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EXCHANGE-RATE PASS-THROUGH: EMPIRICAL EVIDENCE FROM SUDAN ECONOMY

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Abstract

This paper aims to assess the pass-through effect of exchange rate to import and consumer prices in Sudan via Vector Error Correction Model. Short-run estimates of either import prices or consumer price are insignificant, suggesting that the adjustment in Sudan tends to be slow. NEER affects consumer and import prices in the long-run by -1.07 and -1.92 respectively. The ratio of cumulative responses of import prices to exchange rate changes i.e. Exchange rate pass-through (ERPT) into consumer and import prices has been increasing gradually with an average of 47 and 50 respectively. Variance decomposition indicate that one standard deviation shock to the CPI creates downward trend of its own innovations, upward trend of real GDP, excess money and the exchange rate respectively. This means that there is strong link between consumer prices and monetary policy

Key words:

ERPT; Import prices; VECM; Slow adjustment.

INTRODUCTION

Exchange rate is a macroeconomic variable that is known from monetary policy perspective to affect the behavior of prices (Loloh, 2014). Devaluation of the exchange rate causes price movement directly through imports of finished goods and inputs, according to their share in consumer price index; and indirectly by raising the prices of substitutes and export goods as a result of increased demand for exports. Different pass-through effects have been found depending on the selection of methodologies, model specification and variables. This degree is related to the ability of producers and importers to pass costs to consumers (Winkelried, 2011). The lags between the transmission of the pass-through to domestic prices makes the effect of the exchange depreciation low which further makes trade flow insensitive to change in exchange

rate (Rowland 2004). Incomplete pass-through occurs when 1% currency depreciation leads to less than 1% in domestic prices (Devereux, 2011).

IMF in September 1978 recommended that Sudan should adopt managed floating exchange rate instead of fixed one, and devalue its currency against US dollar, for the first time by 25%. Since then, the devaluation process has been continuing almost every 2-3 years i.e. 80% in 1981, 92% in 1985, 80% in 1987, reached the peak of 774% in 1992, then 164% in 1995, 2% in 1999, 11% in 2011, and 60% in 2012. The exchange rate was remained constant over the period 2000-2002, and appreciated during 2003-2007, before depreciating again since 2008. Since the first devaluation the trade weighted exchange rate that is the nominal exchange rate NEER has been falling. The 1960's showed an average inflation of 3.2%. Disinflation occurred in only two years 1965 (-2) and 1968 (-8). Throughout the period 1970-2014 Sudan has experienced periods of high inflation. Its consumer price inflation reached high levels in the 1980s and 1990's before reaching a peak of 129% in 1995. There is significant correlation between the changes of exchange rate and inflation of 0.56; and inflation and changes in import prices of 0.66 suggesting that the lower value of the Sudanese currency is likely to raise the cost of imports, which can feed into higher consumer prices especially in an unstable monetary environment (Mishkin, 2008).

Sudan's Central Bureau of Statistics (2014) CPI item group weights are: Foods & Drinks (52.9); Tobacco (0.7); Clothing & Foot Wear (4.5); Housing, Water, Electricity, Gas, and other Fuels (14.2); Furniture (6.9); Health (1.0); Transport (8.3); Communication (1.7); Recreation and Culture (2.2); Hotels, Cafes and Restaurants (2.3); and Miscellaneous (2.6).

No study has been carried out directly to investigate exchange rate pass-through into import and domestic prices in Sudan. This paper aims to contribute to the empirical analysis of exchange rate pass-through into import and consumer prices by estimating the dynamics of exchange rate pass-through in Sudan using Vector auto regression error correction model.

The paper is organized in four sections: literature review where attention paid to theoretical and empirical studies on exchange rate pass-through in different economies, methodology and data description, empirical results, and finally the conclusion. This research differs from others in variable selection where most studies used output gap to quantify supply shocks, instead, it is used real output, and added another variable to cater for monetary policy, that is the deviation of money supply from its Hodrick-Prescott trend expressed as excess money. An exchange rate pass-through effect seems to be in line with evidence found for other developing countries.



LITERATURE REVIEW

Empirical studies usually employed two approaches, the law of one price and open economy macroeconomics. The law of one price assumes perfect competition, homogeneity, information, and adjustment of costs, home price of goods are the product of exchange rate by foreign good prices, relative national price levels are independent of exchange rate movements. This is useful for international price of materials; the other is the Keynesians who assume, less than fully homogeneity, sticky wages, imperfect competition, and real exchange rate which is the outcome of the division of home GDP deflator by the product of foreign GDP deflator multiplied by exchange rate. This is relevant to manufactures. Real commodity price depends on real exchange rate, its supply, and economic activity home and abroad (Dornbusch, 1987). The violation of law of price is caused by deviation of international tradable prices i.e. pricing to market which breaks the link between home and foreign price levels and allows the real exchange rates to fluctuate.

Exchange-rate pass-through (ERPT) is a measure of how responsive international prices or local prices are to changes in the local-currency. It is computed as the cumulative change in consumer or import prices divided by the cumulative change in the nominal effective exchange rate between period t and t_j . If the ERPT is incomplete the effect of exchange rate movements on CPI inflation is expected to be more limited in the short run but prolonged (Adolfson, 2001). Zero and one pass-through, can be tested via imposing zero or one on the coefficients on the exchange rate variables (Razafimahefa, 2012). In a simple regression of import prices on exchange rate ERPT is complete is the coefficient of the exchange rate is 1 and incomplete if the coefficient is less than 1. There is observed low ERPT of import prices that can be attributed to Pricing-to-Market. The size of the pass-through effect can be associated with the gearing the policy to certain inflation target or facilitate adjustment of real exchange rate (Regimes et al, 2004).

The major objectives of central banks are to attain maximum employment, stable prices, and moderate long-term interest rate. Stable price and moderate long-run interest rate in the long-run realize sustainable output growth and employment. When the actual inflation rate exceeds the target rate the central bank implements contractionary monetary policy by employing different tools such as raising reserve requirement, which in turn increases inter-bank interest rates, then businesses borrow less, don't expand as much, and hire fewer workers, decreasing demand. To stimulate growth the central banks implement expansionary monetary policy through open market operations. They buy Treasury notes from member banks, giving them more money; banks reduce the lending rate, making loans for auto, schools, and homes expensive. With cheaper credit card interest rate boosting consumer spending. An

important tool is lowering the discount rate. Peru is an excellent example of success in reducing hyperinflation from 140 per cent to single digit in seven years, done gradually improving the credibility of monetary policy, changing it operational targets from quantitative indicators such as money growth to short-run interbank interest rate (Winkelried, 2011).

Most empirical studies referred to in this paper used macro data reaching various findings. Some found incomplete exchange pass-through e.g. Bwire et al, 2014; Razafimahefa, 2012; Ehsan et al, 2012; Flodén et al, 2006; Smets & Wouters 2002. Others provided strong evidence of positive and significant association between the pass-through and inflation (Choudhri & Hakura, 2001; Otani et al, 2002; Bailliu, 2006; Abdul Aleem & Lahiane, 2008; Dooja, 2009; Winkelried, 2011; and Jombo et al, 2013). Those who used micro data obtained mainly an incomplete pass-through (Nakamura & Zerom, 2009; Hummels et al, 2010; Strasser, 2012; Auer & Schoenle, 2012; and Garetto, 2014).

METHODOLOGY

Model specification

Enders (1996) stated that a principal feature of cointegrated variables is that their time paths are influenced by the extent of any deviation from long-run equilibrium. After all, if the system is to return to the long-run equilibrium, the movements of at least some of the variables must respond to the magnitude of the disequilibrium. In an error-correction model, the short-run dynamics of the variables in the system are influenced by the deviation from equilibrium. Formally the $(n \times 1)$ vector $x_t = (x_{1t}, x_{2t}, \dots, x_{nt})^T$ has an error correction representation if it can be represented in the form:

$$\Delta x_t = \pi_0 + \pi x_{t-1} + \pi_1 \Delta x_{t-1} + \pi_2 \Delta x_{t-2} + \dots + \pi_p \Delta x_{t-p} + \epsilon_t \quad (1)$$

Where $\pi_0 = an$ ($n \times 1$) vector of intercept terms with elements π_{i0}

$\pi_i = (n \times n)$ coefficient matrices with elements $\pi_{jk}(i)$

$\pi =$ is a matrix with elements π_{jk} such that one or more of the $\pi_{jk} \neq 0$

$\epsilon_t = an$ ($n \times 1$) vector with elements ϵ_{it}

Most studies on ERPT used NEER/nominal exchange rate as the main determinant of the exchange rate pass-through augmented with output gap/real output; oil prices; and money supply/ excess money; interest rate; nominal wage rate; import price index production prices index/whole price index; consumer price index or inflation its expectation and/or its volatility (García & Restrepo, 2001; Leigh & Rossi, 2002; Regimes et al, 2004; Correa & Minella, 2006; Istrefi & Semi, 2007; Doojav, 2009; Przystupa & Wróbel, 2011; Razafimahefa, 2012; Adeyemi & Samuel, 2013; Abul Aleem & Lahiani, 2014; and Bwire et al, 2014).



In order to estimate the effects of ERPT into CPI and import prices, it is used the NEER as the main determinant conforming to empirical studies. In an open economy the value of the local currency in terms of other currencies is defined as bilateral exchange rates that can be combined in a single index usually called the effective exchange rate and measures competitiveness (Alsterlind 2006). Then the effective exchange rate is calculated as:

$$E_{effective} = E_1 \frac{Trade_1}{Trade} + \dots + E_N \frac{Trade_N}{Trade} \quad (2)$$

The changes of the exchange rate affect the demand for local and foreign goods and services via changing the relative prices of imports is determined by many factors among them are the level of income and relative prices. Exchange rate serves as an indicator of relative prices (Dornbusch, 1987; Uribe, 2009). An increase in exchange rate will cause a decrease in imports by raising the relative cost of foreign goods; a decrease in e lowers the relative price of foreign goods and therefore increases imports. This process often occurs with a delay. The effects of exchange rate movements are transmitted to consumer prices via three major channels:

- (i) Prices of imported consumption goods;
- (ii) Domestically produced goods priced in foreign currency; and
- (iii) Prices of imported intermediate goods (Sanusi, 2009).

Real output has been selected to conform to the classical and Keynesian economic theories on its effects on prices. The third explanatory variable is the excess money, as the link between prices and money supply has been postulated by the classical quantity theory of money. The relation is sought to be positive, while there is a negative relationship between price level and value of money under constancy of real output and velocity of circulation. The contemporary quantity theory assumes a predictable relationship between money supply and real output since supply is determined independently of stable demand for money relative to income, wealth, interest rate, and price expectations. Keynes assumes that a monetary expansion depreciates the national currency and hence, within the short run of price stickiness, the real exchange rate leads to an improvement in the inflating country's terms of trade, and ultimately depresses real economic activity. Money supply affects price level indirectly through interest rate, output and employment. An increase in money supply lowers the rate of interest, leads to more investment, increases output and employment.

Data Description

This paper uses macro data. Sample data spans over the period 1960 to 2011. The start period showed establishment of the Central Bank of Sudan, and the end period showed the succession of South Sudan.

TABLE 1. DESCRIPTON OF VARIABLES

Variable	Symbol	Source
Nominal Effective Exchange Rate	NEER	REER_databaseVer19Jan2015
Consumer Price Index	CPI	Central Bureau of Statistics
Real GDP	Y	Central Bureau of Statistics
General Price Level	P	Central Bureau of Statistics
Unemployment Rate	U	Central Bureau of Statistics
Import Price Index	MP	Central Bureau of Statistics
Excess Money Supply	EXM	Constructed Variable*

* Deviation of money supply from it Hodrick Prescott filter

EMPIRICAL EVIDENCE

Purchasing Power Parity

TABLE 2. RESULTS OF ONE PRICE LAW

Dependent Variable: LOG(X)				
Method: Least Squares				
Date: 06/19/15 Time: 16:02				
Sample (adjusted): 1960 2012				
Included observations: 53 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
CONSTANT	0.264178	0.063749	4.144009	0.0001
LOG(WCPI/CPI)	-0.952506	0.013139	-72.49492	0.0000
R-squared	0.990389	Mean dependent var		2.751046
Adjusted R-squared	0.990201	S.D. dependent var		3.951665
S.E. of regression	0.391180	Akaike info criterion		0.997710
Sum squared resid	7.804130	Schwarz criterion		1.072061
Log likelihood	-24.43931	Hannan-Quinn criter.		1.026302
F-statistic	5255.513	Durbin-Watson stat		0.552080
Prob(F-statistic)	0.000000			

Tables 2. & 3. show that the law of one price is not applicable to Sudan economy since the regression results of relative purchasing power parity rejected the null hypothesis of $\beta_1 = 1$ by Wald Test.

TABLE 3. WALD TEST

Test Statistic	Value	Df	Probability
t-statistic	-148.6046	51	0.0000
F-statistic	22083.33	(1, 51)	0.0000
Chi-square	22083.33	1	0.0000

Descriptive Statistics

The growth rates of consumer prices, money supply, and nominal exchange rate were low in 1960s then increased over the decades 1970s to 1990s, decreased in 2000s and increased again in the last five years. Nominal effective exchange rate appreciated in



1960s, followed by depreciation over 1970s to 1990s, appreciated in 2000s before depreciating in the last five year

TABLE 4. PERCENTAGE CHANGE AND RATIOS

Year	1960-69	1970-79	1980-89	1990-99	2000-2009	2010-2014
Inflation Rate	3.28	15.4	36.33	80.36	8.71	23.6
Money Supply	13.01	23.57	28.16	64.55	27.54	21.73
Exchange Rate	0.00	3.92	29.68	142.38	-0.83	35.48
NEER	4.05	-1.51	-14.37	-34.03	1.22	-15.63
Trade/GDP	0.31	0.27	0.17	0.21	0.29	

It is obvious that model variables tend to move together up and down. Excess money has the largest standard deviation, followed by NEER, real GDP and CPI. There is significant negative correlation coefficient of -0.61 between CPI and NEER, and very high positive correlation between CPI and real GDP. Negative correlation between CPI and excess money has been rejected. Pairwise Granger Causality test indicates that consumer price index on one hand and effective exchange rate, real GDP, and excess money on the other hand Granger cause each other. Import prices increase more rapidly than general level of prices and to a lesser extent so do the export prices.

Unit Root Results

Unit roots tests in showed that excess money supply is stationary, nominal effective exchange rate, real GDP, and oil prices have one unit root, consumer price index, general price level, and import prices have two units roots.

TABLE 5. UNIT ROOT TESTS

Variable	Prob. - Level	Prob. - 1st diff	Prob. -2 nd	Order of Integration
NEER	0.9217	0.0000	-	I(1)
CPI	1.0000	1.0000	0.0000	I(2)
Y	1.0000	0.0000		I(1)
P	1.000	0.9951	0.0001	I(2)
MP	1.000	0.9908	0.0001	I(2)
EXM	0.000			I(0)
Oil Prices	0.9658	0.0000		I(1)

Cointegration Results

Trace test indicates cointegrating equation among consumer price index, nominal effective exchange rate, real GDP, and excess money at the 0.05 level.

TABLE 6. COINTEGRATION TEST

Date: 04/27/15 Time: 15:36				
Sample (adjusted): 1962 2011				
Included observations: 50 after adjustments				
Trend assumption: Linear deterministic trend				
Series: CPI NEER Y EXM				
Lags interval (in first differences): 1 to 1				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigen Value	Statistic	Critical Value	Prob.**
None *	0.526422	66.63499	47.85613	0.0004
At most 1	0.289600	29.26306	29.79707	0.0575
At most 2	0.205280	12.16669	15.49471	0.1491
At most 3	0.013476	0.678391	3.841466	0.4101
Trace test indicates 1 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Vector Error Correction Estimation Results

TABLE 7. SUMMARY OF VECM ESTIMATION RESULTS

Dependent Variable	Import Price Index		Consumer Price Index	
	Short-run	Long-run	Short-run	Long-run
MP(-1)		1.00		
CPI(-1)				1.00
NEER(-1)		-1.92***		-1.06***
Y(-1)		-80.02***		-67.05***
EXM(-1)		0.35***		0.12***
Constant		721143.3		597334.8.
Δ MP	0.49**			
$\Delta\Delta$ MP				
Δ CPI			0.64**	
$\Delta\Delta$ CPI			0.04	
Δ NEER	0.86		0.17	
$\Delta\Delta$ NEER			0.13	
Δ Y	58.96**		-3.19*	
$\Delta\Delta$ Y			-2.62	
Δ EXM	-0.12**		0.01***	
$\Delta\Delta$ EXM			0.004	
Constant	11236.57		11888.93***	
Error Correction	-0.33**		-0.12***	
R^2	0.68		0.83	
\bar{R}^2	0.64		0.79	
Akaike AIC	26.76		22.41	

*, **, *** denotes rejection of the hypothesis at 0.10; 0.05 and 0.01 level



Multicollinearity test indicates absence among NEER, Y, and EXM with coefficients 2.11, 2.13, and 1.02 respectively since all of them are less than 5. The estimated coefficients of Consumer price model in long-run are significantly different from zero and got the correct signs. Cumulative pass-through coefficients are obtained by dividing the cumulative impulse responses of import price or CPI after j years by the cumulative response of the exchange rate shock after j years. Estimates of CPI model suggest that the exchange rate shock has passed through an average of 47 per cent to consumer prices, which implies that ERPT remain potentially important source of inflation in Sudan. Split of CPI into food and nonfood yields estimates of long-run NEER as -0.56312 and -0.50138 respectively, but the ERPT remains constant. The exchange rate pass-through to import prices has upward trend starts from 7% in the first year to 109% in the tenth years. The average pass-through was 50%. Exchange rate pass-through is consistent with 0.4 average of 33 Sub-Saharan countries and Uganda 0.48, but less than Ghana which reported 0.79.

The error correction terms of import prices and consumer prices indicate the elimination of 33% and 12% of disequilibrium respectively within one year.

The exchange pass-through into import prices found to be lower than that into consumer prices. However, the insignificant results in the contemporaneous or short-run ERPT into either import prices or consumer price, suggest that the adjustment in Sudan tends to be slow. Consumer prices adjust within two lags compared to one lag of import prices. Excess money in the short run affects, despite its significance in the short-run got wrong sign in import prices model. Error correction term of import is larger than consumer prices. Consumer price index shows superiority over of import price index in terms of correct coefficients' signs, R squared, and Akaike information criteria.

Taylor's Hypothesis that single-digit inflation could cause low pass-through has been rejected since the exogenous dummy variable which takes the value 1 if the inflation rate is single digit, 0 otherwise, is insignificant.

The binding restriction to the long-run effect of ERPT to import price is rejected i.e. $\chi_1^2 = 9.53$; (*Prob* = 0.002); and rejected for consumer prices $\chi_1^2 = 4.97$; (*Prob* = 0.026)

Most of the imported machinery and transport equipment are from the European Union, China and Japan. A large proportion of imported consumer goods are from KSA, and China low prices and quality. The sources of main imports are India and China where price is expected to be low given the cheap labor available in these countries. In addition, low quality products are imported from China and this further explains the low import prices.

Variance decomposition indicate that one standard deviation shock to the CPI downward trend of its own innovations, upward trend of real GDP, excess money and the exchange rate respectively. This means that there is strong link between consumer prices and monetary policy

DISCUSSION

Sudan is a small, open economy; the average trade ratio to GDP is 25%. Importation of agricultural inputs and manufacturing raw materials, machinery and equipment constitutes about 70% of the sectors need as well as necessities for domestic consumption, ranging from foodstuffs and other consumer goods. Changes of exchange rates is sought to affect domestic consumption directly through changes the prices of finished goods and indirectly through the change in the cost of inputs. As mentioned before the exchange rate subjected to continuous devaluation the extreme was in 1992 by 774% from 15.1 to 132 Sudanese Pounds per one dollar.

Sudan monetary policy is characterized by increased uncertainty that reduces the number of domestically produced goods priced with reference to domestic market conditions. The central bank of Sudan usually sets an inflation target of one digit and ought to fight aggressively using monetary policy tools to avoid any increase in general price level at times of depreciations, but failed to do so, and can be labeled incredible monetary policy. Money supply growth rates are always above the targets. Too much liquidity into the banking system triggers inflation. When consumers expect prices to increase gradually, they are more likely to buy more now. This drives demand faster, which triggers businesses to produce more, and hire more workers. The additional income allows people to spend more, stimulating more demand. The central bank implemented restrictive monetary policy by selling government securities and bonds that is GMC and CMC, and raising the required reserve ratio. This reduced the money supply. Monetary policy was not independently managed by the central bank of Sudan and had no specific goals and means. The central bank was engaged only in issues orders and regulations concerning credit ceiling and direction to priority sectors. In 1983 the government adopted Islamic laws prohibiting the dealing with interest rate.

The period 1990-1995 witnessed structural imbalances where internal imbalances included in total supply and demand imbalances, budget deficit and high inflation and external imbalances i.e. deficits in the current account and balance of payments, and problems of inflow of foreign capital which reflected negatively on the deterioration of exchange rate. Liberalization policies focused mainly on structural reforms and did not encompass monetary and fiscal policies. The main problems affected adversely the performance of the monetary sector can be summarized in large increase in money supply; increased public debt from banking system which had negative effect on the availability of funds to the private sector; Lack of efficient policy tools to manage liquidity in banks and total liquidity in the economy; clear the failure



of the performance of some tools, particularly required reserve ratio; and profit margins and ceilings, and large amount of currency with the public. The government succeeded over the period 1996-1999 in managing the aggregate demand; controlled domestic credit; comply with article 57 that regulate government borrowing from central bank; led to the reduction of inflation; stability in exchange rate; and reduction of Base money.

During 2000-2004 the central bank used many tools to control money supply such as: internal liquidity; profit margins; participation ratios; central bank participation certificates; government participation certificates; activate the role of the central bank as a last lender. During the 2005-2014 the monetary policy failed to achieve its goals of reducing inflation; economic growth; and stability of exchange rate. One of the reasons was the duality of banking system in North and South Sudan, lack of accountability; corruption; lack of transparency. Thus money supply has been ineffective in tightening the link between exchange rate movement and prices.

CONCLUSION

Since the devaluation of the Sudanese pound in Sep. 1978 the exchange rate has been depreciating throughout the periods 1978-1999, 2003-2014, accompanied with high inflation indicating significant correlation between the changes of exchange rate and inflation of 0.56; and inflation and changes in import prices of 0.66 suggesting that the lower value of the Sudanese currency is likely to raise the cost of imports, which can feed into higher consumer prices especially in an unstable monetary environment. This study has analyzed the exchange rate pass-through to import and domestic prices in Sudan. ERPT to consumer prices is greater than that to import prices. The magnitude of the exchange pass-through is to some extent higher than those of similar African countries. Monetary policy failed in most periods to attain its goals of price and exchange rate stability.

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ANNEX

TABLE 8. DESCRIPTIVE STATISTICS

	NEER	CPI	Q	MP
Mean	83647.6	121063.8	0.4	157576.5
Median	66090.6	213.9	0.4	211.4
Maximum	197945.3	738046.1	0.7	1058206.0
Minimum	82.4	9.2	0.3	9.1
Std. Dev.	79225.9	209556.2	0.1	278300.5
Skewness	0.2	1.5	1.2	1.6
Kurtosis	1.3	4.0	3.8	4.6
Jarque-Bera	6.5	21.4	12.5	27.8
Probability	0.0	0.0	0.0	0.0
Sum	4182380	6053188	21.45647	7878826

TABLE 9. PAIRWISE GRANGER CAUSALITY TESTS

Date: 02/08/15 Time: 07:23			
Sample: 1960 2014			
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Prob.
NEER does not Granger Cause CPI	53	1.99747	0.1468
CPI does not Granger Cause NEER	53	0.19830	0.8208

TABLE 10. VECTOR ERROR CORRECTION ESTIMATES

Date: 04/30/15 Time: 15:01				
Sample (adjusted): 1963 2011				
Included observations: 49 after adjustments				
Standard errors in () & t-statistics in []				
Cointegrating Eq:	CointEq1			
CPI(-1)	1.000000			
NEER(-1)	-1.064505			
	(0.24729)			
	[-4.30469]			
Y(-1)	-67.04651			
	(6.34417)			
	[-10.5682]			
EXM(-1)	0.115095			
	(0.03551)			
	[3.24087]			
C	597334.8			
Error Correction:	D(CPI)	D(NEER)	D(Y)	D(EXM)
CointEq1	-0.117761	0.046359	0.001720	2.481774
	(0.03029)	(0.02580)	(0.00242)	(0.90518)
	[-3.88717]	[1.79701]	[0.71174]	[2.74174]
D(CPI(-1))	0.641214	0.137050	0.005847	2.182927
	(0.16547)	(0.14090)	(0.01320)	(4.94397)
	[3.87522]	[0.97265]	[0.44297]	[0.44153]
D(CPI(-2))	0.039516	0.041801	0.027477	-1.139175



	(0.15654)	(0.13331)	(0.01249)	(4.67739)
	[0.25243]	[0.31358]	[2.20040]	[-0.24355]
D(NEER(-1))	0.173659	0.132694	-0.001967	-2.228480
	(0.18054)	(0.15374)	(0.01440)	(5.39435)
	[0.96189]	[0.86311]	[-0.13658]	[-0.41311]
D(NEER(-2))	0.132070	0.067612	0.002551	-1.903331
	(0.17817)	(0.15172)	(0.01421)	(5.32357)
	[0.74126]	[0.44563]	[0.17951]	[-0.35753]
D(Y(-1))	-3.191545	2.636695	-0.300656	138.9303
	(2.46772)	(2.10141)	(0.19685)	(73.7337)
	[-1.29331]	[1.25473]	[-1.52733]	[1.88422]
D(Y(-2))	-2.615683	-0.315679	-0.116178	81.77146
	(2.33056)	(1.98461)	(0.18591)	(69.6353)
	[-1.12234]	[-0.15906]	[-0.62492]	[1.17428]
D(EXM(-1))	0.009938	-0.002984	-0.000527	0.740246
	(0.00453)	(0.00386)	(0.00036)	(0.13539)
	[2.19315]	[-0.77339]	[-1.45787]	[5.46742]
D(EXM(-2))	0.003770	-0.005841	0.000191	-1.237179
	(0.00631)	(0.00537)	(0.00050)	(0.18854)
	[0.59751]	[-1.08701]	[0.37880]	[-6.56183]
C	11888.93	-6563.850	196.8881	-185980.3
	(3619.03)	(3081.82)	(288.690)	(108134.)
	[3.28511]	[-2.12986]	[0.68201]	[-1.71991]
R-squared	0.831533	0.174172	0.359131	0.742670
Adj. R-squared	0.792656	-0.016404	0.211238	0.683286
Sum sq. resid	7.01E+09	5.08E+09	44614975	6.26E+12
S.E. equation	13408.15	11417.81	1069.567	400625.0
F-statistic	21.38885	0.913926	2.428321	12.50625
Log likelihood	-529.6129	-521.7392	-405.7111	-696.0739
Akaike AIC	22.02502	21.70364	16.96780	28.81934
Schwarz SC	22.41110	22.08973	17.35389	29.20543
Mean dependent	18914.86	-2870.316	528.5232	-100863.9
S.D. dependent	29445.79	11325.30	1204.301	711876.1
Determinant resid covariance (dof adj.)		3.47E+33		
Determinant resid covariance		1.39E+33		
Log likelihood		-2147.835		
Akaike information criterion		89.46265		
Schwarz criterion		91.16143		

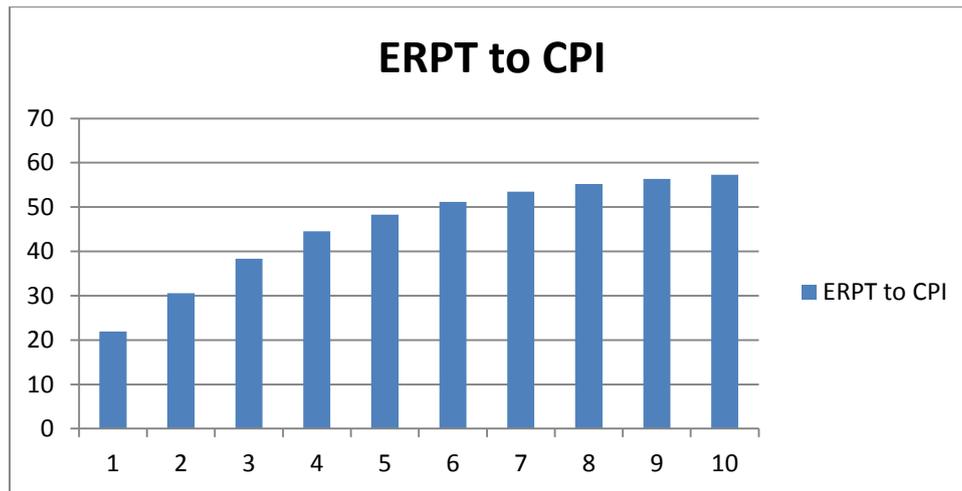


FIGURE 1. ERPT to CPI

TABLE 11. VECTOR ERROR CORRECTION ESTIMATES

Date: 04/30/15 Time: 19:50				
Sample (adjusted): 1962 2011				
Included observations: 50 after adjustments				
Standard errors in () & t-statistics in []				
Cointegrating Eq:	CointEq1			
MP(-1)	1.000000			
NEER(-1)	-1.917889			
	(0.52829)			
	[-3.63035]			
Y(-1)	-80.02149			
	(9.96895)			
	[-8.02708]			
EXM(-1)	0.351640			
	(0.05612)			
	[6.26616]			
C	721143.3			
Error Correction:	D(MP)	D(NEER)	D(Y)	D(EXM)
CointEq1	-0.325012	0.010990	0.002803	-1.617518
	(0.11622)	(0.00885)	(0.00081)	(0.37456)
	[-2.79653]	[1.24221]	[3.45871]	[-4.31844]
D(MP(-1))	0.487477	0.004502	0.003876	-1.515499
	(0.27132)	(0.02065)	(0.00189)	(0.87443)
	[1.79669]	[0.21794]	[2.04870]	[-1.73313]
	(1.89090)	(0.14395)	(0.01318)	(6.09411)
	[0.45389]	[1.42930]	[0.06800]	[0.38032]
D(Y(-1))	58.96129	1.432094	-0.102324	-42.93682
	(19.8368)	(1.51010)	(0.13831)	(63.9313)
	[2.97232]	[0.94834]	[-0.73982]	[-0.67161]
D(EXM(-1))	-0.124610	-0.002832	-0.001304	1.185896
	(0.05106)	(0.00389)	(0.00036)	(0.16455)
	[-2.44054]	[-0.72850]	[-3.66233]	[7.20672]



C	11236.57	-3158.396	420.0273	28645.71
	(24681.6)	(1878.91)	(172.090)	(79545.4)
	[0.45526]	[-1.68097]	[2.44074]	[0.36012]
R-squared	0.680581	0.099340	0.323821	0.586657
Adj. R-squared	0.644283	-0.003007	0.246983	0.539686
Sum sq. resids	9.68E+11	5.61E+09	47078435	1.01E+13
S.E. equation	148354.7	11293.67	1034.391	478126.8
F-statistic	18.75002	0.970616	4.214313	12.48982
Log likelihood	-663.1191	-534.3510	-414.8295	-721.6327
Akaike AIC	26.76477	21.61404	16.83318	29.10531
Schwarz SC	26.99421	21.84348	17.06262	29.33475
Mean dependent	57865.04	-2695.986	526.7310	-98845.58
S.D. dependent	248742.0	11276.72	1192.016	704719.2
Determinant resid covariance (dof adj.)		6.30E+35		
Determinant resid covariance		3.78E+35		
Log likelihood		-2331.784		
Akaike information criterion		94.39136		
Schwarz criterion		95.46209		

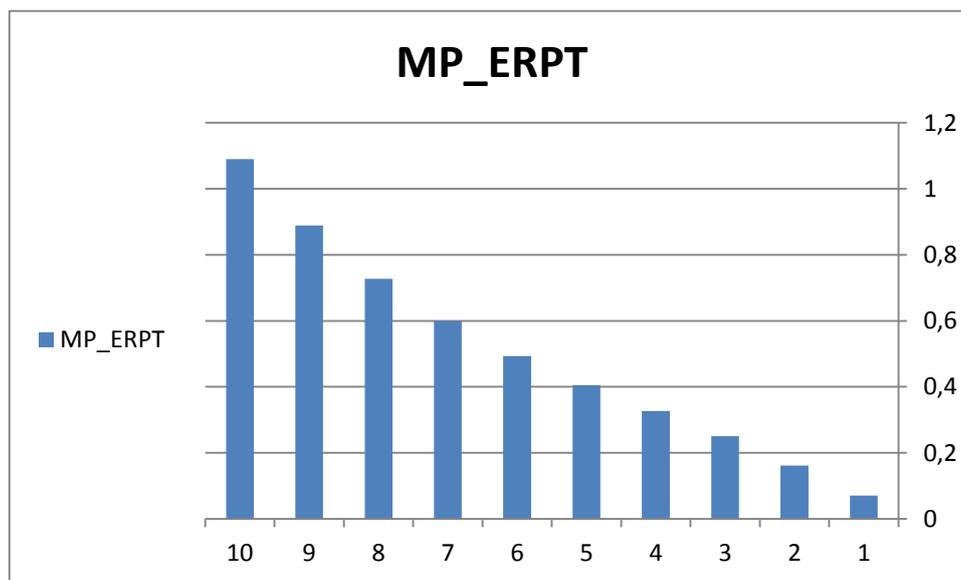


FIGURE 2. ERPT to IMPORT PRICES

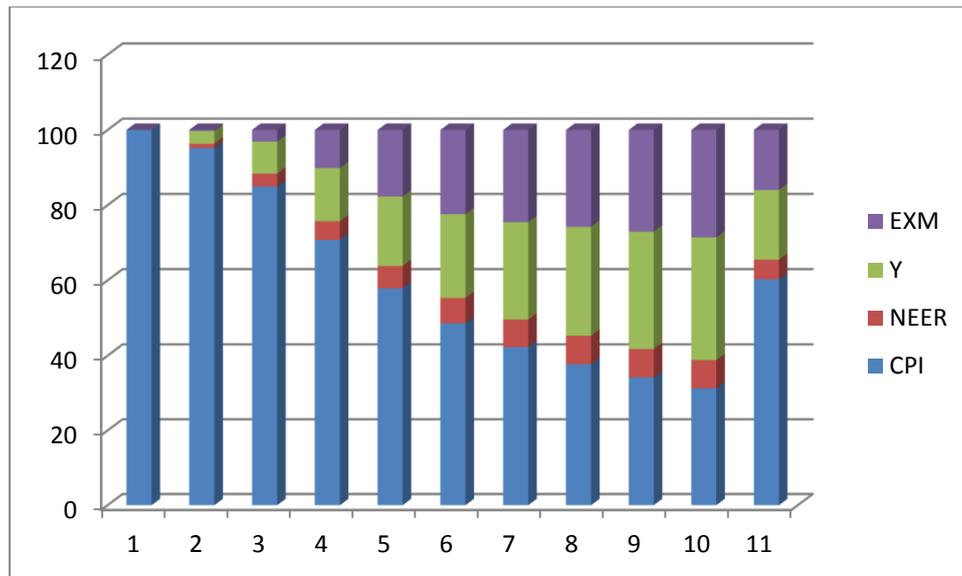


FIGURE 3. VARIANCE DECOMPOSITION OF CPI



USAGE OF KANBAN METHODOLOGY AT SOFTWARE DEVELOPMENT TEAMS

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Abstract

The purpose of this paper is to present the Kanban methodology and its practical usage within a software development environment. Kanban is primary a lean manufacturing concept and its application in other areas is continuously growing due to its proven successfulness. Applying Kanban in software development environments is yet young but increasingly growing concept that is becoming more and more popular. Traditional methodologies are going down on the popularity scale as new methods and practices come on board. Agile methods are proven to be very successful in today's modern software development. Usage of Kanban in software development teams brings many advantages and improvements. Kanban methodology also offers specific metrics for monitoring and studying in stochastic terms which means increased effectiveness and collaboration. The practical implementation of this concept will be conducted by using the Kanban web based application called KanbanMAK within an IT company. The results of this implementation showed increased effectiveness, better collaboration and overall improvement in the software development process.

Key words:

Kanban Methodology; Agile Methodology; Software Development; Lean.

INTRODUCTION

In order to understand the usage of Kanban in a software development process we must first explore its original usage. The Kanban concept was originally a part of the JIT (Just-In-Time) production system of Toyota in the 1950s. "Just-In-Time" means making "only what is needed, when it is needed, and in the amount needed." Kanban roughly means signal card that is used to trigger manufacturing action. At Toyota, when a process refers to a preceding process to retrieve parts, it uses a kanban to communicate which parts have been used (Taiichi, 1988).

Taiichi Ohno is the name that is behind this concept and in his book, Toyota Production System, he highlights the JIT concept and automation with a human touch (autonomation) as the two pillars of the Toyota Production System with Kanban being the tool used to operate the system (Taiichi, 1988). The Kanban system has also been called the “Supermarket method” because Taiichi Ohno’s inspiration came from the American grocery stores.

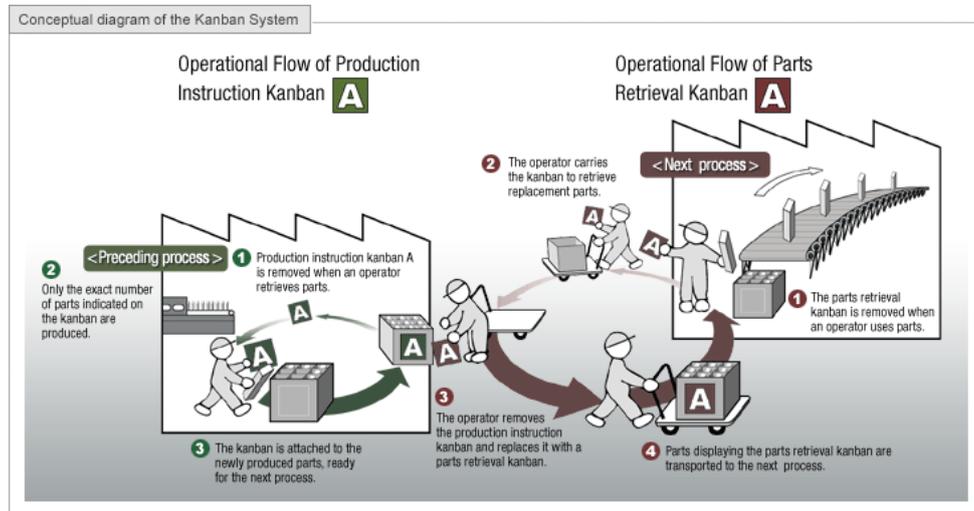


FIG. 1 CONCEPTUAL DIAGRAM OF THE KANBAN SYSTEM

The Figure 1 shows the conceptual diagram of the Kanban system. Here we have two kinds of Kanban in a meaning of visual signals (Production Instruction and Parts Retrieval Kanban). These two kinds of Kanban are being used for managing parts in the production process (Toyota Global, Web page, August 2015).

Kanban is not just a concept related to JIT production. It is also a *lean* technique. The term lean was originally mentioned in the book “The machine that changed the world” from the authors J. P. Womack and D. T. Jones briefly meaning *elimination of waste*. The authors used the term as a synonym for the Toyota’s automotive industry. Furthermore, in software engineering, this term was originally used in the book “Lean Software Development” (Poppendieck & Poppendieck, 2003). In software engineering the principles that this concept is based on are similar to the one in the production and they are:

1. Eliminate waste
2. Amplify learning
3. Decide as late as possible
4. Deliver as fast as possible
5. Empower the team
6. Build quality in
7. See the whole



The beginnings of Kanban involvement in software development are connected to David J. Anderson (Anderson, 2010) when he was invited by Microsoft to assist in one of their small teams for achieving better visualisation of the working flow and limiting the workflow.

This paper goal is to present the usage of Kanban in the process of software development and it is structured in this order: section 2 describes the comparison between traditional software development methods on one side and Kanban on the other, section 3 presents the implementation of Kanban in software development and the benefits from it and the last section describes the results gained from evaluating that implementation.

TRADITIONAL SOFTWARE DEVELOPMENT METHODS AND AGILE METHODS

In the last decade, there have been many studies, researches and publications about agile software development methodologies (ASDM). The popularity of these methodologies come from the disadvantages and shortage of traditional software development methods (TSDM) in today`s dynamics and fast changing environment. The formal origin of this agile methodologies date from February 2001, where a group of experts (Agile Alliance) sat down and discussed the problems and disadvantages of the current software development methodologies. The result of that meeting was a document containing the principles and basics of agile methodologies called *Agile Manifesto* (Beck et al, 2001). The messages resulting from this document are:

- Individuals and interactions over processes and tools
- Working software over comprehensive documentation
- Customer collaboration over contract negotiation
- Responding to change over following a plan

According to Beck et al, (2001) the Agile movement is not anti-methodology, but a way to restore credibility to the word methodology, a chance to restore a balance. They embrace modelling, but not in order to file some diagram in a dusty corporate repository. They also embrace documentation, but not hundreds of pages of never-maintained and rarely-used tomes. Planning is conducted, but recognition of the limits of planning in a turbulent environment is achieved.

Agile methods are a subset of iterative and evolutionary methods (Larman & Basili, 2003). They are based on the same agile principles but the differences among them come from the different aspects of the software development life cycle they focus. Popular agile methods include: XP, Scrum, Kanban, Dynamic System Development

Method (DSDM), Adaptive Software Development (ASD), Feature Driven Development (FDD), Unified Process (UP), Crystal, etc. Agile methods focus on the code rather than the design. They are based on an iterative approach for software development and are intended to deliver working software quickly and evolve this quickly to meet changing requirements. The aim of agile methods is to reduce overheads in the software process (e.g. by limiting documentation) and to be able to respond quickly to changing requirements without excessive rework.

Many studies have been made comparing ASDM and TSDM with an emphasis on the advantages and disadvantages that came from ASDM implementation. Apart from taking references and reviews, Bhadoriya et al, (2014) conducted a research in a software firm that uses ASDM (Specifically Extreme Programming) in their software development work. The research aim was to find the benefits and difficulties in the transition from traditional to agile software development and the changes from both the team and customer's point of view. The benefits reported were: quick adoption of clients changing requirements, saved time and money for not following the whole systems development life cycle (SDLC), improved and reviewed software in every phase of development because of the customer involvement and so on. Beside the benefits, there were few drawbacks reported by team members. Inconsistency of requirements makes difficulties in project scheduling. As the project requirements change it is absolutely necessary to have experienced and senior resources in the team or at least experienced resources mentoring new resources. Bhadoriya et al, (2014) also reported that team members had decreased time for software development which is some way increasing their programming ability to deliver software properly in time.

Even though agile methodologies are used for small and medium-sized projects, there are also studies and researches that analyse the implementation of ASDM in large projects. Papadopoulos (2015) conducted a case study about adopting the agile framework on large, distributed projects and reported improved quality and employee satisfaction while building the end product, requirement changes and improved better performance of the agile software development than the traditional methodologies. The case study also demonstrated that adopting the agile framework is not straightforward and large companies with a long history of using traditional processes need to carefully plan this activity, trying to avoid common problems observed when attempting to adopt the agile methodologies.

APPLYING KANBAN IN SOFTWARE DEVELOPMENT

Software development is not a production or a manufacturing activity (Reeves, 1993). Software engineers create different things every time, whereas manufacturing produces same things over and over again. When we talk about a software development using Kanban we are not using the term signal cards for "pulling" work but instead we are talking about *work items*. The term *virtual* cards can also be



used because here we don't have a physical card that is passed on to mark limits in the Work-In-Progress.

The formal beginnings of Kanban involvement in software development are connected to David J. Anderson (Anderson, 2010) when he was invited by Microsoft to assist in one of their small teams for achieving better visualisation of the working flow and limiting the workflow. The result turned out to be five successfully proven principles for Kanban implementation. The process of successful adoption starts from adopting the basic foundation principles:

- Start with what you have now – that is your current process.
- Agree to pursue an evolutionary approach to change and improvement
- Respect the current roles and responsibilities of the team/ organization

Based on these principles, the next thing to implement are the five core Kanban principles (Anderson, 2010) which were commonly observed in organizations that experienced success in using the Kanban method.

1. Visualize the Work and the workflow that it follows
2. Limit Work-In-Progress (WIP) using a virtual Kanban system
3. Manage Flow
4. Make Management Policies Explicit
5. Use Models and the scientific method and Improve collaboratively

The term "virtual Kanban board" was used by Anderson to make the Work-In-Progress visible while identifying constrains and limiting the Work-In-Progress to one item. In traditional software development, the work was "pushed" over the software development line while here everyone has only one task at a time and the work is "pulled" after it is finished.

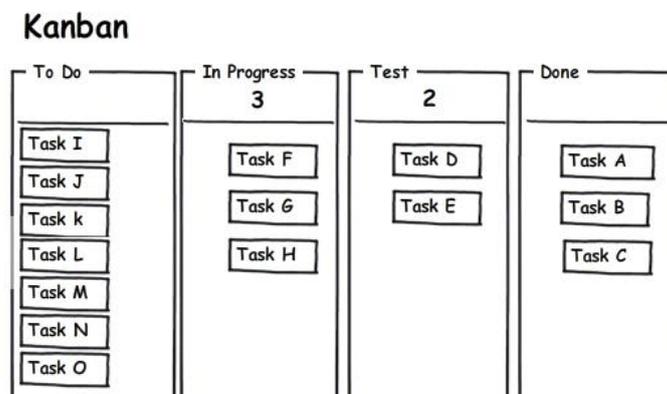


FIG. 2 EXAMPLE OF A KANBAN BOARD

Ahmad et al, (2013) reported lack of scientific researching's regarding Kanban usage in software engineering. Despite that deficiency, their literature review revealed findings about motivation factors for Kanban adoption, benefits and challenges. Even though practices, benefits and challenges were presented, there were no studies found regarding detailed and fully explained usage of Kanban in software development.

Ahmad et al, (2014) reported improving team communication and development flow, reducing time to reach the market, increasing productivity and creating transparency in organisation as main motivation factors for Kanban adoption. The empirical study was conducted on the current state of Kanban usage in software companies which extensively use Agile and Lean approaches. The authors used survey and thematic interviews to analyse the motivations of Kanban usage, the benefits obtained from it and faced challenges. The most common achieved benefits of using Kanban were better visibility of work, improved transparency and communication and better control of flow. Along with the benefits, a few challenges were faced. The most common one was lack of experience with Kanban. That means difficulties in managing the WIP limits and prioritization of tasks. The next challenge was about the traditional culture of the organization and how it affected adoption of Kanban.

Usage and evaluation of KanbanMAK web application

KanbanMAK is a custom web-based application. The application was presented and then tested by the software development team members. The application was tested on medium-sized projects with 1-10 team members. The application test period usage lasted for 14 months and included around 23 projects. After the implementation, the evaluation phase started.

The main goal of this analysis was to examine the real usage of the application and the benefits from it. Two methodological approaches were used, including:

- Automatic database analysis and
- Web-surveys with employees.

Analysis results and conclusions

The conducted web survey included 45 team members from which 88,8% gave their answers. The results from this survey showed that there are significant improvements of the daily development process, with increased collaboration and better estimation of working tasks execution. The following graphs show some of the results presented.

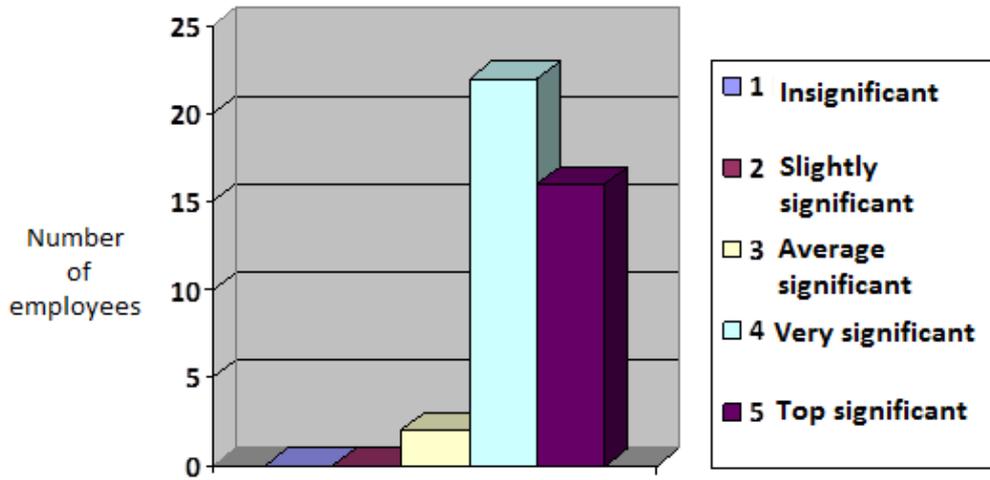


FIG. 3 LEVELS OF IMPROVEMENTS USING KANBANMAK APPLICATION

Figure 3 shows that more than half of the employees gave a rating 4 out of 5 for improvements after the usage of the application. The highest rate was given by 40% of them which is also a satisfactory result.

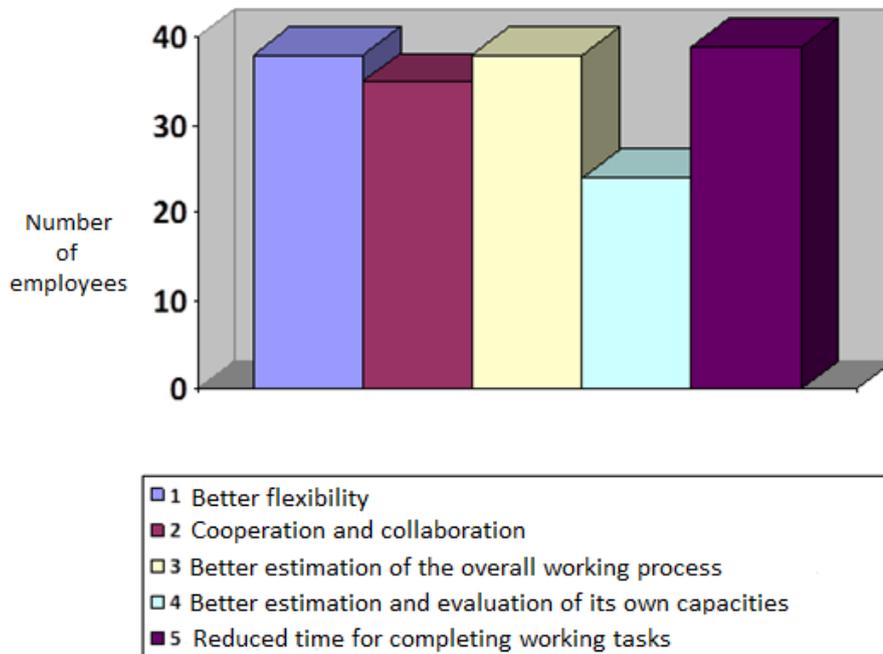


FIG. 4 ADVANTAGES REPORTED WHILE USING KANBANMAK APPLICATION

Most of the proposed advantages were chosen by the employees as gained benefit after using the Kanban web-based application presented in the graph on figure 4. These advantages included: reducing time for completing working tasks, better flexibility, cooperation and collaboration and similar.

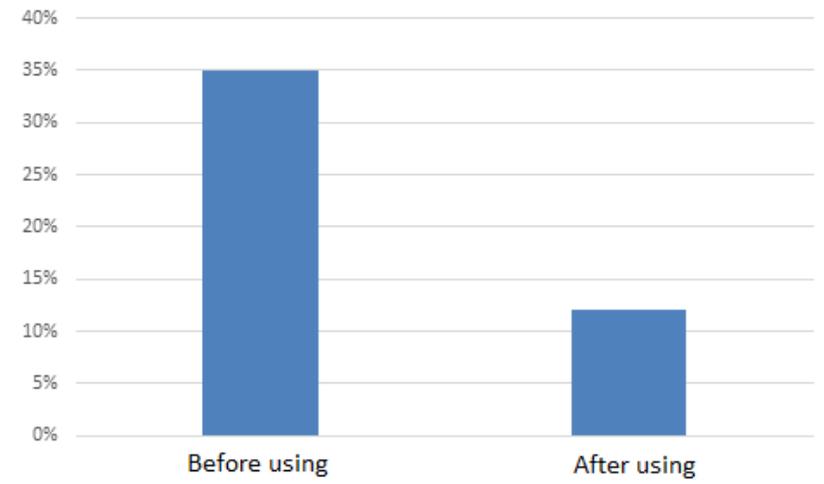


FIG. 5 DIFFERENCE BETWEEN ESTIMATED AND REAL TIME OF WORKING TASKS IN MEDIUM-SIZED PROJECTS

Figure 5 shows a 23% decrease of the difference between the estimated and real time of working tasks. This means better predictability for estimated delivery and overall customer satisfaction.

Beside the reported advantages and benefits from using the application, there were disagreements and disbelieves for including the new methodology into the daily management processes. There were also employees who didn't wanted to participate in the web survey and considered it to be "too fresh to adopt". This is an interesting fact because it is indeed a new and fresh concept and disagreement in something other than the known traditional approach can be sometimes justified. But all team members should have in mind that everything in the IT world is changing rapidly and they must be prepared to adopt quickly the new challenges that come due to fast changing technical environment.

Taking into consideration all of the results from the survey conducted using the KanbanMAK application and the literature overview, we can list the following advantages:

- Kanban implementation has a few principles and rule which makes it easy to fulfil.
- Applying Kanban in software development means adoption of practices and principle into the existing process for improvement.
- Visualization is the key for identifying bottlenecks and a way to monitor the current state of development process.
- Using Kanban methodology encourages the team to further upgrade and motivate.
- Final development results increases customer trust and satisfaction.



- Improvements in product quality, expenses are decreased and time for delivery is reduced.

One of the most important things about the Kanban methodology is that this methodology is applied to our existing process. This methodology does not create a new way of managing the existing process but find ways to improve the existing process. That is why Kanban is an evolutionary method that promotes gradual improvements to managing processes including development.

CONCLUSIONS

Being originally a lean manufacturing concept, Kanban has gained a great popularity as software development methodology. The traditional, heavyweight methodologies are being substituted by the lightweight agile methodologies as a result of the many advantages they offer.

Each software development project is story for itself and there is no such thing as a perfect single model for all types of software projects. All agile methods have their advantages and disadvantages. What distinguishes Kanban methodology from all the other agile methodologies is the minor changes made when it is applied in the current process. Kanban methodology also offers specific metrics for monitoring and studying in stochastic terms. Predicting the development process increases effectiveness and collaboration within the team.

Beside the reported advantages and benefits from the surveys made, there were disagreements and disbelieves for including the new methodology into the daily management processes. Kanban involvement in software development is still new and fresh concept and there is and will be a need for better understatement and changes in traditionalism for faster adoption.

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INSURANCE DEMAND, FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH IN SOUTH AFRICA: EVIDENCE FROM TODA-YAMAMOTO CAUSALITY TEST

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Abstract

This paper examines the dynamic interactions among insurance demand, financial development and economic growth in South Africa for the period of 1970 to 2012. A Vector Error Correction Model (VECM) and Toda-Yamamoto (T-Y) causality test are used to analyze the short run and long run relationship after establishing a multivariate cointegration relation among the variables of interest. The VECM shows that, in the short run, financial development promotes insurance demand. The Toda-Yamamoto causality test supports the insurance-led and finance-led growth hypothesis with unidirectional causalities running from insurance activities and financial development to economic growth. Therefore, the results of this paper support the theory of supply leading and demand-following hypothesis for South Africa. We conclude that financial interdependence of insurance demand and financial development are crucial for growth in South Africa. The policy implication of the results is that efforts should be geared towards the implementation of policies that promotes the mutual interdependence of insurance and financial activities in South Africa.

Key words:

Insurance Demand; Financial Development; Growth; T-Y causality; South Africa.

INTRODUCTION

The relationship between financial development and economic growth on one hand has been studied extensively in the literature likewise the insurance and economic growth nexus on the other hand. Empirical studies on finance–growth relationships are Patrick (1966), Goldsmith (1969), Mackinnon (1973), Shaw (1973), Lewis (1955) Robinson (1952) among others. Empirical studies on the relationship between

insurance and economic growth have also been many and mixed. For instances, studies like Soo (1996), and Ward and Zurbruegg (2000) found evidence that economic growth promotes insurance development, that is the relationship is demand-following. Others studies such as Kugler and Ofoghi (2005), Arena (2008), Haiss and Sumegi (2008), Curak, et al, (2009), Avram et al, (2010) among others found supply-leading where insurance is found to promote economic growth. However, given the contribution of both financial development and insurance to growth, empirical analysis of the relationship among insurance demand, financial development and growth is generally rare in the literature for both developed and developing countries.

Despite the apparent lack of literature on the role of insurance demand and financial development on growth, the work of Horng et al, (2012) examined the causal relationship among insurance demand, financial development and growth for Taiwan. The limitation of the work is that only the conventional ECM-type Granger (1988) short-run causality test was used in the analysis. This paper, on the other hand, adds to the literature by adopting both the short-run (ECM-type) and the long-run augmented causality test proposed by Toda and Yamamoto (1995). This is necessary as inadequate estimation technique can lead to spurious inferences and conclusions. The Toda-Yamamoto (1995) causality test provides the possibility of testing for causality between integrated variables based on asymptotic theory with or without pretest of cointegration. The results of the augmented causality are equally valid with the Wald test irrespective of the order of integration and whether there is cointegration or not. Apart from the study done for Taiwan, to the best of our knowledge no empirical paper is available in this area of economic research. Theoretically, holding of insurance policy can facilitate credit access by serving as collateral, while banks can equally provide insurance companies with liquidity facilities to enable the prompt payment of future claims to insurance policy holders.

There are reasons why this study is relevant and important in the sample country. The first is due to South Africa's high level of insurance development in Africa. From Table 1, South Africa has the highest financial development in terms of insurance density (premium per capita) and Banking measurements in the selected African countries and African countries in general. Besides, the nature of the financial system in the country is a cross-holding where banks also act as insurers (Vivian, 1984). For instance, a bank can simultaneously mortgage bond to a client and offer the building and credit life (Vivian, 1995). Moreover, most insurance companies in South Africa hold considerable shares in the big banks (Table 2). The interrelationship between the insurance companies and the banks coupled with the financial reforms might have led to South Africa being ranked 25th in the world in 2008 ahead countries like India, Brazil and Russia in terms of financial development index (World Economic Forum, 2008). Meanwhile, before then, in the 1998 World Competitiveness Report, the South African



banking sector was ranked 13th out of the 53 nations (The South African Banking Review, 1998).

In addition, the graph of insurance density and financial development in fig.1 shows that the two variables are almost moving together meaning there is likelihood of association between them. It is, therefore, against this background, that this paper examines the contribution of insurance and financial development to economic growth and their directions of causality to ascertain the one that precedes the other. The remaining part of this paper is structured as follows: section 2 provides the theoretical issues and modeling, section 3 gives the relevant literature while section 4 contains data measurement, sources and preliminary tests. Section 5 presents the empirical model, estimation results and discussions of the result while Section 6 provides conclusion and policy implications.

TABLE 1. INSURANCE DENSITY AND FINANCIAL MEASUREMENTS IN SOME SELECTED AFRICAN COUNTRIES IN 2012

Countries	Life US\$	non-life US\$	Total Premium in US\$	Premium per capita US\$	Domestic Credit to private sector by financial sector % GDP US\$	Bank credit to private sector % GDP US\$	Broad Money as % of GDP US\$
Algeria	89	1,161	1,250	32.7	68.09	38.84	61.01
Egypt	785	1,033	1,818	21.7	77.65	29.11	74.08
Kenya	436	855	1,290	30.0	52.88	36.91	51.16
Mauritius	442	213	655	498.8	113.72	100.76	100.51
Nigeria	474	1,354	1828	10.8	20.35	11.84	20.86
S. Africa*	44,787	10,084	54,871	1,124.2	188.15	71.15	75.57
Tunisia	123	694	816	76.0	80.02	72.10	67.36
Angola	57	1,083	1,140	63.1	15.74	23.27	34.51
Namibia	674	306	980	452.5	48.32	47.21	63.83
Morocco	930	1,927	2,875	76	115.36	73.25	113.90

Source: Swiss Reinsurance Company, Sigma database 2010 and World Development Indicator 2012.

Note: *South Africa export-based economy is the largest and most developed in Africa. Apart from this, the country has one of the highest per capita GDP measured in US Dollars in the African region (see Table 2, the descriptive statistics)

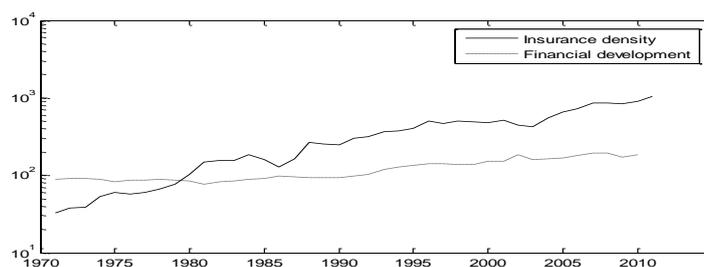


Figure 1 The Growth rate of Insurance density and Financial development in South Africa

Brief Overview of Insurance and Banking Structure in South Africa

The regulators in the financial sector in South Africa consist of the South African Reserve Bank (SARB), which is the South Africa's Central Bank. The Financial Service Board (FSB) was later created to supervise non-banking financial institutions such as insurers, pension houses, brokerage firms and mutual banks. The South African banking system consists of 55 domestic banks, 5 mutual banks and 12 foreign-controlled banks while the insurance sector comprise of indigenous insurance companies which increased from 62 in 2001 to 79 insurance companies by 2010. The banking sector in South Africa was reported to be the dominant part of the financial sector with assets of 120 per cent of the GDP in 2008 (International Monetary Fund, 2008). The four biggest banks in South Africa which are ABSA, First Rand Bank, Standard Bank and Ned bank control the largest portion of 85 per cent of the total assets.

The largest contributor to life insurance is the Old Mutual, followed by other players like Salem, Liberty and Momentum. The Old Mutual is the largest life insurance company in terms of premium in Africa. In 2007, the gross written premium of the Old Mutual was US\$5,359.9 million, by 2011 it has increased to US\$6,447.1 million (Axco Insurance Information Services, 2012). This was followed by Momentum Group and Sanlam with premium of US\$4,248.0 million and US\$4,220.0 million in 2011. For the non-life, Santam Ltd is the largest with gross written premium of US\$1,872.1 million in 2011. The nature of the financial system in South Africa is an extensive and intimate interrelationship of the insurance sector with the banks. There were cases of cross-holdings where banks also hold shares in insurers. As shown in Table 2, South Africa insurance companies hold a significant proportion of shares in the big South African banks.

TABLE 2. INSURANCE COMPANIES' SHARE IN SELECTED BANKS IN SOUTH AFRICA

	Banks	Absa Bank Ltd	Ned bank Ltd	Investec Plc	Investec Ltd	The Standard bank	Rennies Bank Ltd
Insurance companies							
Old-Mutual Assurance		-	52.7	4.9	7.3	20.2	9.7
Sanlam-Life Insurance		22.7	-	2.0	3.4	5.4	6.7
Liberty-Group Ltd		-	-	1.6	1.8	4.9	2.6
Momentum Life Ass.		-	-	1.5	1.6	1.0	-

Source: South African Reserve Bank. (2008).



THEORETICAL ISSUES

In the analysis of the relationship among insurance demand, financial development and economic growth, the financial system can affect economic growth in two ways. It is either through the demand-following hypothesis, which indicates that economic growth promotes the financial system or the supply-leading hypothesis that the financial system promotes economic growth (Levine, 1997; King & Levine 1993a, 1993b; Rajan & Zingales, 1998; Darrat, 1999).

Schumpeter (1911) was the first to assert the role of financial intermediaries in fund mobilization, risk management, technical innovation and growth. While insurance provides savings through premium collection that can be invested in the capital market and channeled to the productive sector, developed financial structure can equally help bring both borrowers and lenders together for growth and development. Likewise, insurance purchase reduces risk and provides liquidity for investors thereby contributing to economic growth (Watchel, 2001). Theorists such as Robinson (1952), Kuznets (1955), Stem (1989), Demetriade and Hussein (1996) are the proponents of the demand-following hypothesis. Kuznets (1955), for instance, claims that high growth rates create the incentive for consumers to demand more of financial assets and instruments due to higher returns. The increased financial demands, in turn, would generate the introduction of new financial institutions and markets to satisfy the increased demand for financial services.

Therefore, the Money in Utility (MIU) by Sidrauski (1967) and AK model by Pagano (1963) that model and describe the demand-following and the supply-leading hypotheses are presented.

Demand-Following Model

Following Sidrauski (1967), the ¹Money in Utility (MIU) model that explains the demand-following hypothesis is first presented. The model is relevant in this paper because it includes money into the utility function and helps to link monetary aggregates to growth. Thus, it helps to explain the demand-following hypothesis of economic growth and the financial services. The model assumes an infinitely lived identical agents (households and firms) and each agent takes decisions at the beginning of every period of how much to consume and how much of money to spend optimally. Individual agent maximizes their expected discounted utility-function over life-time at time *t* described as :

$$\sum_{t=0}^{\infty} \beta^t U(c_t, m_t) \tag{1}$$

¹Extensive descriptions on MIU model optimization can be found in Walsh (2010). Also, Brock (1974) and Feenstra (1986) made use of the model in their works.

Where $\beta \in (0,1)$ is the discount factor, $c_t = \frac{C_t}{NP_t}$ as the real per capita consumption with P_t denoted by domestic price, $m_t = \frac{M_t}{NP_t}$ as real money balances and N is the population. The agents' budget constraint is then given by:

$$Y_t + \tau N_t + (1 - \delta)K_{t-1} + \frac{(1+i_{t-1})S_{t-1}}{P_t} + \frac{M_{t-1}}{P_t} = C_t + K_t + \frac{M_t}{P_t} + \frac{S_t}{P_t} \quad (2)$$

Eq(2) means that households earn income from previous investment which can be spent on consumption, invested as capital, saved as insurance or hold as money in the current period. Where $Y_t = F(K_{t-1}, N_t)$ is the output, τ is the population growth rate, C_t is consumption, K_t is the stock of capital, i_{t-1} is the past nominal interest rate, M_t is the usual money balances (financial development) and S_t is the insurance demand. In per capita terms, Eq. (2) can be written as:

$$y_t + \tau_t + (1 - \delta)k_{t-1} + \frac{(1+i_{t-1})s_{t-1}+m_{t-1}}{1+\pi_t} = c_t + k_t + m_t + s_t \quad (3)$$

Eq. (3) means that the earned income of household can be spent on consumption, invested as capital, held in banks or spent on insurance purchase.

Where $y_t = f(k_{t-1})$, and households choose c, k, s and m so as to maximize Eq. (1). The first order conditions for the dynamic problem using Lagrangian gives Eq. (4) to (7) as:

$$u'(c_t) = \lambda_t \text{ and } \beta u'(c_{t+1}) = \lambda_{t+1} \quad (4)$$

$$\lambda_t + \lambda_{t+1}[f'(k_t) + (1 - \delta)] = 0 \quad (5)$$

$$u'(m_t) - \lambda_t + \lambda_{t+1} \left(\frac{1}{1+\pi_{t+1}} \right) = 0 \quad (6)$$

$$-\lambda_t + \lambda_{t+1} \left(\frac{1+i_t}{1+\pi_{t+1}} \right) = 0 \quad (7)$$

Giving up present consumption for future consumption by money yielding interest (financial development) and insurance purchase impact on growth through the capital stock expressed in Eq. (8), (9) and (10). Taking ratio of $u'(c_t) = \lambda_t$ and $\beta u'(c_{t+1}) = \lambda_{t+1}$ in Eq. (4) gives:

$$\frac{u'(c_t)}{u'(c_{t+1})} = \beta \frac{1+i_t}{1+\pi_{t+1}} \quad (8)$$

In Eq. (8), the marginal rate of substitution between present and future consumption equals the discounted value and real interest rate. Consumers are ready and willing to trade present consumption for higher future consumption due to higher returns.

From Eq. (4) and (6) we derive Eq. (9) as:

$$u'(m_t) + \beta u'(c_{t+1}) \left(\frac{1}{1+\pi_{t+1}} \right) = u'(c_t) \quad (9)$$



Eq. (9) implies utility lost at present equals utility from money saved at present and additional utility from future consumption. From Eq. (4) and (5) we derive Eq. (10) as:

$$\frac{u'(c_t)}{u'(c_{t+1})} = \beta[f'(k_t) + (1 + \delta)] \tag{10}$$

Finally, in Eq. (10), the marginal rate of substitution between present and future consumption equals the discount value of the net marginal product of capital. Consumers are willing to trade present consumption for higher future consumption as a result of higher product of capital. This is one of the channels to which high economic growth promotes the demand of financial assets.

Supply-Leading Model

In the supply-side model, following Pagano (1993), we present an endogenous growth model alternatively called AK model. The AK model was pioneered by growth theorists such as Lucas, (1988) and Romer (1989) and the model has been used in many studies like Rebelo (1991), Jalil and Feridun (2011) and Khan (2008) among others to explain how financial assets impact on growth. The AK model is of the form:

$$Y_t = AK_t \tag{11}$$

Where Y signifies output, A is technology and K in its broad sense includes both human capital and stock of capital. This model assumes absence of diminishing returns, constant return to scale competitive economy and increasing function of capital. Capital stock evolves as follows:

$$K_t = I_t + (1 - \delta)K_{t-1} \tag{12}$$

If $(1 - \theta)$ leaks from the process of savings, then savings evolve as:

$$\theta S_{t-1} = I_{t-1} \tag{13}$$

From Eq. (12) and (13), the steady state growth rate equation becomes:

$$g = A\theta s - \delta \tag{14}$$

Where $g_t = \left(\frac{Y_t}{Y_{t-1}} - 1\right) = \left(\frac{K_t}{K_{t-1}} - 1\right)$ and $s = \frac{S_t}{Y_t}$. From Eq. (14), there are three channels from which insurance demand and financial development can affect growth. These are through the savings channel to investment, savings parameter and marginal productivity of capital. In conclusion, both the MIU and the AK model help to explain the demand-following and supply-leading hypothesis in the relationship between financial system and economic growth.

RELEVANT EMPIRICAL LITERATURE

As earlier stated, most of the available empirical studies are on financial development and economic growth with few insurance, financial development and growth relationships.

In Asia, Demetriades and Hussein (1996) examined the financial-led hypothesis using annual data from 1965 to 1992. The paper showed evidence of financial-led hypothesis for Sri-Lanka and that economic growth causes financial development in Pakistan. Furthermore, bi-directional causal relationships were found for India, South Korea, and Thailand. Thornton (1996) also using annual data from 1950 to 1990, found that financial-led hypothesis was evident in Nepal, Malaysia, Philippines and Thailand. Luintel and Khan (1999) also investigated the long-run causality between financial development and economic growth. Bi-directional causality was found in the six countries, namely; India, Korea, Malaysia, the Philippines, Sri Lanka and Thailand. Al-Yousif (2002) examined the relationship between financial development and growth for seven Asian countries. The Philippines and Korea supported the financial-led hypothesis, Sri Lanka and Pakistan supported the demand-following, Malaysia and Singapore had bi-directional causality while it was neutral for Thailand. Levine (1997) found that bank-based and markets-based financial markets are complimentary in providing financial services to the economy because both have positive associations with economic growth. Fase and Abma (2003) used pooled data for nine countries such as Bangladesh, India, Malaysia, Pakistan, the Philippines, Singapore, South Korea, Sri Lanka and Thailand. The paper concluded that financial development matters for growth and that causality was from financial development to growth.

Beck et al, (2000) investigated not only the relationship between financial development and economic growth but also the relationship between financial development and the sources of growth in terms of private saving rates, physical capital accumulation and total factor productivity. The authors conclude that higher levels of financial development lead to higher rates of economic growth and total factor productivity. In Arab Countries, Darrat (1999) examined the relationship between financial development and growth for Saudi Arabia, Turkey and the United Arab Emirates (UAE). The results showed that finance led to growth in Turkey while growth promoted finance in the UAE, and bi-directionality in Saudi Arabia. Al-Zubi et al, (2006) used a panel data for eleven Arab countries for the period of 1980 to 2001. The result showed that financial development did not promote economic growth. Ozturk (2008) employed annual data from 1975 to 2005 for Turkey. The paper found absent of long-run relationship between financial development and economic growth and the result show a one way causality from economic growth to financial development.



In Africa, Odhiambo (2009) examined the relationship among the variables such as interest rate reforms, financial development and growth in South Africa. The results show that causal relationship exists from financial development to economic growth which is a demand-following relationship. Djoumessi (2009) examined the relationship between financial development and economic growth in Cameroon and South Africa from 1970 to 2006. Both VECM and ARDL were employed. The result showed both positive contributions from financial development to economic growth in the two countries. Sunde (2012) also examined the relationship between financial sector development and economic growth in South Africa using ECM and Granger causality test for the period of 1977 to 2009. The ECM result showed that growth is explained by financial sector variables, while the granger causality shows a bi-directional causality between financial development and economic growth in South Africa.

Aziakpono (2003) examined the relationship between financial intermediation and economic growth for Botswana, Lesotho, Namibia, South Africa and Swaziland between 1980 to 2000 by using two financial indicators. In the analysis, while mixed evidence of financial intermediation are found for Botswana, strong evidence of relevance of domestic financial intermediation are found for South Africa, weak for Lesotho and Swaziland. Previous insurance-growth studies in South Africa are few. Alhassan and Fiador (2014) examined long run causal relationship between insurance penetration and economic growth for Ghana during the period of 1990 to 2010. The authors used autoregressive distributed lag (ARDL) bounds approach to cointegration by Pesaran et al, (1996, 2001). The study found a long run positive relationship between insurance penetration and growth. A unidirectional causality was found from aggregate insurance penetration to growth on one hand and life and non-life insurance penetration to growth on the other hand

Pei-Fen et al, (2011) investigated the effect of life insurance (using penetration and density measure) on economic growth and what conditions affect the insurance-growth nexus such as economic, financial, demographic, income level and regional conditions. The authors employed the two-step system GMM of dynamic model for 60 countries in which South Africa was included. The result showed that the development of the life insurance market has a positive effect on economic growth. The conditional variables of middle income countries, sub-Saharan Africa, savings, the real interest rate, social security, the stock market turnover ratio, and the young dependency ratio alleviated the positive impacts of the development of the life insurance market on growth. By contrast, the conditional variables of low-income countries and Latin America strengthened the positive impact of life insurance market on growth.

Horng et al, (2012) carried out the relationship among Insurance, financial development and economic growth for Taiwan. The paper found economic growth to granger cause insurance demand and financial development to granger cause economic growth both in the short run. In summary, from the empirical literature, it is obvious that previous studies on insurance demand, financial development and economic growth in South Africa are rare.

DATA SOURCES AND VARIABLE DEFINITIONS

Following previous studies, such as (Ward & Zurbruegg, 2002; Esho et al, 2004; Horng et al, 2012) real GDP per capita (Rgdp) was used to measure economic growth. Financial development (Findev) was measured as ratio of M2 (broad money supply) to GDP. GDP and M2 were both measured in US dollars. Both the series for Real GDP per capita (constant 2005) and financial development were obtained from World Development Indicator (WDI, 2011). Insurance density (Insden), that is, premium per capita after adjusted for inflation, was used as a proxy for insurance demand (Brown et al, 2000) and was sourced from Swiss Reinsurance Company, Sigma Publication (2011). The data on insurance density, financial development and the GDP per capita are all measured in US dollars after adjusted for inflation. The descriptive statistics of all our series are presented in Table 3 with 43 observations. The values of the mean and median are bit close, which suggest low variability and normal distribution of the data. The closeness of the value of the kurtosis, the skewness and Jarque-Bera to zero also suggest symmetrical nature of the distribution.

TABLE 3. DESCRIPTIVE STATISTICS OF VARIABLES

	Insden	Findev	RGdp
Mean	335.925	120.3825	3233.383
Median	282.8	97.3	3217.65
Maximum	894	195.2	5848.04
Minimum	32.7	76.4	2903.2
Std. Dev.	259.3072	37.99675	221.6275
Skewness	0.689943	0.61034	0.675793
Kurtosis	2.467905	1.878207	2.964338
Jarque-Bera	3.645349	4.580797	3.046764
Probability	0.161593	0.101226	0.217973
Sum	13437	4815.3	129335.3
Sq. Dev.	2622370	56306.38	1915632
Observations	43	43	43

Unit root Test

In order to ensure the stationarity of our data, the Augmented Dickey Fuller (Dickey & Fuller, 1979) (ADF) is used to determine the order of integration of the variables. This is necessary to ensure the stationarity properties of our variables to avoid spurious results. The unit-root result, presented in Table 4, shows that all our variables



are I(1). As a consequence, the cointegration test is conducted after 1 lag length selection shown in Table 4 using the Akaike Information Criteria (AIC), Schwartz Bayesian Information Criterion (BIC), and Hannan-Quinn Criterion (HQC).

TABLE 4. UNIT ROOT RESULTS

Variables	Intercept		Trend and Intercept		
	Levels	First diff	Variables	Level	First diff.
Lfindev	-0.0543	-7.7150	Lfindev	-2.4633	-7.8522
Linsden	-1.9245	-4.6810	Linsden	-0.6321	-5.2155
Lrgdp	-1.6979	-3.6971	Lrgdp	-1.5763	-3.7278

ADF critical values for the intercept at levels and first difference are -3.6105(1%), -2.9390 (5%), -2.6079 (10%) and while that of the trend and intercept at level and first difference are -4.2119(1%), -3.5298(5%) -3.1964(10%). All the variables are in log form.

TABLE 5. LAG LENGTH SELECTION CRITERIA

Lag	LogL	LR	FPE	AIC	SC	HQ
0	146.168	NA	5.62E-08	-8.1813	-8.0477	-8.135
1	161.154*	26.5475*	4.00E-08*	-8.5231*	-7.9898*	-8.339*
2	165.452	6.8767	5.31E-08	-8.2544	-7.3212	-7.9323
3	169.275	5.4607	7.37E-08	-7.9586	-6.6254	-7.4983
4	179.521	12.8811	7.31E-08	-8.0298	-6.2967	-7.4315
5	178.779	6.1698	1.17E-07	-7.6929	-5.5381	-6.9581

LR means Likelihood Ratio, FPE is Final Prediction Error Criterion, AIC is Akaike Information Criterion, SC is Schwach Criterion, HQ is Hannan-Quinn Criterion. * signifies optimal lag length.

Cointegration test

In order to ascertain the long-run relationship among the variables, the Johansen (1991), a multivariate cointegration test is employed following previous studies such as (Demetriades & Hussein, 1996; Luintel & Khan, 1999) in VAR form as:

$$\Delta y_t = \alpha + \Pi y_{t-1} + \sum_{i=1}^{\rho-1} \Gamma_i \Delta y_{t-i} + \varepsilon_t \tag{15}$$

Where $y_t = [Linsden, Lfindev, Lrgdp]'$ is a (3×1) vector containing all non-stationary variables; α and $\Pi = (A_1 - I)$ are (3×1) vector of constant term and error-correction term (ECT). While Γ_i is a (3×3) matrices of short-run parameters, the rank of the normalized matrix Π captures the long-run relationships among the variables which are represented in logarithmic form. The cointegration result presented in Table 6 establishes the presence of long-run cointegration among the variables. The Johansen test shows that given the 1 lag length selection model, both the trace and eigen-statistics are greater than the critical values. This implies 3 co-integrating vectors and the presence of a long-term, or equilibrium, relationship among the variables.

With the cointegration result, we expect there should be at least 3 direction of causality among the variables (Engle & Granger, 1987).

TABLE 6. JOHANSEN COINTEGRATION MLE ESTIMATES

Null	Trace Stat.	Crit. 90%	Crit. 95%	Crit. 99%	Null	Eigen Stat.	Crit. 90%	Crit. 95%	Crit. 99%
r<=0	50.65	27.07	29.8	35.46	r<=0	24.49	18.89	21.13	25.87
r<=1	26.16	13.43	15.49	19.94	r<=1	16.22	12.3	14.26	18.52
r<=2	9.93	2.71	3.84	6.64	r<=2	9.93	2.71	3.84	6.64

Notes: $r = m$ i.e no of cointegrating vectors is equal number of equation, whereas according to econometric theory (Johansen, 1991) $r < m$ for the appropriate cointegrating vector should be identified.

Robustness Checks on Cointegration

Given the small sample size of our analysis, the Johansen cointegration procedure is sensitive to wrongly reject the null hypothesis of no cointegration in small sample (Reinsel & Ahn, 1992). In order to ascertain the cointegration of the variables, the cointegration test proposed by Phillips and Hansen (1990) called the fully modified Ordinary Least Square (FMOLS) which corrects for finite-sample biases is employed. The FMOLS usually corrects for endogeneity, serial correlation and not sensitive to lag length in the regression equations (Phillips & Hansen, 1990). The FMOLS result presented in Table 7 confirms the presence of cointegration among the variables with their significant p-values and the Durbin Watson showing absence of autocorrelation. The residuals of each co integrating equations are also stationarity and not correlated.

TABLE 7. FULLY MODIFIED OLS COINTEGRATION ESTIMATE

Indep.variable	Dep.variables: Δ Linsden			Δ Lfindev			Δ Lrgdp		
	coeff.	t.stat	p-val	coeff.	t.stat	p-val	coeff.	t.stat	pval
Interept	0.13*	3.67	0.00	0.01	0.26	0.79	-0.01	-1.1	0.28
Δ Lfindev	-1.01*	-2.73	0.00	-	-	-	0.2**	2.32	0.03
Δ Lrgdp	1.64**	2.29	0.02	0.73**	2.51	0.01	-	-	-
Δ Linsden	-	-	-	-0.1**	-2.20	0.03	0.05***	1.75	0.08
R^2	-	13	-	-	20	-	-	17	-
Dur. Watson	-	1.91	-	-	1.87	-	-	1.72	-
Observation	-	41	-	-	41	-	-	41	-

*, **, and *** represent 1%, 5% and 10% significant levels.

EMPIRICAL ANALYSIS

Since the co integrating vector is not identified given the presence of 3 co integrating vectors, the next step is to perform a weak exogeneity test on the variables, in order to identify the right co integrating vector and to avoid mis-specification of the model needed in the VECM estimation. This is crucial and important at the estimation level,



so as to avoid invalid assumptions and model mis-selection that could result in inefficient or inconsistent inferences and policy implications.

Weak Exogeneity test

In carrying out the weak exogeneity test, a restriction is usually placed in the VECM such that in the Granger representation, the i-th row of the alpha matrix is set to zero (Johansen, 1995; Harris, 1995; Urbain, 1992). Granger's representation shows that Pi = alpha beta' and that Pi has reduced rank i.e r < k where there exists k x r of alpha and beta each with rank r. Where r is the number of cointegrating relations and each column of beta is a cointegrating vector. Johansen (1995) gives more exposition on the weak exogeneity test. Then, if this condition of setting the alpha matrix is set to zero holds with respect to the beta parameters, the i-th endogenous variable is assumed to be weakly exogenous. Namely, A test of the null hypothesis H0: alpha11 = 0 is a test of weak exogeneity since a rejection of the null means log of insurance (linsden) is exogenous to the system. The same procedure is applied in our estimation. The results, shown in Table 8, indicate that the first co integrating vector is the identified vector where the insurance demand (Linsden) is the dependent variable.

TABLE 8. THE RESULTS OF THE WEAK EXOGENEITY TEST

Table with 4 columns: Endogenous Variables, Vec Restriction, Chi-Square, Prob. Rows include Linsden, Lfindev, and Lrgdp with their respective test results.

* signifies 5% level of significance

Vector Error Correction Model

According to Loayza and Ranciere (2006), short-term dynamic is also important as it explains the deviations of the variables from their long-run path. As a result, after identifying the appropriate co integrating vector with the weak exogeneity test, the short-run causality and dynamics are done using the identified model of the weak exogeneity test in the VECM representation as follows:

Delta Linsden_t = mu + phi_11 Delta Linsden_{t-1} + phi_12 Delta Lfindev_{t-1} + phi_13 Delta Lrgdp_{t-1} + alpha_11 ECT_{t-1} + epsilon_1t (16)

Where, ECT_{t-1} = beta_11 Linsden_{t-1} + beta_12 Lfindev_{t-1} + beta_13 Lrgdp_{t-1} is the error correction term, which is the co integrating relationship between the variables. In more explicit term, the ECT is a cointegrating term that measures the error-correction mechanism that insurance demand, financial development and economic growth bring to their long run relationship. Eq. (16) is estimated and we derive the short run and long run relationships among the variables.

TABLE 9. ERROR-CORRECTION MODEL FOR INSURANCE DEMAND, FINANCIAL DEVELOPMENT AND GROWTH

Dep Variable: $\Delta Linsden$			
Indep. Variables	coeff.	t.stat	p-val
Intercept	12.72*	3.36	0.00
$\Delta Linsden_{t-1}$	0.36*	1.83	0.00
$\Delta Lfindev_{t-1}$	0.27**	2.29	0.02
$\Delta Lrgdp_{t-1}$	-0.99	-0.74	0.46
ECT_{t-1}	-11.6*	-4.40	0.00
R^2	-	0.54	-
Dur. Watson		1.86	

*, ** and *** represent 1%, 5% and 10% significant levels. The long run normalized co integrating equation is $ECT_{t-1} = Linsden_{t-1} + 0.74 lfindev_{t-1} + 0.01Lrgdp_{t-1}$

Toda Yamamoto Causality Test

Having established the order of integration of our data in Table 3 with the optimal lag length of 1 in Table 4, we proceed to the Toda-Yamamoto (1995) causality procedure given the model stability and non-serial correlation in the residual (Appendix). The Toda-Yamamoto (1995) procedure is a non-granger causality test with a linear restriction, null hypothesis and Wald test statistics that are asymptotically distributed as χ^2 . The causality test does not require any prior knowledge of the order of cointegration of the variable of interest. The method proposes a causality test in the level VAR equation, by applying an augmented VAR(p + d)² to the data. We test for the Toda-Yamamoto Granger Causality test based on the following equations:

$$\begin{aligned}
 insden &= \phi_0 + \sum_{i=1}^{p+d} \phi_1 findev + \sum_{i=1}^{p+d} \phi_2 rgdp + \varepsilon_{1t} \\
 findev &= \beta_0 + \sum_{i=1}^{p+d} \beta_1 insden + \sum_{i=1}^{p+d} \beta_2 rgdp + \varepsilon_{2t} \\
 rgdp &= \omega_0 + \sum_{i=1}^{p+d} \omega_1 findev + \sum_{i=1}^{p+d} \omega_2 insden + \varepsilon_{3t}
 \end{aligned} \tag{18}$$

Where d is the order of integration of the variables in the VAR and p is the is number of lags. The null hypothesis that $H_0: \phi_1 = \phi_2 = 0$ is a test that findev and rgdp do not granger-cause insden. Similarly, the null hypothesis that $H_0: \beta_1 = \beta_2 = 0$ means insden and rgdp do not granger-cause findev and lastly, the null hypothesis that $H_0: \omega_1 = \omega_2 = 0$ implies findev and insden do not granger-cause rgdp. The T-Y granger causality results are presented in Table 10.

² The lag length of 1 is found to be optimal, and the maximum number of order of integration of integration in is 1. This altogether makes the augmented VAR (p+d) into be 2. In other words the lag length of 2 is finally used in the Toda-Yamamoto (T-Y) causality test.



TABLE 10. T-Y GRANGER CAUSALITY TEST OF INSURANCE DEMAND, FINANCIAL DEVELOPMENT AND GROWTH

	Dep.var	insden		findev			rgdp		
Independ. Var	chi-sq	df	P-val	chi-sq	df	p-val	chi-sq	df	p-val
insden		-		6.28**	2	0.04	8.91**	2	0.01
findev	1.61	2	0.45		-		5.91***	2	0.05
rgdp	1.63	2	0.44	8.02**	2	0.01		-	

*, ** and *** indicates significance level at 1%, 5% and 10%.

DISCUSSION OF RESULTS

Table 9 reports the result of the VECM with insurance demand as the dependent variable. The lagged error-correction term is significant at 1% level and correctly signed with negative value of -11.6. This implies that in the long run, the adjustment of insurance demand to changes in both economic growth and financial development is high with 116%. 1% change in both financial development and economic growth leads to 116% change in insurance demand. This result is not surprising given the high financial development and GDP per capita of South Africa relative to other African countries (see Table 1). Moreover, the short run dynamic shows that coefficients of past value of insurance demand and financial development are significant at 1% and 5% respectively. The results indicate that insurance demand responds significantly to positive changes in both its past value and financial development in the short-run. This result confirms the outstanding features in South Africa’s financial system where insurers have substantial shareholdings in the banking system and a situation of banks establishing their own insurers (Vivian, 1995). On the contrary, there is insignificant response of insurance demand to negative change in economic growth in the short run. This implies that negative short-run changes do not have significant effects on insurance demand in the sample country.

In addition, considering the T-Y long-run causality results in Table 8, it is found that insurance demand and economic growth granger cause financial development significantly at 5% level in the long-run. The result shows a demand-following hypothesis with long-run causality running from economic growth to financial development. In the same vein, insurance demand and financial development are both found to granger cause economic growth at 5% and 10% respectively. This can be interpreted to mean that long-run growth in South Africa is both finance and insurance-led, that is, a supply-leading hypothesis. This finding is consistent with the work of Avram et al, (2010) that support insurance-led economic growth. A long-run unidirectional causality test running from financial development to economic growth

during the sample period is in line with studies like Aziakpono, (2003) and Djoumessi (2009) for South Africa. Therefore, in summary, the following findings emerge from this paper. Firstly, short-run unidirectional causalities are found to run from financial development to insurance. Secondly, long run unidirectional causality is found to run from insurance demand to financial development. Also, long-run causalities run from insurance demand and growth to financial development. Finally, a long-run causality runs from both financial development and insurance demand to economic growth.

CONCLUSION AND POLICY IMPLICATIONS

Using a three-variable model, the demand following and supply leading hypotheses are empirically tested regarding the dynamic relationship among insurance demand, financial development and economic growth in South Africa. This paper is relevant for the sample country given her high level of insurance development and the financial linkages between insurance and the financial sectors in the country. The empirical results show that there is a long run, or equilibrium relationship among insurance demand, financial development and economic growth. The VECM results show that in the short-run, financial development promotes insurance demand, while in the long-run, the causality tests reveal unidirectional causalities running from both insurance demand and economic growth to financial development. Lastly, insurance demand and financial development are equally found to granger-cause economic growth in the long-run. The result supports the insurance-led and finance-led growth hypothesis that is the supply-leading and the demand-following hypothesis in the long-run for South Africa.

The implication of the positive contribution of both insurance demand and financial development to growth in South Africa is that policies that would increase insurance market development and strengthen the financial intermediation between insurance and banking institutions should be promoted. The unidirectional causalities from insurance demand and financial development to economic growth also emphasize the importance of the complementarities between insurance and banking services on South Africa's growth. Likewise, the bi-directional causalities between financial development and insurance demand signify that the mutual relationship and interactions between the financial sector and insurance sector should be encouraged and promoted. It means that high financial development matters for insurance development and vice versa. To the policy makers, the development of the financial sectors alongside of insurance activities can be effective policies towards promoting economic growth in South Africa. This paper concludes that the mutual interdependence between financial development and insurance activities are important for economic growth in the sample country.



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APPENDIX

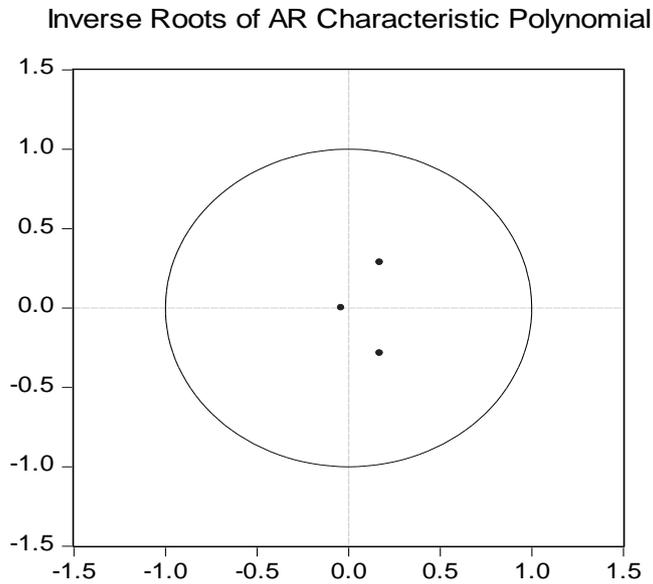


FIGURE 1. INVERSE ROOTS OF AR CHARACTERISTIC POLYNOMIAL

Note: The dots shows that no variable lies outside the unit circle and this confirms the stability of the estimated VAR model.

TABLE 1. RESIDUAL SERIAL CORRELATION LAGRANGE MULTIPLIER (LM)TEST

Lags	LM-Stat	Prob
1	6.019733	0.7379
2	7.291872	0.6068
3	8.906589	0.4459
4	2.668207	0.976
5	10.08728	0.3435
6	11.30495	0.2554
7	9.06981	0.4309
8	4.151537	0.9012
9	8.147757	0.5193
10	2.914416	0.9676

Note: Null hypothesis: no serial correlation at lag order 10



EVALUATING TOURISM DEVELOPMENT OF SOUTH EAST MACEDONIA: A MICRO REGION PERSPECTIVE

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Abstract

The paper evaluates the current level of tourism development in a micro region consisted of the municipalities of Gevgelija, Bogdanci and Dojran, as part of the South East planning region of Macedonia. It analyses the tourism sector dynamics by evaluating the market, the core value chain as well as the enabling environment for tourism development. Moreover, it elaborates the supporting functions, services, rules and regulations that facilitate tourism growth. For that purpose, the paper undertakes several commonly applied analysis (SWOT, PEST, VRIO and TALC) in the line of detecting the most profound obstacles as well as potentials for tourism enhancement of the micro region. The overall conclusion is that the current marketing strategy needs to be redesigned in order to overcome the spotted weaknesses.

Key words:

Tourism development; Evaluation; South East region; Macedonia.

INTRODUCTION

Tourism has emerged as one of the major industries in the world economy by benefiting transportation, accommodation, catering and many other sectors. Thus each country insists on developing it and making a profit from its variety of impacts. Moreover, every country is interested in increasing the number of incoming visitors since it serves as a source of economic growth.

Over the past six decades, tourism experienced continued expansion and diversification, becoming one of the largest and fastest-growing economic sectors in the world. Despite occasional shocks (devastating terrorist attack (9/11) in 2001; the combined effect of three significant factors in 2003: the Iraq crisis, the SARS outbreak



and a persistently weak global economy; and the global economic recession that started in the second half of 2008), tourism development noted virtually uninterrupted growth. Starting from 25 million in 1950, to 278 million in 1980, 528 million in 1995, and 1,035 million in 2012, the international tourists' arrivals are worldwide increasing. The purposes for traveling are varying among holidays, recreation and types of leisure accounting for just over half of all international tourist arrivals (52%) mostly traveling by air in terms of inbound tourism. Furthermore, tourism's importance to the wider economy continued to grow in 2012. Its total contribution reached 9% of global GDP (EUR 4.95 trillion) and generated over 260 million jobs (8.7% or 1 in 11 of the world's total jobs). It is worth pointing out that 101 million jobs (3.4% of total employment) are directly involved, meaning the employment by hotels, travel agents, airlines and other passenger transportation services (excluding commuter services). It also includes the activities of the restaurant and leisure industries directly supported by tourists. So, tourism grew faster than other notable industries such as manufacturing, financial services and retail. With such resilience in demand and an ability to generate high employment, the importance of tourism as a tool for economic development and job creation is clear. In total, it contributed to over 10% of all new jobs created in 2012.

Regarding the long-term outlook one may note that the international tourist arrivals worldwide will increase by reaching 1.8 billion by 2030. In particular, the market share of emerging economies, from 30% in 1980 and 47% in 2012, is expected to reach 57% by 2030. Only minor changes are expected to happen in the world's top tourism destinations. Despite the economic challenges, Europe continues to have the largest portion of the market share. In addition, the large majority of international travel takes place within traveller's own region, hence supporting tourism development in its national context is more than necessary. Less restrictive visa regimes, the reduction in punitive taxation levels, as well as the liberal international regulations assist in contributing even more to broader economic development and better fulfilling the clear demand for international travel.

In its National Strategy for Tourism Development (up-dated for the period 2011-2015), Macedonia identified tourism as a mean for generating various micro and macro-economic effects, with a vision to establish an image as a notable European destination for cultural and natural heritage-based tourism. Up-to-date, tourism accomplished an average growth of 4.64% per year, which is higher than the average growth of the entire economy (3.12%). In this context, the participation of tourism in the creation of the gross domestic product (GDP) has an average of 1.7% per year, which is very moderate compared to the world average of 2.8%, and the European average of 2.4%. Furthermore, one may find interesting the data for direct economic influence of tourism over Macedonian economy by its contribution to employment. In this line, it is substantially to know whether tourism can contribute to job creation, thus acting as

a factor for decreasing the high unemployment rate of 28%. Namely, the average tourism employment in total labor is 1.9%, but the picture is not clear since it does not address the employees in travel agencies, tour-operators and other tourism mediators. If being compared with World's average of 3.3% of direct tourism jobs, one may conclude very modest national contribution. Yet, compared to the average of other European countries (1.8%), leads to conclusion that tourism in Macedonia can create new job positions, and consequently contribute to curbing the unemployment rate. The tourism inflows represented 26% of total inflows of services and 8% of exports of goods in Macedonia. In the frames of services, tourism inflows were the second biggest item (just a little bit lower compared to the inflows of transport services), which is 1.3 times higher than the inflows of business services and 2.4 times larger than communication services inflows. Accordingly, the net tourism inflows in Macedonia have an average of 1% of GDP indicating high potentials for increasing tourism effects.

The historical and cultural heritage, as well as the gastronomy are the competitive advantages of the country. Therefore, the lake, wine, cultural, rural and mountain tourism (supplemented with eco-tourism) are the leading comparative tourism products at national level, being identified as clusters. Consequently, an upward trend is observed in tourism sector in terms of catering business units, rooms, beds, as well as tourism flows. According to statistics for 2013, 18,225 employees work in 3,740 accommodation and food service business entities, whereas 67.8% are micro enterprises (up to five employees) and all are in private ownership.

An upward trend is noted in tourism flows as well, starting with 585,699 total tourists arrivals in 1992 (whereas only 37% are foreign tourists), to 701,794 total tourists arrivals in 2013 (whereas 57% are foreign tourists). Although there is constant increase in the figures in favor of international tourism demand, the average stay of foreign visitors is not changing (2.2 days for the period 2000-2013). Half of foreign tourists (53.6% average for 2000-2011) originate from only six neighboring countries (Albania, Bulgaria, Croatia, Greece, Serbia and Slovenia), presenting extremely limited international tourism demand. Currently the tourists in this micro region originate mainly from the following countries: Serbia, Slovenia, Montenegro, Bosnia, Croatia, Germany, Bulgaria, Italy, Austria and Poland.

Concerning domestic tourists, it is noted an average of 4.7 days (for the period 2000-2013 being higher than the average for 2013 - 4.2 days). The extremely short average length of stay at national level (3.7 days for 200-2013, and 3.1 days for 2013), points to the necessity of undertaking urgent and serious activities and measures in the line of supporting domestic tourism market. In this line, the main strategic actors which have a mandate to plan, support and enhance development of tourism in Macedonia are: Ministry of economy (via the Sector for tourism and hospitality), the Agency for promotion and support of tourism, Ministry of culture, Ministry of transport,



Chamber for Tourism, Regional Centers of the planning regions, Local self-government units (LSGUs), as well as various tourism associations.

The objective of this paper is to evaluate the current stage of tourism development of the micro region (Gevgelija, Bogdanci, Dojran) in the South East Macedonia. In particular, the paper attempts to explore and identify the major problems and weaknesses that need to be addressed. The focus is put on the major opportunities for improvements, particularly formulating the sector vision of change and the vision of change for products and services. The paper is structured in several parts. After the introductory part, the paper is organised as follows: Section 2 provides a brief overview on literature addressing the issue of tourism and regional development. Section 3 provides some stylized general and tourism facts on the micro region. Section 4 presents the sector dynamics of the micro region, while Section 5 encompasses the tourism planning concept applied on the micro region. Conclusions and recommendations are presented in the final section.

LITERATURE REVIEW

The concept of regional development includes on one hand, the dynamics of development of specific areas, primarily understood as a regional economic development of those areas, but also regional traffic, population or environmental development. There is a large body of literature which main thesis are that regional development must be based on the exploitation of best potentials of the regions environmental features, and sustainable development must be based on reasonable regional development.

In this respect, the conventional thinking about the relationship between tourism and regional development is present in many studies (Sharpley & Telfer, 2002; Rayan, 2010; Stabler et al, 2010). Other researchers investigate the local, place-based factors that influence tourism development, and ask why some tourism areas develop more than others (Raina & Agarwal, 2004). Likewise, a focus is put specifically on the less developed world and by arising many assumptions about the role of tourism in development and, in particular, highlighting the dilemmas faced by destinations seeking to achieve development through tourism (Huybers, 2007; Telfer & Sharpley, 2008). Some authors even endeavor to a critical approach within a multi-disciplinary framework to relook at the complex phenomenon of tourism development (Babu et al, 2008; Ramos & Jimenez, 2008).

Tourism is seen as a 'sunrise' industry that is labor intensive and therefore offers the potential to be a substantial source of employment. In short, much attention has been directed to tourism's economic potential. Due to the relationship between food and tourism, some authors underscore the significant opportunity for product development as a means to rural diversification (Bessière, 1998). Others examine the contemporary issues and reasons for tourism development as a strategy for urban

revitalization (Pearce & Butler, 2002) as well as for providing the basis for a better informed integration of tourism in regional development strategies (Sharma, 2004). Moreover, some discussions are towards various policy innovations as activities by regions in terms of tourism development considering continuous growth within the sector (Giaoutzi & Nijkamp, 2006). Additionally, as tourism and regional development are closely linked, regions and local authorities play a key role in the formulation of policy and the organization and development of tourism (Constantin, 2000).

SNAPSHOT ON THE MICRO REGION

General data

The micro region consists of the municipalities of Gevgelija, Bogdanci and Dojran and it is a part of the South East (SE) Region. It is located in the extreme southeast part of the country and besides afore mentioned municipalities, it contains the municipalities of Strumica, Valandovo, Novo Selo, Radovish, Konce, Vasilevo, and Bosilovo (Figure 1). SE region comprises the Strumica-Radovish and Gevgelija-Valandovo basins, the Strumica River valley and the lower course of the Vardar River.

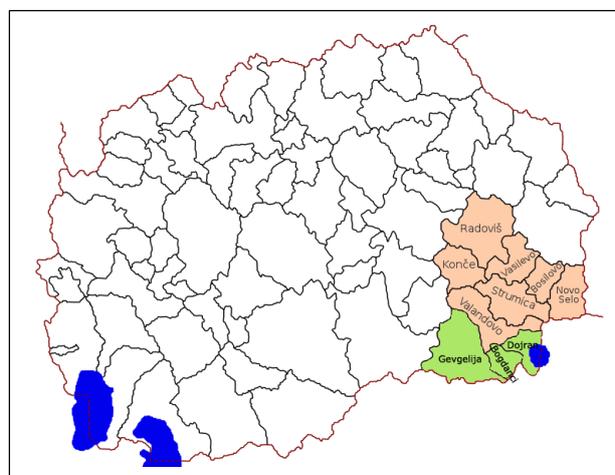


FIG 1. MAP OF MACEDONIA WITH MARKED SE REGION AND THE MICRO REGION

All three municipalities are connected with road corridor 10 that goes through Macedonia from north to south (highway A1). Dojran is connected to M1 highway via two motorways (one goes via Valandovo R1105 (40 km), and another road is from Gevgelija R1109 (23km)). Dojran-Dojrani border crossing with Greece is in Dojran and gives direct connection with cities in the Northern Greece. Dojran is 147 km from Skopje's Airport and 93 km from Thessaloniki Airport in Greece. With normal traffic, approximately 1.5 hours are needed to get to Dojran from any of those two airports. Gevgelija is on A1 highway and only 3 km from the biggest border crossing with Greece, Bogorodica-Evzoni. The Thessaloniki airport is 100 km, and Skopje's Airport is 137 km from Gevgelija. Bogdanci is around 10 km from A1 highway. Gevgelija has Railway Station, and border crossing with Greece for trains. The distance to Dojran and Bogdanci are same as for traveling by car.



TABLE 1. BASIC DEMOGRAPHIC INDICATORS OF THE MICRO REGION

Municipality	Surface (km ²)	Population	Gender structure		Youth (15-29 years)
			Male	Female	
Gevgelija	485	20362	10070	10292	4443
Bogdanci	115	8707	4377	4330	1779
Dojran	43	3426	1728	1698	761
Micro region	643	32495	16175	16320	6983

Another specific feature of the micro region is that it has the highest activity and employment rates and the lowest unemployment rates both on short and long term (Table 2 and Table 3).

TABLE 2. DATA REFERRING (UN)EMPLOYMENT

Municipality	Working age population			Employed			Unemployed		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Gevgelija	10105	5507	4598	7806	4180	3626	2299	1327	972
Bogdanci	4153	2421	1732	3142	1823	1316	1011	595	416
Dojran	1434	878	556	1008	647	361	426	231	195
Micro region	15692	8806	6886	11956	6650	5303	3736	2153	1583

TABLE 3. DATA REFERRING (UN)EMPLOYMENT RATES, LONG-TERM UNEMPLOYMENT RATES AND EMPLOYMENT RATES IN SERVICE SECTORS

Municipality	Unemployment rate	Employment rate	Long-term unemployment as % of total unemployment	Employment in Services as % of total employment
Gevgelija	21.9	50.4	59.6	48.1
Bogdanci	24.3	51.6	75.3	47.5
Dojran	26.9	45.3	71.0	41.4
Micro region	24.4	49.1	68.6	45.7

According to the estimations of the Macedonian State Statistical Office in 2012, 8.4% of the total population in the Republic of Macedonia lived in the SE region. The SE region covers 10.9% of the total land area of the country and has a population density of 63.2 inhabitants per km². On its own, the micro region encompasses 23.5% of the surface of the SE region and 18.7% of total population of the SE region with a density of 50.5 inhabitants per km². The demographic structure of the micro region is described with the figures given in Table 1. Compared with the SE region, it could be said that it encompasses 18.5% of male population, 19.0% of female population and 18.7% of young population (15-29 years). Regarding the gender structure of the micro region, one may conclude almost ideal gender balance (49.8% male and 50.2% female population). Only Gevgelija has slightly more female population (50.5% female opposite to 49.5% male population). Furthermore, Table 1 presents the distribution of

young population (15-29 years) inside the micro region. Gevgelija participates with 63.6%, Bogdanci with 25.5% and Dojran with 10.9%. The average unemployment rate of youngsters is 59.5%, whereas, in Gevgelija 58.0%, Bogdanci 60.1% and Dojran 59.5%. Analyzes of the sector specific data show, that the total number of employees in accommodation and food service activities in Macedonia in 2013 is 18,225. The average net wage in the field of accommodation and food services activities in 2013 is approximately 250 EUR (State Statistical Office, 2014a: 38), which is less than the average net wage (270EUR) in the SE region for 2013 (State Statistical Office, 2014b: 114).

The extensive hydrographic network, the great number of sunny days, the climate and the favorable geologic conditions characterize the micro region as predominantly agricultural. The large-scale production of high-quality early vegetables, fruits and industrial crops enable the development of the canning and food processing industry, for which this region is renowned.

The micro region has huge sales potentials due to its natural beauties, so it offers a variety of tourism types (lake, spa, cultural, casino, health, ski tourism, etc.). So far, the micro region has already established services and it is easy accessible from Greece. It possesses sufficient resources (water and electricity) to support high number of visitors during all seasons. It has relatively developed infrastructure and good healthcare facilities. There are 7 hotels and motels, 11 restaurants, 3 coffee bars, and 3 summer beach clubs in Dojran. In Gevgelija there are 12 hotels and motels, 16 restaurants, 3 night clubs. Bogdanci has limited accommodation facilities (the one and only existing hotel is still not officially registered), 6 restaurants, 6 coffee bars and 1 night club. The municipality of Dojran has around 3,500 available beds, (56% private accommodation, less than 20% in hotels and motels, around 11% refers to off-shore closed hotels that has their own casinos for Greek tourists. Recently, new hotels and gambling facilities near the Greek border have been built, in order to sustain the increased number of Greek tourist interested in gambling. Therefore, one may conclude that this is very big potential for this micro region.

Tourism data

By analyzing tourism statistical data for the SE region, one may note that it encompasses constant share of the national market in terms of rooms and beds within accommodation facilities. Moreover, in 2013, the SE region has 26,887 rooms, which is 8.7% of total rooms in Macedonia, and 6,298 beds representing 9% of all beds on national level. Referring tourism statistics in terms of arrivals and nights spent, the SE region has large portion of the national market. Namely, in 2013, 109,982 tourists visited the SE region, which represents 15.7% of total tourists visiting Macedonia. More than half of it (59,977) were domestic tourists, thus representing 19.9% of domestic tourists visiting Macedonia. The other half of the tourists that visited the SE region were foreign tourists (50,005), which is 12.5% of total foreigners at national



level. The total tourists in the SE region had 327,279 nights spent, representing 15.2% of Macedonia’s total overnights. In this line, 231,879 are nights spent by domestic tourists, which is 18.2% on national tourism market and 95,409 are nights spent by foreign tourists, which is 10.8%. The average length of stay in 2013 in SE region is 3 days for all tourists (the same as Macedonia), whereas, the domestic tourists stay 3.9 days, while foreigners only 1.9 days, which in both case is shorter that the average of Macedonia.

TABLE 4. TOURISM DATA

Municipality	Accommodation entities	Rooms	Beds	Tourists			Nights spent		
				Total	Domestic	Foreign	Total	Domestic	Foreign
Gevgelija*	8	339	777	29,304	10,459	18,845	77,184	49,425	27,759
Bogdanci	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A
Dojran**	49	1,216	3891	22,524	21,295	1,229	104,578	102,019	2,559
Micro region	57	1,555	4668	51,828	31,754	20,074	181,762	151,444	30,318

Note: * Data for 2010; ** Data for 2011

Based on Table 4, one may find interesting conclusions regarding tourism statistics of the micro region compared to the regional context. The strong and dominant position of the micro region within the regional frames is notable. Namely, it encompasses nearly half of total tourist arrivals (47.1%, whereas 52.9% of total domestic arrivals and 40.1% of total foreign arrivals) and more than a half of total nights spent (55.5%, whereas 65.3% are overnights of domestic tourists and 31.8% are overnights of foreign tourists). However, one must note that the above noted figures may not present the real picture of tourism statistics. The problems are located within the private accommodation (particularly in Dojran). It is often the case that the guests are not registered, or the guests are registered, but their overnight is not registered, or the accommodation is not registered as official tourism service provider within the local tourism authority.

Out of 126 accommodation business entities in the SE region, the micro region covers 45.2% posing sold tourism infrastructure. The situation goes in favor even more when referring rooms and beds in tourism, by including 66.3% of rooms and 74.1% of beds registered at regional level.

Tourists who visit the micro region stay in average 3.5 days, which is higher compared to the average of the SE region (3 days). Yet, there are notable differences in the length of stay among domestic and foreign tourists. Domestic tourists stay in average 4.8 days (higher than the SE region average of 3.9 days). This is more than three times higher compared to the average of foreign tourists who stay only 1.5 days (even lower than the SE region average being 1.9 days).

SECTOR DYNAMICS

Market overview

The key players providers of tourism services within the micro region are established networks of supply chain as well as local self governments, bussiness development centers, formal and informal education providers and Center for development of the South East region. Tourism and hospitality sector is run by private owners comprising the supply of 19 hotels and motels, 33 restaurants, 9 coffee bars, and 3 night clubs, and 3 summer beach clubs. The micro region has a Tourist association (consisted of 5 members) aiming to contribute to sustainable development, as well as facilitation of the cooperation between the interested parties within the wider area. The establishment of local DMO as a holistic organization may foster the collaboration and coordinate the actions of all key tourism market players.

Considering the attractiveness of the tourism supply in terms of natural environment, historical and cultural heritage, it may be pointed out that the micro region has great potential for offering quality tourism products. This is closely related to its social characteristics as well as its dimension and accessibility. In this line, the ease of access of the micro region is ensuring continuous tourism flow. Education of local community with regards to tourism and hospitality, as well as education and training of staff working in tourism and hospitality, is a main point that still requires improvement.

Sector map

Applying the Making Markets Work for the Poor (M4P) methodology the sector map for the micro region is given in Figure 2. Based on Figure 2, one may find that the sector map for the micro region is comprehensive. Many of the supporting functions currently present may be used in the line of supporting and enhancing sustainable development. The NGO sector (comprised of 14 organizations and associations) aims at raising awareness for positive effects of tourism development. The private sector along with the investors are mostly focused on casino tourism by supporting the expansion of the current accommodation supply, instead of creating unique tourism supply.

The accent should be on provision of services that can make the current tourism supply more competitive and stronger, thus leading to creation of tourism brand of the micro region. Moreover, the private sector may find interesting and at the same time, profitable to invest in development of "Adrenalin Park", organizing Regional Fair for the wine producers from the Gevgelija-Valandovo valley or by developing and implementing an idea for hot-air balloons over Bogorodica field. The representative bodies are looking after the legal aspects and tourism and hospitality standards and regulations. The LSGUs have adopted various strategic documents at local level and make efforts for being in the line with regional document. Yet,

coordination is missing for fulfilling the noted priority of the wider region to develop spa, cultural and historic, rural and alternative tourism through cooperation with neighboring regions and countries.

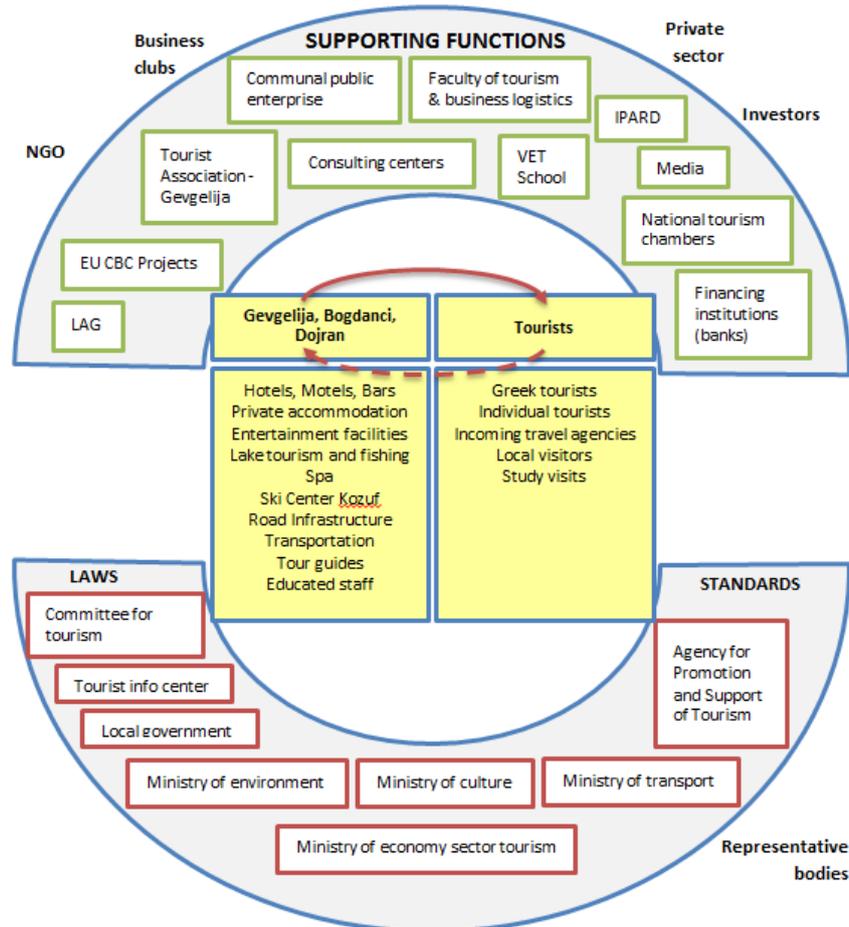


FIGURE 2. SECTOR MAP

The current engagement of local community only as a work force for the service facilities, may be expanded to production of local food, handicraft, tour-guiding and souvenirs. Individual tourists, who visit the micro region by self-organized trips, should be replaced with organized tours by involving tourism intermediaries, in the first place domestic incoming travel agencies, as well as foreign tour-operators. Currently, there are only two active travel agencies operating in the micro region which have established cooperation with the Agency for promotion and support of tourism of the Republic of Macedonia, and the different Ministries. They also have cooperation with different branches of various tourism associations working at local level. This should be the case for all service facilities in the micro region, since it is the only way for contributing to sustainable tourism development.

Core value chain

The micro region has various types of accommodation facilities (private accommodation is dominant in Dojran, while hotel accommodation in Gevgelija), which generally are not star ranked. In the past few years, new luxury hotels were built ("Apolonija", "Flamingo" and hotel and casino "Ramada Princess") near the border with Greece offering casino tourism. The potentials also lies in nearby spa resort Negorski Banji (Negorci Spa) located only 3 km from Gevgelija. The resort consists of three hotels ("Jasen" - 126 beds, "Ilinden" - 88 beds and "Bozur" - 68 beds) and two restaurants. The complex is situated in a specific environment, at the bottom of the mountain Kozuf, amidst well-off and rare ash woods (an area of 22 acres), which form a natural park. It is a center for prolonged treatment and rehabilitation with modern equipment and functional rooms for all kinds of therapy in the field of physical medicine and rehabilitation. The mineral water (38-40C) contains lots of calcium, magnesium, radon, cesium, rubidium, and other minerals. The facilities are mostly used by domestic sport clubs for accommodation and trainings practices out of the main season (late autumn and winter in particular). Despite the potentials, the owner is not much interested in incorporating it within the micro region's supply, but rather working as a separate market actor.

The micro region can be reached by road and train, so several providers are active. The public enterprise "Makedonski zeleznici" is the one and only provider in the railway traffic, while the bus carriers are "Transbalkan", "Amigo" as well as the travel agencies "Dori" and "Internacional". All travel agencies within the micro region ("Dori" and "Internacional") possess a working license type "A", have over 20 years of experience, and have an approximate yearly income up to 50,000 EUR in the last 2 years. They sell 75% of the arrangements for Macedonia in total (not only for the micro region), and make arrangements for neighboring countries. They do not make arrangements for European countries or the Worldwide, but do sell incoming packages. The program "Work and Travel" is not included in their work.

The definition for a "season" for the micro region differs. Namely, besides summer, the travel agencies consider autumn as good season as well, due to reduced prices for out of season period. Given the fact that the travel agencies mostly work outgoing travel and not incoming tourism, it is understandable why they have identified autumn as a main season for their business. On the other hand, the other service facilities (hotels, motel, restaurants and private accommodation) identify summer as the main season where the utilization of capacities is estimated to 60%. Although, some of the key tourism players undertake measures and activities for prolonging the short season and avoiding the negative effects, they are with very modest results. The travel agencies cooperate with foreign and domestic travel agencies and have established and maintained cooperation at national level and local level. They cooperate with the Agency for promotion and support of tourism of the Republic of



Macedonia, with different Ministries – for Economy, Culture etc.), as well as with the local government and different branches of various tourist associations. On the other hand, the service facilities as tourism supply players do not collaborate with other tourism actors and neither cooperate with travel agencies (foreign and domestic), nor use foreign tour-operators as intermediaries.

Domestic and foreign tourists visit the micro region. Domestic tourists prevail (61.3% of total tourist arrivals and 83.3% of total overnights) so it is often a case that they come on an annual basis, particularly staying during summer months for a holiday in Dojran. Mostly, they come from other places than Skopje, particularly from the south-eastern part of Macedonia. Foreign tourists encompass 38.7% of total arrivals and only 16.7% of total nights spent. They come from neighboring countries, predominantly from Greece mostly visiting the luxury hotels near the border of Greece (Apolonija, Flamingo and Ramada Princess). Since generally these foreign tourists visit the micro region for gambling purpose, they are either day-trippers, or have just one, to two overnights. Consequently, the length of stay of foreign tourists is 1.5 days, which is shorter than the regional level (1.9 days) and national level (2.2 days). Yet, the foreigners stay longer in Dojran due to lake tourism (2.1 day) and shorter in Gevgelija due to transit and casino tourism (1.5 days).

Consequently, the average daily expenditure of domestic and foreign tourists is less than 30 EUR in both cases, for food and for fun. The tourists travel by self-organizing trips and generally, reach the micro region by car or bus, and in some exceptional situations, by train. Both types of transport (public and private) are equally used, so there is an absence of rent-a-car service. Since the tourists have a short visit to the micro region, it is often the case that they have included other destinations during the trip. The main purpose of visit is holiday (particularly if staying in Dojran), often accompanied by fun elements. Generally, there is an absence of reservation prior to the arrival, and if so, the reservation is made by telephone. When having an overnight, firstly the tourists choose to be accommodated in private rooms and apartments.

Although the tourist tax is symbolic (0.7 EUR tourist/night), in most cases the tourists do not pay it since the private owners do not register the guests. 20% of the total income rising from tourist tax is allocated to the municipal budget, so the micro region approximately raises up to 45,000 EUR (just from Gevgelija - 25,000 EUR and Dojran - 20,000 EUR, while Bogdanci is not a tourism oriented area, so no substantial amount is raised for local economic development). One of tourists' priorities is to have good accommodation during the stay, so they rather choose to be accommodated in the center, away from the beach/skiing paths. Although the micro region offers tourist guide services, the tourists never use them, most probably due to short length of stay or low level of tourism supply. The price of a tourist package is the most

influencing determinant when making decision to stay. The tourists are not willing to pay 15 EUR for obtaining a card for 10-15% discount in all hotels, restaurants and museums, if they stay 3 or 5 days. Only in the case when they stay 7 days or more (which is very rare), the tourists are willing to pay for this kind of service. Yet, the overall law service prices are one of the top-3 advantages that the micro region has. The overall perception that the prices are acceptable encourages additional service expenditure for food in food facilities, shopping and fun.

Enabling environment

In terms of legislation, there are national and local governments' planning documents directly or indirectly focused on developing tourism in the micro region. Within the up-dated version of the National Strategy for tourism development (2011-2015) Dojran is spotted as the most prospective lake tourism destination. Particular attention is put on the broader vicinity of the micro region, marking it with high tourism development potential due to the closeness to the border with Greece.

In this line, one of the priorities of the Government is to continue in attracting foreign investors for construction of hotels and other service facilities in the micro region. According to the Law on Tourism Development Zones, three zones are foreseen to be located in the micro region (two for supporting the development of lake tourism, and one for supporting eco and winter tourism). The first tourism development zone is located in Old Dojran (Star Dojran) covering the area of 19.5 ha. It is planned to attract investors who will build hotel complexes, tourism settlement with bungalows, Rehabilitation center for alternative treatment, small catering and commercial units etc. The second zone is foreseen for New Dojran (Nov Dojran) covering the surface of 11 ha which will encompass a golf field. In December 2013, the government launched the official public call for the first two zones located on the shores of Lake Dojran, while the third zone (foreseen for Kozuf Mountain) is still in the preparation phase. The local government officials expect that the development of these zones will accelerate the local economic development of the micro region.

For enhancing tourism development, the LSGUs of Gevgelija, Bogdanci and Dojran have adopted various strategic documents at local and regional level. All municipalities have prepared its own Strategy for Local Economic Development (LED). Gevgelija has a Tourism Action Plan for its potentials supplemented with the neighboring municipality of Valandovo. The main potential generally is seen in the natural and archeological sites (Smrdliva Voda, Vardarski Rid, Isar Marvinci, Milisin, Bazin), the Ski-center Kozuf, Negorci spa, etc. The potentials will be used for development of agro-tourism, wine-tourism, hunting tourism, as well as alternative tourism. Among the five strategic goals within the Tourism Action Plan, Gevegelija defined as priority to enreach the current tourism supply in the first line by production of local organic food, production of authentic traditional products, as well as developing an itinerery that includes all historical sites in the vicinity. Furthermore,



the Action Plan foresees improvement of tourism infrastructure, improvement of tourism promotion, investing in human resources in tourism, as well as increasing investment in tourism. The municipality of Dojran participats in the project for environmental protection of Lake Dojran, which is an initiative of the French Agency for Development, European Union, the Global Ecology Fund, the Government of Japan, the Foundation McArthur and the World Bank. The main aim is capacity building in the line of ecological monitoring. Bogdanci treats tourism as integral part of their LED strategy, whereas underlines the opportunity to use potential of the artificial Lake Paljurci, and several other places with cultural and historic heritage. Besides at local level, tourism potential of the micro region is treated at regional level i.e. within the Center for SE planning region. Tourism is focused on development of spa, cultural, historical, rural and alternative tourism generally through cooperation with neighboring regions and countries.

TOURISM PLANNING OF THE MICRO REGION

Tourism indicators

in order to identify tourism carrying capacity of the micro region, some commonly applied tourism indicators are calculated. Table 5 presents the calculated Overcrowding indicator (Ioc), Indicator for density of tourist infrastrucure (Idti) and the Indicator for density of tourist circulation (Idtc). The Ecological conservation indicator and the Environmental protection indicator are not calculated due to unavailability of data for surface protected area in the micro region. Consequently, Table 6 posts interesting conclusions regarding tourism carrying capacity of the micro region. Namely, one may note that all three calculated tourism indicators are in favor of the micro region compared to the SE region. The Overcrowding indicator (or tourist density indicator) reflects the application level of natural space in a given area. It is noticeable that the micro region’s indicator is higher than the SE region, meaning that the pressure is higher, especially if we take in consideration the residents and the unregistered tourists.

TABLE 5. INDICATORS FOR TOURISM CARRYING CAPACITY

Tourism indicator	Micro region	SE region
Ioc	80.6	40.2
Idti	0.0018	0.007
Idtc	1.59	0.63

The Indicator for density of tourist infrastrucure is calculated in terms of accommodation business entities. It presents that the accommodation infrastructure in the micro region is more developed than the regional one. According to the calculations of the Indicator for density of tourist circulation, there is almost 2.5 times bigger tourism flow within the micro region, than in the SE region. Hence, the general

conclusion is that the micro region has strong potentials for further tourism development within the region.

SWOT Matrix - In order to identify macroeconomic factors that are of great importance for tourism development of the micro region, we have implemented the SWOT matrix as one of the most explored tourism planning techniques. The SWOT Matrix (Table 6) posts the most profound strengths, weaknesses, opportunities and threats of the micro region in the line of wine tourism development.

TABLE 6. SWOT MATRIX

Strengths <ul style="list-style-type: none"> ○ Good location and accessibility ○ Natural beauties and cultural-historical heritage ○ Tourist Information Center ○ Solid accommodation capacity ○ Easy access to tourist attractions and locations ○ Transit tourists; Low service prices ○ Almost 50% of total tourists in the SE region 	Opportunities <ul style="list-style-type: none"> ○ Transform transit tourists into overnight tourists ○ Closeness to Greek border ○ Highway E75 ○ Road and railway network ○ Different tourism types (Lake, Spa, Casino, Ski) ○ Tourism Development Zone ○ Intermediary support services ○ Cross-border projects
Weaknesses <ul style="list-style-type: none"> ○ Lack of qualified and skilled workers ○ Lack of knowledge of team work, work place specialization and communication skills ○ No opportunity to buy souvenirs or/and to participate in creation of a specific local specialty / product ○ Lack of clean beaches and public order ○ Absence of offer of optional excursions 	Threats <ul style="list-style-type: none"> ○ No DMO ○ Low access to finance for tourism business ○ Limited promotion at foreign markets and cooperation with foreign partners ○ Lack of cooperation with local government ○ Not effective marketing strategy ○ Lack of cultural events, animation and traditional food ○ Uninventive promotion

PESTLE Analysis – Table 7 posts political, economic, socio-cultural, technological, legal and environmental factors that influence tourism development in the micro region.

TABLE 7. PESTLE ANALYSIS

Politics <ul style="list-style-type: none"> ○ Stable political environment ○ Directives ○ Lack of cooperation between the key market players 	Economics <ul style="list-style-type: none"> ○ Employment in services as percent of total employment 45.7% ○ Unemployment rate 24.4%, long-term unemployment as percent of total unemployed 68.6% ○ Unemployment rate of youth 59.5% ○ Limited access to finance
Socio-cultural factors <ul style="list-style-type: none"> ○ Change in life-style ○ Lack of knowledge of team work, working place specialization and communication skills 	Technology <ul style="list-style-type: none"> ○ Limited investments in innovations; ○ Limited knowledge on benefits of application of IT in tourism ○ Uninventive promotion



<p>Legal factors</p> <ul style="list-style-type: none"> ○ Tourism development zone ○ Tourism legislation ○ Strategic documents (National Strategy for Tourism Development 2011-2015, Tourism action plans on local level) 	<p>Environment</p> <ul style="list-style-type: none"> ○ Favourable climate and geographic position ○ Low level of eco-awareness; ○ Limited knowledge on benefits of environmental aspects of wine tourism development
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VRIO Analysis explains whether the micro region has value, rarity, possibilities for imitation and organization towards tourism development (Figure 3).

Value	Rarity	Limit to imitate	Organization	Implications	Performances
Yes	---	---		Competitive disadvantage	Below normal
Yes	No	---		Competitive parity	Normal
Yes	Yes	No		Temporary advantage	Above normal
Yes	Yes	Yes		Sustainable competitive advantage	Extremely above normal

FIG 3. VRIO ANALYSIS

TALC Model - In order to detect the stage of tourism development of the micro region, the TALC (Tourism Area Life Cycle) Model is applied (Table 8). This model determines the position of the micro region in terms of its tourism growth. In this line, the model suggests various stages the micro region goes through (exploration, involvement, development, consolidation, stagnation, and decline/rejuvenation). It assists in identifying in which particular phase the micro region is currently, depending on the number of tourists it attracts over time, purpose of visit, fun elements and activities.

TABLE 8. GENERAL FRAME FOR TALC MODEL

Total tourist arrivals	47.1%
Accommodation business entities	45.2%
Rooms	66.3%
Beds	74.1%
Purpose of visit	Holiday, fun
Activities	Lack of cultural events, animation; No possibilities for practicing sport
Additional tourism supply	No opportunity to buy souvenirs or/and to participate in creation of a specific local specialty / product; No offer of optional excursions and outings

Table 8 presents the assessment of tourism elements of the micro region compared to the SE region. At first glance, one may conclude the strong and dominant position of the micro region within the SE regional frames. It encompasses nearly half of total tourist arrivals and accommodation facilities. The situation goes in favor even more when referring rooms and beds in the tourism and hospitality sector. Yet, this covers only one side of the tourism supply/demand. Concerning the activities being offered/demanded, the impression is that still needs to be done.

So, currently the micro region is at the 'development' phase, where it attracts sufficient visitors and the undesirable social impacts (crime, overcrowding, price rise, residents' hostility etc.), are still under control. The tourism market area is well-defined, being still not sufficiently shaped in some parts. The local residents have passed successfully the involvement stage, but are faced with rapid decline of control and involvement. Large and more up-to-date facility provide accommodation visa-a-vi locally providing facility. The natural and cultural tourist attractions are developed and marketed but in an insufficient manner. It is perceived that the development stage will last in the following short-time period. The defined TALC model may assist the management to take appropriate measures for further balanced tourism development of the micro region.

CONCLUSION AND RECOMMENDATIONS

The study found that the micro region consisted of Gevgelija, Bogdanci and Dojran has big potentials for tourism development. Due to natural beauties, it offers a variety of tourism types, has already established tourism and hospitality services and is easy accessible due to favorable location. Moreover, low prices for accommodation and additional services compared to Ohrid (the most famous tourist place in Macedonia) are also one very big advantage and opportunity for the micro region. In addition, it possesses sufficient resources (water and electricity) to support high number of visitors during all seasons. It has relatively developed infrastructure and good healthcare facilities. However, its biggest potential lies in the huge number of transit tourists who are still not fully exploited.

The local population has positive attitude towards the development of tourism sector by stating that tourism can contribute and enhance development of their local communities. Proper education and training could raise the awareness of the local citizens for provision of additional services like (handicraft and souvenirs, provision of guided tours, visits, provision of local dishes and gourmet specialties etc.) that can make tourism supply even stronger. Most of these additional services in Macedonia are mainly associated with women, so possibilities for their part-time employment or job-sharing are detected. In case of undertaking interventions in this manner, it may reduce the unemployment rate among women population through their involvement into tourism.



Moreover, the new approaches for introducing systems and mechanisms will encourage and facilitate women's participation in decision-making process. The gender stereotyping of tourism job placements will be rejected, thus leading to raising awareness for equal payment for the same job, as well as employment and career development. This is in-line with the strategic plan for promotion of various tourism supply in the SE region, developed by the Association for Tourism development - Gevgelija. Implementation of this plan should result in creation of new job opportunities for the local population as well. However, it needs support from the local government, as well as capacity building, skills improvement of the potential employers and employees, but also funds for investment in some of the areas.

Undertaking identified interventions may be three-folded:

- 1) To create more competitive tourism sector in the micro region;
- 2) To enable systematic change in terms of improving tourism services offered in the micro region; and
- 3) To identify potential for job creation, increased employability and labor market.

In the line of making the current tourism and hospitality sector more competitive, several profound strategic improvements should be applied. Firstly, tourism needs to become recognizable. Hence, the current marketing strategy needs to be improved. The main focus should be on tourism promotion, mainly by introducing new innovative approaches. Namely, the main aim is to attract bigger number of tourists, which is not a trouble-free process, particularly in times of ever-changing travel preferences. Despite the variety of options regarding the destination or attraction, tourists frequently are not capable to cope with such a huge volume of choice. Moreover, they need an advice about where to go and what to see. In this case the micro region should develop and apply tourism recommendation system that will indicate places to visit, attractions to see, events to participate in, travel plans, road maps, options for hotels, travel agencies, tour guide services etc.

The second strategic direction for improving tourism competitiveness is to strengthen the coordination with local government and among all key tourism players. The objectives and aims set within regional tourism development plans and programs must be in the same line as those created on local level. Additionally, objectives of all tourism players identified at the supply side of the market must conform to the expectations of tourists and travelers who visit the micro region. In this line, launching series of Tourism Awareness Programme Activities (forums and debates) in order to raise awareness of all tourism stakeholders on the issue of the importance of tourism development for the micro region may be set.

The vision of change for services perceives interventions in more systematic approach. In this line, the first strategic option is to improve the knowledge and behavior of

employees in tourism. Namely, series of capacity building trainings should lead to upgrading the skills of the workforce by developing a high performing, highly qualified and multi skilled employees. The tourism workforce is lacking a professional and customer oriented approach, which is an indispensable factor for micro region's development. Language and communication skills, as well as teamwork are at a very low level. Therefore, developing high performing education with an accent on quality instead of quantity and measures for collaboration between employers and educational institutions may bring the perceived results. The outcome will be creation and development of a stable, high performance environment for employment.

The second strategic direction for systematic change is detected in improvement of current accommodation facilities. The tourist product is often seen as accommodation service only, so the facilities should be improved and maintained. In case of detecting necessity of enlargement, it must be taken into account the nature and environment impacts that they will cause. Attention should be put on fulfilling the accommodation standards and obtaining a star-rank categorization.

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THE ROLE OF BONDING, BRIDGING AND LINKING AT TRADITIONAL MARKETS IN INDONESIA: A Study at Lok Baintan Floating Market Banjar Regency South Kalimantan

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Abstract

This paper aims to analyze the role of bonding, bridging, and linking among the economic actors in Indonesian Traditional Markets. By applying the analysis of social capital framework and empirical data from the well-known cases, Lok Baintan Floating Market South Kalimantan is analyzed through a qualitative approach and phenomenology research strategy. This study confirms previous findings that market participants rely more on informal institutions for financial problems than on formal institutions, as dealing with formal institutions is too complicated for them. The novelty of this study is that it reveals the role of social capital not only from the point of micro aspects but also from the macro aspects. This study further confirms that the three types of relationship (bonding, bridging, and linking) are attached to individual actors and the market in which the level of social capital "linking" between the market participants and the government is still low due to the difficulty of changing ingrained value among market participants. The "bridging" level between the market participants with formal and informal institutions is very high for assistance, excluded bonding and a wider customer network. Social capital of "bonding" is also important in the exchange of capital, price and goods information among sellers, although the relationship too close is provento potentially lead to the emergence of misappropriation of trust and lead to distrust.

Key words:

Social capital; Bonding; Bridging; Linking; Traditional market.

INTRODUCTION

Traditional markets and modern markets have become part of people's lives of urban and rural communities. In their existence, traditional markets face a threat from the development of the modern ones. Several studies, such as Dewi et al, (2012), affirm on a decrease in traditional markets' revenue due to the construction



of supermarkets and hypermart. In contrast, Suryadharma (2010) provides different argument, the number of traditional markets decline due to internal problems of the traditional markets.

Along with the debate on what causes a decrease in the role of traditional markets, in fact, the role of traditional markets is increasingly important as the majority of Indonesia's population lives in rural areas and they depend on the agricultural sector. This is supported by data from BPS (2014) that the number of poor people in Indonesia reached 28.55 million people (11.47%) up to September 2013 and the majority of these poor people in Indonesia live in rural areas, as many as 17.92 million people, compared to those living in cities, as many as 10.63 million people. Based on this, the majority of the population belongs to the middle-income class and below who live in the countryside.

The Floating Market is inseparable from the formation of Banjarmasin city and its surroundings as a living community of Banjar. The existence of Floating Market is very closely related to the indigenous people's culture, which is based on Islam. As well as traditional markets, social networking is defined as a consideration for the trading activities or subsequent transactions in the Floating Market, and as social relations in general, this always involves market participants.

Based on this framework, the Floating Market as one of the traditional markets in South Kalimantan is considered feasible and challenging to be investigated in order to maintain and develop its presence for local people.

Traditional markets in Indonesia have suffered a setback in their existence (Dewi et al, 2012; Suryadarma et al, 2010). The opposite occurs in Lok Baintan Floating Market. This market continues to exist until today, and is even more crowded, contrast to the disappearance of other floating markets. Naturalness and authenticity of this market remains well preserved. The local government is trying to preserve and raise the cultural side of Lok Baintan Floating Market as 'Leading Tourism Icons'.

The study aims to identify the relationship between the existence of Lok Baintan Floating Market and the role of bonding, bridging, and linking in Lok Baintan Floating Market. This article starts with a brief overview of the conceptual and theoretical review on social capital in relation to the existence of traditional markets followed by a presentation of the methods applied. Finally, the authors integrate the findings with the theory of social capital and draw conclusions.

THEORETICAL AND EMPIRICAL STUDY SOCIAL CAPITAL

Some scholars introduced the concept of social capital in their works such as Bourdieu, Coleman, and Putnam (Yustika, 2010). Nevertheless, in its development,

other researchers also submitted the concept of social capital with essentially the same meaning. At an intuitive level, social capital is a resource arising from a relationship and can be obtained either individually or collectively (Bartkus et al, 2009).

According to Olajide (2013), social capital is a concept of a network of social relationships characterized by norms of trust and reciprocity. The essence of social capital is the quality of social relationships. The definition by Mulunga and Yazdanifard (2014) is somewhat different from the ones developed by previous scholars. Mulunga and Yazdanifard (2014) define social capital as individual sacrifice in terms of time, labor, and consumption made in an effort to improve cooperation with others. Heenan (2010) reinforces previous scholars that the key indicators of social capital such as trust, reciprocity, and cooperation greatly affect and determine social relations.

Social capital consists of five elements, namely trust, networks, norms, values, and reciprocity. Fukuyama (2002) suggests that trust is a very important side effect of cooperative social norms that results in social capital. Trust allows sellers to have the opportunity to build a reputation of reliability, as well as making transactions cheaper and more stable. Good reputation generates trust and eventually will help spread information quickly and inexpensively (Murshid, 2011). The importance of the role of trust in a relationship is also delivered by Groenewald (2013) trust explains why some people find it more easily to catch the opportunities created by the expansion of the market, while others are left behind in poverty.

Fukuyama (2002) defines network as a group of individual agents sharing norms or values beyond the informal values or norms important to ordinary market transactions. Network provides the basis for social cohesion because it encourages people to cooperate with each other and not merely with those they know in person to obtain mutual benefits (Field, 2003).

McDonald and Crandall (2015) define social norms as an expectation of appropriate behavior that occurs within a group. Putnam (1995) describes norms as consisting of understandings, values, expectations, and goals that are believed and run by a group of people. The norms can be derived from religious, moral guidelines, and secular standards as well as code of professional ethics. Cash sale to farmers is one of the norms (Murshid, 2011).

According to Fukuyama (1995), values can strengthen social capital shall they are managed to be more beneficial and helpful. Social capital development must also consider the development of organizational or system capacity in order for it to run efficiently, effectively, and continuously.



Reciprocity is a dimension of social capital where people are definitely giving benefit to others and receiving kindness from others. In principle, there is a passion for helping and altruism (Fukuyama, 1995).

Based on the relationship between actors situated at different levels, social capital has been presented as bonding, bridging, and linking. According to Chou (2006), bonding refers to the relationships between family members, close friends, and neighbors. Bridging is for further associates and colleagues who may have different demographic characteristics. Linking strengthens relationships between groups and other organizations.

According to Oztok et al, (2015), bonding refers to the strong relationship between relatively homogeneous individuals, by enabling individuals to share history and their experiences, and by building shared values and prosocial goals. Bridging, according to Tseng and Kuo (2010), refers to individuals with similar interests or backgrounds to develop a higher level of social capital, which leads them to establish and maintain peer relationships. Beugelsdijk and Sjak (2009) considers the model of social capital as participation in social networks of two types: first, the network of family and close friends, and, second, an open network bridging different communities.

According to Mohsenzadeh (2011), social capital is divided for different types of bonding, bridging, and linking. Bonding is built among people who have a close relationship with each other, such as close friends and relatives and family members because there is trust and forgiveness is easy to seek, and matters are resolved friendly without reference to the courts. Bridging exists when trust and cooperation among people or group who happen to not have close relationship but they are related in some manners such as NGOs and political groups at any levels. Some research shows that bridging social capital has a positive effect and bonding social capital has a negative effect on economic development.

As quoted by Mulunga (2014) that bonding social capital refers to the intracommunity bond where members can depend on each other when the situation requires. The relationship can be a source of valuable services, such as emergency cash assistance, and it has been found that social groups provide an important bonding and bridging social capital in the form of protection, risk management, and solidarity, especially in the case of poor people in rural areas.

THE ROLE OF SOCIAL CAPITAL TOWARD THE MARKET

Markets have emerged not only as a social meeting place of people, but also as a political grassroots organization to disseminate and to debate on current issues.

Markets reflect the characteristics of users, various levels of access to diverse populations, and state policies towards market (Stillerman, 2006).

Markets can help build community as they involve all the local sectors. These markets employ local people and usually sell local products, so they keep the money in the local economy (Chamhuri & Batt, 2013). Therefore, markets act as a very valuable tool to improve low-income communities, to create jobs for retailers, help people with their financial needs (Marten, 2010).

The role of social capital on the sustainability of a market both at home and abroad has been investigated. Fatimah (2012) describes social capital has been utilized in a wide range of innovative activities. Network, trust, and solidarity is created from cooperation undertaken in the implementation of Forum Silaturahmi Paguyuban Pedagang Pasar Yogyakarta (FSP3Y).

Another study by Suryadarma et al, (2010) aims to determine the factors leading to the decline of traditional market through qualitative and quantitative approaches; the results show that supermarkets is not the major cause of the decline, it is the internal problems of traditional markets and the increasingly harder competition from street vendors (PKL).

Besides research in Indonesia, studies abroad also link social capital and markets. Research in Bangladesh by KAS Murshid (2011) describes how the markets in Bangladesh are able to solve complex exchange problems, especially the ones faced by the dominant participants in the market facing the most complex trading risks by building trust and personal transactions that are crucial to the successful implementation of complex exchanges.

Research linking social capital and traditional market has been done. However, this study is of difference from previous studies (Dewi et al, 2012; Fatimah, 2012; Suryadarma et al, 2010) whose focus is on competition between traditional and modern markets. This study identifies not only on how Lok Baintan Floating Market competes with the modern markets, but also on how it competes with other traditional markets; this study also seeks to improve the existence of Lok Baintan Floating Market through bonding, bridging, and linking.

RESEARCH METHOD

The research is qualitative under phenomenological research strategy. Lok Baintan Floating Market is in Banjar Regency of South Kalimantan. Researchers spend quite long time (from July 2014 to June 2015) at the site. This period is sufficient to help the researchers immerse in situations and activities of economic actors in this market, particularly in relation to social and economic interaction. The researchers also take the advantage of an interview using the local language (Banjar) so they could easily communicate with the subjects of research as well as develop an understanding of economic behavior in Lok Baintan Floating Market. The researchers observed how



people behave and interact, and how decisions were made in this market. In-depth interviews were conducted to the subjects, and triangulation of information was done such as through semi-structured interviews, meetings, and discussions with relevant agencies such as the Department of Agriculture, Plantation, and Farm of Banjar, the Department of Culture, Tourism, Youth, and Sports of Banjar, as well as the Regional Development Planning Agency of Banjar.

RESULTS

This study was conducted to answer the research question on the factors supporting the existence of Lok Baintan Floating Market—whether because of the nature of a strong bond between market participants (mostly the Banjarese), or whether because of their bridging and linking social capital. This section presents an analysis of three different types of social capital introduced in the previous section: bonding, bridging, and linking social capital. This section begins with information on market participants at Lok Baintan Floating Market.

Characteristics of the Floating Market and the Market Participants

The area around the Lok Baintan Floating Market located in Sungai Tabuk Sub-District produces agricultural and plantation products. As an area of agricultural products, the Floating Market acts as a market of agricultural products for local residents.

Lok Baintan Floating Market is physically different from the traditional markets in general. More detailed information can be seen in the following table:

TABLE 1. DIFFERENCES OF TRADITIONAL MARKETS AND LOK BAINANTAN FLOATING MARKET

Table with 3 columns: Differences, Traditional Markets, Lok Baintan Floating Market. Rows include Physical, Appearance, Activities, and Transactions.

Source: Data processed. 2014

This difference also makes market participants in Lok Baintan Floating Market slightly different from most traditional market participants. The uniqueness of this market has attracted local and foreign visitors. Sellers, buyers, and visitors can reach the market from both land transportation and river channel. However, the most of them prefer to use the river channel, by using jukung or kelotok (a kind of traditional boat) to get to its destination.

Market participants have their own reasons for choosing the river channel. Sellers choose the river channel because it is more practical and they can carry more stuff; they are known as *dukuh*. Buyers choose the river channel because most of them buy in large quantities to resell to consumers in the traditional markets; they are called *penyambang*. People around the Floating Market usually do small quantity purchase. Other visitors usually buy in small quantity as the focus of their visit is more on recreation.



FIGURE 1. TRADER ACTIVITY IN LOK BAINANTAN FLOATING MARKET

Bonding in Lok Baintan Floating Market

Bonding social capital is a strong horizontal network between individuals, groups, or institutions that have similar characteristics (demographic characteristics, background, identity, as well as norms and values). In terms of the activity of Lok Baintan Floating Market sellers, bonding social capital is formed based on the similarity of work.

Bonding, bridging, and linking each has a special way of capital formation, goods flow, and transactions. The findings show that capital formation in bonding social capital happens through the division of roles within the family as social capital assets, kinship, and trust. A trader explained as follows:

“I start after the morning prayer until 8 AM. When I do my job in the market, my husband takes care of the children. My husband supports my job so much. If my husband does not agree, I cannot do my job well, I feel like something is not right. I bring many things to sell, whereas sometimes I have to go against the water flow, especially when it rains.” (An interview on October 24, 2014)

The above statement explains the important role of a family in supporting the career as a seller at Lok Baintan Floating Market. It has been the reason why sellers in this market are dominated by housewives.

Bonding social capital can be seen from the flow of goods including “taboos”, doing “*jual beli di atas*” (customary law in trading), the culture of “*kurang*



labih" (norms of tolerance), the agreement on transfer of ownership of goods is made orally (no written contract).

There is a prevailing norm among sellers not to buy and sell goods in the farmhouse. As expressed by one of the sellers:

"Sell in Sungai Lulut Market. Shop here. Not accustomed to shopping at the farmhouse. Only on the floating market. Better here. Many goods are available; you can always have many options to choose. It is not a problem if you do not buy for the goods do not suit what you want, even if it is between family members or relatives. We continue these purchasing habits." (An interview on November 1, 2014)

The transactions involve *bepanduk* (barter), trade-ins (barter and money), and cash money transaction.

Bridging in Lok Baintan Floating Market

According to Chou (2006), bonding refers to the relationships between family members, close friends, and neighbors. Bridging is for further associates and colleagues who may have different demographic characteristics. Because of the homogeneity of sellers in Lok Baintan Floating Market, bridging which helps building relationship of people of different ethnic groups is irrelevant for Lok Baintan Floating Market. However, in this study, the researchers focused on bridging formal and informal relationships with different functions conducted by market participants of Lok Baintan Floating Market to achieve collective goals in addition to the achievement of personal goals.

Bridging social capital seen from the existing capital formation shows that there is a relationship of sellers with capital outside of the capital obtained from bonding relationship. The capital is an incentive and is temporary in nature, but the capital obtained from this bridging relationship is beneficial for sellers. The capital can take forms of cash money and physical assistance such as the provision of *jukung*, *kelotok*, painting for *jukung*, and art tools. Bridging is established through "Tambangan Balarut" Cooperative, BI in Kalimantan, capital support from the private sectors (XL and Telkomsel) and Pokdarwis (Tourism Awareness Group). The complexity of bridging relationship that exists between sellers with various parties proves that their presence in this market gets attention from various interest groups in South Kalimantan in an effort to increase their revenues.

Some sellers have become members of "Tambangan Balarut" Cooperative, but some others do not so as they do not want to borrow money to a bank or to the cooperative as additional capital:

“It has been decades I sell goods in this market, and I rely on my own for capital. Many refuse to get loans from banks. The interest is far too high for us, and monthly payment is unaffordable. If we take days off or we are sick, how can we pay it? This is the same for the cooperative. We will have to pay the interest and monthly payment as well. We prefer to borrow money from family and relatives. If we borrow 100,000, we will pay back as much as 100,000. We do not need to borrow in such big amount.” (An interview on October 24, 2014)

Bridging social capital seen from the flow of goods, the ways sellers do to attract shoppers and visitors are by getting close to the boats of the visitors and consumers, preparing fruit and vegetables in such beautiful arrangement, and showing friendliness. Selling goods in reasonable market price, satisfying the desire of visitors, and maintaining the trust of visitors are ways sellers do to keep customer loyalty.

Linking in Lok Baintan Floating Market

Linking also occurs in this market. Farmers and sellers are linked to the the Department of Agriculture, Plantation, and Farm of Banjar, the Department of Culture, Tourism, Youth, and Sports of Banjar, as well as the Regional Development Planning Agency of Banjar. Each agency has an interest in the existence of Lok Baintan Floating Market.

The area around the Lok Baintan Floating Market located in Sungai Tabuk Sub-District produces agricultural and plantation products. As an area of agricultural products, the Floating Market acts as a market of agricultural products for local residents. This success is closely related to the work of the Department of Agriculture, Plantation, and Farm of Banjar. Specifically, the role of this Department for farmers in areas around Sungai Tabuk Sub-District ranges from provision of seeds, marketing, socialization, and training in an effort to empower farmers—producing more agricultural products.

Linking social capital is indirectly related with the Regional Development Planning Agency of Banjar. However, the Regional Development Planning Agency of Banjar holds such a big role for the development of the Lok Baintan Floating Market. Its role includes planning based on input from relevant agencies and approving the budget proposed by related agencies in the development of Lok Baintan Floating Market.

The findings reveal that the social relations of farmers and sellers in this market have gone through a long history. The involvement of market participants starts from bonding social capital, and over time, the interaction among market participants has been growing with the coming of bridging relationship. Bridging relationship arises because the relationship among market participants is no longer homogeneous, but



it involves a variety of communities. Market participants start to realize that an organization, such as “Tambangan Balarut”, farmer groups, Pokdarwis, may accommodate their aspirations and this will secure them from a variety of risks. The communities involved are diverse, yet the same goal is the same—to develop Lok Baintan Floating Market for the welfare of all.

DISCUSSION

Forms of bonding and bridging that occur in the Lok Baintan in terms of capital formation, goods flow, and transactions signaling that the three types of relationships go hand in hand. In line with the statement by Mulunga (2014), that bonding social capital refers to intracommunity bond where members can depend on each other when the situation requires. This means that the results of the study support the study by Mohsenzadeh (2011) and Chou (2006).

Bonding, bridging, and linking in Lok Baintan Floating Market is a complementary relationship. In situation where relationship is less beneficial for those involved, they will move to other social capital in solving the problems. Thus, much of the literature accept that bridging and linking social capital is very important to mobilize external resources and to benefit-mediated tissue, while bonding social capital maintains family support and social control (Woolcock, 1998).

The role of the three types of social capital relationships in Lok Baintan Floating Market can be explained as follows. Bonding social capital takes the form of good prices offered among acquaintances, information (price, availability and quality of desired goods and potential consumers), reduced transaction costs, and customer relationships. Bridging social capital includes latest price information, capital, and a wider customer network. Linking social capital takes the form of capital assistance, network marketing, network promotion, and integrated area management planning for tourism sector

The three forms of social capital interact and complement each other. Concrete manifestation of these relationships is the survival of Lok Baintan Floating Market from internal and external threats. This is consistent with the findings of Krishna Prasad Dahal and Adhikari (2008), confirming that trusting local communities to manage their natural resources will not bring success if the local communities only have a certain kind of social capital. The incorporation of several types of social capital (bonding, bridging, linking), rather than trying to execute one type of it, can be useful in solving public problems and improving welfare.

CONCLUSION

Bonding is not just relationship between individuals economic and social interaction because of demographic similarity (family members, close friends, and

neighborhoods), but also similarity at work done. Bridging is trust and cooperation between a group of people having the same goals in terms of a common source of raw materials, capital, and in the formal and informal relationships. Linking relationship is trust and cooperation between market participants with a higher authority in an effort to increase revenue. Normally, authorities have an interest in the establishment of the relationship.

This paper attempts to develop a form of relationship of bonding, bridging, and linking to the existence of Lok Baintan Floating Market. Increased existence of the market is because economy actors play such an important role through bonding, bridging, and linking.

Bonding will facilitate sellers and buyers in carrying out their activities like getting lower price than the market price, getting pricing information, and getting goods with the desired quality, and reducing transaction costs. Bridging will facilitate sellers and buyers in the form of latest price information, capital assistance, and a wider customer network. Linking is at the macro level in which ease is intended for groups of market participants in obtaining capital, network marketing, promotion, and tourism planning.

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GLOBAL NETWORK INDUSTRIES: A CASE STUDY ON ORGANIZATIONAL DYNAMICS AND EFFICIENCY

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Abstract

Focusing on key aspects of network industries, this study investigates recent dynamics of global aviation industry on a temporal and business organization basis. Specifically, the study focuses on companies based in both established and prominent global markets such as the USA, Europe, Asia and Middle East. The paper presents comparable data on profitability of carriers in the last twenty years that are reported in a similar fashion. It also associate the ratios of companies of each area to comprehend which is more or less profitable or efficient in its operation. As long as Asian and Middle East carriers have strengthened their position as key players in the global markets results from the empirical investigation suggest that the strategic role which is played by global carriers in terms of growth, jobs and economic development requires effective policies aimed at guaranteeing a proper regulatory environment for the operation firm.

Key words:

Network industries; Aviation; Business model; Industrial organization,

INTRODUCTION

Networks include a large number of sectors, among others: net economy, ICT, transport, energy, utilities. Prior research suggests that the growing importance that these sectors have in the modern economy has led to a significant development of the so-called network economics that include topics such as: consumer demand under network effects, compatibility decisions and standardization, technology advances in network industries or social influence (Shy, 2011). A major feature of network industries is that they show competitive network externalities net of exogenous factors that interact with business and influence their operations. Also, one should consider that that network industries face increasing demand elasticity

over time and their services are prone to be either complements or substitutes, with different degrees of homogeneity nevertheless. This is true in most sectors, taking into consideration the transport industry, inland road transport and railways can compete on short and long distances, nonetheless diverse transportation modes can complement each other. In the field of aviation, shared areas of research have been the taxation, regulation, labor, and fuel related costs in the European and americal markets as a consequence of the higher competition levels boosted by the American deregulation started in 1978, and the European liberalization ten years later. This work presents strategic economic data and profitability ratios controlling for the growing similarities of the business configuration and models between the so called low cost carries (LCCs) and full service network carries (FSNCs). The above mentioned business convergence may be steered by strategic decision of infrastructure boundries where because of the lack of low-cost aviation infrastructure LCCs offer premium services for better yields and FSNCs reduce add-on services and tickets prices to preserve market share. No wonder that competitive forces determine the profitability of an industry and so are of greatest importance. Airways are on the front line of this competitive challenge and are fighting to survive in competitive market that is characterized by different regulatory frameworks, by different cultures and preferences, by market barriers and drivers or by different competition level. See for example market biases coming from subsidies granted on subjective bases or other practices that preclude firms to offer their products operating under the same regulatory environment (Arrigo & Di Foggia, 2013).

The remainder of this paper is organized as follows: in the first section the network industries interrelations with the other sectors of the economy are introduced. After that the paper describes the aviation sector since, only a few industries have tackled fluctuations as deep as those that have characterized the global aviation industry over the past two decades. This is followed by a discussion of costs structure, types and relative proportions on total costs costs. Since the concept can be defined in smaller units (e.g. products, services, customers etc.), the geographic region was chosen as a refefrence. After that, the paper:

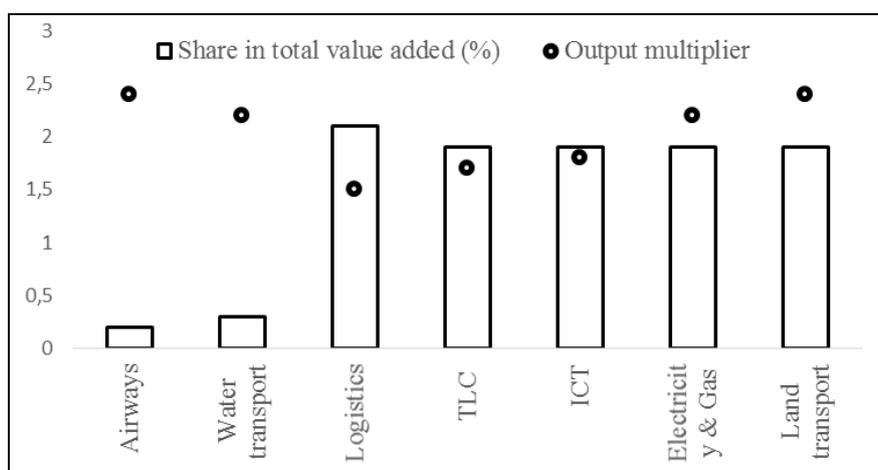
- (i) Resumes the crucial features of business models;
- (ii) Compares some economic data; and
- (iii) Provides comparable profitability and efficiency ratios.

The discussion of main results follows and in the last section, the paper provides some conclusions and business implications.

CASE DELIMITATION

Looking at their interrelations with the other sectors of the economy and how a change in the final demand to these sectors impacts on the rest of the economy a

prominent role of networks in the economy emerges. In all cases, their output multipliers are equal or above the median economy-wide multiplier (1.9), which hints at the strong inter-linkages that these sectors have with the rest of the economy. This is observed in particular in air transport (multiplier of 2.4) and water transport (multiplier of 2.2), as well as in further related services, having even higher shares in value added, like logistics. Transport is the backbone of business activity; linking the different stages of production, allowing service industries to reach their clients, as well as being a significant employer in its own right.



HIST. 1: SOURCE: OWN ELABORATION BASED ON EC-DGECFIN, 2013

It is commonly recognized that network industries share some characteristics, nevertheless, each network industry has its own characteristics and specificities. On the one hand, the infrastructure segment displays features of natural monopoly and is thus usually subject to regulation on pricing and access to the network. This applies to the transmission and distribution networks in e-communications, energy, and transport infrastructures. On the other hand, as long as each operator gets a fair and transparent access to the infrastructure, competition can be ensured in service provision.

A major feature of network industries is that they show network externalities with implications, for example, on the access regulation to third parties (Arrigo & Di Foggia, 2014). There are particular strategic characteristics that come with network externalities and which are usually identified with network industries, e.g. interconnection and bundling, compatibility and the creation of standards, costs of information production, demand side economies of scale, differential pricing, lock-ins and switching costs (Gottinger, 2003).

TABLE 1. NETWORK INDUSTRIES' CHARACTERISTICS AT A GLANCE

Network	Homogeneity	ELT	Investment in network	Physical characteristics	Foreign dimension
TLC	low-medium	Medium in the ST, higher in the LT	Costly and sunk but lighter at service provision level	Long-distance for backbone, medium-distance for wireless, and short-distance for last mile	Important for backbone
Gas	high	ST: low LT: medium (main substitute: natural resources)	Costly and sunk	Long distance. Physical network	important
Electricity	high	ST: low LT: medium	Costly and sunk	Medium distance. Physical network.	Of relevance only indirectly
Rail	high	ST: medium (competition with road) LT: higher (competition with other modes)	Costly and sunk	Long and short distance. Physical network	Of relevance only indirectly
Road	ST: low. LT: higher (competition with other modes)	higher	Costly and sunk	Long and short distance. Physical network	Of relevance only indirectly
Air	high	ST: medium LT: medium	Costly and sunk	Long and medium distance. Physical network	Of relevance only indirectly
Water	high	ST: low LT: medium (competition with other modes)	Costly and sunk	Long and short distance. Physical network	Of relevance only indirectly

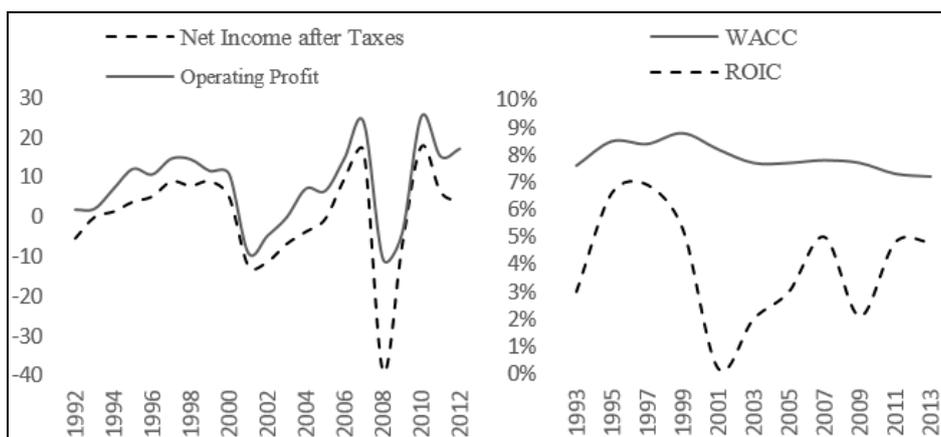
Source: adapted from EC-DGECOFIN. (2013).

RELATED WORKS AND BACKGROUND

There is evidence of a growing interest by academics in the broadly defined field of air transportation management (Ginieis et al, 2012) especially since the end of the '90s. Aviation is helping fuel the growth of the global economy since it provides service globally. The airline industry itself is a major economic force, both in terms of its own operations and its impacts on related industries. Besides one should consider that the aviation industry ranks among less profitable sectors, for various reasons: for example business cycles or capital to which access has become tough due to the recent financial crisis (Bjelicic, 2012). In addition, other economic circumstances -



such as increases in energy prices and fluctuations in prices of raw materials or contractions in infrastructure spending - could have negative consequences for the industry and, together with the other factors, could have a hostile effect. It is on this basis that that many studies dealing with aspects influencing the industry operations, e.g. regulatory environment (Arrigo, 2014), the market mechanisms where the field of industrial organization deals primarily with the market system approach (Scherer & Ross, 1990; Forbes & Lederman, 2009), have been published so far. The human resources field has also emerged as prominent area (Bamber, Gittell, Kochan, & Von Nordenflycht, 2013; Wright, 2012). Taking into consideration the labor cost, Alamdari & Morrell (1997) analyze trends focusing on major US and European operators. By the same token Borenstein & Rose (2013) focus on the profitability, in particular its volatility and the implications of investment deficits. Keeping on profitability, Oum et al, (2004) examine the effect of horizontal alliances on firm performance in terms of productivity and profitability. Their study reveals that horizontal alliances make a significant contribution to productivity gains, whereas they have no overall significant and positive impact on profitability. Indeed, focusing on financial aspects, a recent report reveal a gap in the index of profitability of the invested capital, (IATA, 2013). Switching to typical operative choices Wei & Hansen (2007) investigate how airlines make decisions on aircraft size and service frequency. The authors study how airlines' choices in a competitive environment may vary with flight distance, and explore how the equilibrium results may change when air travel demand is higher. Their research considers the competition factor in airlines' decisions on both aircraft size and service frequency, and the impact of these decisions on both the cost and demand sides of airlines' business.



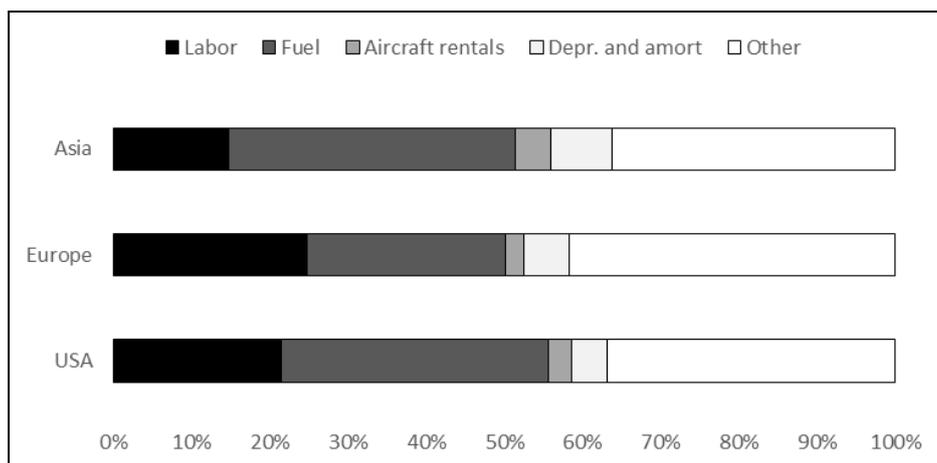
GRAPH 1: FINANCIAL DATA

From Graph 1 it emerges that compared to the profit earned from firms' normal core business operations (OP), the net income after tax is more effected by external

factors. Graph 1 also shows the return on invested capital (ROIC) that is on average 4% higher than the weighted average cost of capital (WACC).

TAXONOMY OF OPERATING COSTS

In this section the paper sheds some lights on the cost structure. A comparison of the cost structures for short and long-haul routes suggests that input costs, such as labor rates and administrative expenses are a much smaller share of the average cost per available-seat km on long-haul ones. Simultaneously, taxation, fees, and surcharges account for three quarter of the ticket price in some long-haul markets. LCCs' input-cost edge is larger for short-haul flights than for long-haul ones. Due to the oil market fluctuations fuel costs have drastically increased reaching about 30% of total costs in recent years. To this regard, technological innovations have been introduced to make aircraft more efficient. Indeed the aviation sector has made significant efforts to improve the fuel efficiency through more advanced jet engines, high-lift wing designs, and lighter airframe materials (Lee & Mo, 2011). As a consequence, the amount of fuel used to fly has halved. Provided that the industry can be considered an energy-intensive business, advances in productivity have been significant. Alongside fuel cost another key operating cost determinant is the labor. Alamdari & Morrell (1997) analyze trends in labor unit costs (labor expenses per available ton-km) of major US and European carriers. The results indicate that both US and European airlines have been successful in reducing labor unit costs. The salary for accumulated hours collapsed after the peak reached in the early 2000s, but the gap between the average value of the major airlines and the cost leader in the industry was also maintained in the United States.



GRAPH 2: PERCENTAGE SHARE OF AIRLINE OPERATING COSTS, BY REGION

Graph 2 shows the the share of the fuels costs that reflects the sharp increase in fuel prices faced by airlines. Aviation industry has reacted to high fuel expenses and financial crunch trying by operating more efficient aircrafts as per fuel usage and by reaching large productivity and efficiency improvements in other cost statement, for example labor productivity. As a result, labor's share of total operating costs has



fallen. Airlines have also achieved significant cost efficiencies in other areas reducing the share of “other” costs and the airlines have also substantially improved the use of the aircraft. It is now convenient to present results from a simple model aimed at describe the effects of selected measures on the operative revenues and expenses worldwide. The analysis in based on a panel dataset of 78 companies over 10 years, namely from 2003 to 2012. The variables used to estimate the model are the following: ASA: average seats per aircraft. PASSENGER: number of passenger (log of thousand). UTILIZATION: utilization (hours/day). LOAD: load factor (percentage). HOURS: hours (thousand). The dependent variables are: REVENUES: total revenues (log mil. \$). EXPENSES: total expenses (log mil. \$).

TABLE 2: REGRESSION MODEL

	REVENUES	EXPENSES
ASA	0.00458*** (0.000458)	0.00449*** (0.000494)
PASSENGER	0.851*** (0.0349)	0.863*** (0.0383)
UTILIZATON	0.00631*** (0.00197)	0.00709*** (0.00220)
LOAD	0.0128*** (0.00214)	0.00960*** (0.00237)
HOURS	0.000449*** (6.75e-05)	0.000438*** (7.43e-05)
CONSTANT	-2.190*** (0.329)	-2.057*** (0.361)
Observations	714	714
Number of id	78	78

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 2 sheds some light on the effect of the selected measures on revenues and expenses. Among other information figures show that the average seats per aircraft impact on both revenues and revenues with a stronger effect on the first, on the contrary, the number of passenger seems to impact more on costs as the utilization ratio because of maintenance expenses above all. The load factor as expected has a major influence on the revenues since it covers both variable and fixed costs of operating. The aircraft’s usage number of hours per day follows the same path. The above mentioned explanations make clear the increasing role of revenue management to outperform (Di Foggia & Lazzarotti, 2014a) especially in those industries that are increasingly characterized by changes in markets and consumer preferences, in drivers for competitiveness, in technology and in the organization of factors of production (Di Foggia & Lazzarotti, 2014b).

REGIONAL BREAKDOWN AND BUSINESS ORGANIZATION

The development at a global level of the air market has triggered industries in defining and developing new business models utilizing new technologic and communication paradigms in order to outperform and mitigate the impact of unfavorable situations (Causevic & Lynch, 2013). Thus, a comparison of airline business models requires that they are coherently assessed (Daft & Albers, 2013). To this respect, one can note that services concentrating on local need and specialized interests are especially vital it is possible to interfere that the convergence of FSNCs and entrants business models and technology requirements would accelerate. FSNCs gain competitive advantages due to their reputation, the economics of scale and know-how, protection granted by some government, and entry barriers in their key airports. FSNCs take advantage from economies of scope and density, especially through the expansion of systems hub-and-spoke. They also take advantage of an international placing thanks to the strategic alliances of which they form part with no investment needs in infrastructure or slots in remote airports (Ramón-Rodríguez et al, 2011). Strategic alliances also can serve to establish barriers for competitors (Oum et al, 2004).

Although strategic alliances seem to be a crucial factor they could involve risks that may prevent the expected benefits of the transactions or the achievement of strategic objectives. Such risks could include: technological and product synergies, economies of scale and cost reductions not occurring as expected; unexpected liabilities; incompatibility in processes or systems; unexpected changes in laws or regulations; inability to retain key employees; inability to source certain products; increased financing costs and inability to fund such costs; significant costs associated with terminating or modifying alliances; and problems in retaining customers and integrating operations, services, personnel, and customer bases. If problems or issues were to arise among the parties to one or more strategic alliances for managerial, financial, or other reasons, or if such strategic alliances or other relationships were terminated, the financial position, and results of operations could be adversely affected.

SOME ECONOMIC DATA

It is evident that the low-cost carriers tend to have a higher profitability of capital in their respective geographic areas compared to FSNCs. The profitability of the latter struggles mainly in the more mature regions such as North America and Europe. The airlines in all regions and belonging to all categories of business, for the entire economic cycle, have generated an average ROIC below the WACC.



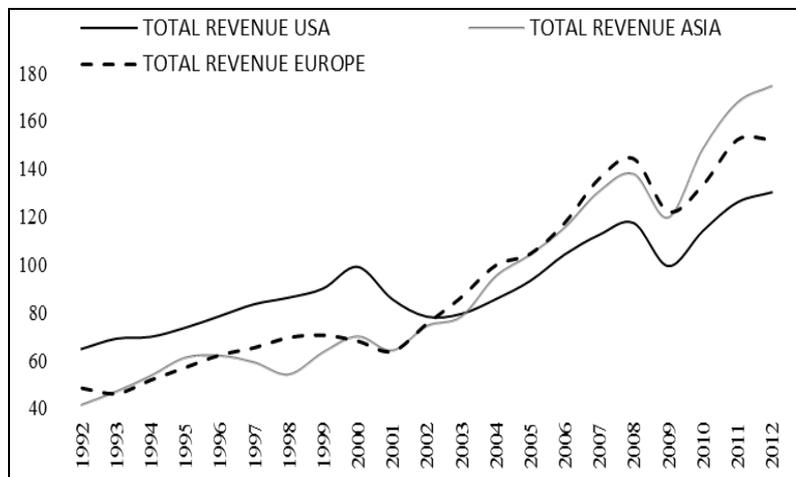
TABLE 3: ROIC, WACC AND RATIOS (BY REGION)

Region	WACC f	ROIC l	WACC f	ROIC l	ROIC r	WACC r
USA	7,4%	2,9%	7,4%	3,3%	1,14	1,00
EUROPE	7,5%	3,5%	8,3%	7,6%	2,17	1,11
ASIA	7,7%	3,7%	7,7%	6,9%	1,86	1,00

f=FSNCs, l= LCCs, r = ratio f/t. Source: Owe elaboration based on AITA (2014)

The industry is characterized by: remarkable bargaining power of: suppliers, GDS (Global Distribution System) and clients. Data suggest some carriers have been able to create value for shareholders, however, only few companies have reached similar results. Over the last fifteen years, both the ton-km and the amount of capital invested in the aviation sector have doubled, nevertheless, this would not imply an immediate investors response. In addition, one should mention that over the past forty years the airline industry has more than halved the cost of air transport in real terms, due to better fuel efficiency, resource utilization and productivity of production factors.

This has created a tremendous value to consumers and the economy as a whole; the same could not be said for equity investors. The explanation of the current performance of the airline operators is located more in the market structure and in the nature of competition than in the supply chain. The consequence of this competitive pressure is the fragmentation of the industrial structure in many regions due to favorable conditions of entry and difficulty in attempting to exit the market or in the case of consolidation. The regulation of various governments prevents mergers between airlines of different nationalities and some government interventions have preserved the operational capacity in certain markets regardless inefficiency. The result is an excess of capacity. The high load factor often mask this kind of situation, but each offered seat must necessarily have a yield to cover the costs incurred with the purpose of generating a profit, but often this does not happen.



GRAPH 3: TOTAL REVENUES BY REGION (B \$)

The Graph 3 shows the breakdown of total revenues earned by each company in the three regions: United States, Europe and Asia.

Switching to operating and profitability ratios it is essential to recall that airways face a variety of risks in their business. If for example any of the following events occur, the aviation business, financial condition and results of operations could be materially and adversely affected. Profitability depends on reaching certain minimum sales volumes. If sales deteriorate, the results of operations and financial condition will suffer. The businesses of industry are affected by global financial markets and general economic and other conditions over which companies have no control. Earnings and financial position may be influenced by various macroeconomic factors - including changes in gross domestic product, the level of consumer and business confidence, changes in interest rates for or availability of consumer and business credit, energy prices, the cost of commodities or other raw materials and the rate of unemployment - within the various countries in which firms operate. Also the industry's future performance depends on its ability to enrich the product portfolio and offer innovative products

The success of businesses depends, among other things, on their ability to maintain or increase their share in existing markets and/or to expand into new markets through the development of innovative, high-quality products that are attractive to customers and provide adequate profitability. The aviation industry is highly competitive and cyclical and business may suffer from those factors more than some of their competitors. The ability to access the capital markets or other forms of financing and the related costs depend, among other things, on the credit ratings. Any downgrade may increase the cost of capital and potentially limit its access to sources of financing, with a consequent material adverse effect on the Group's business prospects, earnings and financial position. The companies' ability to achieve cost reductions and to realize production efficiencies is critical to maintaining their competitiveness and long-term profitability.

Table 4 contains three ratios aimed at measuring the profitability of operations; this is done for main regions investigated. The airlines that have lower unit labor costs, structures of flexible wages, high mobility and working conditions less onerous get a competitive advantage (Pellicelli, 1996). Included in this category are the Asian companies. Just as happened in Europe, where central banks will raise the cost of borrowing to contain inflation and public debt financing, companies are most affected. The increase in interest rates reduces consumption and corporate profits. Those who invest in equity capital are interested in the present and future profits, but also the prospects for capital appreciation. Those who provide loans to first establish the conditions assess the risks and therefore the financial situation, as well as the ability to payback. In both situations are the most favored carriers with better earning capacity and financial strength.



TABLE 4: PROFITABILITY RATIOS BY REGIONS (% REVENUES)

Year	Europe			Asia			USA			World		
	OP/TR	NI/TR	TC/TR	OP/TR	NI/TR	TC/TR	OP/TR	NI/TR	TC/TR	OP/TR	NI/TR	TC/TR
1992	-0.61	-4.15	1.00	4.52	3.13	0.95	-4.03	-4.50	1.04	-1.03	-3.14	1.01
1993	0.03	-6.56	1.00	3.34	2.10	0.97	1.30	-1.99	0.99	1.12	-2.56	0.99
1994	4.09	3.39	0.96	5.46	3.05	0.95	2.61	-1.39	0.97	3.64	0.71	0.96
1995	5.41	1.17	0.95	5.72	2.94	0.94	6.80	2.58	0.93	5.66	1.81	0.94
1996	3.63	1.13	0.96	4.50	2.28	0.95	6.72	3.70	0.93	4.75	2.31	0.95
1997	5.60	5.18	0.94	4.00	-0.56	0.96	9.15	6.30	0.91	6.35	3.91	0.94
1998	5.75	4.31	0.94	3.56	0.44	0.96	9.30	5.42	0.91	6.21	3.38	0.94
1999	1.96	2.68	0.98	5.30	3.16	0.95	7.20	5.92	0.93	4.65	3.65	0.95
2000	2.01	2.72	0.98	6.20	2.33	0.94	5.70	2.34	0.94	4.11	1.93	0.96
2001	-2.71	-4.01	1.03	2.29	-1.68	0.98	-10.01	-8.60	1.10	-3.86	-5.20	1.04
2002	3.06	0.44	0.97	4.67	2.88	0.95	-12.04	-14.47	1.12	-1.87	-4.13	1.02
2003	1.13	-1.22	0.99	3.01	1.21	0.97	-4.35	-5.30	1.04	-0.05	-2.47	1.00
2004	3.11	1.31	0.97	6.49	4.53	0.94	-4.09	-11.61	1.04	2.25	-1.17	0.98
2005	4.00	3.31	0.96	3.10	1.57	0.97	-2.35	-7.00	1.02	1.88	-0.14	0.98
2006	4.33	3.53	0.96	3.42	2.69	0.97	4.27	1.63	0.96	3.82	2.51	0.96
2007	5.94	5.03	0.94	5.29	3.13	0.95	5.84	3.36	0.94	5.47	3.80	0.95
2008	0.71	-1.47	0.99	-4.43	-5.79	1.04	-5.45	-22.73	1.05	-2.28	-8.33	1.02
2009	-2.60	-2.92	1.03	-1.96	-1.95	1.02	0.32	-3.11	1.00	-1.05	-1.81	1.01
2010	2.04	2.48	0.98	7.73	6.32	0.92	6.80	2.21	0.93	5.41	3.81	0.95
2011	1.40	0.53	0.99	4.11	2.35	0.96	3.93	1.35	0.96	2.87	1.20	0.97
2012	1.69	0.59	0.98	4.43	2.20	0.96	4.38	-0.04	0.96	3.14	0.70	0.97

OP: Operating Profit; NI: Net Income after Taxes; TR: Total Revenue.

Source: own elaboration on data Airline Monitor (2013).

TABLE 5: OPERATING COSTS PER REGION (US CENT \$)

Year	Europe	Asia	USA	ME
2002	11.97	9.16	12.21	
2003	13.46	9.68	11.58	
2004	13.80	9.67	11.33	
2005	13.53	10.26	11.58	
2006	14.33	10.80	11.87	8.34
2007	15.40	11.30	12.17	8.80
2008	16.93	13.38	14.63	10.02
2009	15.95	11.63	12.54	9.67
2010	15.66	11.39	12.86	8.90
2011	16.79	13.23	14.34	9.28
2012	16.26	13.52	14.58	10.03

Source: own elaboration on data Airline Monitor (2013)

Table 5 summarizes compared data, specifically the unit operating costs per passenger mile in main markets worldwide i.e. Europe, USA, Asia and Middle East.

It is apparent from Table 5 that the unit costs of the operators based in the Middle East are the lowest.

CONCLUDING REMARKS

Driven by factors such as the diversification and increasing global demand especially since the Nineties, the volatility inputs' costs, regulatory environment, financial market and stakeholders the aviation sector has introduced important innovations and efficiency measures aimed at boosting the productivity. From an industrial organization perspective, new entrants have gained market power and the business models of both FSNCs and LCCs have almost converged in strategic areas i.e. service levels, price and aircraft sized. No wonder that operators now compete vigorously to meet user needs in all segments of the market. The interpretation of the data contained in the corresponding tables is straightforward and put in evidence that in traditional industries, the economic model orthodoxly used to assess the market function is perfect competition; to this regard, network industries are dissimilar. In their markets, products are heterogeneous and differentiation in products is common, innovation is essential, sunk cost is significant. Two of the most common characteristics concern their directionality and spatial character (Gottinger, 2003).

To better define the framework of the analysis, this paper has focused on the definition of the reference market especially from a regional basis. Considering the most profitable firms, key ingredients that have helped underpin the performance include, among others, efforts aimed at maximizing the load factor, the utilization of the aircrafts, technological innovations and strategic decisions. The paper has also highlighted that business, financial condition and results of operations could adversely be affected by different factors such as minimum sales volumes, global financial markets and general economic and other conditions over which companies have no control, various macroeconomic factors and the ability to enrich the product portfolio and offer innovative products. The success of businesses depends, among other things, on their ability to maintain or increase their share in existing markets and/or to expand into new markets through the development of innovative, high-quality products that are attractive to customers and provide adequate profitability. The most effective way to thrive in this arena is innovation. The innovative business models are the result of the strategic choices of the operators and are driven in a perspective of differentiation and with the purpose of balancing the risk from external factors that can undermine the organizations themselves (Di Foggia, 2015). In fact the persistence of regional imbalances among the analysed regions has the potential to undermine the competitiveness of carriers based in areas where labor and taxation costs are higher. Correction of competitiveness and imbalances requires significant changes in relative prices and costs and sound regulatory policies aimed at guaranteeing the healthy functioning of the market



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