

ECONOMIC GROWTH AND FINANCIAL SECTOR DEVELOPMENT

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ABSTRACT

This paper estimates an Odedokun-type “supply-leading” model of financial sector development (FSD) which incorporates both banking and capital market variables as potential drivers of economic growth. The current findings illustrate the impact on economic growth of various measures of FSD which includes basic intermediation services, as measured by M2 and money market mutual funds, and more advanced financial products such as stock market development and risk management services. The empirical findings in this study document an important shift from an exclusive reliance on basic banking services among emerging/developing countries towards an expanding role for the capital markets. An even stronger emphasis on the role of capital markets is documented for a group of advanced countries.

INTRODUCTION

Finding ways to stimulate economic growth is a topic of global concern. Financial sector development (FSD) can play either a leading role in economic growth or it may take a more passive role (derived demand) in response to expanding economic needs. In the very early stages of development causation often runs from economic development to FSD. This view has been labeled “demand-following”. On the other hand, as economic growth occurs the direction of causality may reverse and a “supply-leading” relationship develops. Here the efficiency gains associated with the intermediation process help generate continued economic growth. Thus, expanded FSD takes on a “financial sector broadening” dimension where consumers and firms, acting as both investors and borrowers, have more efficient access to basic intermediation service. Expanded access to financial services saves time and lowers transactions costs. Furthermore, the development of large scale financial intermediaries and the linkage of national markets drives information and transaction costs even lower. For example, Gertler (1988) and Levin (1997) show that financial intermediaries can reduce the cost of acquiring firm-specific information, leading to lower transaction costs.

According to Allen and Santomero (2001), at much more advanced stages of growth economic agents may demand increasingly sophisticated types of financial services such as innovative risk management products. By facilitating risk management, improving asset liquidity and lowering trading costs, financial intermediaries can encourage investment in higher-return activities (Obstfeld, 1994; Bencivenga and Smith, 1991; Greenwood and Smith, 1997). This is an example of “financial sector deepening”.

LITERATURE REVIEW

Using a model which includes a number of growth-determining variables, Odedokun (1996) analyzes the economic and FSD status of a number of less-developed countries over the 1965 to 1988 period. Odedokun confirms that FSD plays a supply-leading role in promoting economic growth. Furthermore, FSD has a more consistent and statistically significant positive relationship with economic growth than do the other variables in his model. Tsai and Wu (1999) divide financial development into endogenous and exogenous components. Endogenous financial development results directly from economic growth. As an economy grows the aggregate demand for goods and services increases. To expand output, producers must look for efficient ways to raise capital. Consumer, on the other hand, will seek more efficient means to earn higher rates of return on their savings. Consequently, a more efficient financial market is required

as the economy grows. In contrast, the exogenous view of FSD suggests that development is either stimulated or retarded by a variety of external factors such as government tax policy, commercial laws, and financial regulation. That is, in order to provide an attractive investment environment, governments often need to reduce tax rates, open financial market to foreign investors, remove barriers in the consumer credit and mortgage loan markets, and establish and enforce laws and regulations to protect creditors and investors. Based on evidence from newly industrialized Asian countries, Tsai and Wu (1999) find that countries which adopt more effective public policies tend to experience more rapid financial development and economic growth than countries which do not. Levine (1998) examines the relationship between the legal system and banking sector development and finds that countries that have well defined creditor rights and effective legal enforcement have better-developed banks than countries where laws do not accord high priority to creditor right and where enforcement is often lax.

The conventional neo-classical one-sector aggregate production function in which financial development constitutes an input to production is still the dominant model. Beck et al. (2000) include financial sector size, level of private credit, and liquidity as proxies for financial sector development. Liquidity is calculated as currency plus demand deposits and interest-bearing liabilities of financial intermediaries divided by GDP. In addition they calculate the ratio of commercial bank to central bank deposits to test the hypothesis that private financial intermediaries are more likely to identify profitable investments, monitor managers more effectively, adopt modern risk management techniques, and mobilize saving more efficiently than government controlled central banks. In addition, they include the ratio of private sector loans issued by depository institutions as a share of GDP.

Levine and Zeros (1998) examine the impact of capital market development using total stock market capitalization and various measures of market liquidity. In addition they calculate the value of recent trading activity and measures of international integration at the global level. As for banking sector development, they use the value of private sector loans made by commercial banks and other deposit-taking banks divided by GDP.

In a recent paper, Liang and Reichert (2006) update and extend the Odedokun using a more recent set of data and a larger sample of both developing and advanced countries. Their paper employs a broad definition of the money supply (M3) as a measure of financial sector liquidity and FSD. The model is estimated over the 1980-2000 period. The pooled regression results consistently indicate a strong “supply-leading” relationship between FSD and aggregate output. At the same time, the results of a set of single equation individual country estimates appear to suggest that the impact of FSD is less pervasive today than in the earlier Odedokun study. Furthermore, as suggested by Granger causality tests, at some point in the economic growth cycle, the driving force turns into a “demand-following” relationship, as increased economic growth leads to higher income and education levels, which in turn generates greater demands for more sophisticated financial and risk management services.

On the other hand, using a single measure of financial sector development, such as M3, may not be sufficient to capture the multi-dimensional financial factors which potentially drive economic growth. In addition, the mix and relative importance of these factors may change over time and during different stages of development. For example, as mentioned above, Levine and Zeros (1998) shows that stock market liquidity and banking development both positively predict economic growth, capital accumulation, and productivity improvement. As mentioned before, well-developed financial markets in turn make it easier for firms to attract financing to meet their investment needs (Rajan and Zingales. 1998).

The current paper addresses both capital broadening and capital deepening issues and includes more disaggregate measures for FSD than earlier works. Financial sector development is now divided into measures of banking sector, stock market, and risk management development. The degree of banking sector development is measured by disaggregating M3 into two major components: a narrower definition

of the money supply (M2) and the aggregate level of money market mutual funds. This is done to identify both the transaction and investment demands for liquidity. Stock market development variables include total market capitalization as a measure of the scale of capital market activity and stock market turnover ratio as a measure of market liquidity. Risk management development is proxied by growth in the insurance sector as measured by the total level of life insurance premiums paid during the year. Unit root tests are conducted on all time series variables to insure that the data is stationary. Variables found not to be stationary are measured in first difference form. (For brevity the unit root test results are not included in the paper but the authors will supply the results upon request).

DATA SOURCES AND RESEARCH MEHTODOLOGY

The countries included in this analysis were grouped using the classification system employed in IMF's 2005 World Economic Outlook report. The IMF divides the world into two major groups: 1) emerging market/developing countries and 2) advanced economies. The majority of the data for this study was provided by the 2005 World Bank Economic Indicators along with IMF updates over the 1980 to 2003 period. The data is divided into two sub-periods: 1) 1980-1990, and 2) 1991-2003. This places the economic recessions of 1982 and 1991 at roughly same point in each sub-period. Table 1 - Panel A and B identify the countries in the emerging/developing countries in the early and later periods, respectively; while Panels C and D identify the advanced countries in the later period. After adjusting for missing data the total number of emerging and developing countries included the earlier period is nineteen, which increases to twenty-five countries in the later period. For the advanced countries, eight countries are included in the earlier period and eleven in the later period.

Table 1: Emerging and Developing Countries

Panel A : Earlier Period (1980-1990; N=19)			
Country Code	Country Name	Country Code	Country Name
ARG	Argentina	MAR	Morocco
BRA	Brazil	NGA	Nigeria
CHL	Chile	PAK	Pakistan
COL	Colombia	PER	Peru
CIV	Cote d'Ivoire	PHL	Philippines
EGY	Egypt, Arab Rep.	THA	Thailand
IDN	Indonesia	URY	Uruguay
IRN	Iran, Islamic Rep.	VEN	Venezuela, RB
MYS	Malaysia	ZWE	Zimbabwe
MEX	Mexico		
Panel B: Later Period-Seven Added and One Deleted in Later Period (1991-2003; Total N=25)			
Country Code	Country Name	Country Code	Country Name
CHN	China	LSO	Lesotho
IND	India	LKA	Sri Lanka
MUS	Mauritius	TUN	Tunisia
PAN	Panama	CIV	Cote d'Ivoire (Deleted)

Table 1- Continued - Panel C Advanced Countries: Earlier Period (1980-1990; N=8)			
Country Code	Country Name	Country Code	Country Name
CAN	Canada	USA	United States
JPN	Japan	KOR	Korea, Rep.
AUS	Australia	NZL	New Zealand
DNK	Denmark	CHE	Switzerland
Panel D: Advanced Countries -Three Added in the Later Period (1991-2003; Total N=11)			
Country Code	Country Name	Country Code	Country Name
HKG	Hong Kong, China	ISR	Israel
ISL	Iceland		

As indicated in Table 2, the model includes the annual growth rates for the following factors: 1) labor force (L*), 2) exports of goods and services (X*), 3) capital investment (I), 4) two measures of financial sector liquidity growth (M2*) and money market funds (MFUND*), 5) a proxy for risk management activities (LIFE*), and 6) two measures of capital market activity: a) total stock market capitalization (STKCAP) and b) stock market turnover (STKTUR). GDP (Y) is measured in constant 1995 US dollars. (I/Y) indicates the level of gross fixed capital investment expressed as a percent of GDP, while X* represents growth in the level of goods and services exported in constant 1995 US dollars. L* represents the annual rate of population growth. (Note: an asterisk * is used to denote annual rates of change in the variable).

Table 2: Variable Definitions

Definition	Calculation	Abbreviation
Annual growth rate of real GDP	$\log(Y)-\log(Y(-1))$	Y*
Population rate of growth		L*
Growth rate of exports of goods & services	$\log((X)-\log(X(-1)))$	X*
Gross fixed capital formation (% of GDP)		I/Y
Money and quasi money (M2) ¹ (\$)		M2
Money market mutual funds (\$)	M3-M2	Mfund
The annual growth rate of M2	$\log(M2)-\log(M2(-1))$	M2*
The annual growth rate of Mfund	$\log(mfund)-\log(mfund(-1))$	Mfund*
Life insurance penetration (% GDP)(first diff)	Life-Life(-1)	Life1
Stock market turnover ratio ² (first difference)	SKTTUR-SKTTUR(-1)	SKTTUR1
Stock market capitalization/GDP ³ (first diff.)	SKTCAP-SKTCAP(-1)	SKTCAP1

¹ Money and quasi money comprise the sum of currency outside banks, demand deposits other than those of the central government, and the time, savings, and foreign currency deposits of resident sectors other than the central government. This definition of money supply is frequently called M2 and corresponds to lines 34 and 35 in the International Monetary Fund's (IMF) International Financial Statistics (IFS). * Denotes rate of growth.

² Ratio of value of share traded to total market capitalization

³ Value of listed shares to GDP

To conserve space, Table 3 provides descriptive statistics for the combined sample period (1980- 2003) for both the emerging/developing countries (Panel A) and the advanced countries (Panel B). In a similar fashion, Table 4 provides the correlation matrix for the emerging/developing countries (Part A) and the advanced countries (Part B) for the total sample period.

Table 3: Descriptive statistics for Emerging and Advanced Countries

Panel A: Emerging Countries									
	Y*	L*	X*	IY	M2*	SKTTUR1	SKTCAP1	LIFE1	MFUND*
Mean	0.04	0.02	0.06	0.23	0.06	0.01	0.01	0.00	0.00
Median	0.04	0.02	0.06	0.22	0.07	0.00	0.01	0.00	0.05
Maximum	0.14	0.04	0.72	0.66	0.51	1.25	1.07	0.04	2.47
Minimum	-0.14	0.00	-1.12	0.09	-0.62	-1.15	-0.71	-0.06	-1.54
Std. Dev.	0.04	0.01	0.12	0.08	0.12	0.20	0.10	0.00	0.40
Observations	426.00	426.00	426.00	426.00	426.00	426.00	426.00	426.00	426.00
Panel B: Advanced Countries									
	Y*	L*	X*	IY	M2*	SKTTUR1	SKTCAP1	LIFE1	MFUND*
Mean	0.03	0.01	0.06	0.24	0.06	0.04	0.04	0.00	0.02
Median	0.03	0.01	0.06	0.23	0.05	0.03	0.02	0.00	0.06
Maximum	0.11	0.04	0.24	0.39	0.46	1.57	0.92	0.03	4.94
Minimum	-0.07	-0.01	-0.12	0.16	-0.08	-1.01	-0.68	-0.01	-4.08
Std. Dev.	0.03	0.01	0.05	0.05	0.05	0.23	0.16	0.00	0.76
Observations	210.00	210.00	210.00	210.00	210.00	210.00	210.00	210.00	210.00

Table 4: Correlation Matrix for Emerging and Advanced Countries

Panel A: Emerging Countries									
	Y*	L*	X*	IY	M2*	SKTTUR1	SKTCAP1	LIFE1	MFUND*
Y*	1.00	-0.08	0.37	0.27	0.42	0.02	0.20	-0.05	0.15
L*	-0.08	1.00	-0.13	-0.24	-0.06	0.04	0.02	0.02	0.01
X*	0.37	-0.13	1.00	0.12	0.02	0.00	0.09	0.02	0.17
IY	0.27	-0.24	0.12	1.00	0.17	-0.07	0.04	0.06	0.12
M2*	0.42	-0.06	0.02	0.17	1.00	0.05	0.10	0.16	0.13
SKTTUR1	0.02	0.04	0.00	-0.07	0.05	1.00	0.14	-0.01	0.08
SKTCAP1	0.20	0.02	0.09	0.04	0.10	0.14	1.00	0.09	0.00
LIFE1	-0.05	0.02	0.02	0.06	0.16	-0.01	0.09	1.00	0.02
MFUND*	0.15	0.01	0.17	0.12	0.13	0.08	0.00	0.02	1.00
Panel B: Advanced Countries									
	Y*	L*	X*	IY	M2*	SKTTUR1	SKTCAP1	LIFE1	MFUND*
Y*	1.00	0.15	0.47	0.43	0.22	0.10	0.20	0.10	0.13
L*	0.15	1.00	0.06	0.00	0.17	0.02	0.01	-0.01	0.01
X*	0.47	0.06	1.00	0.22	0.08	0.04	0.19	0.05	0.01
IY	0.43	0.00	0.22	1.00	0.20	-0.02	-0.02	0.13	0.07
M2*	0.22	0.17	0.08	0.20	1.00	0.09	0.16	0.01	0.06
SKTTUR1	0.10	0.02	0.04	-0.02	0.09	1.00	0.07	-0.04	-0.13
SKTCAP1	0.20	0.01	0.19	-0.02	0.16	0.07	1.00	0.12	0.08
LIFE1	0.10	-0.01	0.05	0.13	0.01	-0.04	0.12	1.00	0.11
MFUND*	0.13	0.01	0.01	0.07	0.06	-0.13	0.08	0.11	1.00

MODEL

The empirical model is specified in equation 1 as follows:

$$Y_t^* = B_0 + B_1 L_t^* + B_2 X_t^* + B_3 (I/Y)_t + B_4 M2_t^* + B_5 STKTUR1_t + B_6 STKCAP1_t + B_7 LIFE_t + B_8 MFUND_t^* + u_t \quad (1)$$

where,

- Y_t^* = Economic growth is measured as annual growth rate of the real GDP.
- L_t^* = Labor force growth was proxied by the annual rate of population growth.
- X_t^* = Real export growth was calculated as the annual growth rate of exports of goods and services.
- I/Y_t = Indicates the level of gross fixed capital investment expressed as a percent of GDP.
- $M2_t^*$ = Annual growth in M2 is our measure of bank intermediation .
- $STKTUR1_t$ = Measures stock market turnover or liquidity (first difference).
- $STKCAP1_t$ = Measures stock market size or scale (first difference).
- $LIFE_t$ = A proxy for risk management activity as measured by the volume of life insurance policies enforce.
- $MFUND_t^*$ = Annual growth in money market funds.
- u_t = The error term is assume to be a white noise process (normal distribution $(0, \delta^2)$) after adjusting for autoregressive term as necessary

EMPIRICAL RESULTS

To capture time effects, Table 5 presents the regression results for emerging/developing countries for two distinct data periods: Part A: 1980-1990, and Part B: 1991-2003. Table 6 presents the regression results for the advanced countries for the same two data periods: Part A: 1980-1990 and Part B: 1991-2003. (Note: the authors will provide the regression results for the combined data period upon request).

Table 5: Regression Results for Emerging and Developing Countries.

Panel A: Sample Period 1980-1990				
Dependent Variable: GDP Growth (Y)	Cross-sections included: 19		Total (unbalanced) observations: 127	
Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	0.01462	0.052247	0.279827	0.7802
Labor (L*)	-2.689291	2.078856	-1.29364	0.1988
Exports (X*)	0.176215	0.036307	4.853496	0
Investment (I/Y)	0.291763	0.103367	2.822584	0.0058
Money Supply (M2*)	0.164993	0.031879	5.17561	0
Stock Market Turnover (SKTTUR1)	-0.005301	0.019515	-0.271642	0.7865
Stock Market Capitalization (SKTCAP1)	0.165548	0.142631	1.160677	0.2486
Life Insurance Premiums (LIFE1)	-3.273405	2.221494	-1.473515	0.1438
Money Market Funds (MFUND*)	0.008777	0.009698	0.905102	0.3676
Autoregressive term AR (1)	0.08642	0.100037	0.863881	0.3897
R-squared	0.592775	Mean dependent var		0.032134
Adjusted R-squared	0.481714	S.D. dependent var		0.052558
S.E. of regression	0.037838	Akaike info criterion		-3.519143
Sum squared resid	0.141738	Schwarz criterion		-2.892078
Log likelihood	251.4656	F-statistic		5.33737
Durbin-Watson	1.912768	Prob(F-statistic)		0

Table 5 Continued - Panel B: Sample Period 1991-2003				
Dependent Variable: GDP Growth (Y)	Cross-sections included: 25	Total (unbalanced) observations: 191		
Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	-0.039338	0.014432	-2.725718	0.0072
Labor (L*)	1.043045	0.794961	1.312071	0.1914
Exports (X*)	0.073666	0.031088	2.369625	0.019
Investment (I/Y)	0.200264	0.048408	4.137034	0.0001
Money Supply (M2*)	0.11317	0.030506	3.709776	0.0003
Stock Market Turnover (SKTTUR1)	-0.004694	0.011655	-0.402762	0.6877
Stock Market Capitalization (SKTCAP1)	0.13015	0.027554	4.723469	0
Life Insurance Premiums (LIFE1)	-1.382318	0.720967	-1.917313	0.057
Money Market Funds (MFUND*)	0.00269	0.007413	0.362856	0.7172
Autoregressive term: AR (1)	-0.223201	0.080765	-2.763592	0.0064
AR(2)	-0.136676	0.077172	-1.771066	0.0785
AR(3)	-0.203813	0.071913	-2.834178	0.0052
AR(4)	-0.277265	0.071874	-3.857647	0.0002
R-squared	0.497433	Mean dependent var		0.03702
Adjusted R-squared	0.379949	S.D. dependent var		0.040683
S.E. of regression	0.032036	Akaike info criterion		-3.87183
Sum squared residuals	0.158046	Schwarz criterion		-3.241808
Log likelihood	406.7597	F-statistic		4.234073
Durbin-Watson	2.031787	Prob (F-statistic)		0

Table 6: Regression Results for Advanced Countries

Panel A: Sample Period 1980-1990				
Dependent Variable: GDP Growth (Y)				
Cross-sections included: 8				
Total (unbalanced) observations: 76				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	-0.092557	0.031079	-2.978151	0.0042
Labor (L*)	-1.495046	0.91372	-1.636218	0.1071
Exports (X*)	0.139485	0.036766	3.793812	0.0004
Investment (I/Y)	0.508416	0.111266	4.56938	0
Money Supply (M2*)	0.070904	0.038477	1.842764	0.0704
Stock Market Turnover (SKTTUR1)	0.017997	0.012599	1.4285	0.1584
Stock Market Capitalization (SKTCAP1)	0.035852	0.031779	1.12816	0.2638
Life Insurance Premiums (LIFE1)	-0.183738	0.59774	-0.307387	0.7596
Money Market Funds (MFUND*)	0.003357	0.003947	0.850682	0.3984
Autoregressive term AR (1)	0.153638	0.11193	1.372631	0.1751
R-squared	0.738692	Mean dependent var		0.033485
Adjusted R-squared	0.667828	S.D. dependent var		0.028782
S.E. of regression	0.016588	Akaike info criterion		-5.166081
Sum squared residuals	0.016235	Schwarz criterion		-4.644733
Log likelihood	213.3111	F-statistic		10.42417
Durbin-Watson	2.038432	Prob (F-statistic)		0

Table 6 continued Panel B: Sample Period 1991-2003				
Dependent Variable: GDP Growth (Y)				
Cross-sections included: 11				
Total (unbalanced) observations: 92				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	-0.205692	0.027141	-7.578666	0
Labor (L*)	1.071008	0.749462	1.429035	0.1575
Exports (X*)	0.144683	0.034198	4.230767	0.0001
Investment (I/Y)	0.880924	0.107955	8.160116	0
Money Supply (M2*)	0.07662	0.066738	1.148066	0.2549
Stock Market Turnover (SKTTUR1)	0.019048	0.00679	2.805158	0.0065
Stock Market Capitalization (SKTCAP1)	0.04522	0.013395	3.375839	0.0012
Life Insurance Premiums (LIFE1)	-0.30461	0.281287	-1.082912	0.2826
Money Market Funds (MFUND*)	-0.000286	0.001541	-0.185859	0.8531
Autoregressive term: AR (1)	0.54575	0.124887	4.369939	0
AR(2)	0.034797	0.14168	0.245602	0.8067
AR(3)	-0.194167	0.143186	-1.356052	0.1795
AR(4)	-0.137208	0.123141	-1.114238	0.269
R-squared	0.720629	Mean dependent var		0.029866
Adjusted R-squared	0.631554	S.D. dependent var		0.028173
S.E. of regression	0.017101	Akaike info criterion		-5.08703
Sum squared residuals	0.020179	Schwarz criterion		-4.456583
Log likelihood	257.0034	F-statistic		8.090155
Durbin-Watson	1.979802	Prob(F-statistic)		0

Given the large number of coefficients involved in Tables 5 and 6, Table 7 is included to summarize the main regression results. Looking first at the control variable results presented in Table 7, the growth rate of the labor force (L*) is not statistically significant for either group of countries in either period. On the other hand, the growth in exports (X*) has a positive and highly significant coefficient for both groups in both time periods. The export elasticities range from a high of 0.18 in the earlier period to a low of 0.07 in the later period for the group of emerging/ developing countries. The export elasticities for the advanced countries equals 0.14 in both periods. The ratio of gross fixed capital investment (I/Y) expressed as a percent of GDP is positive and statistically significant at the one percent level for both groups and both periods. For the emerging/developing countries, (I/Y) has an elasticity of 0.29 and 0.20 for the early and later periods, respectively. For the advanced countries, the coefficient on (I/Y) is much larger, equaling 0.51 in the earlier period and increasing substantially in the later period to 0.88. Growth in money market mutual funds is not statistically significant for either group of countries in either period

Turning to the main financial sector hypothesis variables, M2 is statistically significant in both periods for the emerging/developing countries, although the coefficient declines by about one-third from the earlier period (0.16 to 0.11). Among the advanced countries M2 is only significant in the early period with an elasticity coefficient (0.07) which is much lower than that reported for the emerging/developing countries. While the coefficient is approximately the same size for the later period it is no longer statistically significant. For the two stock market variables, STKTUR1 and STKCAP1, neither are statistically significant in the 1980-1990 period for both groups of countries. On the other hand, during the 1991-2003 period, the size of the country's stock market as measured by total market capitalization is now highly significant for the emerging/developing countries with a regression coefficient of 0.13, and a t-value of 4.7. During this later period, both stock market variables for the group of advance countries are statistically significant, with the coefficient on STKTUR1 equal to approximately 0.02 and the coefficient

on STKCAP1 equal to 0.05. Our measure of risk management, LIFE, is weakly significant for only the later period for the emerging/developing countries and unexpectedly carries a negative coefficient (-1.38). The model's adjusted R² for ranges from 38 to 48 percent for the emerging/ developing countries where there is a greater degree of economic diversity. The adjusted R² for the advanced countries is substantially greater with a tighter range from 0.63 to 0.67 compared to 0.38 to 0.48 for the emerging/developing countries.

Table 7 - Regression Coefficients Summary

Variable	Emerging	Advanced	Variable	Emerging	Advanced
Labor (L*)			Stock Market Cap. (SKTCAP1)		
Early	N.S	N.S	Early	N.S.	N.S.
Late	N.S	N.S	Late	0.13***	0.05***
Exports (X*)			Life Insurance Premiums (LIFE1)		
Early	0.18***	0.14***	Early	N.S.	N.S.
Late	0.07**	0.14***	Late	-1.38*	N.S.
Investment (I/Y)			Money Market Funds (MFUND*)		
Early	0.29***	0.51***	Early	N.S.	N.S.
Late	0.20***	0.88***	Late	N.S.	N.S.
Money supply (M2*)			Adj. R²		
Early	0.16***	0.07*	Early	0.48	0.67
Late	0.11***	N.S.	Late	0.38	0.63
Stock Market Turn. (SKTTUR1)					
Early	N.S.	N.S.			
Late	N.S.	0.02***			

*10% significant level, **5% significant level, *** 1% significant level, NS not significant

CONCLUSIONS

Financial sector development (FSD) can play either a leading role in economic growth or it may take a more passive role in response to expanding economics needs. In the very early stages of development causation often runs from economic development to FSD. This view has been labeled “demand-following”. On the other hand, as economic growth occurs the direction of causality may reverse and a “supply-leading” relationship develops. Here the efficiency gains associated with the intermediation process facilitates economic growth by lowering transactions costs. Furthermore, by facilitating risk management, improving asset liquidity, and reducing trading costs, financial intermediaries can encourage investment in higher-return activities. This paper estimates an Odedokun-type “supply-leading” model which incorporates banking sector, capital market variables, and risk management variables as potential drivers of economic growth.

More specifically, the current findings illustrate the impact on economic growth of various measures of FSD which includes basic intermediation services, as measured by M2 and money market mutual funds, and more advanced FSD services such as stock market development and risk management services. The empirical findings in this study document an important shift from a heavy reliance on basic banking services among both emerging/developing and advanced countries towards an expanded role for the capital markets. This shift is clearly more noticeable among the advanced countries, where our measure of banking sector development ceases to be significant during the 1991-2003 period. On the other hand,

among the emerging/developing countries banking sector development continues to play an important role as the shift to capital markets takes place.

Thus, the results suggest that the financial drivers of economic growth have shifted from basic intermediation services supplied by the banking sector in the form of loans and deposits to more efficient and more sophisticated capital market services. It should be noted that the current study does not explicitly consider the role of external factors such as government laws and local business practices along with differences in financial regulation which may either enhance or restrict FSD development and economic growth. In future research we plan to include other countries as data permits and incorporate differences in financial regulation, economic freedom, and creditor rights along with alternative risk management measures.

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