by Nepal. In other words, what kind of contribution has been made in the total aid of Japanese assist in a certain period.

The data simply shows the Japanese loan assistance and its percentage share in the total loan assistance received by Nepal within the period of FY 1984/85 to FY 2017/18. Data shows that in the initial years, the loan amount provided by Japan to Nepal was small. In FY 1984/85, Japan provides Rs. 163.7 million loan assistance, which was 9.3 percent of the total foreign loan of Rs. 1753.0 million. There was no loan from the FY 1997/98 to FY 1998/99. In FY 1994/95, Japan provided Rs. 6372.5 million loan assistance, which was 87.1 percent of the total foreign loan of Rs. 7312.3 million. From FY 1990/91 to FY 2017/18, overall Japanese loan assistance is Rs. 63701.5 million, which 18.31 percent of the aggregate loans help during the last 34 years. It is thus clear that Japanese loan assistance has occupied an important place in the total loan assistance to Nepal (Economic Survey, various issues).

iii) Technical Assistance to Nepal: The term Technical Assistance is related to human resource development. It is the fundamental force to drive the country along the path of peace and prosperity. Japanese technical assistance covers a wide area of activities, from accepting the students from Nepal and the supply of techniques and modern equipment in different fields like health, education, agriculture, hydropower, transportation, and communication. The foreign development partners of Nepal are not only helping through the government agencies but also through the International Non-Governmental Organizations (INGOs). It has a significant role in the economic and social development of Nepal.

2. Methodology

The study is based on secondary data, and no further attempt is made to verify the quality of published data. The coverage of the research of 37 years is FY 1984/85 to 2017/18. This study will be covered to the foreign aid given as loans, grants, and technical assistance. Private foreign investment and exchange gaps will not be taken into consideration.

This study is based on secondary data obtained from various publications of the National Planning Commission (NPC), Nepal Rastra Bank (NRB), Central Bureau of Statistics (CBS), Ministry of Finance (MoF), Embassy of Japan, etc. To achieve the goals of the study, books, magazines, newspapers, and journals have been studied. The required data are collected from various issues of the economic survey, budget speech, and several plans of Nepal.

The article of the study is descriptive. It is designed to describe the increasing volume of Japanese aid inflow and GDP growth in Nepal. It focuses the on-trend, magnitude, structure, impact, and role of Japanese aid in Nepal. The descriptive, quantitative, and analytical research tools are used for the study.

i) Research equations:

$Y_t = a + bj_t$……. (i)

$Y_t = a_0 + a_1 j_t + a_2 j_{t-1} + a_3 j_{t-2} + a_4 j_{t-3}$ ……... (ii)

Where, Y_t= GDP at time periods, j_t, j_{t-1}, j_{t-2} and j_{t-3} =Japanese aid at different time periods a_0 , a_1, a_2 , a_3 and a_4 = Regression parameters

ii) Statistical Test of Significance: Coefficient of Determination [R^2]: Parameter Estimates (T-test): Parameter Estimates (F-test): Parameter Estimates (D-W test):

3. Objectives and literatures

The objective of this study is to analyze trends, patterns, and the effectiveness of Japanese aid in the economic development of Nepal. The goal is to analyze the impact of Japanese assistance on the overall economic development of Nepal.

The related literature is based on the research; there have been several studies in knowing the impact of foreign aid inflow in the economic development of developing countries like Nepal. Similarly, in the areas of foreign aids, these are several booklets, journals, and articles to review of the literature.

The role of foreign economic assistance in economic development and growth remains contentious in economic literature. Some studies proved its positive impact on the economic development empirically, while some studies highlighted its undesirable effects as Chenery and Strout and Chenery (1966) concluded, based on empirical evidence from least developed countries (LDCs), that foreign capital has a positive effect on economic growth. Afterward, some other studies also argued that foreign economic assistance stimulates economic growth. However, some other economists like Leff (1969) and Griffin and Enoj (1970) have analyzed its adverse impacts on progress. They argued that the Foreign aid could adversely affect the economic growth by substituting the domestic savings. So, the literature on the effectiveness of foreign aid shows both positive and negative effects in economic development.

Poudyal (1988) performed regression analyses between foreign aid and economic growth and aid and domestic savings. Poudyal (1988) found that aid had a significant positive effect on the level of gross domestic product (GDP). Paudyal (1982) believed that foreign aid contributed positively to the development of Nepal. It was only possible through aid to build projects and physical infrastructure, which would not have been manufactured due mainly to resource constraints.

In Nepal, several economists have tried to find out the role of foreign aid in the economic development of Nepal. Many economists in Nepal, such as Dahal (2008), Dhakal, Upadhyaya, and Upadhyaya (1996),

Karmacharya (2000), Khadka (1996), Khatiwada (2003), Panday (2001), Paudyal (1982), Sharma (1999), Sharma (2011), Shrestha (2002), Bhattarai (2009) all are highlighted the non-optimal utilization of foreign assistance for Nepal and interpreted it as a sustainable

and prospective factor for higher growth if macro and micro-level efforts are made for optimal utilization of foreign support.

Karna (2007) states that foreign aid holds critical importance in Nepal. Even though its economic importance lies in the fact that it provides resources for the national budget; it also helps bridge the gap between national saving, and investment. Pyakuryal, Adhikari and Dhakal (2008) found that the resource gap has widened over the years due to increasing fiscal deficit.

Foreign Aid Policy 2009 outlines problems as is the absence of prioritization based on national needs, ignorance of sustainability, operation and maintenance aspects of the projects, and slow disbursement as compared to commitments. Sigdel (1997) found that one billion increments in the resource gap are met by more than one billion increments in foreign aid during the fiscal year (FY) 1981/82 to 2001/02. The flow of foreign aid is faster than the increment in the resource gap (1.023477, lag coefficient).

Acharya (1998) stated that foreign aid has been unable to achieve its objectives in Nepal by principle. Basnet (2013) found that foreign aid has a positive and significant impact on growth in five South Asian countries.

Galiani, Knack, Xu & Zou (2016) found that a one percent increase in the aid to gross national income (GNI) ratio raises the annual real per capita short term GDP growth rate by 0.031 percentage point.

Overall, having found out that foreign aid positively affects GDP, its importance to lift every sector of the economy in Nepal viz: infrastructure development, minimizing resource gap, etc. but on the other side, the inefficiencies, misuses, cost of dependence syndrome aid has generated every concerned citizen consider about its existence in Nepal. In the Nepalese context also there are sufficient studies but individual donor-wise studies and Japanese aid, in particular, are too few. These are the guiding factors that have encouraged me to undertake this research.

4. Empirical Analysis

Foreign aid is said to have effects on economic growth and the overall welfare of the country. The amount of foreign aid becomes essential for the further progress of the country. In a situation, there may arise questions like whether foreign aid has proved beneficial for Nepal? Has foreign assistance shown positive effects on the economic growth and overall welfare of the country? If the answer to these queries is found positive, then to some extent, foreign aid has played a positive role in the Nepalese economy and is necessary for the further growth of the economy.

The research intends to analyze the impact of Japanese aid on the gross domestic product (GDP) of Nepal. Thus the starting point is examining a direct relationship between the GDP and the amount of Japanese aid. Different lagged and unlagged models have been used to analyze the impact. Models have been estimated in log-linear forms. All the data in the analysis are taken from various economic surveys and Japanese Aid booklets during the period FY 1984/85 to FY 2017/18. In all statistical analyses, numbers in parenthesis below the co-efficient of independent variables indicate their respective t-values with corresponding significance. All regression lines in this chapter are computed by using the

Statistical Package for the Social Sciences (SPSS) program. Impact of Japanese aid in the period t is,

$$Y_t = 127316.309 + 33.21\, J_t \quad \text{.....(i)}$$

(2.193) (3.039)

(0.001) (0.000)

$$R^2 = 0.57,\ \text{Adj.}\, R^2 = 0.51, F = 9.574,\ DW = 0.451,\ N = 34$$

Where Y_t = Gross Domestic product in time period t (dependent variables)

J_t = Japanese aid in time period t (Independent variable)

Equation (i) shows a positive relationship between nominal GDP and Japanese aid inflow. The Beta coefficient is equal to 33.21, implying that one million changes in Japanese aid have produced 33.21 million changes in the GDP. Though it seems impossible logically, it has given the approximate figure. The adjusted R^2 value is 0.59, implying that 59 percent of the total variations in the dependent variable being explained by the independent variable.

The calculated value of F (V_1, V_2), i.e., F (1, 18) degrees of freedom, is 9.574, which is greater than the tabulated value of F for 5 percent level of significance (4.41). Hence it can be said that the overall significance of the specified equation is significant. t statistics also support the best fit of the theoretical distribution of the parameters at a 5 percent level of significance.

The D-W (d*) statistics from the data is 0.451. From the D-W table with a 5 percent level of significance, n = 34 observations, and K' = 1 independent variable, the significant point of dl & du are dl = 1.20 and du = 1.41. Since dl > d* and du > d*, there is a positive autocorrelation in the GDP function. Impact of Japanese aid with one year lag,

$$Y_t = 1051780.761 + 40.399\, J_{t-1} \quad \text{.....(ii)}$$

(5.991) (2.659)

(0.010) (0.000)

$$R^2 = 0.74,\ \text{Adj.}\, R^2 = 0.59, F = 16.885,\ DW = 0.819,\ N = 33$$

Where j_{t-1}, = Japanese Aid in one year lag.

In equation (ii), GDP is regressed with the Japanese aid in the lagged one year. The equation itself is a better fit, with 57 percent of the variations independent variable being explained by the independent variable. The Beta coefficient is equal to 40.399, implying that one million changes in Japanese aid have produced 40.399 million changes in GDP.

The calculated value of F (V1, V2), i.e., F (1, 17) degrees of freedom, is 16.885, which is greater than the tabulated value of F for a 5 percent level of significance (4.45). Hence, it can be said that there is a strong association among variables in the equation.

The D-W (d*) statistics from the data is 0.819. From the D-W table with a 5 percent level of significance, n = 34 observations K' = 1 independent variable, the significance print of

dl & du are 1.18, 1.40 respectively. Since, dl > d*, du > d* there is positive autocorrelation in the GDP function. Impact of Japanese aid with a two-year lag,

$$Y_t = 113284.250 + 41.897\, J_{t-2} \quad \text{.....(iii)}$$

(6.253) (2.462)

(0.005) (0.000)

$$R^2 = 0.88,\ AdjR^2 = 0.56, F = 24.941, DW = 1.311, N = 32$$

Where, J_{t-2} = Japanese aid in two year lag.

In equation (iii), GDP is regressed with the Japanese aid two-year lag. The beta coefficient is 41.897, implying that one million changes in Japanese aid have produced 41.897 million changes in the GDP - the value of R^2 and adjusted R^2 show the fit of the model. Adjusted R^2 (0.56) implies that a 56 percent change in GDP is explained by the adjustment in Japanese aid and rest 41percent change is due to the other variable.

The calculated value of F (V1, V2), F (1, 16) at degrees of freedom is 24.941, which is greater than the tabulated value of F for a 5 percent level of significance (4.49). Since the calculated F-value is higher, there is a strong association among variables in the equation.

The D-W (d*) statistics from the data is 1.311. From D-W table at 5 percent level of significance, n = 32, & k' = 1 independent variable, the significance point of dl & du are dl = 1.16 & du = 1.39. Since dl < d* and du > d*, there is no auto correlation in the GDP function.

Keeping the R^2 and Adjusted R^2 in mind, the one-year lag model, is not as strong as the two-year lag model. That's why we can conclude that Japanese aid has been primarily made with a short gestation period of two years.

5. Findings

i) Foreign aid has covered many fields like agriculture, public health, education, transportation, communication, electrification, industrialization, public administration, poverty alleviation, emergency relief as well as family planning and various allied training programs and expert services for socio-economic development in Nepal.

ii) The total foreign aid inflow in Nepal from FY 1984/85 to FY 2017/18 is Rs. 996594.7 million. In FY 2014/15 lowest grant assistance only 4.93 percent of the total inflows of foreign aid but in FY 1994/95, grant aid comprised 61.58 percent of the total aid.

iii) Japan has been participating in the economic development programs of Nepal since 1956 after the diplomatic relations between the two countries has been established. Till than from 1951 to 1956, Japan did not provide any assistance to Nepal.

iv) Japanese aid to Nepal is in the form of a grant, Loan, and technical assistance. Technical assistance is being provided in equipment supply,

training to Nepalese dispatch of Japanese experts to Nepal, and development survey.

v) There is a positive relationship between the nominal GDP of Nepal, and Japanese aid inflow and one million changes in Japanese aid have produced 33.21 million changes in the GDP.

vi) GDP is not explained by the change in Japanese aid but also clarified by other variables the 57 percent of the total variations in the GDP being explained by the Japanese support.

vii) The beta coefficient is equal to 33.21, implying that one million changes in Japanese aid have produced 33.21 million changes in GDP in Nepal.

6. Conclusion

Japanese aid mainly in the economic infrastructure likes roads, bridge, transportation, safe drinking water supply, civil aviation, and telecommunication, and so on. Typically Japan aid is on these sectors like agricultural development, the social sector, which consists of health and education, human resource development, cultural grant aid, environment conservation, and sustainable development.

Japanese foreign aid to Nepal has brought a significant change in the socioeconomic status of Nepalese people. More people have access to education, health and communication from when foreign countries assisted Nepal. The number of schools, hospitals, communications, and social services facilities have increased significantly. The road network has also significantly expanded, enabling a large number of towns and villages in peripheral areas to increase the local peoples economic status as well as social life.

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ANNEX – I

Total Amount of Foreign Aid and Japanese Aid from FY 1984/85 to FY 2017/18

(Rs. In a million)

Fiscal Year	**Total Foreign Aid**	**Total Japanese Aid**	**Japanese Aid in % (from total aid)**
1984/85	2676.4	231.8	8.66
1985/86	3491.5	659.4	18.88
1986/87	3314.4	929.0	28.02
1987/88	5078.5	1104.6	21.75
1988/89	5666.9	897.7	15.84
1989/90	6427.1	1069.5	16.64
1990/91	5990.0	1781.9	29.74
1991/92	7800.4	1757.4	22.52
1992/93	9235.6	3501.4	37.91
1993/94	11557.2	1571.9	13.60
1994/95	11249.4	6928.3	61.58
1995/96	14289.0	5295.5	37.05
1996/97	15031.9	4994.4	33.22
1997/98	16457.1	1746.6	10.61
1998/99	16189.0	2894.5	17.87
1999/00	17523.9	6394.1	36.48
2000/01	18797.4	8354.1	44.4
2001/02	14384.8	6299.7	43.79
2002/03	15885.5	7435.43	46.80
2003/04	18912.4	4712.4	24.91
2004/05	23657.3	4161.1	17.58
2005/06	22041.8	4477.0	20.31
2006/07	25854.4	3047.8	11.78
2007/08	29300.6	3462.6	11.81
2008/09	36351.7	2166.4	5.95

2009/10	49769.4	3376.5	6.78
2010/11	57997.8	5834.1	10.05
2011/12	51893.4	5433.0	10.46
2012/13	47199.2	4168.7	8.83
2013/14	60204.6	4037.8	6.70
2014/15	82581.93	4077.1	4.93
2015/16	89559.87	4964.4	5.54
2016/17	95024.46	8961.9	9.43
2017/18	105199.8	10834.5	10.29
Total	996594.7	137562.5	-
Average	29311.61	4045.957	13.80

Source: i) Various Issues of Economic survey, MoF, Government of Nepal.

ii) Various Issues of Japan's ODA Annual Report MoFA, Japan.

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THE IMPACT OF FDI AND EXCHANGE RATE ON GDP IN MENA COUNTRIES : EVIDENCE FROM THE PANEL APPROACH

Mustapha Djaballah [1]

Abstract

This article empirically discusses the possible interactions between the rate of economic growth, the rate of change in inflows of foreign direct investment (FDI) and the rate of real equilibrium real exchange, in MENA countries (18 countries) for the period 2000 -2019. The result suggests that there is a positive relationship between financial development and economic growth. The study also documents that inflation and government expenditure have negative impact on economic growth for those selected MENA countries. The paper ends with some policy implications and potential limitations.

Keywords: GDP, FDI, Exchange rate, Dynamic Panel Modeling.
JEL Codes: C32, O47, F17, F31.

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1. Introduction

Empirical analysis of interactions is understood to mean the following: we will account for the linear relationships, past and present, between the three variables. Specifically, we will show how each of the three variables is determined by the other two (contemporary and structural relationships) by its past and the past of the other two (dynamic and autoregressive relationships), as the evolutionary aspect is decisive, Rey & Jaussaud (2012) for this analysis, we will begin by reporting in the first section the empirical trends declined in the following questions: What was the evolution of GDP and what were the different macroeconomic policies that were carried out for? What are the factors of attractiveness of FDI, and what is the reality of foreign direct investment in Algeria? What has been the evolution of the exchange rate and what have been the exchange policies adopted?

2. Literature review:

Recently, most studies have focused on the VAR, the cointégration approach and the causality test, our review of the literature is limited to studies that focus on the joint GDP, FDI and exchange rate on economic growth, which are highlighted in the table below

Table.1 Previous studies of the relationship between economic growth and trade openness ratio

Author(s)	Time Period	Country	Method	Outcome
WIJEWEERA, Albertand MOUNTER, Stuart(2008)	1950-2004	Sri lanka	VAR	GDP, exchange rates, interest rates, and the level of external trade.
Alex EHIMARE Omankhan(2011	1972-2006	Nigeria	OLS	positively to GDP when the contribution of.FDI
Abas et al (2011)	1996-2010	SAARC Countries	PANEL	a positive and significant relationship between GDP and FDI while an insignificant relationship between GDP and inflation.
Nabi and Malarvizhi(2014)	1991-2012	Malaysia	OLS	the Malaysian Foreign Direct Investment,

Sasi L (2016)	1971-2010	124 cross-country	Linear Panel	overall effects of FDI are positively associated with growth
Yu Z and Sufang Z(2018)	1982-2016	China	ARDL , VAR	the impacts of both services trade and exchange rate on China's carbon emissions were negative, the impacts of FDI inflows were positive.
Azzouzi and Bousselhami(2019)	1990-2017	Turkey and Morocco	ARDL, GARCH-M	a positive effect on FDI flows is only perceptible in Morocco. In addition, the series of structural reforms in Turkey
Umaru et al (2019)	1980-2017 (panel data)	West African speaking English	Panel	The findings of this study will help the countries under review and other nations in general to improve on monetary policy;

Abdul Mansoor, Taskeen Bibi(2019)	1980-2016	Pakistan	ARDL	both log run and short run relationship. In short run relationship the GDP is positively influences with the dependent variables.

Source : Author

3. Data

We consider the annual data covering the period 2000-2018 according to a sample of 18 countries of the MENA: these countries were selected on the basis of the available data in order to have a cy To reiterate, we used pooled cross-section and time-series data. As the study period covers 20 years and 13 cross-sectional units (countries), the total number of observations should be 360 year country observations (20 × 18). However, due to missing data for some of the cross-sectional units, the number of observations for each country is not identical. Therefore, this results in an unbalanced panel. Using panel data techniques have several advantages, for example, it gives "more informative data, more variability, less co-linearity among the variables, more degrees of freedom and more efficiency panel, in order to investigate the possibility of panel cointegration, it is first necessary to determine the order of integration before using cointegration techniques. For this purpose; we used Im,Pesaran and Shin test, which is being used intensively in panel unit root tests studies. IPS allows for heterogeneity both in intercept and slope terms for the cross section units and solves the serial correlation problem. Although the IPS test requires a balanced panel.

4. Result & Discussion

In this section, we propose to test our theoretical result: FDI and RER destabilize GDP in the MENA economies, with regard to the availability of data, we use panel data techniques to estimate the models. As we mentioned above, with nonstationary time series, the model needs to be a cointegrated relation, therefore, before estimating these relationships, we perform panel unit root testing and testing of existence of the cointegration relationship.

4.1 Panel root and cointegration tests

Panel unit roots are used to examine the degree of integration between three variables growth foreign direct investment real exchange rate by unit root panel testing. We are suggested as alternative tests to analyze the causal relationship between GDP , FDI and RER. In the panel structure as these tests capture country-specific effects as well as allowing heterogeneity in direction and in the magnitude of the parameters. To study the existence of unit roots in our series, we use three different unit root panel tests including

LEVIN, LIN and CHU (LLC); IM, PESARAN and SHIN (IPS), MADDALA and WU, and CHOI, for each technique, we test the presence of the unit root in panel using two types of models. The first model contains a constant while the second integrates the constant and the trend he most widely used LLC (2002) test is based on the Augmented DICKEY FULLER (ADF) test and is based on the assumption of panel homogeneity, the IPS test (2003) is an extension of the LLC test (2002). This test relaxes the hypothesis of panel homogeneity by allowing heterogeneity in autoregressive coefficients for all panel members. However, these two tests assume independence in cross section between the elements of the panel. However, to take into account possible correlations between countries in our sample, we used the MADDALA and WU (1999) and CHOI (2001) tests. In our sample, transverse dependence is clearly present because of the common membership of certain countries in economic unions and monetary. Thus, the MADDALA and WU (1999) and CHOI (2001) test appears to be superior to the IPS test, it is a non-parametric test based on the Fisher test and relaxing the hypothesis of the unit root process common to all members. of the panel. Furthermore, the result obtained on the basis of this test does not depend on the different delays in ADF regressions. Table 1 presents the unit root results under the assumption of independence between the members of the panel. Table no. 2 presents the results of the unit root test under the hypothesis of dependence between members of the panel. an analysis of these results, it appears that the variables gross domestic product and FDI and RER measured by the value of US Dollar are stationary at level in the model with individual constancy while in the model with individual constant and trend this variables are stationary at level ,the other variables are stationary in difference whatever the model considered, in conclusion, all the variables in our study being stationary, we can explore the cointegration relationship between financial this variables in economies of MENA countries.

Table 2. Unit Root Test Results (2nd Generation Tests)

PES–CADF

Variable	Constant	Constant and trend	Variable	Constant	Constant and trend
GDP	−1.478	0.128	**ΔGDP**	−12.467*	−12.004*
FDI	−0.671	0.784	**ΔFDI**	−11.638*	−11.453*
RER	−0.703	−1.085	**ΔRER**	−07.749*	−08.715*

CIPS

Variable	Constant	Constant and trend	Variable	Constant	Constant and trend
GDP	−1.577	−2.256	**ΔGDP**	−5.988	−4.847
FDI	−1.0847	−2.159	**ΔFDI**	−5.375	−4.957
RER	−1.667	−1.996	**ΔRER**	−5.482	−5.315

Notes: H_0: homogeneous non-stationary; general to particular based on F joint test; critical values, CIPS with constant: 10 % (−2.03), 5 % (−2.11), 1 % (−2.25); critical values CIPS with constant and trend: 10 % (−2.54), 5 % (2.62), 1 % (−2.76); * indicates significance at the 1 % level

Table 3. Westerlund's Cointegration Test Results

Test	Statistic	Z-value	P-value	Robust P-value
G_t	−3.247	−5.506	0.047	0.039
G_a	−1.549	−8.304	0.019	0.018
P_t	−5.889	−6.687	0.018	0.023
P_a	−7.168	−9.044	0.034	0.018

Notes: H_0*:* no cointegration; lags and lead automatically selected by AIC criterion with Bartlett-Kernel window width set according to $4(T/100)^{2/9} \approx 3$; robust *p*-value controls for cross-section dependence

4.2 Pedroni Test and Johansen Fisher Panel Cointegration Test

To determine whether a cointegrating relationship exits, the recently developed methodology proposed by Pedroni (2001) and Johansen Fisher panel cointegration are employed. Firstly we used four panel statistics which are v-statistic, p statistic, PP-statistic and ADF-statistic (within dimension) and three group panel statistics which are group p-statistic, group PP-statistic and group ADF-statistic (between dimension) to test the null hypothesis of no cointegration against the alternative hypothesis of cointegration. These

statistics are distributed asymptotically as standard normal. Secondly, we also conduct the Johansen fisher test to confirm that the existence of co integration between variables. The results are reported in Tables no. 2 and no. 3.

Table. 4 Pedroni panel cointegration test

Pedroni cointegration result test

Within dimension test statistic					Between dimension test statistic		
	stat	P-value	stat	p-value		stat	P-value
Panel v-statistic	1.28945	0.1134	0.0167	0.5467	Group rho-statistic	0.7832	0.3754
Panel rho-statistic	-0.7689	0.1937	-0.5715	0.2689	Group PP-statistic	-2.8954	0.0062
Panel PP-statistic	-2.4478	0.0054	-2.6854	0.0011	Group ADF-statistic	-3.5546	0.0002
Panel ADF-statistic	-2.4188	0.0043	-3.7893	0.0023			

Table .5 Johansen Fisher Panel Cointegration Test

No of CE(s)	Trace stat	P-value	Max eigen value	P-value
None	48.83	0.000	48.83	0.000
At most 1	26.76	0.345	26.76	0.345

Table 4 reports both the within and between dimension panel cointegration test statistics for each panel data set. These statistics are based on averages of the individual autoregressive coefficients associated with the unit root tests of the residuals for each country in the panel. The majority of all seven panel cointegration tests reject the null hypothesis of no cointegration at the 5% significance level for the panel. Consequently, the evidence suggests that in both panel data sets there is a long run equilibrium relationship between oil production variable and economic growth. The result of coitegration test in table no 5 indicates that all variables are cointegated. Johancen fisher panel cointegration test results confirmed that there is a long run cointegration relationship among the panel variables.

4.3 Panel cointegration modeling

The second step in our empirical work is to involve the investigating of the long-term relationship between the tree variables , analysis of the relationship our variables in MENA countries has been the subject of several studies (Table6) , first we propose to use the fully modified ordinary least squares (FMOLS) and dynamique least squares (DOLS),

by these two methods we can estimate a Panel A. With this in mind, we propose to use the Pooled Mean Group (PMG) method, the principle of which we outline before explaining the actual implementation. In addition, in order to confirm our choice, we compare the results of this method with those obtained by two alternative methods, notably those of the Mean Group (MG) and Dynamic Fixed Effects. (DFE) , Panel B depends these tree methods, so PMG estimates will not be consistent while MG estimates will give consistent estimates of the average of long-term coefficients among countries. To ensure that the estimation is consistent and efficient, the Hausman test is applied because for (PESARAN and SMITH, 1999), imposing an invalid restriction on the parameters in dynamic models generally results in underestimating the speed of adjustment. In our study, the Hausman test shows us that the PMG estimate is the most appropriate therefore we introduce a subgroup of long-term homogeneity restrictions. the empirical results are obtained by assuming that the residuals are normal and therefore, the likelihood model in panel is obtained as the product of the likelihood of each country, maximizing this likelihood simultaneously estimates the long-term and adjustment coefficients for each country, the maximum likelihood method allows us to have, from long-term coefficients, short coefficients term country by country as well as their error variances. Table 3 presents the results of the estimation of the long-term coefficients stemming from the stacked regressions of the effect of FDI and RER in the MENA country.

Table. 6 Panel estimation FMOLS, DOLS results

Panel A			
Panel Fully Modified Least Squares (FMOLS)		Panel Dynamic Least Squares (DOLS)	
Dependent variable is GDP		Dependent variable is GDP	
FDI	0.4431*	FDI	0.4669*
T-stat	6.5687	T-stat	6.7583
p-value	0.0000	p-value	0.0000
RER	*-0.3683***	RER	-0.3401**
T-stat	5.1465	T-stat	5.6645
p-value	0.023	p-value	0.021
R^2	**0.9515**	**R^2**	**0.9604**

Source: author. the values in brackets are significant at 1%, 5% and 10% respectively (***), (**) and (*)

FMOLS and DOLS estimates illustrate that GDP and inflation are significant at 5% and have the expected sign, while the interest rate is positive and significant. The results show the effect of FDI and RER has a positive and significant effect on demand for money in the strict sense. The results of the Hausman test confirm that the hypothesis of homogeneity of long-term coefficients cannot be rejected. Considering the GDP , the estimated average coefficient relating to the error correction term is negative and significant.

Table. 7 Results of dynamic panel modeling data

Long-term coefficients Panel B	method		
	PMG	MG	DFE
GDP	3.665*** (0.000)	2.339* (0.007)	0.586*** (0.000)
FDI	-6.118*** (0.000)	-3.411 (0.218)	3.223** (0.01)
RER	0.653 (0.112)	-1.397 (0.493)	-1.415** (0.03)
ECT (-1)	-0.341*** (0.000)	-0.231*** (0.000)	-0.176*** (0.000)
Hausman test	1.365 (0.177)	----	1.996 (0.882)
Obs	360	360	360

Source: author . the values in brackets are significant at 1%, 5% and 10% respectively (***), (**) and (*)

This analysis of the effect of FDI and RER on GDP the results of PMG, however those from the MG and DFE estimators are useful for comparison purposes ,the main results obtained are following:

PMG estimates illustrate that GDP, FDI and RER are significant at 5% and have the expected sign.. the results of Hausman test confirm that the assumption of homogeneity of long-term coefficients cannot be rejected regarding the relationship. Likewise in this case, the results of the Hausman test confirm that the assumption of homogeneity of long-term coefficients cannot be rejected concerning the relationship between the variables, there by confirming the long-term or equilibrium relationship between GDP and its determinants.

5. Conclusion

Our analysis of the possible interactions between the three macroeconomic aggregates that are GDP, FDI and the Exchange Rate, both contemporary and structural, aimed to empirically verify whether, in the MENA countries case, the FDI and foreign exchange policy efforts have produced the expected effects on economic growth. We were able to identify the following empirical results. First, we note that the MENA 's current level of economic growth is determined by previously adopted FDI and exchange rate policies, which the exchange rate turns out to be a key variable FDI flows, and that the exchange rate is only determined by the exchange policies undertaken in the past, secondly, in terms of FDI, there is an ambiguity between the theoretical lessons and the empirically obtained results. It appeared to us that an increase in FDI flows contributes initially negatively to growth, which is hardly sustainable economically, because even if it is made by foreigners, FDI like any other investment should contribute to growth. Thirdly, we also managed to verify that according to our empirical results the exchange rate is a positive function of the previous values of the growth rate and the rate of change of FDI. Furthermore, by performing a modeling in which the variable of FDI rates is an explanatory variable of the

endogenous variables GDP rate and Exchange Rate, we obtained very statistical results, which means that FDI take on an exogenous aspect compared to GDP and FDI.

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Review of Socio-Economic Perspectives **Khurelbaatar, S. pp. 121-140**
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EXPERIENCE OF THE MONGOLIAN EDUCATION REFORM AND MAIN ISSUES

Sansarmaa Khurelbaatar [1]

Abstract

Mongolia is one of the countries in the world with the largest number of pastoralists. However, many pastoralists still face many challenges (Fratkin & Meir, 2005; Stolpe, 2016). On the other hand, since the post-Soviet market economic reforms of 1990, significant socio-economic changes have taken place in Mongolia, which have had a strong impact on the equality of the education sector (Ahearn & Bumochir, 2016; Steiner-Khamsi & Gerelmaa, 2008; Stolpe, 2016; Batkhuyag & Dondogdulam, 2018). However, we know that greater equality in education is not only beneficial to society, but also a way to increase economic growth (Hanushek and Woessmann, 2010). To overcome these difficulties, the education system has been reformed several times and borrowed or localized internationally used education system models to meet international standards. Unfortunately, the education sector does not have adequate schooling for children with disabilities, ethnic minorities, rural and remote herders, and the gap in academic achievement between these students has intensified in recent years. Therefore, this study aims to assess the current state of the education system and identify the causes of the biggest problems based on statistical and literature reviews. Student achievement levels vary, with student achievement declining year after year for unknown reasons, such as children living in low-income, remote rural areas, ethnic minorities, and children in dormitories. In the future, there is a need to further study the factors influencing this key issue in line with Mongolia's nomadic style and to further improve the education system.

Keywords: Education system, Disadvantaged students, Dropout in school, Student achievement.
JEL Codes: A20.

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1. Introduction

Mongolia has one of the largest number of pastoralists in the world. Territorially vast, with a population of just over 3 million, the population is scattered and nomadic. More than 60 percent of the population lives in remote rural areas. Eighty-two percent of the country's population is Khalkh, with the rest being Kazakhs, Durvuds, Bayads, and Buryats, and 0.6 percent are foreigners from China, Russia, and Korea. The official and main language is Mongolian and some ethnic languages are spoken, for example, Kazakhs speak Kazakh. The climate is dry and harsh, with temperatures of -40 degrees Celsius in winter and +40 degrees Celsius in summer, and four seasons of a year.. Mongolia is an independent parliamentary republic with a sparse population, administratively divided into the capital city and 21 provinces (aimags), the capital city into 9 districts, and the provinces into sub-provinces (soums) and sub-soums (bags). The dominant religion is Buddhism.

The social reform taken in the 1990s resulted in significant changes in Mongolia's political, social, and economic sectors (Steiner-Khamsi & Stolpe, 2006, 2008; ADB, 2008). Consequently, the transition period has had a strong impact on the country's education system (e.g. dropout, student achievement, enrollment, lack of school instruction, dormitories, minority background, male-female discrepancy, teachers discrimination), requiring more focus on education equality (Aassve& Altankhuyag, 2002; Weidman & Yoder, 2010; Sukhbaatar, 2014). In particular, "a young person born in a household living out of $1 a day has a ceteris paribus probability about 4 times greater of dropping out of school" (Pastore, 2012b.17.).

The Government of Mongolia has performed a number of systemic changes in line with international standards and new developments and approaches and made its 10-year secondary education system the current 12-year. Unfortunately, Mongolia's Human Development Index is 0.73 or 92nd compared to other countries, and the poverty rate decreased slightly from 29.6 percent in 2016 to 28.4 percent in 2018, but 15 percent of the population is below the national poverty rate with one in three herder households (NSO, 2020). Women aged 25-29 often have a university degree but are not employed in a better-paying job (Caroleo, Gianneli, & Pastore, 2010; WB, 26, May 2020). Primary and secondary education enrollment is 98.5 percent in 2018, but preschool enrollment is 70 percent among children aged 3-5 (NSO, 2020). However the enrollment rates are relatively high, children from households below the poverty rate, and from herders, and disabled parents, and from ethnic minorities have limited access to kindergartens and schools, and their drop-out statistics vary (MECS, ADB, & JFPR, 2019).

The Educational Evaluation Report 2012 released by the Educational Evaluation Center of Mongolia suggests that the level of quality assessment was different in urban and rural areas and that the national performance average was lower than the international average performance and this is still the case in the 2018 survey, and the exact socio-psychological reasons for its impact have not been identified. As of 2018, the education sector spends 5 percent of GDP or 15.3 percent of the country's budget, but most of them are day-to-day expenditures, so teaching materials and school buildings have not been fully renovated. These issues are directly related to the quality of education focus on disadvantaged students (WB, 26, May 2020). From these statistics, it is doubtful whether the equality of the education system can be achieved. So how has the current education system developed, how does the current education system work, why has the model of the international

education system been chosen and implemented, what are the challenges in this education system, and which is the most important issue? In the first instance, we aim to identify the most pressing issues in order to provide advice on how to overcome them. This research work consists of 4 main chapters, a conclusion, and references.

2. Literature review and development hypothesis

Why educational equity in Mongolia is interesting for readers from a different country? First of all, Mongolia is one of the countries in the world with the largest number of pastoralists. Territorially vast, with a population of just over 3 million, the population is scattered and nomadic. More than 60 percent of the population lives in remote rural areas. However, many pastoralists still face many challenges (Fratkin & Meir, 2005; Stolpe, 2016). Second, since the post-Soviet market economic reforms of 1990, significant socio-economic changes have taken place in Mongolia, which have had a strong impact on the equality of the education sector. For example, children of remote herders in rural areas, people with disabilities, ethnic minorities, migration, etc. (Steiner-Khamsi & Gerelmaa, 2008; Stolpe, 2016; Ahearn & Bumochir, 2016; Batkhuyag & Dondogdulam, 2018; Sukhbaatar & Tarko, 2018). Third, creating greater equality in education is not only socially beneficial, but also a way to increase economic growth (Hanushek and Woessmann, 2010). The current education system aims to provide every student with an equal opportunity to succeed (OECD, 2020) and everyone shouldn't be left out of school. On the one hand, it is important to create a citizen who is able to overcome any obstacles. On the other hand, it is time for education leaders to focus on the equality of education and the groups that make it up. This is because focusing on the target group of students is of great socio-economic importance. Therefore, it is important to identify the situation in the education system and the students who are affected by it. It is within occurrences and events and our awareness that the concept of resilience has gained prominence. It is reasonable that interest in resilience or the ability to thrive in the face of adversity would increase as awareness of challenges increases and as we recall the capacity of humans to survive and come times thrive in the face of adversity (Prince- Embury & Saklofske, 2014). It is obvious that we will create such a citizen through the education sector. Resilience has been the measure subject of study in psychology and education disciplines (OECD, 2011). In terms of educational attitudes, resilience is a group of "disadvantaged students" who are academically successful despite their disadvantaged background (OECD, 2011; Agasisti & Longobardi, 2014; Ebru, Maria, Saida, Sharlyn, & Teresa, 2015). Often many studies use relative outcomes on achievement tests to identify resilient students.

3. Research Methodology

The search for studies that include an analysis of the association between parent participation (disadvantaged students) and academic achievement was conducted using the main bibliographic databases of the scientific literature in these platforms and resources (ERIC, Psych Info, EBSCOhost, Science Direct, Organization of cross-national educational research of PISA, TIMSS, Sociological Abstracts, and statistic data). The keywords (taken from the corresponding thesauri) used in the initial exploration were

≪*resilience*≫, ≪*equity*≫, ≪*dropout*≫, ≪*achievement*≫. After that the data were analyzed and summarized by answering the following questions: *Why the Mongolian Government has done a radical reform in the education system? What is the new system like? Why this structure was chosen?, How the changes were made? Analyzing the new system: is there a rule/law/anything to solve the problem? How does the new system work? What are the big problems which have no solution now?.* After the initial search, in which more than 5000 studies of different types were filtered (books, doctoral theses, articles, research reports, etc.), approximately 60 studies were selected for their apparent association with the research object of this study.

4. Findings and Discussion

What is the new system like?

Current Education System of Mongolia

To address the challenges in this education sector, the Government of Mongolia has repeatedly reformed the education system. In 1992, full secondary education was provided in three levels –primary, lower and upper secondary education on a 3 + 5 + 2- year basis, and until 2004 on a 4 + 4 + 2-year basis. In accordance with the Master Plan for Development of Education in Mongolia 2006-2015, in order to bring Mongolia's primary and secondary education system in line with international standards, the schooling duration was changed into a 12-year system from 2008, and primary school starting age was changed to the age of 6 (Table 1).

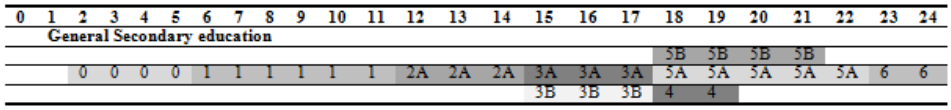
Table 1. Change of education system in Mongolia

Academic year	To 2006	2006-2008	Since 2008
Grade level	10	11	12
Primary education	4	5	5
Lower secondary	4	4	4
Upper secondary	2	2	3
Start age	8	7	6

Source: Sukhbaatar (2014)

The current 12-year secondary education system of Mongolia provides in three levels-primary, lower secondary, upper secondary (5+4+3), and includes preschool, vocational, and tertiary education in accordance with the International Standard Classification of Education (Model 1).

Model 1. Structure of Mongolian formal education system, according to the International Standard Classification of Education (ISCED, 2011)



Source: UNESCO- Institute for Statistics (UNESCO-UIS, 2012)

0- Kindergarten

1- Primary education

2A- Lower secondary education

3A- Upper secondary education

3B- Upper secondary education with vocational track

4- Vocational school

5B- Colleges with 4 years degree programmers

5A- University Degree Programmers: Bachelor's/Master's Degree

6- Doctorate 3 years

Why this structure was chosen?

The studies of Steiner-Khamsi and Stolpe (2008), Steiner-Khamsi (2012) found that a world-class, highly efficient education system is internationally more widely available because it removes barriers to the education and skills of Mongolian youth. An effective neoliberal model of the education system should be adopted. In other words, whether voluntary, random, or systematic, and whether the results of the reforms are good or bad, countries directly choose the model of a neoliberal international education system. This study compares examples of countries' education system reforms by a brief overview of comparative methodology. The key question in global research is whether the education system is moving away from the unique cultural concept of "good education" or "effective schooling" and gradually moving towards an international education model. Steiner-Hamsi and Stolpe (2006) defined previously that the school reform is novel to systematically apply an epidemiological model to explain the reason to reform a plethora of school reforms, only a few appear in different corners of the world. This figure epidemiological model assumes a Lazy-S- curve (see the Epidemiological Model of Global Dissemination**,** Steiner-Khamsi, and Stolpe, 2006, p.10). Explain this model, before the reform of the education system, a few education systems are "infected" by certain epidemics. At this stage, the first countries to reform and reform their education systems adopt international practices, especially the internationally accepted model. As a result, there will be no transnational policy borrowing. Such borrowed education system reforms prevent countries from developing a model of the education system that is appropriate to their country's geography, culture, and environment. In this way, countries can choose to borrow an effective and well-implemented model of an international education system and localize it to their own specifics to build herd immunity, ending the epidemic or spreading it around the world. However, countries that are reforming their education systems later use models that have already been imported. In other words, the best education system models that benefit the industry are borrowed from secondhand of other late adopters and do not receive education system loans like early countries. Also, researchers such as Weidman and Yoder (2010) provide that countries may mimic or borrow international education systems in order to increase foreign investment in education. In other words, the process of education reform in each country reflects the political situation in each country. In addition to the transnational interest in the education

policy phase, Phillips and Ochs (2003) previously discussed the borrowing process: Impulses and Externalizing decision, implementation, internalization, and indigenization (see figure, Phillips & Ochs, 2003.p.452). In other words, these stages are greatly influenced by the economic and political situation in the country, which then re-evaluates the model of their education system and takes all possible measures, such as changing teaching methods. For example, success in German vocational education has attracted the attention of British policymakers, who have seen the successful German model and used it as a model for experimenting with reforming their education systems, as Phillips and Ochs (2003) say that implementation is preconditioned to major education reform. It is also important to examine whether the model is truly in line with the culture, customs and development of the nation. Thus, the decision to reform the education system should be part of the policy reform, and overall strategy of the educational institution, and finally, the process and policy implementation should be evaluated and the country should adopt another country's education system model.

How the changes were made? is there a rule/law/anything to solve the problem?

At the same time, the education sector of Mongolia has gone through three development stages: a reforming stage at which it reformed its education sector and newly defined the sector's development policies and strategies (1995-2004), a strengthening stage at which curricula and teaching methods were integrated into, and the education system that values each student's development was built up (2005-2015), and the beginning of new strategic planning for making education sector in line with global trends (since 2016) (MECSS, EEC, & UNESCO, 2019). According to Article 4 of the Law on Education (2002), the general purpose of education as follows: "The purpose of education is to provide the citizen with appropriate intellectual, moral and physically capable, and develop respect to the principles of humanism and ability to learn, work and live independently, and free public education by the state. In response to it, the post-1990 education reform began with the establishment of schools and kindergartens in remote areas to suit the nomadic style (Steiner-Khamsi, & Stolpe, 2008), and the adoption of official documents such as the Mongolian Education Law and the Master Plan to Develop Education of Mongolia 2006-2015 (Weidman & Yoder, 2010). In addition, the Government of Mongolia has defined a development policy for the education sector and planned to develop an equitable and inclusive education for all to strengthen the quality of life through the quality education in its "Education Sector Medium-Term Master Plan for 2021-2030", and to be included in PISA in 2021 (Ministry of Education, Culture, Science [MECS], ADB, & The Japan Fund for Poverty Reduction [JFPR], 2019).

How the new system works?

Current situation of preschool education

In the 2017-2018 academic year, a total of 1,416 kindergartens are operating of which 878 or 62.0 percent are public, 538 or 38.0 percent are private (Table 4.) and 434 or 80.7 percent are in the capital city of Ulaanbaatar (NSO, 2018).

Table 2. Preschool education institutions by number, 2013-2018

Academic year	Number of Kindergartens	Public	Private
2013-2014	1067	764	303
2014-2015	1177	777	394
2015-2016	1288	826	462
2016-2017	1354	854	500
2017-2018	1416	878	538

Source: NSO (2018)

A total of 256,720 children were enrolled in pre-school education, of which 233,015 or 90.3 percent were enrolled in kindergartens and 23,705 or 9.7 percent were enrolled in alternative education (Table 3).

Table 3. Number of children enrolled in preschool education, by numbers between 2013-2018

Academic year	Number of Children	Kindergarten	Alternative
2013-2014	193,672	167,878	25,794
2014-2015	206,636	182,957	23,679
2015-2016	225,388	201,834	23,554
2016-2017	243,432	219,811	23,621
2017-2018	256,720	233,015	23,705

Source: NSO (2018)

The number of children in preschool education and kindergartens has been increasing year by year. The kindergarten enrollment was a total of 7,808 groups with an average of 32.9 children in basic kindergarten groups 37.0 children in the public sector and 23.1 children in the private sector during the 2017-2018 academic year. The number of children enrolled in basic kindergarten education was as follows: 2,674 (1.1%) in the nursery group, 46,950 (20.2%) in the junior group, 53,957 (23.2%) in the middle group, 59,061 (25.3%) in the senior group, and 59,268 (25.4%) in the preparatory group the mixed group covered 11,105 (4.8%). The gross enrollment in preschool education is 82.8 percent. The enrollment rate for pre-school 5-year-olds is 92.1. According to the residential areas, the kindergarten enrollment in urban areas is 81.4 percent and 58.2 percent in rural areas. Of the total number of children enrolled in preschool education the number of 29,493 or 11.5 percent are from herder family, 1,599 or 0.6 percent are disabled children, 2,070 or 0.8 percent are children in social welfare and 152 or 0.1 percent are orphans. The number of the 23,705 or 9.2 percent of the children attended alternative education of which 4,636 attended pre-school education in shift groups, 16,291 in nomadic groups ("Ger" kindergartens), and 2,778 attended pre-school education through mobile teacher services.

Challenges and issues

Although the enrollment in pre-school education is raising, the enrollment percent of children from poor and migrants families in urban areas, children with disabilities, and children from herder families, are still lower. Child development indicates varies in urban, rural, public and alternative education. It influenced by these factors such as the location of the kindergarten, the parents' education level (the child's mother must be educated), and

living standard. Children from low-income families attend three times less in preschool than middle-income families. Investments in the preschool sector do not fully provide training materials. According to the school readiness assessment, children from remote or herder households get the lowest results. There are insufficient statistical data on out-of-kindergarten children and local data vary (WB, 2016; MECSS, EEC, & UNESCO, 2019; MECS, ADB, & JFPR, 2019; MECSS, Global Partnership for Education [GPE], & WB, 2020). There are some challenges with "Ger" kindergarten such as clean drinking water, toilets, and fires (Rosario, Battsetseg, Bolormaa, Dorjnamjin, Tumendelger, Tsetsenbileg, & Enkhbold, 2005).

Current situation of primary and secondary education

Total numbers of 798 schools are operating nationwide of which 81.7 percents are public and 18.3 percent are private (Table 4).

Table 4. Number of secondary education schools, by types of ownership, 2013-2018

Academic year	Number of schools	Public	Private
2013-2014	756	628	128
2014-2015	762	628	134
2015-2016	768	638	132
2016-2017	778	645	133
2017-2018	798	652	146

Source: NSO (2018)

74 (9.3%) of total schools are primary schools, 116 (14.5%) are lower secondary schools, 562 (70.4%) are upper secondary schools, 46 (5.8%) are complex schools and as a location 557 or 69.8 percent are in rural areas and 241 or 30.2 percent are in the capital city of Ulaanbaatar. 705 or 88.3 percent of total school are in regular, 16 or 2.0 percent in professional, 63 or 7.9 percent in intensive, 6 or 0.8 percent in special, and 8 or 1.0 percent in the international curriculum. In the 2017-2018 academic years, a total number of 20,211 groups were trained, of which 12,705 were trained in the first shift, 7,320 in the second shift, and 186 in the third shift. 3 of the 25 schools enrolled in the third shift are in rural areas 22 of them are in Ulaanbaatar. The average class size is 28.3 students and the average class size in 35 schools in the capital city and 5 schools in the aimags is between 37.0-53.7. The number of students in general education schools has been increasing year by year and totally 581.2 thousand children enrolled in schools in 2017-2018 academic year, 572,752 of them have studied full-time, 111 of them studied in the evening classes, 350 of them studied as part-time and 7,947 of them studied for equivalent programs (Lifelong Learning Center) (Table 5).

Table 5. The number of students in primary and secondary school

Academic year	Number of students	Full-time	Evening	Part-time	Equivalent
2013-2014	510,203	497,022	588	973	11,620
2014-2015	517,878	506,816	315	680	10,067
2015-2016	546,215	535,055	244	723	10,193
2016-2017	561,693	551,953	177	447	9,116
2017-2018	581,160	572,752	111	350	7,947

Source: NSO (2018)

94.2 percent attended in public schools and 5.8 percent attended in private schools of all full-time students. 0.07 percent of full-time students enrolled earlier than school age, 53.8 percent were 6-10 years old, 29.2 percent were 11-14 years old, 16.4 percent were 15-17 years old and 0.5 percent were 18 years old or older. 687 are ex-pats, 2,050 are orphans, 193 are re-enrolled, 7,279 are disabled and 109,396 are from herders family of all students. 67,974 new students entered the first grade and 64,148 of them entered in public and 3,826 of them entered in private schools. A number of 43,932 and 64.6 percent were enrolled in pre-school education which is 99.6 percent of the total number of children eligible for school enrollment. Secondary school enrollment declined rapidly during the Mongolian political transition period of 1990 (ADB, 2008) and increased gradually and steadily since 2013. During the 2017-2018 academic year, the primary school enrollment rate was 97.1, the lower secondary school enrollment rate was 95.1 and the upper secondary school enrollment rate was 100.3. The national average class size is 31.5 (number of students in one class) in urban areas and 26.1 in rural areas (30.7 in province centers, 24.5 in sub-province, and 18.2 in baghs, khoroos, and villages). The pupil-teacher ratio is 19.6, of which 32.3 in primary school and 13.4 in middle and high school.

Challenges and issues

Despite the percent of school enrollment students is high, the school enrollment percent of disadvantaged students is very low. A classroom in Ulaanbaatar is crowd while students in rural areas especially in soums schools are not using its capacity full. Due to the lack of teachers in remote areas and soums (sub-district of the province), several subjects are taught by one teacher limits the opportunities for teachers' professional development and increases the workload, and affects the quality of education negatively. Although school enrollment is 95% during the 2017-2018 academic years, there are 682 children aged 6-14 who are out-of-school and most of them are male students. Migration from rural areas to provinces and the capital city and from the suburbs of the capital city to the city center have been differentiated the average class size in both urban and rural areas and it affects negatively the quality of education and the outcomes of educational services. There is a need to redistribute the school structure among location and enrollment district taking account of scientifically based economical, socio-cultural, and other factors such as duration of school attendance, barriers, and conditions to travel to school. Although the core curriculum was developed and implemented in stages between 1998-2019, curricula and textbooks have been being constantly changed due to inadequate preparation, textbook supply issues are not fully addressed and teachers weren't trained well. Schools need to increase the investment of laboratories in the learning environment and learning materials to make students aware of the information they find (Save the Children [SCH] &

Independent Research Institute of Mongolia [IRIM], 2018; MECSS, EEC, & UNESCO, 2019; MECS, ADB, & JFPR, 2019; MECSS, GPE, & WB, 2020).

Drop out of school

According to the Ministry of Education, dropout of school is "The children between the ages of 6-14 dropped out of school and never enrolled to school" (NSO, 2018). School dropout dimensions vary and research reports are different as we see from these various definitions (SCH, IRIM, 2018). The dropout rate increased sharply during Mongolia's political and socio-economic reforms in the 1990s and has declined sharply since then. According to our data, the dropout rate increased double from 4,4 percent to 8,1 percent in 1988-1992. In recent years dropout rates in general education levels are decreasing successively from the academic year of 2008-2009. However, statistics and researchers say there are many reasons for dropping out. These include:

Poverty and socio-economic condition

According to Rosaria and his/her colleagues' research (2005), many school-age children who are expected to be in school look after livestock, sell cigarettes and candy, wash cars, sell TV program guides, carry loads, and work as bus conductors to help and support their families, earn a living in 2005. However, the number of children working on the streets has decreased 10 years later that, poverty has not decreased steadily especially in suburban households and single mothers are affected by poverty. The poverty rate in Ulaanbaatar was 24.8 percent, and one-third of the population was migrants more vulnerable to poverty according to the 2016 poverty survey. These poor families are unable to send their children to school because they cannot afford to pay for their children's school expenses such as uniforms, school supplies, savings, holidays, and books (MECSS, EEC, & UNESCO, 2019). On the other hand, Pastore (2012) made an interesting argument that parents with either uneducated or lower education levels are more likely to fall into poverty and might be a child born to a household with a daily income of one dollar is four times more likely to drop out of school.

Migration and nomadic style

The transition of Mongolia in the 1990s created so much unemployment and poverty that people in remote areas began to move to urban areas to improve their livelihoods (National University of Mongolia, Childhood Poverty Research and Policy Centre [CHIP], 2005). In other words, migration is the movement of persons from rural to urban cities in search of greener pasture, significant numbers of children never enrolled in school in places where are large areas and nomadic children, or children with special needs in remote communities. The shift of people from the countryside to the capital has been increasing year by year. As a result, the number of seats in secondary schools in the capital has increased while the number of schools in rural areas has decreased, resulting in a hidden shortage of professional teachers. Between 2007 and 2017, 184 new school buildings were opened but the number of schools with three shifts still remained (MECSS, EEC, & UNESCO, 2019). For example, Pastore (2012) found that the number of immigrant students was three times higher than urban students because immigrants did not have time to register or did not register and city schools did not accept stateless students are dropping out of school. On the other hand, Mongolia has a nomadic culture and more than 40 percent of the population has a nomadic lifestyle herding livestock and grazing all four seasons of

the year have greatly contributed to school dropouts (Rosario et al., 2005; Steiner-Khamsi & Gerelmaa, 2007; Tony, 2008; ADB, 2008; Walters, Marshal & Nixon, 2012). Mongolia winters are very cold and down to -40 degrees, Celsius and herders often move to shelter and pasture to cope with severe winter.

Households (nomadic families) that live 35-50 km away from the soum's (sub-province) center and away from each other. If children live more than 10 km away from the school: most children used to walk to school, other children used to go by car, by riding a horse or camel or by motorcycle. As a result, some parents drop their children out of school because of transport and distance between home and school, because of the winter cold or because they don't have warm clothes or because they don't have enough manpower to take children to school. The farthest area some of them come from was 130 km along the Gobi desert sands. Also, students are dropping out of school due to parents may place their children in a dormitory alone or the father may take care of the animals and the mothers move to the soum center with the child to school. These conditions may affect divorce, sometimes the children stay with relatives or friends. Because of these issues, some parents postpone children to school enrollment until they get 7 or 8 years old instead of enrolling at the age of 6 (MECS, ADB, & JFPR, 2019; MECSS, EEC, & UNESCO, 2019). The Education Law in 2016 was amended to accept parents' requests that are unable to enroll in school from the age of 6 can be accepted at the request of their parents when they're 7 or 8. In addition, due to insufficient dormitory capacity, herder children who apply are forced to drop out of school because they are not able to stay in dormitories. For example, 27,945 herder children applied to stay in dormitories, of which 25,705 lived in dormitories and it covers 92.0 percent of herder students who applied for staying dormitories in the 2017-2018 academic years.

Lack of dormitories

There were a total of 532 (522 public, 10 private) dormitories nationwide, most of which or 516 were located in rural areas in the 2017-2018 academic year. 35,196 students lived in dormitories totally (NSO, 2018). These dormitories accompanying schools in these soum centers (sub-province) and baghs (rural area) play an important role in educating children from remote rural areas and herders households. Unfortunately, secondary school facilities are outdated often dilapidated and do not have adequate budgets for renovations, especially in dormitories which are very cold and need to be renovated and insulated (Tony, 2008). (MECSS, EEC, & UNESCO, 2019) reported that dormitories were affected in poor health and had poor access to drinking water and sanitation. As a result, the personal hygiene of dormitory students is inadequate. In addition, it was noted that these conditions have a serious impact on the health of students as well as teachers and staff. In particular, the poor health of dormitories in rural schools has led to dropouts and poor academic performance and many parents are reluctant to send their children to schools without adequate sanitation. In addition, there has a very disadvantaged condition such as child unfriendly, bullying (Steiner-Khamsi & Gerelmaa, 2007, 2009), giving nicknames, and defamation because of depending on their appearance, dress, socio-economic status, and academic performance (MECS, ADB, & JPDF, 2019). Also, there is inequality of food service due to the lack of fixed and normative cost for the number of students living in dormitories. Steiner-Khamsi and Stolpe (2008) and Rosario et al. (2005) studies show that herder children living in dormitories often drop out of school because they miss their

parents, suffer from colds (poor infrastructure building) uncomfortable condition to study, and hunger.

Ethnic minority

The 2020 population census recorded 16 ethnic groups represented in Mongolia, the Kalkh are the majority accounting for around 95 percent of the population. Kazakhs represented approximately 4 percent and all other ethnic minorities accounted for just 1.6 percent of the total population. 88.7 percent of Kazakh ethnic are living in Bayan-Ulgii province which is in the western part of Mongolia, 11.5 percent of the Kazakh population lives in Hovd province which is in the northwest part of Mongolia (NSO, 2018). The reason for the emphasis on the Kazakh ethnic group is that they have a bilingual Kazakh-Mongolian language and are traditionally very different, therefore Kazakh students are dropping out of school because they do not speak Mongolian well (Sandra, 2005; Tony, 2008; Wei-chieh, 2011). In Bayan-Ulgii aimag, dropout rates are three times higher than the national average (MECSS, EEC, & UNESCO, 2019). Therefore, the Ministry of Education pays special attention to the development of special textbooks and programs for them. In addition, the lifelong education program uses radio and printed materials to educate Tuvan immigrants (migrates to the mountains) through mobile teachers. However, these programs are often implemented with the funding of international donors and the education process is disrupted when funding ceases (MECSS, EEC, & UNESCO, 2019).

Gender equality

The sex ratio index of all secondary school students is 1.00 in the 2017-2018 academic year, but in primary education (100 men, 96 women), basic education (100 men, 98 women), and upper secondary education (100 men, 119 women) respectively (MECSS, EEC, & UNESCO, 2019). According to the available statistics dropout rate is higher among boys than girls and increases. (Steiner-Khamsi & Gerelmaa, 2007, 2009; Pastore, 2012). In particular, more boys are dropout because they are doing the kind of work the livestock, selling goods, working in mining for gold and coal to earn money to support their families. For example, in the case of 15-year-old Otgonmurun, a herder's son dropped out of school at the age of 7 to herd livestock. Because his family has 300 sheep, cattle, and horses. Bur her sister goes to school (Cengel, 3, Jan 2018). The number of uneducated young people is twice higher as uneducated young woman (Pastore, 2012). However, the girls often drop out of school due to someone's illness in her family, helping their mother with household chores, taking care of their siblings, or being abused or pregnant (Rosario et al, 2005).

Student achievement

The Government Action Plan for 2016-2020 states that "it will be possible to assess the quality and effectiveness of educational services at all levels and create a standard-based education system" (Appendix to Resolution No. 45 of the State Great Hural of Mongolia). According to this, a lot of work has been done on preschool education, primary and secondary education curricula, principles of assessment, and methodologies to establish a system for evaluating the quality of education and to update the evaluation method. Such as:

In the field of preschool education

Preschool education standards were revised in 2003, 2011, and 2015 and significant conceptual changes were their measurements changes (Table 6).

Table 6. Preschool education standards, measurement, since 2003

Standards	Measurements
Preschool Education Standards (2003)	Quality of service, content, methodology, evaluation, requirements for the child development environment, development fear, content, and ability to master
Early Childhood Development Standards (2011)	Comprehensive Child Development: Physical, Mental and Social Development, Combined Development of Congenital and Acquired Development, and Adult Support
Core curriculum (2015)	Assess the child's skills, fill out a detailed structured observation sheet, conduct a free observation, and create a personal file

Source: MECSS, EEC, & UNESCO. (2019.p.228)

The Education Evaluation Center examined and assessing up to 10 percent of all children within the sample of under 3 years of age (29 questions) and 3 to 6 years of age (115 questions) randomly using a detailed structure of observation sheet in order to set the national average, norms, and standards for preschool development, assess each child's development, determine progress and support the effective organization of learning activities based on the core curriculum of preschool education since 2015 (MECSS, EEC, & UNESCO, 2019). A total of 22968 children from 6348 groups of 1332 kindergartens (3 years old-5231, 3-6 years old 17737, 51.5 percent from Ulaanbaatar and 48.5 percent from the countryside) were involved in the study in 2018. An official report of the data is not available to the public yet. The World Bank examined the quality of kindergarten services using the Early Childhood Environmental Monitoring Instrument (ECEMI). The survey covered a total of 327 groups of children from public and private kindergartens covering the capital city and 8 aimags in 2015. The study found significant differences in access and service of education between state-owned urban kindergartens and rural state-owned kindergartens, aimag center kindergartens and soum center kindergartens and Ulaanbaatar suburban kindergartens and city center kindergartens in the quality. For example, sub-indicators (space, communication, training, activities, reading and writing environment, mathematics) are different from each other, in the rural, remote areas and Ger kindergartens received relatively lower scores (WB, 2016). In other words, the cognitive, language, and socio-psychological skills of preschool children in rural areas, low-income families, and ethnic minorities are lower than in urban areas. In addition, rural children are less prepared for school readiness than urban children and there is a lack of school readiness for 5-year-olds nationwide. These issues are due to poor training materials such as the supply of toys and materials, and inadequate group room organization (MECSS, GPE, & WB, 2020).

Challenges and issues

The quality of pre-school education for children in remote rural areas especially Ger kindergartens is lower than in central areas. There is a lack of official reports and data information on the current state of preschool education, implementation of standards, quality assessment indicators, and child development. There is a need to establish a methodology and system for a comprehensive assessment of early childhood development (MECSS, EEC, & UNESCO, 2019).

In the field of primary and secondary education

Related to both new standards based on comprehensive competencies in primary and secondary education and its implementation the curriculums were developed such as "The Right Mongolian Child" National Curriculum (Appendix to Government Resolution No. 295 of 2013), and the Core Curriculum (Appendix 1 to Order No. A / 302 of the MECSS of July 10, 2015) by Ministry of Education. In this regard, the training plan was changed by 21 decisions in 2004-2008 years. There have been significant changes to the procedures for assessing students' knowledge, skills, and attitudes (1998, 2010, 2013, and 2018). Students are assessed by three assessments: diagnostic, formative, and summative in accordance with the updated procedure of general education students and training quality assessment in 2018 (Order No. A / 425 of the MECSS of 2018).

The Educational Evaluation center aims to determine the students' knowledge, skills and attitudes and their application skills and conducting the study covering ten percent of all students involving these subjects such as Mongolian language, mathematics, science in primary education (5^{th} grade), Mongolian language, mathematics, science and social sciences in basic education and a combination of the Mongolian language, literature, mathematics, selective course and foreign languages in secondary education to determine the implementation and quality of primary, basic and secondary education (9^{th}, 12^{th} grades) programs at the national level (10 percent of all pupils) in accordance with the "Procedure for Assessing Secondary School Students and Education Quality" since 2013 (EEC, 2008; MECSS, EEC, & UNESCO, 2019). Educational quality assessment research methods are being developed with the support of international consulting services and local researchers. For example, the Education Evaluation Center has received consulting services from the Cambridge International Examinations Center on the development of assignments, revision, evaluation, and reporting of examination materials for three years. Students, parents, teachers, and school administrators conducted an online questionnaire of the survey in Mongolian context is used in the 2016 PISA and TIMSS surveys to identify factors that affect the quality of education (Khurelbaatar, 2017; Khurelbaatar & Jozsef, 2017a; Khurelbaatar, 2018b). Prior to this, some studies have been conducted using internationally accepted methods. Within its functions, the EEC carried out series of studies on assessment such as National Assessment of Primary Mathematics and Reading-Grade 5 (2008), TIMSS, PIRLS International Experimental Research (2011)- Grades 4 and 8, Implementation of Primary and Basic Education Standards and external audits (2012)- Grades 7 and 10 (MECSS, EEC, & UNESCO, 2019). According to the survey results, the average math test performance decreased to 45.4 percent in 2008, 38.8 percent in 2011, and 39.1 percent in 2012. Between 2016 and 2018, the level of academic achievement decreased in primary education by 52.6-41.7 percent, basic education by 40.3-37.1 percent, and complete secondary education by 34.7-39.9 percent or slightly

increased. In other words, recent education quality assessment reports show that students' knowledge and skills are very low, performances are below 60 percent and the proportion of low-scoring students especially basic and upper secondary school students is lower than in primary education. In addition, the quality of education of children from ethnic minorities living in remote rural areas, herders, and dormitories is still lower than that of central children. Also, the mother tongue of Mongolian children living in Kazakhstan, Tuva, and abroad affects a negative impact on their learning (see "Medium-term development plan for the education sector 2021-2030 by MECS", 2019; "Mongolian Basic Education Report", 2019). Subsequently, in order to assess the effectiveness of the country's education system, share experiences, define the country's level and determine policy recommendations for the future, the Ministry of Education in Mongolia is planned to be covered in the PISA Evaluation of Economic Cooperation in 2021 (Government Resolution No. 19 of 2016). These weaknesses and differences in the quality of education are due to the lack of teacher evaluation methods, knowledge-based traditional not focused on skill-based assessment, inability to effectively use progress assessment in training, lack of books and manuals to assess students' knowledge, skills, attitudes, and insufficient teaching materials and textbooks. Such issues are strongly influenced by the fact that the curriculum is constantly changing (MECSS, EEC, & UNESCO, 2019). Also, due to the growing number of migrants from the countryside to the capital city, the workload of the capital city's secondary schools has increased to 40-50 students' class size. However, a sharp decline in the number of students in schools in remote areas has led to a hidden shortage of professional teachers, which has distorted academic achievement. In other words, due to the fact that the construction of new schools is not coordinated with population growth and needs, some schools are below capacity, and some are operating in two or even three shifts which had a negative impact on students' performance (MECSS, GPE, & WB, 2020).

Challenges and issues

Although Mongolia is experimenting, implementing, and planning internationally used methods to improve the quality of education, it should be noted that learning differences in academic achievement persist. In particular, there is an urgent need to address the issues of being assessed lower in remote rural areas students such as herders, people with disabilities, dormitories, and ethnic minorities. On the other hand, it is necessary to differentiate the assessment methods for assessing academic achievement according to the age, psychological and mental characteristics of the students and to study the methods used in the international education quality assessment.

5. Conclusion

What are the big problems which have no solution now?

Primary and secondary education enrollment is 98.5 percent in 2018, but preschool enrollment is 70 percent among children aged 3-5 (NSO, 2018). However the enrollment rates are relatively high, children from households below the poverty rate, and from herders, and disabled parents, and ethnic minorities have limited access to kindergartens and schools, and their drop-out statistics vary (MECS, ADB, & JFPR, 2019). Preschool, primary, and secondary education curricula have been significantly reformed in line with

education reforms. As a result, teaching assessment methods, methodologies, and textbooks have changed many times. Unfortunately, the learning environment, classrooms, and laboratories are not prepared as well as teachers and students for these reforms and academic achievement are still unsatisfactory every year. However, Mongolia has made many signs of progresses in assessing the quality of education at the international level it was not yet fully introduced the best methodology for international research but has assessed it by its reference tasks. Student achievement is lower than international standards and some indicators have declined over the years especially those in remote rural areas, ethnic minorities, people with disabilities, and those living in dormitories. The factors and causes that affect it are not clear yet. The quality of education has slowed down the development of the sector (MECSS, GPE, & WB, 2020). So, the issues have been on focus; the equality of the education system is not provided, in fact, who should we focus on, and what detailed measures should be taken to improve the quality of education, and is the methodology for evaluating the quality of education effective, and what can we update and improve based on the causes and factors identified, and in particular, what socio-economic and cultural factors have the greatest impact on the educational achievement of Mongolian students? Therefore, there is an urgent need to develop an assessment methodology to assess the quality of education in line with international standards and to expand research and analysis in this area.

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Review of Socio-Economic Perspectives **Velazquez, R.M. & Gomez, J. pp. 141-150**
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COMMUNITY WORLDVIEWS AND HERITAGE CONSERVATION IN THE DEVELOPMENT OF TOURIST DESTINATIONS

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Abstract

Mexico is widely recognized by the international tourism due to its natural and cultural attractions with coastal, ecotourism and community tourism destinations. There are several community tourism destinations in the southeast region of the country and mainly in Oaxaca State, which main attraction is its cultural heritage. In the northern highlands region of Oaxaca, where most of the indigenous groups are located, it is common to find a pre-Hispanic worldview based on the relationship with the earth and in this region is where the largest number of community tourism destinations is located. The community tourism lies in the appreciation of the natural environment in coexistence with the culture of the local inhabitants. However, the Mexican tourism policy has oriented the growth of tourism in indigenous communities with a homogeneous model based on the construction of cabins with modern elements and without considering the community worldview. In this research, the elements of the community worldview that relate to the conservation of cultural and natural heritage in the development of tourist destinations were analyzed qualitatively with the use of in-depth interviews with key informants. The results provide indicators of community worldview that explain the preservation of culture and can contribute to establish the bases for the development of sustainable tourism destinations in indigenous communities.

Keywords: Tourism, Worldviews, Sustainability, Culture, Indigenous Communities.
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1. Introduction

The cultural richness of Mexico is shown in each of its 68 indigenous peoples. In the southeastern region there are 31 groups and particularly in Oaxaca there are 14 ethnic groups: Chatinos, Chinantecos, Chocholtecos, Chontales, Cuicatecos, Huaves, Ixcatecos, Mazatecos, Mixes, Mixtec, Tacuates, Triquis, Zapotecs and Zoques with a whole population of 819,725 inhabitants distributed in 570 municipalities (CDI - National Institute of Indigenous Peoples, 2019).

Oaxaca is divided into eight regions. In the northern highlands region there is located the largest number of tourist destinations developed under the Mexican Tourism Policy, where the "Pooled Towns Route" (Ruta de los Pueblos Mancomunados) highlights. The Mexican tourism policy argues that the development of tourist destinations based on the construction of tourism infrastructure in indigenous communities will allow economic development.

However, the development of tourist destinations in indigenous communities has only contemplated the economic development, leaving out the preservation of the natural and cultural heritage. The Mexican model on which the development of tourist destinations is based contemplates the construction of cabins with a "homogeneous type of wood and modern construction and infrastructure elements" for the confortable lodging of the visitors, which unfortunately are built in the best spaces for landscape contemplation to increase the visitors attraction, neglecting the impact on the environment as well as the cultural elements.

The environmental impact caused by the development of the tourist destinations in indigenous communities and the exclusion of preservation actions for the culture have caused problems among the inhabitants and some disputes have led to social and environmental vulnerability by the deterioration of the natural and cultural heritage.

Some scholars from indigenous communities such as Díaz Gómez (2004) and Martínez Luna (2013) have analyzed the community worldview in the social construction of these communities and have defined the elements of community culture within the Commonality concept (Comunalidad).

On the other hand, De Witt et al (2016) have explained the environmental behavior patterns throughout the worldviews based on the cultural cognition theory (Kahan 2012). However, to date there has not been a study that analyzes the relationship between the particularities of the indigenous community worldviews and the preservation of the natural heritage.

In this paper, the towns that integrate the "Pooled Towns Tourist Route" in the Northern Highlands of Oaxaca were considered to analyze how the worldviews of the community inhabitants effects the preservation of the natural and cultural heritage in the development of their ecotourism destinations.

2. Literature Review

In the review on the study regarding the community culture of the northern highlands region of Oaxaca, Díaz-Gómez (2004) developed an explanation of the oral-based indigenous knowledge through the ethnographic method on which the "communality" (Comunalidad) raises as a concept to understand these communities dynamics and worldview. The Communality explains the coexistence of the indigenous communities within their territory based on this non-written expression and understanding of the ways of community organization, the identification of the authorities as an element of social service and the indestructible and eternal link of belonging to the earth and place of birth (Martínez-Luna, 2003).

The elements that support the commonality in the indigenous peoples are based on their worldview and self perception at the territory they inhabit and which they belong to, their language, the annual holiday and the traditional organization based on the decision making by the community assembly as part of their identity and sense of belonging (Martínez-Luna, 2003).

This philosophical interpretation of the non-written knowledge has been taken as a base for a first mention of the community worldview under the "communality" approach. Velázquez-Sánchez et al (2013) developed the commonality indicators through the analysis of community sustainability in the Mexican communities with ecotourism destinations. Then, they developed the economic and environmental indicators of these indigenous communities with ecotourism (Velázquez Sánchez, Ramos Soto, & Gómez Velázquez, 2015).

On the other hand, the New Environmental Paradigm has been the theoretical base for the understanding of the human – environment relationship. This theoretical base integrates an approach, which relates the changes in environmental attitudes, values, and behaviors to the changes in the sociocultural systems (Arcury, 1986).

As the environmental, social and economical variables can represent risks, the human perceptions to several variables have been analyzed based on the Cultural Cognition Theory (Kahan 2012) as well as the Cultural Theory of Risk (Douglas & Wildaysky, 1982) under the premise that the individuals beliefs about societal dangers that reflect and reinforce their commitments to particular visions of the ideal society (Kahan, 2012). This theoretical base allowed De Witt et al (2016) to develop a tool for the identification of the worldviews regarding environmental variables. The beliefs and behaviors for climate concerns establish the worldview approach for a traditional, modern, postmodern or integrative category De Witt et al (2016).

The understanding of the worldview patterns in the indigenous communities with tourism projects with an environmental approach (ecotourism or adventure tourism) can explain the actions that lead to the specific behaviors of people when they belong to this common group. In this case, there are several particularities within the community worldview that are not contemplated yet and need to be understood to link the actual theory to the particularities of the context.

3. Methods

This study was developed in the in the indigenous communities of the northern highlands of Oaxaca, Mexico with ecotourism projects. These ecotourism destinations are characterized by the appreciation of natural landscapes located in indigenous communities. These communities have organized themselves for the tourist development for common welfare within "The Pooled Towns Route" including the ecotourism destinations of Benito Juárez, La Neveria, Cuajimoloyas, Llano Grande, Latuvi, Lachatao, Amatan and Yavesia. This region of Oaxaca, Mexico is the origin of the reformulation of the Communality concept by Díaz Gómez (2004) and by Martínez Luna (2002).

The approach of this study comes to retake the tool to "map" the worldviews by De Witt et al (2016) and the community sustainability elements from communality described and operated by Gómez Velázquez, Velázquez Sánchez, Morales Santiago, & Pérez Delgadillo (2016) to relate both variables and give and perform the theoretical base in the local context. To develop this research, it was necessary to carry out a qualitative stage in order to review the categories of Community Worldview and Conservation of the Natural and Cultural Heritage. Fist of all, for the identification of the key informants, they were identified based on their participation in the community assembly, in the municipal government and in the participation in the development of the tourism project and the sample was defined from the total number of inhabitants among those involved with the tourist practice. The in-depth interviews were applied for the data collection tool and allowed sporadic opening in the conversation without limits and without a specific guide. The provided data was analyzed through the content elements suggested by the phenomenology analysis and then, for the identification of the categories with Atlas Ti program to review the relevance or contrast with the findings of Gómez Velázquez et al (2016). 6 in-depth interviews were conducted with the same number of key informants, two in each of the eight communities from "The pooled towns route". The interviews were structured to identify the main elements of the worldview elements and those of conservation of the natural and cultural heritage from their position as members of the community to their perspectives about the establishment of the cabins and the tourism project.

The qualitative results allowed to define the categories of the community worldview variable: The territory they inhabit and share, the traditional organization elected to fulfill the service to others, the party in its relation with the offering to the land and the indigenous language as the means of oral communication with the earth. The categories that were formed with the qualitative analysis for the conservation variable of the natural and cultural heritage were: The belonging to the community, the meaning related to the Mother Nature, the interpretation as a living being, the natural relationship with the planting cycles, the relationship with the life cycle and the relationship with the cosmos.

For the operational definition of the variables, the Integrative Worldview Framework (IWF) was taken as base with its categories: Ontology, Epistemology, Axiology, Anthropology and Societal View (De Witt et al, 2016). Then, the "pillars" of the communities in "communality" defined the community worldview shift with the Territory, Traditional organization, Social Celebrations and Indigenous Language (Martinez-Luna, 2013) categories in order to adapt the theoretical tool for the perceptions in the local context.

For the interpretation of heritage conservation, there were categories related to the community belonging, such as the respect for the meaning of the Mother Nature, interpretation as a living being, respect for the natural relationship with the planting cycles, the relationship with the life cycle and their relationship with the cosmos also found within the communality transcripts (Martinez-Luna, 2013). Then, the community worldview was operationally defined as a variable composed of categories: The territory they inhabit (Anthropology), the traditional organization (Axiology), the social celebrations (Ontology), the indigenous language (Epistemology) and the Sense of Belonging (Societal View). The heritage conservation variable was also treated as a variable composed by the following categories: The meanings related to the Mother Nature, the interpretation as a living being, the natural relationship with the planting cycles, the relationship with the life cycle and its relationship with the cosmos.

Within the identified categories of community worldview and heritage conservation variables, 9 indicators were developed to design the 57 items for the Community Worldview variable and 10 indicators and 40 items for the Conservation of Natural and Cultural Heritage output variable. The Reliability Test after dimension reduction of the factors of both variables by means of factor analysis by principal components and varimax rotation, the reliability test carried out a Crombach's alpha of 8.1.

The factors of the community worldview variable were analyzed in their correlation with the output variable of conservation of the natural and cultural heritage to express the understanding of the ecotourism development from the community worldview and relate it with the conservation actions of their natural and cultural heritage.

4. Results and Discussion

The results defined a Community Worldview construct by The Pooled Towns Route in the Northern Highlands Region of Oaxaca, Mexico under the adaptation of following the categories for the proper understanding in the local context based on De Witt et al (2016) proposal:

• Territory (Anthropology): Through the manifestation of the significant experiences of the territory that represents the earth that gives life, provides food, shelter and shrouds – relationship to nature and context.

• Traditional organization (Societal View): This category was mainly expressed by the participation of the interviewees in traditionally and historically determined positions and by those who, due to the new times, are assigned according to the cultural ancient social structures – Society processes.

• Social Celebrations (Ontology): It is the category that defines the syncretism between the pagan commemoration aimed at gratitude to the natural elements and the imposition of Christianity imposed by Catholicism and that give rise to the commemoration that identifies the community – Metaphysical beliefs and meanings.

•Indigenous language (Epistemology): This category that represents the oral expression as the basis of the culture and identity of indigenous communities – Rationality and knowledge.

• Sense of Belonging (Axiology): The category of what they define as the "sharing facts" which they manifest through their beliefs, their origins as an integrated group, the validity of their ancestors thinking, the permanence of their legends, the transmission of their history as part of their expressions with the nature – Community values and morality.

For the Heritage Conservation Variable, the inhabitants of the "Pooled Towns Route" in the Northern Highlands of Oaxaca, Mexico defined the following categories from they worldview and words:

• Nature as a mother: It is the expression that defines the meaning and significance of the earth where they inhabit as a living being that has an equivalence to the meaning of the mother.

•The life cycle: Respect for the cycles and their relation to life and death as a similar with the sowing and harvest, with the earth and the cosmos.

• The earth as a living being. The nature and the beings that inhabit it, the forest, the plants, the trees, the birds and other inhabitants are living beings that share a common territory.

In the analysis of the constant oral expressions, the categories matched perfectly according to the common ways of meaning in all of the communities in the Pooled Towns Route. Then, the worldview as a construct can define "the communality" in an adapted form as the community worldview.

These expressions were expressed in terms of the importance of the forests, for the community, in the care of the animals, plants and the river. The importance of knowing the plants they use to heal as the elders did since several generations and the respect they show with the earth when it is time to prepare the land, when it is time to plant and harvest, but mainly when it is time to thank the earth. So, the natural heritage represented by the nature, and the cultural heritages represented by the traditional elements are themselves a construct from the oral communication and worldview of indigenous communities expressed in the tourist destinations operation. The resulting categories of these analyses are shown in Table 1:

Table 1. Categories identified for the Community Worldview construct and those by Natural and Cultural Heritage Conservation.

Construct	*Category*	*Category*	*Category*	*Category*	*Category*
Community Worldview	*Territory* *(Anthropology)*	*Traditional Organization* (Societal View)	Social Celebrations (Ontology)	Indigenous Language (Epistemology)	Sense of Belonging (Axiology)
Natural and Cultural Heritage Conservation		The Nature as a mother	The Life Cycle	The Earth as a Living Being	

The factor analysis by principal components was performed 4 times to select the factors and to reduce the items number. At the beginning, a non-significant contamination was observed, so the factors were purified twice and thrice.

The factor analysis shows the commonality of the items and the accumulated variance under the principal components criterion and varimax rotation to observe the grouping of the factors. For the Community Worldview Variable, 5 factors with 30 validated items were clearly identified and matching with De Witt et al (2016) categories. For the Heritage Conservation variable, only 3 factors were identified with 29 Validated items with a difference of 5 items compared to the result of the pilot proof. The results of the factorial analysis are detailed in Table 2:

Table 2. Final Factors from validated items of both Community Worldview and Heritage Conservation variables:

Variable	***Factor***	***Factor***	***Factor***	***Factor***	***Factor***
Community Worldview	*Territory* *(Anthropology)*	*Traditional Organization* (Societal View)	Social Celebrations (Ontology)	Indigenous Language (Epistemology)	Sense of Belonging (Axiology)
	8	5	6	5	6
Natural and Cultural Heritage Conservation		The nature as a mother	The life cycle	The earth as a living being	
		10	10	9	

After debugging the variables of the Community Worldview and Heritage Conservation, the reliability test was carried out by means of the estimation of Crombach's alpha. The result showed an alpha of 8.5 of reliability with a better result compared to the pilot test. With the findings of the qualitative analysis, a questionnaire was designed to perform the quantitative analysis in the following correlation of the variables for the hypothesis test.

The hypothesis test was performed based on Pearson's bivariate correlation test to observe the relationship between the Community Worldview and Heritage Conservation variables. The results showed that there is a significant positive relationship (.979 **) between the Community Worldview categories expressed by the inhabitants of the communities of Benito Juárez, La Neveria, Cuajimoloyas, Llano Grande, Latuvi, Lachatao, Amatan and Yavesia and the elements of Conservation of the Cultural and Natural Heritage. The results of Pearson's Bivariate Correlation are showed in Table 3.

Table. 3 Pearson's Bivariate Correlation Worldview-Heritage Conservation

Correlations

		COMMUNITY WORLDVIEW	HERITAGE CONSERVATION
Community Worldview	Pearson Correlation	1	,979**
	Sig.		,000
	N	35	35
Heritage Conservation	Pearson Correlation	,979**	1
	Sig.	,000	
	N	35	35

**. The correlation is signiticant at 0,01 level (Two-tailed).

Source: Result of the analysis of the difference in means made with the SPSS program 20

The results showed that the Community Worldview elements are closely related with the Conservation of the natural and cultural heritage expressed by the inhabitants of the ecotourism destinations in the Pooled Towns Route of Oaxaca, Mexico. With this, the hypothesis was generally tested by confirming that the Community Worldview guarantees the Conservation of both natural and cultural heritage of the communities in the risk that the modern elements such as the provision of ecotourism services and facilities can represent.

5. Conclusion

The community worldview elements of the communities of Benito Juárez, La Neveria, Cuajimoloyas, Llano Grande, Latuvi, Lachatao, Amatan and Yavesia in the Northern Highlands Region of Oaxaca, Mexico were identified by the adaptation of the theoretical tool to map worldviews (De Witt et al., 2016) to the context variations of language, understanding and worldview itself. These findings allow showing that there is a great similarity between the categories proposed by De Witt et al (2016) and the beliefs and behaviors in the local context. It implies the understanding of the differences between indigenous groups to express their worldview about their natural and cultural heritage even with a great theoretical background such as the cultural cognition theory (Kahan, 2012). However, the results showed a coincidence with the theory in that the Community Worldview is a variable that can explain the environmental beliefs and behaviors of the indigenous group sin the development of their ecotourism projects. As the way of seeing and conceiving the world is the fundamental for the permanence of indigenous groups it is also expressed in the preservation of the natural and cultural heritage in the presence of tourism development projects.

The results allow us to add a new perspective to the studies carried out by Gómez and Velázquez (2016) to consider the Community Worldview as a variable for the study of heritage conservation as well as for the particular considerations needed to develop following research on worldviews and environment. "The Community Worldview allows the Conservation of the Heritage in the indigenous communities with ecotourism destinations".

Limitations

The limitations of this study refer to the theoretical discussion of the findings, which hope to be our next research paper. Then also, the worldview profiles provided by De Witt et al (2016) tool were not explored in this research yet.

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CAPITAL TAXATION IN EUROPEAN TRANSITION ECONOMIES: COMPARATIVE ANALYSIS

Kemal Cebeci[1]

Abstract

Capital taxes have an important place in the tax policy due to its role on economic growth and other effects. Capital taxes derived from different economic sources or parties such as: income of households, income of corporations, income of self-employed, stock of capital. In EU, related with the goals of the tax policy which can be explained as: equity-efficiency, capital taxation can be varied in different countries. For EU transition economies, economic growth may become preferential goal of the tax policy related with the relatively low level of GDP in contrast with EU15. So, EU transition economies may apply tax policy in favor of capital. In this study, we investigated our assumption: *capital can be taxed at a lower level in EU11 economies compared to EU15 countries for encouraging capital".* Tax statistics of Eurostat on capital taxation for several indicators were used for the period of 2008-2018. Our statistical analysis and findings partially show that capital is taxed relatively low in EU transition economies and tax burden on capital has decreased more than EU15 in the period of 2008-2018.

Keywords: Capital taxation, transition economies, tax policy, growth.
JEL Codes: H20, H21, H30, O40.

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1. Introduction

In the OECD classification, the term "taxes" is defined as *"confined to compulsory unrequited payments to general government. Taxes are unrequited in the sense that benefits provided by government to taxpayers are not normally in proportion to their payments"* (OECD, 2018: 5)[1]. *"Tax revenue is considered to be unrequited because the government provides nothing directly to the individual unit in exchange for the payment. Governments may use the tax revenue to provide goods or services to other units, either individually or collectively, or to the community as a whole*" (IMF, 2014: 84). There is no direct relationship between the level of services gained by the individual taxpayers and the level of taxes paid by the taxpayers.

Taxes, in terms of economic resources are classified as; income, wealth and expenditure taxes. There are also more detailed classifications such as; taxes on income, profits and capital gains, taxes on payroll and workforce, taxes on property, taxes on goods and services, etc. which can be considered within the framework of the OECD approach (OECD, 2018: 3-4).

Governments try to achieve three main functions of taxation; to achieve the aims of raising enough revenue in an effective way, reducing unfair distributions of wealth, and regulating economic activities by diversicating the taxes over different economic sources and operations (Avi-Yonah, 2006: 4). Tax policies are shaped within the framework of economic, financial, social and political purposes. Several fiscal policy objectives such as fairness, equity, justice economic growth, price stability, and wealth distribution constitute the basis of tax policy and taxation of different economic resources.

In growth-oriented taxation, policies regarding the tax burden on capital are one of the most important point. It is possible to see policy implications in many countries such as tax reductions on capital income as a means of fostering economic growth (Palomba, 2004, p. 3). Channels between savings, capital accumulation, investments play a vital role for economic growth. From this point on, while reducing the tax burden on capital may affect economic growth positively, distortionary taxation may have negative consequences for economic growth.

Capital taxation may have different results in terms of economic effects and growth, on which resource or economic unit it creates a burden. The effects of taxing institutions, households or capital stock arise through different channels and mechanisms. In the following sections of the study, the effects of capital taxes will be discussed with a focus on growth, as well as the effects of capital taxation on different units and resources.

[1] For more details; OECD, 2018: 3-4.

2. Purpose of the Study

In this study, 11 countries, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, Slovenia, were selected as transition economies[2] (Hereafter EU11) in the European Union[3]. These countries are represented by the abbreviation EU11 in tables, graphics and the text. The study focuses on examining capital taxation in EU11 countries in comparison with EU15 countries. The study is based on the assumption that the tax policy in the EU11 will prioritize the economic growth target, depending on the relatively low GDP level.

EU11 are countries with lower levels of GDP in the European Union than in EU15 countries. Considering the fairness and efficiency purposes of the tax policy, it is thought that countries with relatively high GDP levels may give priority to justice in taxation. For the relatively less developed EU11, the economic growth target is a priority policy that tax policy should take into consideration. Within the framework of economic growth target, it is assumed that capital can be taxed at a lower level in EU11 economies compared to EU15 countries for encouraging capital. The study aims to investigate the accuracy of this assumption by analyzing the taxation of capital in EU11 and EU15 countries within the framework of statistical data.

3. Method and Data

Tax statistics in European Union for the period 2008-2018 derived from European Commission Data on Taxation Database were used in the study. For the selected period, taxation on capital as % of GDP and % of total taxation were examined. In addition, in the period of 2008-2018, tax burdens on capital in terms of different economic units or sources were analyzed.

The data on capital taxation are evaluated in 4 different categories as used in the European Union classification. These are capital taxes on: income of households, income of corporations, income of self-employed, stock of capital. Capital taxation for these 4 different categories has been handled comparatively in terms of both the ratio to GDP and their share in total taxation.

The statistical data of EU11 and EU15 countries in terms of both trend and current data are presented and analyzed with tables and graphs. Tax burdens on capital for EU11 and EU15 countries were analyzed statistically with comparative studies and the accuracy of

[2] The term transition economy represents "*Eastern European countries that became independent in 1989, the new nation states formed by the breakup of former Yugoslavia, the countries west of the Ural that formerly were part of the Soviet Union, and Russia"* (Becker & Fredriksson, 2012, p. 308). All countries selected as transition economy in our study are member of European Union.

[3] IMF Classification of transition economies (IMF, 2000)

Transition economies in Europe and the former Soviet Union (CEE): Albania, Bulgaria, Croatia, Czech Republic, FYR Macedonia, Hungary, Poland, Romania, Slovak Republic, Slovenia
Baltics: Estonia, Latvia, Lithuania
Commonwealth of Independent States
(CIS): Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyz Republic, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan
Transition economies in Asia: Cambodia, China, Laos, Vietnam

the assumption of the study that *"capital can be taxed at a lower level in EU11 economies compared to EU15 countries for encouraging capital"* was investigated.

4. Literature

The economics and public finance has a very comprehensive literature and theory on both capital taxation and its economic effects. Capital taxation can have consequences for investments, company decisions, asset policy, savings and economic growth through a variety of channels.

Bösenberg & Zoller (2018), showed that with the data on 79 countries in the period of 1996–2011, capital-tax reductions create positive effects on output and the capital (Bösenberg & Zoller, 2018, p. 325). Short-run and long-run effects also underlined in the literature by Chen et al. (2017). Researchers found different effects in the short run and in the long run with their research that effects of capital taxation on innovation and economic growth in an R&D-based growth model was examined. They found negative effect of capital taxation on the equilibrium growth rates in the short run while the effect of capital taxation is positive on steady-state economic growth in the long run (Chen et al., 2017, p. 207.)

In another research focusing more broadly on different taxes beyond capital taxation, the different channels through which taxes affect economic growth are examined by Ferretti & Roubini (1998). They analysed the growth effects of income and consumption taxes with their model which, growth process is driven by the accumulation of human and physical capital. Authors show that, generally, the taxation of factor incomes derived from human and physical capital are reducing economic growth with their study examine the effects of income and consumption taxation Ferretti & Roubini (1998, p. 721).

Smith (1996), focus on uncertainity in his analysis on effects of taxes on growth. Findings are interestingly controversial related with the uncertainty and intertemporal substitution of consumers. Smith (1996), stated that: *"If the elasticity of intertemporal substitution is large, however, then the fall in the variance causes growth to decline by less than predicted by non-stochastic models; it is actually possible for a tax increase to enhance growth"* Smith (1996, p. 1647).

Feldstein (2006), focused not only on capital taxation but also on the effect of marginal tax rate on growth. Author focused on effects of high marginal tax rates on income of labor and on income of investment. He stated response of future consumption is the main issue about tax on investment income. Comparatively he tax on labor income has a smaller deadweight loss than a tax on investment income under the condition of same present revenue[4].

[4] Feldstein (2006), analyses concentrated on variables: taxes on labor income, tax on investment income, future consumption, net rate of return, labor supply. Feldstein (2006), mentioned: *"A tax on investment income brings a deadweight loss even if household saving does not respond to taxes and the net rate of return. The response of future consumption is the core point here in the analysis. The tax on investment income is also effectively a tax on labor supply because current work effort produces income that will be spent on future consumption and the tax on investment income reduces the future consumption that results from more work today"* (Feldstein, 2006, p. 2).

It is also possible to see researches in the literature that directly focus on transition economies and investigated capital taxation or its dimensions. Rose & Wiswesser (1998) analysis on transition economies suggests for the countries in that category that for completing the transition process to market-oriented structure, countries need to compensate the capital needs in terms of both human capital and real capital. For that reason, tax system should guarantee the capital is protected from high tax burden to attract capital from the developed countries (Rose & Wiswesser, 1998, 257.)

In another research that investigates the impact of policies on FDI, stated; unit labor costs, the corporate tax burden, infrastructure, foreign exchange and trade regime as key factors which determines FDI. They found adverse relationship between high corporate tax burden with FDI even if the effect differs based on country's income level (Demekas et al., 2007, p. 381). Also, tax policy mentioned in another research as decreasing marginal rates for stimulating growth. Sachs & Warner (1996), in their research on CEEs(Central European economies), they suggested the fiscal policies include low rates of marginal taxation to achieve the rapid growth rates[5].

The extensive literature provides strong evidence that capital taxation has comprehensive impact on economic growth, in the same direction with our projection. The facts and relations presented by the literature will be a guide in our analysis for EU11.

5. Theoretical Framework of Capital Taxation

Tax policy is one of the key elements of growth-oriented fiscal policy especially at the point of reducing distortionary effects of taxation on assets and sectors (Shirazi & Shah, 1994). While the topic is economic growth, capital taxation is one of the core decision area. Proper design of capital taxation is one of the vital questions of public finance theory and arguments especially center around trade off between equity and efficiency (Saez and Stantcheva, 2017, p. 1). Fort that reason, capital taxation has an important role in the governments' tax policies at some key points all over the economy. Capital income taxes or other types of taxes imposed on capital take many forms such as interest, dividends, capital gains, business profits, the value of the housing services enjoyed by owner-occupiers, corporate income, property, other forms of wealth, etc (Sørensen, 2007, p. 173). Capital taxation is essentially a savings taxation. Capital taxation, besides its financial function, is generally considered within the scope of income and wealth distribution. The state tries to fulfill the function of income distribution justice by taxing the savers, that is, individuals who can earn income over their consumption level.

[5] Their study suggests wide range of fiscal policies in addition to tax policy which should concentrated to decrease to marginal tax rates. For more details: (Sachs, & Warner, 1996, p. 28).

Savings play a key role, especially in terms of economic growth[6], as the source from which investments[7] are fed. (Feldstein & Horioka, 1980, p. 328; Carroll and Well, 1993, p. 61; Papanek, 1973, p. 120.)[8]. As the savings level in the country increases, borrowing costs decrease. Thus, the borrowing interest decreases and investment costs decrease. In countries where economic growth is a priority, efficiency becomes prior as the primary goal of tax policy. By minimizing the distorting effects on economic actors and variables, a growth-oriented tax policy can be implemented.

Relationship between level of interest rate, taxation and consumer's decisional behavior between savings-consumption, also at intertemporal level have been stated by researchers and has been a central concern of economists at least since the development of classical macroeconomics (Boskin, 1978, p. 3). Higher tax burden on savings will naturally increases the cost of savings. Negative effects on savings may also have negative consequences for economic growth in the medium and long term. In countries where the economic growth target is a priority, the taxation of savings is important for tax policy. Countries encourage saving by taxing savings less. In this way, they can aim to increase investments and achieve economic growth by decreasing the interest cost. In this framework, policies supporting savings and also capital accumulation play an important role in the terms of economic growth through the channel related with investment.

5.1. Capital Taxation on Income of Households

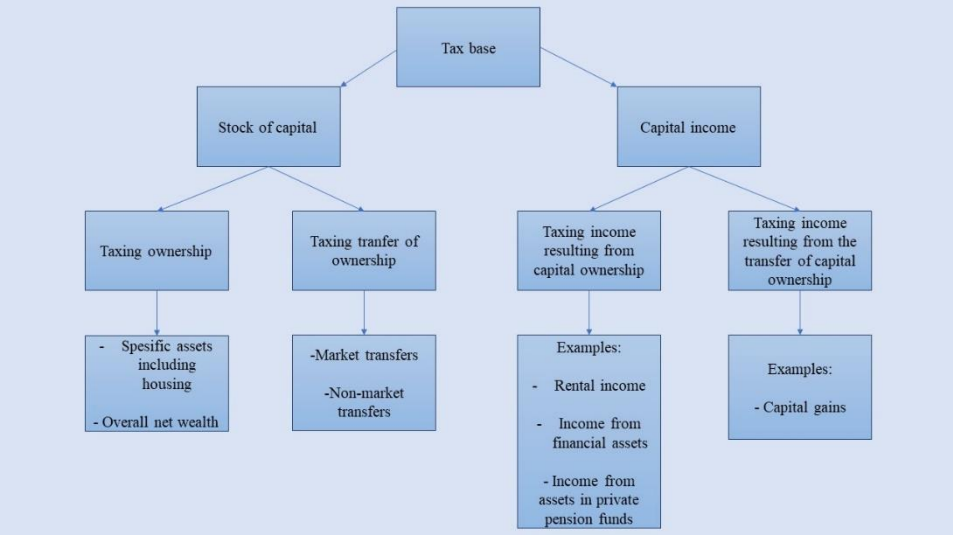
Taxation of household capital income plays a key role in terms of economic efficiency in many dimensions (Mirrlees, 1971). Capital taxation affects the saving and investment decisions of households. This can deviate the saving rates from the optimum level required for growth and create distortionary effects (Zipfel & Heinrichs, 2012, p. 2). Capital accumulation and therefore after-tax return are closely related with the economic growth with the effects on households investment decisions by the channel of changing cost of investments on capital (Princen et al. 2020, p. 8).

[6] Fry (1980), investigated the relationship and some channels between interest rate, savings, investment, growth and capital stock. Fry underlined that *"the growth rate is itself affected positively by the real deposit rate of interest through two channels – first, the volume of saving and investment and, second, capacity utilization of the entire capital stock, i.e. the measured incremental capital/output ratio"* (Fry, 1980, p. 317).

[7] Feldstein & Bacchetta (1991) founds that with their analysis; increase in domestic saving has a substantial effect on the level of domestic investment. (Feldstein & Bacchetta, 1991, p. 218)

[8] Feldstein& Horioka (1980), shows that "*increases in domestic saving will be reflected primarily in additional domestic investment*". Authors found thess results under the assumption: *"if portfolio preferences and institutional rigidities impede the flow of long-term capital among countries"* (Feldstein & Horioka, 1980, p. 328).

Graph 1. Taxing Household Capital Stocks and Capital Income



Source: Prepared by the author with the graph at Princen et al. 2020, p. 7.

Graph 1 presents the theoretical sources of taxes levied on household capital income and capital stock in the European Union. According to this; capital of households is taxed by two channels which are on two basic economic resources; stock of capital and capital income. In this framework, taxation of capital emerges in a two-sided framework such as capital ownership (stock of capital) and obtaining capital income derived from previous/accumulated capital investments.

Under the assumption of efficient and perfect competition market conditions, capital taxation can have distortionary effects on the decision of which assets to invest, while affecting the investment volume of the household (Princen et al. 2020, p. 7). With the distortionary effects mentioned above, it can be possible that any increase in the tax burden on household capital stocks and capital income may results with the decrease on economic growth.

5.2. Capital Taxation on Income of Corporations

In European Union classification, capital taxation on income of corporations represent *"Taxes on capital and business income that economic agents earn or receive from domestic resources or from abroad includes taxes on income or profits of corporations"* (European Commission, 2020, p. 266). Capital taxation as a factor of capital tax burden on businesses affects firm choices. It can affect the choice of location and investment decisions. Firms may move to countries with lower tax burden and resulted with the capital outflows from the countries. Given the negative growth effect of taxes on capital, growth-oriented countries should keep the burden of taxes on capital lower than the other taxable sources (Zipfel & Heinrichs, 2012, 2).

For the firms, corporate income tax is a one of the most important decisive factor in the choice of investment location and also size of an investment project[9]. As a result, based on the location choice, foreign direct investments are also affected by the capital tax burden of the country (Nicodème, 2008: 15).

On the other hand, lowering the corporate tax rate as a capital taxation can improve the quality of investment by reducing possible and potential tax-induced distortions in the choice of assets. Additionally, predictable and simple legislations on capital taxation could enhance growth performance of the country (Johansson, et al. 2008, p. 9).

Reducing tax burden on capital can enhance investment and has positive effects on economic growth in various ways. These can be summarized as[10]:

- Lowering tax rate/burden on capital may increase the overall investments

- Lowering tax rate/burden on capital may enhance the profitability of the firms

- Lowering tax rate/burden on capital may reduce the distortionary effects on capital investments

- Lowering tax rate/burden on capital may support the motivation of foreign direct investments.

5.3. Capital Taxation on Stock of Capital

According to classification of European Union, *"Taxes on capital stock; include the wealth tax, capital taxes including the inheritance tax, the real-estate tax and taxes on the use of fixed assets. Professional and business licences and some taxes on products and possible other taxes and levies that could be regarded as a prerequisite for entering into production if not allocated elsewhere, would ft in this category even if the tax base is not the stock of wealth"* (European Commission, 2020, p. 266)[11]. Capital stock taxation is not a tax imposed on the profit of the firm like corporate tax. These taxes are imposed on a business's net worth or accumulated wealth. In this respect, it is a tax paid on the capital stock, whether the firm makes a profit or not. The tax tends to penalize investment regardless of profitability of the firm in a current year (Cammenga, 2020).

Focusing on taxing household capital stocks may has different aspects in contrast to firm's capital stock. Taxing inheritances and gifts helps reduce wealth inequality between different income groups and increase the equality of opportunities in entire society. In addition, capital stock taxation at household level are considered to be among the least

[9] Carry out a synthesis of previous results of the research in the literature on taxation and foreign direct investment. They transform the results from a variety of studies into uniformly defined semi-elasticities. According to their study, on average, the literature reports semi-elasticities with a median value of − 2.9. This result means that % 1 increase in effective corporate effective tax would decrease foreign direct investment by % 2.9". (Mooij & Ederveen, 2006, p. 18).

[10] Kate & Milionis (2019), pp. 788-789; Gale & Samwick (2014), p.3; Devereux (2007), p. 3; Fatica (2013), p. 21.

[11] EU classification of Taxes on stocks/wealth: D.214- Taxes on products, except VAT and import taxes: D.214b Stamp taxes, D.214c Taxes on financial and capital transactions, D.214k Export duties and monetary compensatory amounts on exports, From D.29- Other taxes on production:, D.29a Taxes on land, buildings or other structures, D.29b Taxes on the use of fixed assets, D.29e Business and professional licences, D.29h Other taxes on production n.e.c., From D.59- Other current taxes: D.59a Current taxes on capital, D.59f Other current taxes on capital n.e.c., D.91 Capital taxes (European Commission, 2020, p. 266).

distortionary taxes (Princen et al. 2020, p. 7). Distortionary effects for capital stock taxation at household level may occur due to high savings level in the upper income group.

5.4. Capital Taxation on Income of Self-employed

The question of in what economic taxation self employed income[12] will be considered is not very clear. Self employed income can be considered as mixed income of capital and labor. But from another point of view, self employed actually takes risks like an entrepreneur and unlike labor, take the risk of incurring losses when maintaining their economic activities. For that reason, EU considers the self-employed income into the capital income sub-category for the self-employed (European Commission, 2020, p. 265).

Since capital gains and savings level are higher in upper income groups, capital taxation accrue mostly results with tax payment of high-income earners (Princen et al. 2020, p. 29). This is mostly valid at individual level both for households and self-employed. So capital gains taxation of self-employed is resulted with similar effects like capital taxation at household level.

6. GDP Rankings and Trend of Growth Rates in EU11 and EU15

Although there are many variables that show the development levels of countries, one of the most important indicators in this sense is the GDP level of the economies. Table 1 shows the GDP level in EU11 and EU15, world GDP rankings and periodic real economic growth data, in terms of being one of the main variables in terms of showing the development levels.

[12] There is a complexity as to whether self-employed income in capital income or labor income. Or which part or what level of self-employed income is accepted as capital or labor income. EU approach consideration about self employed income is as follows: *"The complexity arose whether part of the self-employed income should be treated as a remuneration of labour and whether the related taxes should be included in taxes on labour. The best compromise between economic rationale and data availability was to consider self-employment income to be income from capital: self-employed income is genuinely an entrepreneurial income, and the self-employed take the risk of incurring losses when exercising their activity. For some countries, this assumption does not reflect the situation of some of the self-employed, whose economic status or income does not signifcantly differ from those of wage earners. For instance in Italy, there is different application. The National Statistical Office provides official estimates of the percentages of 'mixed income' that can be attributed to labour and capital"* (European Commission, 2020, p. 265).

Table 1. GDP Rankings and Trend of Growth Rates in EU11 and EU15

Gross domestic product 2019 and GDP world rankings and reel GDP growth rates (avg.)				
	GDP (millions of US dollars)	Ranking	2008-2019 avg.	2010-2019 avg.
Bulgaria	$67.927	73	2,20	2,37
Croatia	$60.416	79	0,42	1,04
Czech Republic	$246.489	47	1,86	2,43
Estonia	$31.387	100	1,49	3,74
Hungary	$160.967	56	1,86	2,79
Latvia	$34.117	99	0,67	2,56
Lithuania	$54.219	83	1,95	3,56
Poland	$592.164	21	3,61	3,63
Romania	$250.077	46	2,91	3,11
Slovak Rep.	$105.422	61	2,50	2,99
Slovenia	$53.742	85	1,27	1,92
EU11 average	$150.630	…..	1,88	2,74
EU15 average	$1.114.909	…..	1,01	1,65

Source: Worldbank, World Development Indicators, GDP data source, 2020.
Growth data: Eurostat, real GDP growth rate 2020.

The top country in the world ranking among EU11 economies is Poland, which ranks 21st with a GDP of 592 billion dollars. Estonia, on the other hand, is the lowest EU11 economy in the world with a GDP level of 31 billion dollars and 100th place. While the average GDP of EU11 economies is 150 billion dollars, the average GDP of EU15 countries is 1.1 trillion dollars. This data shows that EU15 economies represent, on average, an economic volume approximately 7 times larger than the E11 economies. When the average growth data of the period 2008-2019 are examined, it is seen that while the average growth rate of EU11 economies is 1.88%, the growth rate in EU15 is 1.01%. To exclude the effects of the 2008 crisis, the average growth data for 2010-2019 are also used in Table 1. Economic growth in Estonia, Lithuania, Poland and Romania in the 2008-2019 period was above 3% on average and they were the fastest growing E11 countries. Lowest economic growth rate is at Croatia with the % 1,04. When evaluated in terms of country groups, the average growth of EU11 in the 2010-2019 period was above EU15. While the average growth for EU11 was 2.74%, the growth rate was 1.65% for EU15.

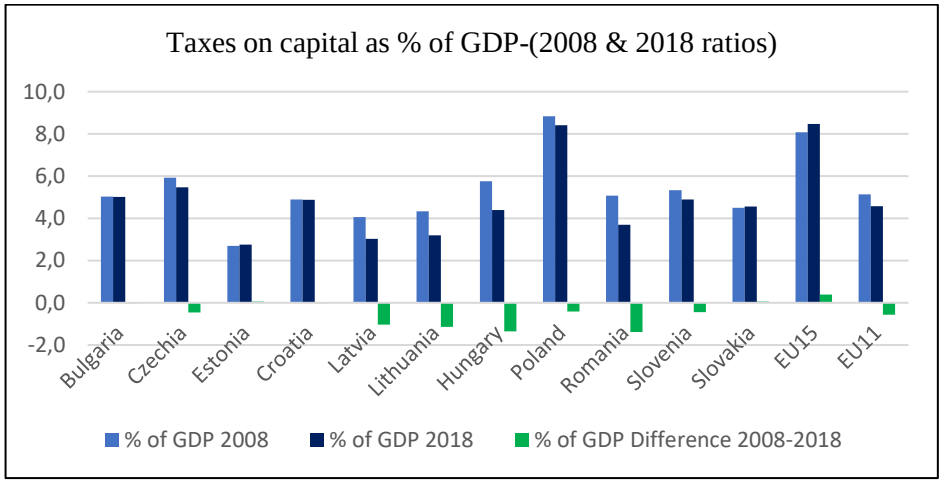
7. Statistical Analysis on Capital Taxation in EU11 and EU15

In this section, we will analysis the tax burden on capital by using different ratios for EU11 and EU15 countried for the period of 2008-2018. Capital taxation as % of GDP and % of total taxation in terms of basic indicator of taxation may give general opinion about tax burden on capital in EU11 and EU15.

7.1. Taxes on Capital in EU11 and EU15 as % of GDP

One of the important indicators that shows the tax burden on capital is taxes on capital as percentage of GDP. Graph 2 shows the taxes on capital as % of GDP for the years 2008, 2018 and difference from 2008 to 2018 for EU transition economies, EU15 countries.

Graph 2. Taxes on Capital as % of GDP-(2008 & 2018 data of EU15, EU11)



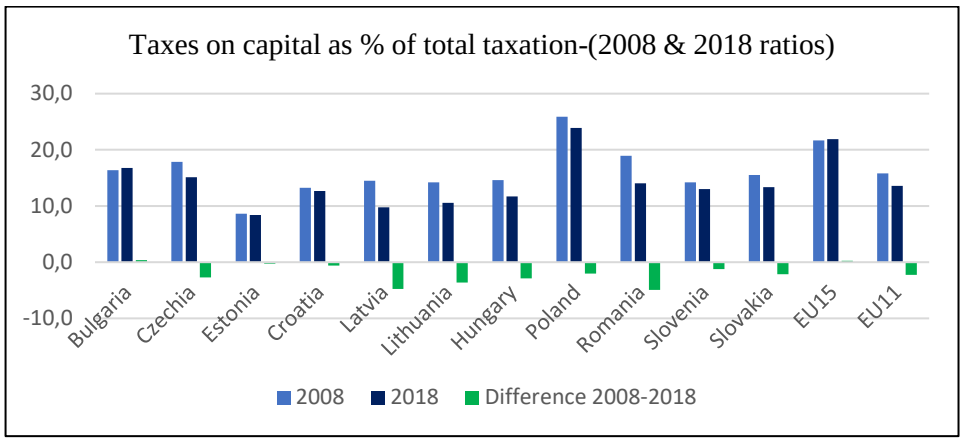
Source: Prepared by the author with the European Commission, DG Taxation and Customs Union, based on Eurostat data, 2020.

For the EU11, taxes on capital to GDP ratio is % 4,57 in 2018 while 5,13 in 2008. Fort he last decade, we can recognise % 0,56 decrease on tax burden for capital. This ratio is higher in EU15 with the ratios: % 8,08 for 2008 and 8,48 in 2018. And the data shows that taxes on capital in EU15 has increased from 2008 to 2018 with the amount of % 0,40 increase while the same data has decreased for EU11. In addition, while the rate of taxes on capital to GDP decreased from 2008 to 2018 in 7 EU11 countries, this rate increased in only 4 countries. Graph 2 proves that the EU11 countries follow a tax policy to reduce the tax burden of capital compared to EU15 countries.

7.2. Taxes on Capital in EU11 and EU15 as % of Total Taxation

Graph 3 shows the share of taxes on capital in total taxes for EU15 and EU11 countries. Analysis with the ratios as percentage of total taxation may help to understand the burden on capital taxes in contrast to burden of other taxable sources into total taxation. Data shown on the Graph 3 is also represent the same period of 2008-2018.

Graph 3. Taxes on Capital as % of Total Taxation-(2008 & 2018 data of EU15, EU11)



Source: Prepared by the author with the European Commission, DG Taxation and Customs Union, based on Eurostat data, 2020.

From 2008 to 2018, while the share of taxes on capital in total taxes decreased in 10 EU11 countries, it increased in only 1 country. In EU11 countries, taxes on capital as % of total taxation decreased from % 15.82 in 2008 to % 13.57 in 2018. The same rate has increased on average in EU15 countries, from % 21.65 in 2008 to % 21.88 in 2018. Taxes on capital as % of total taxation data also reveal similar results to the ratio of capital taxes to GDP for EU11 and EU15. In the period of 2008-2018, the share of capital taxation in total taxes is decreasing for EU11 while increasing for EU15. This reveals important signs for the EU11 that an approach to reduce the tax burden on capital is being taken.

8. Taxes on Capital in Terms of Sub-categories in EU11 and EU15

In this section, we will analysis the tax burden on capital by using different ratios for EU11 and EU15 countries for the period of 2008-2018. In addition to total taxes on capital, we will examine the taxes on capital in sub-categories. EU data enable to make more detailed analysis on capital taxation with provided capital taxation statistics on different economic sources and actors/parties into the categories: income of households, income of corporations, income of self-employed, stock of capital.

8.1. Taxes on Capital: Income of Households

The category of income of households is the least revenue collected source of capital taxation in country groups analysed in this research. But data of capital taxation in this category can be evidence and strengthen our argument about downward trend of taxation on capital. Table 2 shows capital taxation on income of households as % of GDP and % of total taxation.

Table 2. Taxes on Capital as % of GDP and % of Total Taxation: Income of Households

Taxes on capital - Income of households									
Taxes on capital as % of GDP - Inc. of households					Taxes on capital as % of total taxation - Inc. of households				
	2008	**2018**	**Difference 2008-2018**	**Ranking 2018**		**2008**	**2018**	**Difference 2008-2018**	**Ranking 2018**
Bulgaria	0,24	0,40	0,15	20	**Bulgaria**	0,80	1,33	0,53	19
Czechia	0,08	0,11	0,03	26	**Czechia**	0,25	0,30	0,05	26
Estonia	0,19	0,14	-0,05	25	**Estonia**	0,59	0,42	-0,17	25
Croatia	0,30	0,75	0,45	12	**Croatia**	0,81	1,94	1,13	13
Latvia	0,00	0,40	0,40	21	**Latvia**	0,00	1,28	1,28	20
Lithuania	0,50	0,57	0,08	17	**Lithuania**	1,63	1,91	0,28	14
Hungary	0,43	0,56	0,13	18	**Hungary**	1,09	1,48	0,40	18
Poland	0,36	0,30	-0,06	23	**Poland**	1,04	0,85	-0,19	23
Romania	0,85	0,76	-0,09	11	**Romania**	3,16	2,89	-0,28	8
Slovenia	0,49	0,42	-0,07	19	**Slovenia**	1,31	1,13	-0,18	21
Slovakia	0,10	0,07	-0,03	27	**Slovakia**	0,33	0,20	-0,13	27
EU15	0,93	1,00	0,07	…..	**EU15**	2,53	2,56	0,03	…..
EU11	0,32	0,41	0,09	…..	**EU11**	1,00	1,25	0,25	…..

Source: Prepared by the author with the European Commission, DG Taxation and Customs Union, based on Eurostat data, 2020.

In EU11, the rate is % 0,41 in 2018 while it was % 0,32 for 2018 as % of GDP. Similarly, there is an increase on capital taxes on income of households for EU15; it is % 1 in 2018 while it was % 0,93 in 2008. As % of total taxation, capital taxes on income of households also has upward trend from 2008 to 2018. For EU there is % 0,03 increase and for EU15 it rises % 0,25. Rate of increase fort he period 2008-2018 is in EU15 is higher than EU11. It can be said that, burden of capital taxation in both EU11 and EU15 has shifted on income of households from the other economic actors or sources even more in EU15.

8.2. Taxes on Capital: Income of Corporations

Corporations are the greatest source of taxes on capital. Highest revenue in capital taxation is collected from the income of corporations. In this respect, tax policy on corporations is one of the most important part of capital taxation policy. Table 3 shows the capital taxation on income of corporations for EU11 and EU15 for the period of 2008-2018.

Table 3. Taxes on Capital as % of GDP and % of Total Taxation: Income of Corporations

Taxes on capital - Income of corporations									
Taxes on capital as % of GDP - Inc. of corporations					Taxes on capital as % of total taxation - Inc. of corp.				
	2008	**2018**	**Difference 2008-2018**	**Ranking 2018**		**2008**	**2018**	**Difference 2008-2018**	**Ranking 2018**
Bulgaria	3,18	2,33	-0,85	19	**Bulgaria**	10,35	7,78	-2,57	12
Czechia	4,02	3,50	-0,53	5	**Czechia**	12,13	9,68	-2,45	6
Estonia	1,60	1,99	0,39	24	**Estonia**	5,13	6,07	0,94	19
Croatia	2,90	2,28	-0,62	20	**Croatia**	7,87	5,91	-1,96	22
Latvia	2,98	1,06	-1,92	28	**Latvia**	10,65	3,40	-7,25	28
Lithuania	2,72	1,53	-1,19	26	**Lithuania**	8,88	5,06	-3,82	26
Hungary	2,55	1,34	-1,21	27	**Hungary**	6,47	3,57	-2,90	27
Poland	2,68	2,10	-0,59	22	**Poland**	7,86	5,95	-1,91	21
Romania	2,85	2,08	-0,77	23	**Romania**	10,66	7,93	-2,73	10
Slovenia	2,46	1,94	-0,53	25	**Slovenia**	6,56	5,15	-1,41	25
Slovakia	3,30	3,47	0,17	7	**Slovakia**	11,40	10,18	-1,21	5
EU15	3,07	3,13	0,05	…..	**EU15**	8,24	8,20	-0,04	…..
EU11	2,84	2,15	-0,70	…..	**EU11**	8,90	6,42	-2,48	…..

Source: Prepared by the author with the European Commission, DG Taxation and Customs Union, based on Eurostat data, 2020.

According to Table 3, when the capital taxation data on corporate income are examined, it is seen that taxes on capital as % of GDP declined in 9 countries from 2008 to 2018 in EU11. As taxes on capital as % of total taxation, it is seen that this ratio decreased in 10 of E11 countries. Both data sets reveal that capital taxation on Income of corporations is in a clear downward trend in EU11. Average data reveal similar results. It is seen that taxes on capital as % of GDP in EU11 decreased by % 0.7 from 2008 to 2018. In the EU15, it is seen that taxes on capital as % of GDP increased by % 0.05 in the same period. Taxes on capital as % of total taxation has declined in both EU11 and EU15. However, for the EU11, the decline in taxes on capital as % of total taxation becomes clearer and a % 2.48 decrease is seen. This reveals that within the total taxes, the tax on capital has shifted over other economic resources.

8.3. Taxes on Capital: Stock of Capital

Stock of capital stands out as the category with the highest share in capital taxation after Income of corporations. It constitutes an important point for tax policy with its distortionary effects on capital accumulation and capital factor. Table 4 shows the capital taxation data in terms of stock of capital in EU11 and EU15.

Table 4. Taxes on Capital as % of GDP and % of Total Taxation: Stock of Capital

Taxes on capital - Stock of capital									
Taxes on capital as % of GDP - Stock of capital					Taxes on capital as % of total taxation - Stock of capital				
	2008	**2018**	**Difference 2008-2018**	**Ranking 2018**		**2008**	**2018**	**Difference 2008-2018**	**Ranking 2018**
Bulgaria	0,87	1,52	0,65	15	**Bulgaria**	2,84	5,08	2,24	13
Czechia	0,73	0,77	0,04	25	**Czechia**	2,19	2,12	-0,07	26
Estonia	0,69	0,50	-0,19	28	**Estonia**	2,23	1,54	-0,69	28
Croatia	1,25	1,24	-0,01	20	**Croatia**	3,40	3,22	-0,18	19
Latvia	0,92	1,31	0,39	17	**Latvia**	3,30	4,24	0,94	17
Lithuania	0,66	0,52	-0,14	27	**Lithuania**	2,16	1,71	-0,44	27
Hungary	2,18	1,85	-0,33	11	**Hungary**	5,54	4,93	-0,60	14
Poland	1,69	1,89	0,19	10	**Poland**	4,97	5,36	0,39	12
Romania	0,97	0,74	-0,23	26	**Romania**	3,61	2,80	-0,80	23
Slovenia	0,86	1,07	0,20	23	**Slovenia**	2,30	2,84	0,54	22
Slovakia	0,79	0,92	0,13	24	**Slovakia**	2,72	2,69	-0,03	24
EU15	2,46	2,72	0,26	…..	**EU15**	6,64	7,00	0,36	…..
EU11	1,06	1,12	0,06	…..	**EU11**	3,20	3,32	0,12	…..

Source: Prepared by the author with the European Commission, DG Taxation and Customs Union, based on Eurostat data, 2020.

According to Table 4, it is seen that the capital taxation of stock of capital increased in both EU11 and EU15 in the period of 2008-2018. However, the average data in this table can be misleading. Because in terms of stock of capital, taxes on capital as % of GDP in EU11 has decreased in 5 countries and taxes on capital as % of total taxation has decreased in 7 countries. The fact that the average data is positive, that is, the increase in capital taxation on stock of capital in EU11 is largely due to the Bulgarian data. Especially in terms of taxes on capital as % of total taxation, there is an increase of % 2.24 in Bulgaria, which causes the average data to be positive. In summary, excluding Bulgari, the tax burden on stock of capital decreases for EU11, both in terms of average burden and for individual countries. For the EU15, there is a very limited increase in both indicators in terms of % of GDP and % of total taxation.

8.4. Taxes on Capital: Income of Self-Employed

Income of self-employed is another small category with income of households in terms of capital taxation. In contrast to corporations and capital stock, share of income of self-employed as capital taxation is very limited. Table 5, shows the capital taxes on income of self employed in EU11 and EU15 for 2008-2018.

Table 5. Taxes on Capital as % of GDP and % of Total Taxation: Income of Self-Employed

Taxes on capital - Income of self-employed									
Taxes on capital as % of GDP - Inc. of self-employed					Taxes on capital as % of total taxation - Inc. of self-employed				
	2008	**2018**	**Difference 2008-2018**	**Ranking 2018**		**2008**	**2018**	**Difference 2008-2018**	**Ranking 2018**
Bulgaria	0,73	0,77	0,04	18	**Bulgaria**	2,39	2,57	0,19	16
Czechia	1,09	1,10	0,01	12	**Czechia**	3,29	3,04	-0,25	14
Estonia	0,22	0,12	-0,10	26	**Estonia**	0,70	0,36	-0,34	27
Croatia	0,44	0,61	0,17	20	**Croatia**	1,19	1,58	0,39	23
Latvia	0,15	0,26	0,11	25	**Latvia**	0,54	0,84	0,30	25
Lithuania	0,47	0,57	0,11	22	**Lithuania**	1,53	1,90	0,38	19
Hungary	0,59	0,65	0,06	19	**Hungary**	1,49	1,73	0,24	20
Poland	4,10	4,13	0,03	1	**Poland**	12,02	11,73	-0,29	1
Romania	0,41	0,11	-0,30	27	**Romania**	1,53	0,43	-1,10	26
Slovenia	1,51	1,46	-0,05	11	**Slovenia**	4,04	3,88	-0,15	11
Slovakia	0,31	0,09	-0,22	28	**Slovakia**	1,07	0,28	-0,79	28
EU15	1,62	1,63	0,01	…..	**EU15**	4,24	4,13	-0,11	…..
EU11	0,91	0,90	-0,01	…..	**EU11**	2,71	2,58	-0,13	…..

Source: Prepared by the author with the European Commission, DG Taxation and Customs Union, based on Eurostat data, 2020.

It is seen that from the Table 5, In EU11 taxes on capital - income of self-employed declined from 2008 to 2011 as both % of GDP and % of total taxation. For EU15, the same data increased as % of GDP, while it decreased as % of total taxation. In terms of income of self-employed, capital taxation shows more limited decline than other categories. Margin from 2008 to 2018 in EU as average burden all over the EU11 is only % 0,01. And similarly this data is only % 0,13 as % of total taxation. A decrease is observed in 4 EU11 countries as % of GDP and in 6 EU11 countries as % of total taxation. These data suggest that policies to promote capital are more limited in terms of Income of self-employed in EU11. According to Table 5, within the whole EU, Poland, which is an EU11 country, is the country with the highest tax burden in this category.

9. Summary Analysis of the Findings and Conclusions

Our analysis on capital taxation statistics partially proves that for the EU11, tax burden on capital has decreased in the period of 2008-2018. Also, there is relatively limited downward trend recognised for EU15. We summarized our findings on Table 6. All indicators on capital taxation that examined in our research are listed on Table 6 and trend of the burden on different indicators are also shown.

Table 6. Summary of Capital Taxation with All Indicators

Summary Table on Capital Taxation for Selected Indicators				
Indicator	2008 to 2018	2008 to 2018	2008 to 2018	2008 to 2018
	(increase)-EU11	(decrease)-EU11	EU11 avrg.	EU15 avrg.
Taxes on capital (% of GDP)	4 countries	7 countries	decrease	increase
Taxes on capital (% of total taxation)	1 country	10 countries	decrease	increase
Income of households (% of GDP)	6 countries	5 countries	increase	increase
Income of households (% of total taxation)	6 countries	5 countries	increase	increase
Income of corporations (% of GDP)	2 countries	9 countries	decrease	increase
Income of corporations (% of total taxation)	1 country	10 countries	decrease	decrease
Stock of capital (% of GDP)	6 countries	5 countries	increase	increase
Stock of capital (% of total taxation)	4 countries	7 countries	increase	increase
Income of self-employed (% of GDP)	6 countries	5 countries	decrease	increase
Income of self-employed (% of total taxation)	5 countries	6 countries	decrease	decrease

Source: Prepared by the author with the European Commission, DG Taxation and Customs Union, based on Eurostat data, 2020.

Note: First 2 columns show ow many countries in EU11 have decreasing/increasing trends of tax on capital for selected indicator. 3rd and 4rd columns show the trend as decrease/increase for the average data of EU11 and EU15.

Table 6 presents generally decreasing trend of capital taxation on capital consistent with our argument. Taxes on capital (% of GDP), taxes on capital (% of total taxation), capital taxes on income of corporations and capital taxes on stock of capital are indicators that have relatively higher downward trend in contrast to other indicators. Especially highest decrease is seen in the indicator of "capital taxes on corporation". In 9 of 11 EU11 countries, the capital taxes on income of corporations has decreased in the period of 2008-2018. For the average data, in 6 of 10 indicators have decreasing trend for EU11. That show, capital taxation in average level has decreased in EU11. Also, data on taxes on capital (% of GDP) and taxes on capital (% of total taxation) prove that result. For the

EU15, only 2 indicators have decreasing trend. So, in comparative analysis, it can be said that, taxes on capital in EU11 fell relatively more than EU15 for the period of 2008-2018. Except few variables, all these findings are consistent with our assumption that "capital can be taxed at a lower level in EU11 economies compared to EU15 countries for encouraging capital".

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