FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH OF UNITED KINGDOM

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ABSTRACT

When the country's financial system grows properly, it encourages innovations in technology by individuals capable of production. The relationship between finance and economic growth is not strange in the economics literature. This study examined the impact of financial development on economic growth in the United Kingdom during the period 1960-2015. The current study used the Johansen's co-integration test and concluded that development has a positive impact on economic growth. These results apply in the long term. The long-term impact supports the financial development factor. This is statistically significant and positive. (The investment gross fixed capital formation), which is of great statistical importance but is negative. Several other studies have shown a negative correlation between financial development and the economy. The amount of credit from domestic sources to the private sector has been shown to maintain a significant positive correlation with the growth of the economy through long-term periods, while gross fixed capital formation has reversed the long-term trend.

Keywords: financial development; economic growth; relationship; UK; Analysis.

I.   AN INTRODUCTION

The debate on the relationship between financial development and economic growth has been going on for many years. But with a simple consensus of researchers, there have been many empirical studies in both developed and developing economies that aim at finding the link between financial development and economic growth (Levine 1997, Antonios 2010). Economic growth, as the results were not entirely conclusive and empirical evidence tends to suggest that financial development - whether banking or market - has a positive impact on economic growth, as there is evidence to suggest otherwise the evidence also indicates that these results vary from country to country over time it also depends on the specific model and methodology used (Handa and Khan 2008).

The relationship between finance and economic growth is not strange in the economics literature Schumpeter claims that when the country's financial system grows properly, it encourages innovations in technology by individuals capable of production. Moreover, when state officials interfere with the country's financial structure by imposing high ceilings on interest rates, standby conditions and credit control programs, it hampers development and the financial sector (FitzGerald 2006). The Bank of England is the top financial system in the UK, the UK's central bank. Where it maintains monetary and financial stability in order to ensure a healthy economy (Davies, Richardson et al. 2010). Over time, the role has evolved to include a focus on managing and supervising the currency of the economy (Nyasha and Odhiambo 2013). The financial sector in the UK is large, with the bank's balance sheet about five times the gross

domestic product. The UK stock market, which is based on the London Stock Exchange, is also very sophisticated and among the top global stock markets (Koo 2013).

- **Financial Sector in the UK**

The UK financial system is one of the most advanced financial systems in the world according to (Murphy and Senior 2013), Financial System Plays a very important role in the performance of the British economy where we note that both the bank and market-based sectors in the UK financial system are well developed. Over the years, the UK financial sector underwent a number of reforms. These reforms focused on improving the legal, judicial, regulatory and supervisory system, promoting financial liberalization, rehabilitating financial infrastructure, and restoring the Bank's safety (Davies, Richardson et al. 2010, Koo 2013).

The UK financial sector responded to these reforms as the growth of the banking sector, in the UK shows a clear growth in private sector private credit from 50% of GDP in 1975 to 229% in 2009, before falling to 222.6% in 2010, and still to 213.8% in 2011 (Information, Technologies et al. 2012). On the stock market, these reforms have led to an increase in the market value of stocks, total value traded and turnover (Lea 2021).

The market value of shares listed as a percentage of GDP rose from just under 100% between 1988 and 1992 to a peak of 195.2% in 1999. However, the size of the stock market declined sharply during 2000 and improved After 2002, although it failed to reach its size in 1999. In 2007, the UK stock market suffered a financial crisis, which saw a decline in market value, where it arrived to 69.7% in 2008. Since then, the market has not recovered completely after the financial crisis (Information, Technologies et al. 2012, Lea 2021). Despite this growth, the UK financial system still faces some challenges. These challenges include: less than adequate disclosure standards, risk of infection from the euro area, and squeezed interest margin and uncertainties caused by changes in regulatory regimes.

- **UK GDP**

Depending on GDP result for 2015, the economy of the United Kingdom is the fifth-largest national economy in the world measured by nominal gross domestic product (GDP), and 4% of world GDP; it is the second-largest economy in the European Union by both metrics (Baten 2016). UK's gross domestic product expanded 2.3 percent year-on-year in the third quarter of 2016, accelerating from a 2.1 percent growth in the previous period and in line with preliminary estimate. It was the strongest reading since the second quarter of 2015, boosted by net external demand and gross fixed capital formation. GDP Annual Growth Rate in the United Kingdom averaged 2.46 percent from 1956 until 2016, reaching an all-time high of 9.80 percent in the first quarter of 1973 and a record low of -6.10 percent in the first quarter of 2009 (Baker, Carreras et al. 2016).

II. LITERATURE REVIEW

A number of authors addressed the relationship between financial development and economic growth some literature on this subject has been in various scales to analyze the relationship between financial development and economic growth and the studies reviewed are cases in different economies include those by (De Gregorio and Guidotti 1995, Odedokun 1996, Ahmed and Ansari 1998, Ram 1999, Kar and Pentecost 2000, Andersen and Tarp 2003, Christopoulos and Tsionas 2004, Thangavelu, Beng Jiunn et al. 2004, Abu-Bader and Abu-Qarn 2008, Quartey and Prah 2008, Sackey and Nkrumah 2012, Adusei 2013, Ofori-Abebrese, Pickson et al. 2017), All of these studies found that bank-based financial development has a positive impact on economic growth in different countries of the studies, with the exception of

studies conducted by (De Gregorio and Guidotti 1995) which found evidence of a negative relationship between the two in some cases, and the studies conducted by (Ram 1999) show that bank-based financial development does not have a significant impact on economic growth. On the part of market-based financial development, a number of studies examined the impact of market-based financial development on economic growth, these studies include: (Levine 1996, Bekaert, Harvey et al. 2005, Adjasi and Biekpe 2006, Saibu, Bowale et al. 2009, Ujunwa and Salami 2010), All these studies have found that market-based financial development has a positive impact on economic growth, with the exception of studies conducted by, (Ujunwa and Salami 2010) which found the relationship between market-based financial development and economic growth positive in some countries but also negative in Other countries.

The study of (Hassan, Sanchez et al. 2011) provided evidence of the role of financial development in accounting for economic growth in low-income countries and middle-income classified by geographic regions where there was a causal relationship between funding and Growth for most regions, moreover, plays other variables from the real sector such as trade and government spending Play an important role in the interpretation of economic growth.

(Odili, Ohanu et al. 2015) studied the impact of the private sector on financing the banking sector on economic growth and revealed the results there is a positive linear relationship between private sector financing by the banking sector and economic growth in both the long term and the short term. The study also recommends that a financial system be developed and operated effectively.

The study of (Nicholas 2019) examines the effect of both market-based and market-based financial development using self-regression. The empirical results of this study show that while development is based on market, financial development also has a positive impact on economic growth on the basis of banks.

The study of Grace Ofori, Robert and Benjamin (2017) showed that the results of the relationship between funding and growth were mixed while the causal trend Among the two variables in particular were not examined and the amount of credit from domestic sources to the private sector has maintained an important relationship positively with the growth of the economy while domestic deposit has not. Also, the results put the economy's reliance on domestic changes to the private sector and recommended that the authorities focus on improving the efficiency of the financial system to allow deposits to be channeled to growth-stimulating investments to achieve long-term economic growth.

III. ESTIMATION TECHNIQUES AND EMPIRICAL ANALYSIS
1. Specification Model
The empirical model used in this study to determine the impact of financial development on economic growth is as follows:

$$GDP_t = B_o + B1\ DC_t + B2\ IFC_t + B3\ GS_t + \varepsilon_t$$

Where:

- **GDP** represents to real gross domestic product which is prox-ied for economic growth.
- **B$_o$** is **C** or Constant coefficient.
- **DC** represents to domestic credit to private sector (% of GDP).
- **IFC** is investment which is proxied for gross fixed capital formation.

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- **Gs** represents to gross savings as a percentage of GDP.
- **εt** and **t** represent error term and time respectively.

Dependent variable: GDP: is the growth rate of real gross domestic product – a proxy for economic growth

2. Independent variables

- **DC** domestic credit to private sector Includes all appropriations for various sectors on a gross basis, excluding credit to the central government, which is net. The financial sector includes monetary authorities and the deposit of financial banks, as well as other financial companies where data are available (including non-convertible deposit companies but with obligations such as term deposits and savings deposits). Other financial companies include finance and leasing companies, financial lenders, insurance companies, pension funds and foreign exchange companies.
- **IFC** gross fixed capital formation (formerly gross domestic fixed investment) includes land improvements, purchase of machinery, equipment, machinery and equipment; and construction of roads and railways, including schools, offices, hospitals, private residential dwellings and commercial and industrial buildings.
- **Gs** Gross domestic savings are calculated as a percentage of GDP less final consumption expenditure (total consumption).

3. Data Sources

The study used annual time series data for three variables over the period from 1960 to 2015. all the variables expressed as a percentage of gross domestic product (GDP) and data were obtained from the World Bank.

4. GDP relations with the independent variables:

Positive relationship between domestic credit to private sector and GDP (King & Levine, 1993). (Madichie et al,2014) Positive relationship between GDP and gross fixed capital formation (Mankiw et al. &, 1992). Negative relationship between GDP and gross savings.

IV. RESULTS AND ANALYSIS

1. Unit Root Test for Stationarity

❖ Null hypothesis Ho: the variable has unit root (not stationary).
❖ Alternative HYP H1: variable has not unit root (stationary).

Rule1: If |T computed | is greater than |t critical value | and P value is less than α = **1%, 5%, 10%** then accept H**1** and reject Ho (data is stationary). also, the coefficient should be negative.

Rule2: If |T computed | is less than |t critical value | and P value is greater than α = **1%, 5%, 10%** then accept Ho and reject H**1** (data is not stationary) so we have to convert the variable into stationary in first differenced.

variable GDP	(Sample period) 1960-2015		(Country) UK	ADF
At Level	t-statistics	t- critical α= 5%	Prob value	Decision
Intercept	-1.259105	-2.916566	0.6420	Accept H_0 reject H_1
Trend and intercept	-2.722406	-3.495295	0.2321	Accept H_0 reject H_1
None	3.809627	-1.946996	0.9999	Accept H_0 reject H_1

GDP is **not** stationary at level. So, we have to convert the **GDP** into stationary at first differenced to check it's stationary.

Correlogram test for **GDP at level** (gives the same result -not stationary).

Date: 05/14/17 Time: 19:38
Sample: 1960 2015
Included observations: 56

- H_0: data has unit root (not stationary)
- H_1: data is stationary.

variable GDP	(Sample period) 1960-2015		(Country) UK	ADF
At first difference	t-statistics	t- critical α= 5%	Prob value	Decision
Intercept	-5.098033	-2.916566	0.0001	Reject H_0 accept H_1
Trend and intercept	-5.196132	-3.495295	0.0004	Reject H_0 accept H_1
None	-2.984260	-1.946996	0.0035	Reject H_0 accept H_1

GDP (**Stationary**) at first difference.

Correlogram test for **GDP** at **first difference** (gives the same result-stationary)**.**

Date: 05/14/17 Time: 21:32
Sample: 1960 2015
Included observations: 55

DC **domestic credit to private sector**

- H_0: data has unit root (not stationary)
- H_1: data is stationary.

variable **DC**	(Sample period) 1960-2015		(Country) UK	ADF
At Level	t-statistics	t- critical α= 5%	Prob value	Decision
Intercept	-1.082393	-2.915522	0.7166	Accept H_0 reject H_1
Trend and intercept	-1.651510	-3.495295	0.7588	Accept H_0 reject H_1
None	1.436668	-1.946996	0.9609	Accept H_0 reject H_1

DC is **not** stationary at level. So, we have to convert the **DC** into stationary at first differenced to check it's stationary.

Correlogram test for **DC at level** (gives the same result -not stationary).

Date: 05/10/17   Time: 17:22
Sample: 1960 2015
Included observations: 56

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
		1	0.964	0.964	54.850	0.000
		2	0.920	-0.117	105.81	0.000
		3	0.870	-0.121	152.16	0.000
		4	0.818	-0.016	193.99	0.000
		5	0.766	-0.032	231.38	0.000
		6	0.710	-0.083	264.16	0.000
		7	0.653	-0.044	292.43	0.000
		8	0.597	-0.007	316.52	0.000
		9	0.542	-0.010	336.85	0.000
		10	0.488	-0.041	353.67	0.000
		11	0.434	-0.039	367.25	0.000
		12	0.384	0.029	378.13	0.000
		13	0.344	0.101	387.08	0.000
		14	0.308	-0.021	394.41	0.000
		15	0.268	-0.108	400.10	0.000
		16	0.220	-0.148	404.03	0.000
		17	0.170	-0.045	406.45	0.000
		18	0.117	-0.085	407.62	0.000
		19	0.061	-0.098	407.95	0.000
		20	0.003	-0.058	407.95	0.000
		21	-0.056	-0.038	408.24	0.000
		22	-0.112	-0.015	409.45	0.000
		23	-0.169	-0.071	412.25	0.000
		24	-0.225	-0.058	417.38	0.000

- H_0: data has unit root (not stationary)
- H_1: data is stationary.

variable DC	(Sample period) 1960-2015		(Country) UK	ADF
At first difference	t-statistics	t- critical $\alpha= 5\%$	Prob value	Decision
Intercept	-5.297445	-2.916566	0.000	Reject H_0 accept H_1
Trend and intercept	-5.326090	-3.495295	0.0003	Reject H_0 accept H_1
None	-4.914401	-1.946996	0.000	Reject H_0 accept H_1

DC (**Stationary)** at first difference.

Correlogram test for **DC** at **first difference** (gives the same result-stationary)**.**

Date: 05/10/17   Time: 17:57
Sample: 1960 2015
Included observations: 55

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
		1	0.293	0.293	4.9888	0.026
		2	0.193	0.117	7.1822	0.028
		3	0.013	-0.079	7.1918	0.066
		4	-0.025	-0.035	7.2309	0.124
		5	-0.018	0.012	7.2520	0.203
		6	-0.217	-0.227	10.251	0.114
		7	-0.168	-0.067	12.087	0.098
		8	-0.085	0.052	12.572	0.127
		9	-0.050	-0.022	12.744	0.175
		10	-0.063	-0.075	13.020	0.223
		11	-0.269	-0.266	18.174	0.078
		12	-0.059	0.061	18.431	0.103
		13	0.052	0.117	18.634	0.135
		14	0.235	0.202	22.847	0.063
		15	0.039	-0.148	22.965	0.085
		16	0.044	-0.028	23.117	0.111
		17	0.038	-0.057	23.237	0.142
		18	0.051	0.017	23.456	0.174
		19	0.031	0.055	23.537	0.215
		20	-0.011	0.095	23.548	0.263
		21	0.024	0.016	23.603	0.313
		22	0.081	-0.044	24.223	0.336
		23	0.022	-0.042	24.271	0.389
		24	-0.097	-0.083	25.229	0.393

IFC gross fixed capital formation

- H_0: data has unit root (not stationary).
- H_1: data is stationary.

variable IFC	(Sample period) 1960-2015		(Country) UK	ADF
At Level	t-statistics	t- critical $\alpha= 5\%$	Prob value	Decision
Intercept	-1.684371	-2.916566	0.4333	Accept H_0 reject H_1
Trend and intercept	-2.698213	-3.495295	0.2415	Accept H_0 reject H_1
None	-0.217289	-1.946996	0.6034	Accept H_0 reject H_1

IFC is **not** stationary at level. So, we have to convert the **IFC** into stationary at first differenced to check it's stationary.

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Correlogram test for **IFC at level** (gives the same result -not stationary).


```
Date: 05/10/17   Time: 18:35
Sample: 1960 2015
Included observations: 56
```

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
		1	0.908	0.908	48.691	0.000
		2	0.790	-0.198	86.210	0.000
		3	0.677	-0.013	114.32	0.000
		4	0.567	-0.066	134.40	0.000
		5	0.477	0.050	148.88	0.000
		6	0.403	0.002	159.44	0.000
		7	0.311	-0.181	165.84	0.000
		8	0.270	0.288	170.78	0.000
		9	0.266	0.077	175.65	0.000
		10	0.233	-0.228	179.49	0.000
		11	0.200	0.018	182.39	0.000
		12	0.168	0.005	184.46	0.000
		13	0.114	-0.093	185.44	0.000
		14	0.086	0.058	186.01	0.000
		15	0.059	-0.058	186.29	0.000
		16	0.028	0.115	186.35	0.000
		17	-0.011	-0.216	186.36	0.000
		18	-0.052	-0.085	186.59	0.000
		19	-0.122	-0.110	187.90	0.000
		20	-0.186	-0.084	191.01	0.000
		21	-0.241	0.017	196.42	0.000
		22	-0.291	-0.028	204.51	0.000
		23	-0.336	-0.072	215.60	0.000
		24	-0.368	-0.012	229.35	0.000

- H_0: data has unit root (not stationary)
- H_1: data is stationary.

variable **IFC**	(Sample period) 1960-2015		(Country) UK	ADF
At first difference	t-statistics	t- critical α= 5%	Prob value	Decision
Intercept	-5.851032	-2.916566	0.0000	Reject H_0 accept H_1
Trend and intercept	-5.854805	-3.495295	0.0001	Reject H_0 accept H_1
None	-5.904783	-1.946996	0.0000	Reject H_0 accept H_1

IFC (**Stationary)** at first difference.

Correlogram test for **IFC** at **first difference** (gives the same result-stationary)**.**


```
Date: 05/10/17   Time: 18:53
Sample: 1960 2015
Included observations: 55
```

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
		1	0.218	0.218	2.7481	0.097
		2	-0.088	-0.142	3.2014	0.202
		3	-0.038	0.015	3.2892	0.349
		4	-0.066	-0.078	3.5591	0.469
		5	-0.109	-0.085	4.3088	0.506
		6	0.126	0.170	5.3169	0.504
		7	-0.207	-0.339	8.1162	0.322
		8	-0.184	-0.007	10.371	0.240
		9	0.125	0.140	11.432	0.247
		10	0.128	0.010	12.569	0.249
		11	-0.012	-0.005	12.580	0.322
		12	0.130	0.073	13.810	0.313
		13	-0.073	-0.085	14.210	0.359
		14	0.051	0.184	14.412	0.419
		15	0.018	-0.195	14.437	0.493
		16	0.043	0.172	14.588	0.555
		17	-0.036	0.015	14.693	0.618
		18	0.145	0.114	16.473	0.560
		19	0.032	0.056	16.562	0.620
		20	-0.121	-0.260	17.863	0.596
		21	-0.173	-0.004	20.628	0.482
		22	-0.058	-0.022	20.946	0.524
		23	-0.045	-0.068	21.143	0.572
		24	-0.025	-0.047	21.206	0.627

Gs gross savings as a percentage of GDP.

- H_0: data has unit root (not stationary).
- H_1: data is stationary.

variable **GS**	(Sample period) 1960-2015		(Country) UK	ADF
At Level	t-statistics	t- critical α= 5%	Prob value	Decision
Intercept	-0.746230	-2.923780	0.8249	Accept H_0 reject H_1
Trend and intercept	-3.462305	-3.504330	0.0550	Accept H_0 reject H_1
None	-0.659376	-1.947816	0.4263	Accept H_0 reject H_1

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GS is **not** stationary at level. So, we have to convert the **GS** into stationary at first differenced to check it's stationary.

Correlogram test for **GS at level** (gives the same result -not stationary).

```
Date: 05/11/17   Time: 08:42
Sample: 1960 2015
Included observations: 51

Autocorrelation    Partial Correlation        AC      PAC    Q-Stat   Prob
                                      1    0.941    0.941   47.841   0.000
                                      2    0.866   -0.168   89.174   0.000
                                      3    0.802    0.076   125.35   0.000
                                      4    0.736   -0.074   156.54   0.000
                                      5    0.694    0.188   184.87   0.000
                                      6    0.647   -0.150   210.02   0.000
                                      7    0.585   -0.091   231.01   0.000
                                      8    0.525   -0.013   248.36   0.000
                                      9    0.466   -0.015   262.36   0.000
                                     10    0.402   -0.113   273.01   0.000
                                     11    0.333   -0.111   280.49   0.000
                                     12    0.250   -0.155   284.81   0.000
                                     13    0.162   -0.066   286.68   0.000
                                     14    0.089    0.009   287.26   0.000
                                     15    0.040    0.138   287.38   0.000
                                     16    0.017    0.137   287.40   0.000
                                     17   -0.001    0.002   287.40   0.000
                                     18   -0.031   -0.062   287.48   0.000
                                     19   -0.081   -0.161   288.03   0.000
                                     20   -0.138   -0.081   289.69   0.000
                                     21   -0.190   -0.072   292.94   0.000
                                     22   -0.234   -0.026   298.02   0.000
                                     23   -0.275   -0.089   305.33   0.000
                                     24   -0.311   -0.004   315.03   0.000
```

- H_0: data has unit root (not stationary)
- H_1: data is stationary.

variable GS	(Sample period) 1960-2015		(Country) UK	ADF
At first difference	t-statistics	t- critical α= 5%	Prob value	Decision
Intercept	-5.453987	-2.923780	0.0000	Reject H_0 accept H_1
Trend and intercept	-5.466103	-3.506374	0.0002	Reject H_0 accept H_1
None	-5.977151	-1.947665	0.0000	Reject H_0 accept H_1

GS (**Stationary**) at first difference.

Correlogram test for **GS** at **first difference** (gives the same result-stationary)**.**

```
Date: 05/11/17   Time: 09:04
Sample: 1960 2015
Included observations: 50

Autocorrelation    Partial Correlation        AC      PAC    Q-Stat   Prob
                                      1    0.140    0.140   1.0469   0.306
                                      2   -0.192   -0.216   3.0399   0.219
                                      3   -0.062    0.001   3.2542   0.354
                                      4   -0.228   -0.277   6.1968   0.185
                                      5   -0.075   -0.006   6.5210   0.259
                                      6    0.067   -0.037   6.7875   0.341
                                      7    0.142    0.125   7.9996   0.333
                                      8    0.076   -0.019   8.3573   0.399
                                      9    0.046    0.091   8.4916   0.485
                                     10    0.006    0.008   8.4943   0.581
                                     11    0.077    0.196   8.8906   0.632
                                     12    0.060    0.055   9.1385   0.691
                                     13   -0.147   -0.086   10.666   0.639
                                     14   -0.222   -0.207   14.223   0.433
                                     15   -0.197   -0.198   17.094   0.313
                                     16   -0.036   -0.098   17.196   0.373
                                     17    0.195    0.068   20.195   0.264
                                     18    0.228    0.063   24.413   0.142
                                     19    0.107    0.051   25.381   0.148
                                     20   -0.078   -0.036   25.907   0.169
                                     21   -0.108    0.090   26.951   0.172
                                     22   -0.118    0.012   28.253   0.167
                                     23   -0.062    0.039   28.624   0.193
                                     24   -0.047   -0.142   28.846   0.226
```

Table 1: Augmented Dickey Fuller unit root test results for stationarity of variables

UK (1960-2015)	ADF			ADF		
	Level			**First difference**		
Variables	**Intercept**	**Trend and intercept**	**None**	**Intercept**	**Trend and intercept**	**None**
LGDP	-1.259105	-2.722406	3.809627	-5.098033	-5.196132	-2.984260
LDC	-1.082393	-1.651510	1.436668	-5.297445	-5.326090	-4.914401
LIFC	-1.684371	-2.698213	-0.217289	-5.851032	-5.854805	-5.904783
LGS	-0.746230	-3.462305	-0.659376	-5.453987	-5.466103	-5.977151

The results of Augmented Dickey-Fuller method show that gross domestic product, domestic credit to private sector, gross fixed capital formation, and gross savings have confirmed stationary at the first difference, thus integrated of order one; I (1).

Table 2: Philips Perron unit root test results for stationarity of variables

Uk (1960-2015)	PP			PP		
	Level			**First difference**		
Variables	**Intercept**	**Trend and intercept**		**Intercept**	**Trend and intercept**	
LGDP	-1.437570	-1.659604		-5.024350	-4.932659	
LDC	-1.077949	-1.569105		-5.264878	-5.293259	
LIFC	-1.600115	-2.710788		-5.772210	-5.717354	
LGS	-0.957504	-2.781127		-5.900293	-5.857827	

The results shown in the table 2 that all the variables (gross domestic product, domestic credit to private sector, gross fixed capital formation, and gross savings have confirmed stationary at the first difference, so integrated of order one; I (1).

Tables 1 and 2 show the results of root tests for the ADF and PP, shown the series that is not stationary at the level but becomes stationary by taking the first difference. This means that the string is integrated of order 1, I (1). These results satisfy the condition for performing cointegration analysis. Johansen Cointegration test.

Figure 1: Plot of Cumulative Sum of Recursive Residuals
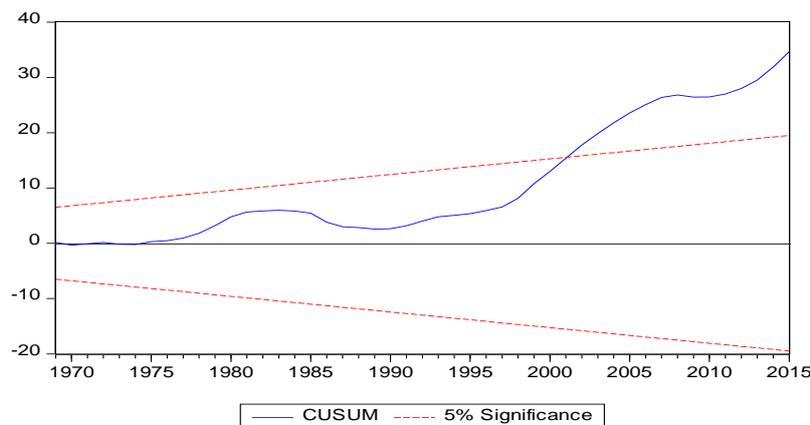
- **Analysis of common integration**

In this study, Johansen's co-integration test was used to test the long-run equilibrium relationship between the variables used in this study or not. The maximum Eigen values and trace statistics are shown in Tables 3 and 4 below

Table 3: Co-integration test (Trace)

Hypothesized No. of CE (s)	Eigen value	Trace statistic	0.05 critical value	Prob.
None*	0.506181	61.03396	47.85613	0.0018
At most 1	0.292497	27.87144	29.79707	0.0820
At most 2	0.163587	11.60880	15.49471	0.1767
At most 3	0.066079	3.213073	3.841466	0.0730

* Indicates rejection of the hypothesis at level 0.05.

Table 4: Co-integration test (maximum eigen value)

Hypothesized No. of CE (s)	Eigen value	Max-eigen statistic	0.05 critical value	Prob.
None*	0.506181	33.16252	27.58434	0.0086
At most 1	0.292497	16.26264	21.13162	0.2099
At most 2	0.163587	8.395730	14.26460	0.3399
At most 3	0.066079	3.213073	3.841466	0.0730

* Indicates rejection of the hypothesis at level 0.05.

Tables 3 and 4 present the common results of the trace test and the maximum Eigen value that reveal common integration 1one equation at the level of 5% of significance, respectively. This indicates that economic growth is integrated with explanatory variables (ldc,lifc,lgs). This means there is a long-run relationship between economic growth and these variables. Since the variables are integrated and have a long-run equilibrium relationship, we can use restricted VAR that is VECM model.

Table 5: Results of ECM

Dependable Variable=ΔLGDP				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	26.79420	0.606922	44.14765	0.0000
ΔLDC	0.391854	0.040639	9.642252	0.0000
ΔLIFC	-0.405730	0.197839	-2.050808	0.0464
ΔLGS	0.298256	0.196561	1.517373	0.1365
RESID01(-1)	0.596794	0.116996	5.100994	0.0000
D	0.467586	0.096523	4.844299	0.0000
SIGMASQ	0.001865	0.000480	3.887114	0.0003
R2 =0.983947 Adjusted R2 = 0.981707 F-statistic =439.2719 Prob.(F-statistic) =0.0000 Durbin-Watson stat= 1.697531				
Breusch-Godfrey Serial Correlation LM Test= 4.030913 Prob =0.1333 No obs =50				

The results presented in Table 5 show that all variables have maintained their long-term relationships with economy growth. We note that the domestic credit of the private sector as a share of GDP has a positive, statistically significant relationship with economic growth, while the investment gross fixed capital formation has a statistically significant negative relationship with economic growth, gross savings as a percentage of GDP have a positive relationship but statistical insignificance with economic growth. The error correction coefficient (SIGMASQ) shows the speed of adaptation to the long-term solution that enters to influence short-term movements in GDP.

The estimated value of the equilibrium correction coefficient (SIGMASQ),0.001865, has a correct sign, which is statistically significant at the 5% level, which means that there is an adjustment of the equilibrium level after shock.

Table 6: Multiple Regression Result.

Dependable Variable=LGDP				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob**.
C	27.38612	0.549270	49.85913	0.0000
LDC	0.396010	0.032204	12.29701	0.0000
LIFC	-0.408937	0.246123	-1.661516	0.1033
LGS	0.086992	0.228378	0.380912	0.7050
R2 =0.931546 Adjusted R2 = 0.927176 F-statistic =213.1962 Prob.(F-statistic) = 0.0000 Durbin-Watson stat= 0.281833 No obs =51				

The estimated model can be presented as an equation as follows:
LGDP = 27.38612+0.396010LDC – 0.408937LIFC + 0.086992LGC

The result in table 6, find that 27.38612 suggests if is no change in the variables as percent of GDP from one year to another GDP will continue to grow by 27.38612 percent also, we see the domestic credit to private sector has a positive impact, statistically significant on economic growth The estimated model shows that domestic credit to the private sector has a positive impact on economic growth. This means that an increase in the domestic credit sector will lead to increased economic growth in the UK. This is consistent with prior expectation. Also, the variable is important at 5%, Gross fixed capital formation has a negative impact on economic growth and thus the art of declining gross fixed capital will lead to a decline in economic growth (inverse relationship) also statistically significant at 5% , the gross savings as a percentage of GDP have a positive relationship but statistical insignificance with economic growth This means that the rise in the gross savings will also lead to increased economic growth in the UK.

V.   CONCLUSION

This study examined the impact of financial development on economic growth in the United Kingdom during the period 1960-2015. The financial system in the UK is one of the most sophisticated in the world according to the Bank of England (2012). It plays a role in the performance of the Kingdom's economy. Between funding and economic growth. The current study used the Johansen's co-integration test and concluded that development has a positive impact on economic growth. These results apply in the long term. The long-term impact supports the financial development factor. This is statistically significant and positive. (the investment gross fixed capital formation), which is of great statistical importance but is negative. Several other studies have shown a negative correlation between financial development and the economy.

The UK financial sector responded to reforms as the growth of the banking sector in the UK shows a clear growth in private sector private credit from 50% of GDP in 1975 to 229% in 2009, before falling to 222.6% in 2010, and still to 213.8% in 2011 (World Bank, 2012). On the stock market, these reforms have led to an increase in the market value of stocks, total value traded and turnover. These results show that in the UK we should focus on more financial development policies aimed at developing financial sector in the UK.

The amount of credit from domestic sources to the private sector has been shown to maintain a significant positive correlation with the growth of the economy through long-term periods, while gross fixed capital formation has reversed the long-term trend. In line with the results, we recommend that the authorities focus on improving the efficiency of the financial system to allow deposits and channel investments that stimulate financial development to achieve long-term economic growth.

VI.   REFERENCES

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