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STRIDES – A STUDENTS' JOURNAL OF SHRI RAM COLLEGE OF COMMERCE

ISSN 2581-4931 (Print)

Shri Ram College of Commerce is well known for its academic excellence and dedicated approach towards dissemination of knowledge in the academic world. The college appreciates the role of research in education and is committed to developing an inclination towards research in both faculty and students. In this pursuit, the college has taken the initiative to launch a new Journal named 'Strides – A Students' Journal of Shri Ram College of Commerce'.

ABOUT THE JOURNAL

It is a double blind reviewed bi-annual Journal launched exclusively to encourage students to pursue research on the contemporary topics and issues in the area of commerce, economics, management, governance, polices etc. The journal provides an opportunity to the students and faculty of Shri Ram College of Commerce to publish their academic research work.

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Shri Ram College of Commerce is committed to upholding the high academic standards. Therefore, the Committee on Publication Ethics (COPE) follows a 3-Stage Selection Process while approving a paper for publication in this Journal. The policy is as follows:

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c) Abstract

d) Keywords

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The abstract should capture the essence of the article and entice the reader. It should typically be of 100 -150 words, and in Italics.

Font type and word limit

The research paper is to be typed on A-4 size paper with single line spacing. The complete length of the paper should not exceed 5000 words including endnotes and references. The font size should be 12 and font style should be Times New Roman.

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The Journal adheres to the APA (American Psychological Association) Referencing Style, Sixth Edition. Students must refer to the APA Referencing Guidelines to ensure conformance to this reference style. For further information you may visit the following link - http://www.apastyle.org

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Endnotes should be serially arranged at the end of the article well before the references and after conclusion.

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The first letter of the caption for table, figure, graph, diagram, picture etc. should be in capital letter and the other words should be in small letter - e.g. Table-1: Demographic Data of Delhi, Figure-1: Pictorial Presentation of Population etc.

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Declaration

As part of the submission process, the student and mentor needs to declare that they are submitting original work for first publication in the Journal and that their work is not being considered for publication elsewhere and has not already been published elsewhere. Again, the paper should not have been presented in any seminar or conference. The scanned copy of duly signed declaration by the students and their respective mentors has to be emailed along with the research paper.

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The student(s) remain the whole and sole author of their respective research papers published in 'Strides – A Students' Journal of Shri Ram College of Commerce' and hold its copyright. Also, the 'author' is wholly and solely responsible for plagiarism caught after publication (if any). The Editor, Referees, Mentors, COPE, SRCC, Printer, Publisher and Printing Press shall not be responsible for any plagiarism.

AWARD

The authors of best three papers from every Issue are awarded – First Prize, Second Prize and Third Prize on the SRCC Annual Day.

Principal's Message

The mission statement of the college signifying the existence and its road map to the achievement of its vision, reads as:

"To achieve and sustain excellence in teaching and research, enrich local, national and international communities through our research, improve skills of alumni, and to publish academic and educational resources"

To achieve and promote excellence in publications and applied research, the college has taken the initiative to launch a new journal exclusively to publish students' research papers and articles. It will be an add-on to the enriched catalogue of college publications and academic literature.

The Journal has provided an opportunity to the students of our college to focus on research. Since the students were not opened to the research methodologies at the undergraduate level, they were mentored by experienced faculty of our college. Simultaneously, their articles were also reviewed by the referees and tested for plagiarism before publication. After reporting all the suggestions recommended by the referees, the articles were revised and then finally published. The college had successfully released the foundation issue of the Journal **"Strides – A Students' Journal of Shri Ram College of Commerce, Volume 1, Issue 1, 2016-17"** on the occasion of 91st Annual Day of the College held on 13th April, 2017. The Journal was released by Shri Prakash Javadekar, Honb'le Union Minister of Human Resource Development, Government of India.

I would like to congratulate the students whose papers are published in this issue of the journal and simultaneously encourage all the students to contribute their research papers and articles for the successive issues of the Journal.

Best wishes for their future endeavors.

Prof. Simrit Kaur
Principal

Editor's Message

Shri Ram College of Commerce is well known for its academic excellence and dedicated approach towards dissemination of knowledge in the academic world. The College appreciates the role of research in education and is committed to developing an inclination towards research in both faculty and students. In this pursuit, the College has taken the initiative to launch a new Journal named 'Strides – A Students' Journal of Shri Ram College of Commerce' to encourage students to pursue research under the guidance of the faculty of Shri Ram College of Commerce.

It is a bi-annual Journal launched exclusively to publish academic research papers and articles by the students on contemporary topics and issues in the area of commerce, economics, management, governance, policies etc.

In order to maintain high standards of publication, COPE (Committee on Publication Ethics) has been constituted. The COPE shall be the apex authority to take all decisions related to publication of research papers and articles in Strides. The decision of COPE shall be final and binding.

To maintain high *academic standards, academic ethics* and *academic integrity*, a rigorous process of double blind review of research papers is followed along with screening of plagiarism of each manuscript received by the COPE for publication. The research work published in Strides is original and not published or presented at any other public forum.

The foundation issue of the Journal **"Strides – A Students' Journal of Shri Ram College of Commerce, Volume 1, Issue 1, 2016-17"** was successfully released on 91st Annual Day of SRCC held on 13th April, 2017 by Shri Prakash Javadekar, Honb'le Union Minister of Human Resource Development, Government of India.

The successive Issues of 'Strides – A Students' Journal of Shri Ram College of Commerce' shall be bi-annually released.

I congratulate all the students whose research papers are published in this Issue of Strides and express my sincere thanks to their mentors and referees.

Dr. Santosh Kumari
Editor

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STRIDES – A STUDENTS' JOURNAL OF SHRI RAM COLLEGE OF COMMERCE

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RESEARCH PAPERS

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Bilateral Causality between Economic Growth and Economic Development

Abstract

In the present world, when conventional measures of economic growth and overall prosperity of a country (National Income) are taking a backseat and overall economic development measures (like HDI) are taking the lead, this paper aims to test a causality (if it exists) between the two.

The paper also goes ahead to put forward possible causes of existence of a causality in a particular phase of a country's development.

INTRODUCTION

'Development'- a word so complicated, seers fail to define. Is it confined to just income or production in a country? Or is it measured by utmost happiness (as described by the Gross National Happiness of Bhutan.)? Or is it comprehensively structured under the Human Development Index Scores given by UNDP? Well, maybe- it is all in the mind!

Heated debates have always surrounded the idea of development. People have their own versions of what should be included as a country's (or for that matter- an individual's) measure for development.

There may be high economic growth (generally measured by a country's GDP) but this can easily be accompanied with huge inequality which is generally accompanied by poverty, malnourishment, high mortality rates – proven companions of high crime rates. This may eventually lead to forming an overall low level of standards of living for the poorer section of the society.

Then we have countries like Bhutan, their idea of an ideal development revolves around happiness of their citizens. Bhutan replaces the widely followed Gross Domestic Product by Gross National Happiness.

With all this and many more debates around, one widely accepted measure of development is the Human Development Index, created by Mahbub-ul-Haq for UNDP. Haq goes a step (in fact three!) ahead and brings in life expectancy, education and per capita income, thus promising a measure for a decent living standard. Health and education- the two tonics for human capital formation, being given utmost priority.

Staunch proponents of the HDI theory clearly reject the GDP growth rate claimed victories of the fast developing countries stating that the high levels of inequality make things worse for the individual citizen. They cite the helpless education and health conditions in these countries as examples. Critiques however, argue that high GDP growth eventually translates into high Government expenditure on important building blocks like health and education thus eventually feeding into the overall 'development'.

The researchers aim to study the bilateral causal relationship between economic growth and economic development making use of both empirics and theory. Granger causality test has been used to study the degree of causality between the two variables in three categories of countries: developed, developing and turmoil-ridden.

THEORY

Economic growth is the increase in the value of goods and services produced in an economy and is conventionally measured by a country's national income.

On the other hand, economic development reaches far beyond growth encompassing structural changes and quality shifts. Growth must therefore be seen as a quantitative change, while development includes both quantitative change and qualitative, measured using Human Development Index which is a summary measure of average achievements in key dimensions of human development: a long and healthy life, being knowledgeable and having a decent standard of living.

In other words, economic growth is a necessary but not the sufficient condition for economic development.

It has been established by various studies that there is a correlation between these two variables but we want to study if a causality exists between the two, i.e. if the value of one variable changes with a change in the other variable, which can be studied through Granger Causality Test in case of Panel Data. According to Granger causality," if a variable X "Granger-causes" another variable Y, then past values of X should contain information that helps predict Y above and beyond the information contained in past values of Y alone." Its mathematical formulation is based on linear regression modelling of stochastic processes.

$X_t = \beta_0 \sum X_{t-k} + U_1$ (restricted regression)

$X_t = \beta_0 \sum X_{t-k} + \beta_1 \sum Y_{t-k} + U_2$ (unrestricted regression)

$Y_t = \alpha_1 \sum Y_{t-k} + U_3$ (restricted regression)

$Y_t = \alpha_0 \sum X_{t-k} + \alpha_1 \sum Y_{t-k} + U_2$ (unrestricted regression)

where k is the number of lags taken.

Test 1- Causation of X on Y

H_0: X does not granger-cause Y

H_1: X granger-causes Y

Test 2- Causation of Y on X

H_0: Y does not granger-cause X

H_1: Y granger-causes X

Variable for testing: F-variable of the system of equations: $F = \frac{RSSUR-RSSR\backslash m}{RSSR/n-k}$

where m is the number of lagged values of the variable other than the dependent variable.

Testing procedure: If the F value is significant then the lagged values of the added variable have an impact on the dependent variable and hence proving that the additional variable granger-causes the dependent variable. The null hypothesis in this case is rejected.

LITERATURE REVIEW

A study of the interrelationship between economic growth and development is essential to develop a holistic understanding of the economics of growth. Understanding the economics of growth in its entirety helps us in understanding the dynamics of sustained growth.

A superficial understanding of income and growth is to view these in the context of factor endowments and productivity of an economy. Both factor endowments and productivity are, however, factors that are endogenous to an economy and are therefore in turn based on a deeper core of interrelated variables which give rise to them. The basic variables that help explain factor endowments and productivity of an economy and, thus, lie at the heart of the economics of growth are: trade, institutions and geography. " Trade, here, refers to the market size and integration as well as the scope of international trade. Institutions refer to the quality of formal and informal socio-political arrangements. Geography relates to the advantages and disadvantages posed by a country's physical location as also the environmental and climatic conditions" (In Search of Prosperity, University Press, Princeton, Rodrik Dani). While trade and institutions are semi-endogenous factors to an economy, geography is an exclusively exogenous factor. It is these three factors mentioned above and the dynamic space in which they interact, that forms the bridge linking economic growth and development in the bilateral relationship which the researchers wish to empirically explore in this paper.

Amartya Sen describes economic development as " the process of expanding the real freedoms that people enjoy. It requires the removal of major sources of 'unfreedom': poverty as well as tyranny, poor economic opportunities, social deprivation, neglect of public facilities, intolerance or over activity of repressive states." In this light then institutions become the most important of the three factors discussed above for linking economic growth with economic development and for ensuring sustained growth as has been empirically proved by Rodrik, Subramnium and Trebbi in their paper titled 'Institutions Rule: The primacy of institutions over geography and integration in economic development'. Paul Romer talks about economic growth and development in terms of idea and object gaps in his paper 'Idea gaps and object gaps in economic development'. Here object gap refers to the lack of physical objects like factories and roads that go directly into generating economic growth. Idea gap refers to lack of knowledge required for creating value in a modern economy which is in the researchers' opinions, just an another way of talking about the expansion of real freedoms and the important rule of institutions.

"Another important aspect of study in this space that defines the interrelationship between economic growth and development are the related concepts of human and social capital. Human capital comprises different forms of formal education and on-the-job experience while social capital comprises different forms of social networks and social norms. A study of both these concepts draws our attention to those institutions necessary for serving economic life that might otherwise go unnoticed" (Dasgupta, 2000).

In empirically testing the bilateral relationship between economic growth and development in this paper, it has been the researchers' motive to differentiate between the degrees of this interrelationship in developed, developing and turmoil-ridden economies respectively as resulting from the tests conducted and explain these differences in terms of the underlying factors explaining these inter-linkages as discussed above.

METHODOLOGY

The researchers have chosen three different sets of countries identified as- developed, developing (both by the IMF list) and countries under continuous turmoil. The main idea is to search for a causality- even if it exists under a particular stage of a country's development (or when the country is under a constant state of turmoil.). 3 developed, 5 developing and 3 countries under constant turmoil are chosen so as to get a rough ratio of the actual composition. A fair representation from all the continents is also kept in mind.

The researchers have taken the growth data in per capita GDP (in thousands) . The reason being the fact that the data for Human development index is measured in per capita terms (per capita income, individual life expectancy and education levels.). The data for economic development (here), is represented by the human development index scores given by UNDP.

Secondary data from years 2001-02 to 2010-11 is collected for the above stated 11 countries. Granger Causality Test has been used to test the bilateral causality between economic growth and economic development for a period of five years for these countries. Two lags for each of the variables are taken.

The results for each country and their corresponding F-values are then obtained. Further details and interpretations (of the same) follow the regression results for each country under the 'Observations and Interpretations' section of the paper. The 'Conclusion' section of the paper further comments on the overall generalized picture of the trends- as observed by the researchers.

Table 1: Observations and Inferences

	2001-02		2002-03		2003-04		2004-05		2005-06	
	GDP ('000)	HDI SCORE	GDP ('000)	HDI SCORE	GDP ('000)	HDI SCORE	GDP ('000)	HDI SCORE	GDP ('000)	HDI SCORE
DEVELOPED ECONOMIES										
UK	32.7	0.837	34.4	0.842	35.4	0.846	36.1	0.851	37.5	0.853
USA	46	0.898	46.4	0.899	47.3	0.9	48.6	0.901	50.6	0.904
JAPAN	33.9	0.872	33.9	0.875	34.3	0.879	35.1	0.882	34.47	0.891
DEVELOPING ECONOMIES										
INDIA	2.57	0.47	2.62	0.478	2.78	0.487	2.96	0.495	3.514	0.512
CHINA	3.98	0.597	4.32	0.606	4.72	0.615	5.17	0.624	6.36	0.644
KENYA	2.15	0.448	2.11	0.453	2.11	0.457	2.16	0.462	2.319	0.474
SOUTH AFRICA	9.89	0.613	10.1	0.609	10.3	0.606	10.6	0.602	11.6	0.601
KAZAKHSTAN	9.95	0.657	12.4	0.68	13.5	0.691	14.7	0.703	17.11	0.721
TURMOIL-RIDDEN ECONOMIES										
CENTRAL AFRICAN REPUBLIC	0.839	0.307	0.852	0.308	0.791	0.309	0.824	0.31	0.869	0.316
AFGANISTAN	0.972	0.23	1.06	0.274	1.1	0.296	1.06	0.318	1.173	0.354
SYRIA	5.23	0.591	5.47	0.598	5.34	0.606	5.55	0.613	5.888	0.624

2006-07		2007-08		2008-09		2009-10		2010-11	
GDP('000)	HDI SCORE	GDP('000)	HDI SCORE	GDP('000)	HDI SCORE	GDP('000)	HDI SCORE	GDP('000)	HDI SCORE
38.16	0.856	37.74	0.86	35.84	0.86	36.2	0.861	36.5	0.863
51.01	0.905	50.38	0.907	48.56	0.906	49.37	0.908	49.8	0.91
35.18	0.894	34.8	0.896	32.88	0.895	35.8	0.898	35.8	0.901
3.806	0.523	3.901	0.527	4.177	0.535	4.41	0.541	4.64	0.547
7.225	0.656	7.88	0.665	8.565	0.674	9.53	0.681	10.4	0.687
2.416	0.486	2.358	0.493	2.371	0.499	2.503	0.504	2.56	0.509
12.05	0.604	12.26	0.608	11.9	0.61	12.09	0.6145	12.2	0.619
18.42	0.727	18.8	0.729	18.53	0.733	19.6	0.739	21.3	0.745
0.892	0.323	0.894	0.327	0.892	0.334	0.901	0.3385	0.913	0.343
1.298	0.363	1.311	0.37	1.548	0.387	1.637	0.3925	1.66	0.398
6.094	0.628	6.246	0.629	6.497	0.63	6.603	0.631	6.36	0.632

The idea of this paper is to track down a causality (if it exists) between the general idea of economic growth (as measured by a country's national income. GDP is the variable used in this paper as the data is easily and widely available across countries and time period.) and the general idea of economic development (as measured by the HDI).

According to Granger causality," if a variable X "Granger-causes" another variable Y, then past values of X should contain information that help predict Y above and beyond the information contained in past values of Y alone." Its mathematical formulation is based on linear regression modelling of stochastic processes.

$X_t = \beta_0 \sum X_{t-k} + U_1$ **(restricted regression)**

$X_t = \beta_0 \sum X_{t-k} + \beta_1 \sum Y_{t-k} + U_2$ **(unrestricted regression)**

$Y_t = \alpha_1 \sum Y_{t-k} + U_3$ **(restricted regression)**

$Y_t = \alpha_0 \sum X_{t-k} + \alpha_1 \sum Y_{t-k} + U_2$ **(unrestricted regression)**

where k is the number of lags taken.

Test 1- Causation of X on Y

H_0: X does not granger-cause Y

H_1: X granger-causes Y

Test 2- Causation of Y on X

H_0: Y does not granger-cause X

H_1: Y granger-causes X

Variable for testing: F-variable of the system of equations: $F = \frac{RSSUR-RSSR\backslash m}{RSSR/n-k}$

where m is the number of lagged values of the variable other than the dependent variable.

Testing procedure: If the F value is significant then the lagged values of the added variable have an impact on the dependent variable and hence proving that the

additional variable granger-causes the dependent variable. The null hypothesis in this case is rejected.

In the study that follows,
X stands for GDP and Y stands for HDI scores

Table 2

Sample: 2004 - 2011				No. of obs = 8			
Log likelihood = 39.86424				AIC = -7.46606			
FPE = 3.02e-06				HQIC = -8.135811			
Det(Sigma_ml) = 1.61e-07				SBIC = -7.366758			
Equation		Parms	RMSE	R-sq	F	P > F	
GDP		5	.906084	0.6446	1.36014	0.4168	
HDI		5	.001203	0.9819	40.60032	0.0060	
		Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
GDP	GDP						
	L1.	.9785074	.4390806	2.23	0.112	-.4188429	2.375858
	L2.	-.4383292	.5183148	-0.85	0.460	-2.087838	1.21118
	HDI						
	L1.	-297.8389	370.1611	-0.80	0.480	-1475.857	880.1789
	L2.	253.5958	282.6213	0.90	0.436	-645.8312	1153.023
	_cons	55.39886	92.03887	0.60	0.590	-237.5099	348.3076
HDI	GDP						
	L1.	.000858	.0005831	1.47	0.238	-.0009978	.0027137
	L2.	-.0005466	.0006883	-0.79	0.485	-.0027373	.001644
	HDI						
	L1.	.2265119	.4915929	0.46	0.676	-1.337956	1.79098
	L2.	.5116444	.3753355	1.36	0.266	-.6828407	1.70613
	_cons	.2161665	.1222323	1.77	0.175	-.1728314	.6051643

United Kingdom (Developed)
H_o: Does not Granger-cause H_A: Does Granger-cause
HDI to GDP
F-critical: 5.79
F-cal: 1.36014

Conclusion: The null is not rejected, hence, ***HDI does not granger – cause GDP.***
GDP to HDI
F-critical: 5.79
F-cal: 40.60032

Conclusion: The null is rejected, hence, ***GDP granger-causes HDI***.
Thus, unilateral causality (GDP to HDI) exists.

Table 3

Sample: 2004 - 2011				No. of obs	= 8	
Log likelihood = 50.16482				AIC	= -10.04121	
FPE = 2.30e-07				HQIC	= -10.71096	
Det(Sigma_ml) = 1.23e-08				SBIC	= -9.941903	
Equation	Parms	RMSE	R-sq	F	P > F	
GDP	5	.575322	0.9088	7.472895	0.0651	
HDI	5	.000523	0.9898	73.12232	0.0025	
	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
GDP						
GDP						
L1.	1.880116	.3878953	4.85	0.017	.6456605	3.114573
L2.	-1.329928	.3826978	-3.48	0.040	-2.547843	-.112013
HDI						
L1.	-922.3936	323.4421	-2.85	0.065	-1951.731	106.9435
L2.	1082.256	348.9177	3.10	0.053	-28.15626	2192.667
_cons	-121.2045	109.3259	-1.11	0.348	-469.1283	226.7192
HDI						
GDP						
L1.	.0017015	.0003527	4.82	0.017	.000579	.002824
L2.	-.0017754	.000348	-5.10	0.015	-.0028829	-.000668
HDI						
L1.	-.4736893	.2941183	-1.61	0.206	-1.409705	.4623266
L2.	1.758862	.3172843	5.54	0.012	.749122	2.768602
_cons	-.2512733	.0994142	-2.53	0.086	-.5676537	.0651071

United States of America (Developed)

H_O: Does not Granger-cause H_A: Does Granger-cause

HDI to GDP

F-critical: 5.79

F-cal: 7.472895

Conclusion: The null is rejected, hence, ***HDI granger – causes GDP***.

GDP to HDI

F-critical: 5.79

F-cal: 73.12232

Conclusion: The null is rejected, hence, ***GDP granger-causes HDI***.

Bilateral causality exists.

Table 4

```
Sample:  2004 - 2011                              No. of obs      =         8
Log likelihood =  35.44423                        AIC             = -6.361058
FPE            =  9.13e-06                        HQIC            = -7.030809
Det(Sigma_ml)  =  4.86e-07                        SBIC            = -6.261756

Equation           Parms      RMSE     R-sq        F       P > F
```

Equation	Parms	RMSE	R-sq	F	P > F
GDP	5	.827421	0.6729	1.54289	0.3759
HDI	5	.003468	0.9133	7.898078	0.0605

		Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
GDP							
	GDP						
	L1.	-.9404183	.4855535	-1.94	0.148	-2.485666	.6048295
	L2.	-1.22729	.5246426	-2.34	0.101	-2.896937	.4423573
	HDI						
	L1.	249.1187	157.9646	1.58	0.213	-253.5951	751.8324
	L2.	-180.4428	136.0997	-1.33	0.277	-613.5729	252.6874
	_cons	47.78006	34.20076	1.40	0.257	-61.06203	156.6222
HDI							
	GDP						
	L1.	.0005823	.002035	0.29	0.793	-.005894	.0070587
	L2.	-.0003319	.0021988	-0.15	0.890	-.0073296	.0066658
	HDI						
	L1.	.7398767	.6620486	1.12	0.345	-1.367058	2.846811
	L2.	.082132	.5704105	0.14	0.895	-1.733169	1.897433
	_cons	.1529737	.1433395	1.07	0.364	-.3031967	.6091441

Japan (Developed)

H_O: Does not Granger-cause $\quad$ H_A: Does Granger-cause

HDI to GDP
F-critical: 5.79
F-cal: 1.54289

Conclusion: The null is not rejected, hence, ***HDI does not granger – cause GDP***.
GDP to HDI
F-critical: 5.79
F-cal: 7.898078

Conclusion: The null is rejected, hence, ***GDP granger-causes HDI***.
Unilateral causality (GDP to HDI exists.)

Table 5

Sample: 2004 - 2011				No. of obs	= 8	
Log likelihood = 63.97243				AIC	= -13.49311	
FPE = 7.29e-09				HQIC	= -14.16286	
Det(Sigma_ml) = 3.88e-10				SBIC	= -13.39381	
Equation	Parms	RMSE	R-sq	F	P > F	
GDP	5	.102656	0.9896	71.65935	0.0026	
HDI	5	.002853	0.9924	98.28885	0.0016	
	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
GDP						
GDP						
L1.	3.456194	1.777163	1.94	0.147	-2.19953	9.111919
L2.	-3.287199	1.356738	-2.42	0.094	-7.604945	1.030547
HDI						
L1.	-115.1004	66.95576	-1.72	0.184	-328.1835	97.98267
L2.	127.0463	51.88813	2.45	0.092	-38.08492	292.1774
_cons	-2.569308	10.06407	-0.26	0.815	-34.59766	29.45904
HDI						
GDP						
L1.	.0656172	.0493934	1.33	0.276	-.0915745	.2228089
L2.	-.0826677	.0377083	-2.19	0.116	-.2026725	.037337
HDI						
L1.	-1.945825	1.860927	-1.05	0.373	-7.868124	3.976474
L2.	3.068561	1.442146	2.13	0.123	-1.520992	7.658114
_cons	.0140081	.2797144	0.05	0.963	-.8761679	.9041841

India (Developing)

H_O: Does not Granger-cause H_A: Does Granger-cause

HDI to GDP

F-critical: 5.79

F-cal: 71.69535

Conclusion: The null is rejected, hence, ***HDI granger-causes GDP***.

GDP to HDI

F-critical: 5.79

F-cal: 98.28885

Conclusion: The null is rejected, hence, ***GDP granger-causes HDI***.

Bilateral causality exists.

Table 6

Sample: 2004 - 2011			No. of obs	= 8		
Log likelihood = 45.968			AIC	= -8.992		
FPE = 6.57e-07			HQIC	= -9.661751		
Det(Sigma_ml) = 3.50e-08			SBIC	= -8.892698		
Equation	Parms	RMSE	R-sq	F	P > F	
GDP	5	.344962	0.9874	58.78678	0.0035	
HDI	5	.004486	0.9875	59.37354	0.0035	

	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
GDP						
GDP						
L1.	1.148468	1.418812	0.81	0.477	-3.366825	5.663761
L2.	-.8322986	2.104574	-0.40	0.719	-7.529992	5.865395
HDI						
L1.	-16.3331	103.1697	-0.16	0.884	-344.6651	311.9989
L2.	59.73421	144.2583	0.41	0.707	-399.3602	518.8286
_cons	-22.61484	33.56693	-0.67	0.549	-129.4398	84.2101
HDI						
GDP						
L1.	.0049863	.0184502	0.27	0.804	-.0537305	.0637031
L2.	-.0249779	.0273679	-0.91	0.429	-.1120747	.0621188
HDI						
L1.	.2682836	1.341617	0.20	0.854	-4.001342	4.537909
L2.	1.80828	1.875934	0.96	0.406	-4.161778	7.778337
_cons	-.5489036	.4365039	-1.26	0.298	-1.938054	.8402466

China (Developing)

H_O: Does not Granger-cause H_A: Does Granger-cause

HDI to GDP
F-critical: 5.79
F-cal: 58.78678

Conclusion: The null is rejected, hence, ***HDI granger-causes GDP.***
GDP to HDI
F-critical: 5.79
F-cal: 59.37354

Conclusion: The null is rejected, hence, ***GDP granger-causes HDI.***
Bilateral causality exists.

Table 7

Sample: 2004 - 2011					No. of obs	= 8		
Log likelihood = 61.95816					AIC	= -12.98954		
FPE = 1.21e-08					HQIC	= -13.65929		
Det(Sigma_ml) = 6.43e-10					SBIC	= -12.89024		
Equation		Parms	RMSE	R-sq	F	P > F		
GDP		5	.039647	0.9718	25.8156	0.0117		
HDI		5	.003033	0.9895	70.70384	0.0027		
		Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]		
GDP	GDP							
	L1.	-.0818732	.4712287	-0.17	0.873	-1.581533	1.417787	
	L2.	-1.264667	.3190575	-3.96	0.029	-2.280051	-.2492836	
	HDI							
	L1.	17.86241	10.08216	1.77	0.175	-14.22352	49.94834	
	L2.	-2.732519	7.052025	-0.39	0.724	-25.17521	19.71017	
	_cons	-1.876839	.6705959	-2.80	0.068	-4.010975	.2572963	
HDI	GDP							
	L1.	-.0156489	.0360545	-0.43	0.694	-.1303904	.0990926	
	L2.	-.0380808	.0244116	-1.56	0.217	-.1157695	.0396079	
	HDI							
	L1.	1.924784	.771403	2.50	0.088	-.5301646	4.379733	
	L2.	-.6393768	.5395623	-1.18	0.321	-2.356505	1.077751	
	_cons	-.012501	.0513084	-0.24	0.823	-.1757873	.1507853	

Kenya (Developing)

H_0: Does not Granger-cause H_A: Does Granger-cause

HDI to GDP

F-critical: 5.79

F-cal: 25.8156

Conclusion: The null is rejected, hence, ***HDI granger-causes GDP***.

GDP to HDI

F-critical: 5.79

F-cal: 70.70384

Conclusion: The null is rejected, hence, ***GDP granger-causes HDI.***

Bilateral causality exists.

Table 8

Sample: 2004 - 2011					No. of obs	= 8		
Log likelihood = 47.24167					AIC	= -9.310418		
FPE = 4.78e-07					HQIC	= -9.980169		
Det(Sigma_ml) = 2.55e-08					SBIC	= -9.211116		
Equation		Parms	RMSE	R-sq	F	P > F		
GDP		5	.368504	0.8985	6.638352	0.0759		
HDI		5	.00154	0.9739	27.94769	0.0104		
		Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]		
GDP	GDP							
	L1.	1.39969	.9238265	1.52	0.227	-1.540338	4.339718	
	L2.	.0888599	.5017503	0.18	0.871	-1.507933	1.685653	
	HDI							
	L1.	-187.4011	166.4182	-1.13	0.342	-717.018	342.2158	
	L2.	183.6571	209.6167	0.88	0.445	-483.4367	850.7509	
	_cons	-2.957873	45.98518	-0.06	0.953	-149.3032	143.3875	
HDI	GDP							
	L1.	.0081292	.0038606	2.11	0.126	-.0041569	.0204153	
	L2.	-.0002528	.0020968	-0.12	0.912	-.0069257	.00642	
	HDI							
	L1.	.0843482	.695448	0.12	0.911	-2.128878	2.297574	
	L2.	1.193288	.875971	1.36	0.266	-1.594443	3.981018	
	_cons	-.2565639	.1921683	-1.34	0.274	-.8681293	.3550015	

South Africa (Developing)

H_o: Does not Granger-cause H_A: Does Granger-cause

HDI to GDP

F-critical: 5.79

F-cal: 6.638352

Conclusion: The null is rejected, hence, ***HDI granger-causes GDP***.

GDP to HDI

F-critical: 5.79

F-cal: 27.94769

Conclusion: The null is rejected, hence, GDP ***granger-causes HDI.***

Bilateral causality exists.

Table 9

Sample: 2004 - 2011				No. of obs = 8		
Log likelihood = 32.67333				AIC = -5.668333		
FPE = .0000182				HQIC = -6.338085		
Det(Sigma_ml) = 9.72e-07				SBIC = -5.569031		
Equation	Parms	RMSE	R-sq	F	P > F	
GDP	5	.561247	0.9794	35.72571	0.0073	
HDI	5	.008044	0.9151	8.082682	0.0587	
	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
GDP						
GDP						
L1.	-.4196027	.5885316	-0.71	0.527	-2.292573	1.453367
L2.	-.2639674	.3490348	-0.76	0.504	-1.374752	.8468169
HDI						
L1.	137.4944	46.81351	2.94	0.061	-11.48711	286.4759
L2.	62.64367	59.83788	1.05	0.372	-127.7872	253.0745
_cons	-113.5355	43.91014	-2.59	0.081	-253.2771	26.20621
HDI						
GDP						
L1.	-.0059056	.0084348	-0.70	0.534	-.0327491	.0209378
L2.	.0017068	.0050024	0.34	0.755	-.014213	.0176266
HDI						
L1.	.8649017	.6709323	1.29	0.288	-1.270304	3.000108
L2.	.3692959	.8575977	0.43	0.696	-2.359963	3.098555
_cons	-.083499	.6293211	-0.13	0.903	-2.08628	1.919282

Kazakhastan (Developing)

H_o: Does not Granger-cause H_A: Does Granger-cause

HDI to GDP

F-critical: 5.79

F-cal: 35.72571

Conclusion: The null is rejected, hence, ***HDI granger-causes GDP.***

GDP to HDI

F-critical: 5.79

F-cal: 8.082682

Conclusion: The null is rejected, hence, GDP ***granger-causes HDI.***

Bilateral causality exists

Table 10

Sample: 2004 - 2011				No. of obs	= 8	
Log likelihood = 34.74022				AIC	= -6.185054	
FPE = .0000109				HQIC	= -6.854806	
Det(Sigma_ml) = 5.80e-07				SBIC	= -6.085752	
Equation	Parms	RMSE	R-sq	F	P > F	
GDP	5	.031185	0.7524	2.278597	0.2623	
HDI	5	.071238	0.9317	10.22699	0.0428	

	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
GDP						
GDP						
L1.	-1.008674	.6967499	-1.45	0.244	-3.226043	1.208695
L2.	-1.449746	.6512755	-2.23	0.112	-3.522395	.6229037
HDI						
L1.	.2381443	.1188358	2.00	0.139	-.1400441	.6163328
L2.	.2061361	.1266911	1.63	0.202	-.1970515	.6093237
_cons	2.729351	.8263014	3.30	0.046	.0996909	5.359011
HDI						
GDP						
L1.	-2.066077	1.591616	-1.30	0.285	-7.131308	2.999154
L2.	-7.629069	1.487736	-5.13	0.014	-12.36371	-2.894428
HDI						
L1.	.7720247	.2714616	2.84	0.065	-.0918874	1.635937
L2.	.9389187	.2894059	3.24	0.048	.0178999	1.859937
_cons	7.92533	1.887556	4.20	0.025	1.918286	13.93237

Central African Republic (Turmoil)
H_O: Does not Granger-cause H_A: Does Granger-cause
HDI to GDP
F-critical: 5.79
F-cal: 2.278597

Conclusion: The null is not rejected, hence, ***HDI does not granger-cause GDP.***
GDP to HDI
F-critical: 5.79
F-cal: 10.22699

Conclusion: The null is rejected, hence, ***GDP granger-causes HDI.***
Unilateral causality (GDP to HDI) exists.

Table 11

Sample: 2004 - 2011				No. of obs	= 8		
Log likelihood = 44.73417				AIC	= -8.683542		
FPE = 8.95e-07				HQIC	= -9.353294		
Det(Sigma_ml) = 4.77e-08				SBIC	= -8.58424		
Equation	Parms	RMSE	R-sq	F	P > F		
GDP	5	.088515	0.9412	12.00718	0.0344		
HDI	5	.007103	0.9836	45.00159	0.0052		
		Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
GDP	GDP						
	L1.	.1830664	.5341464	0.34	0.754	-1.516826	1.882959
	L2.	.6030405	.6509148	0.93	0.423	-1.468461	2.674542
	HDI						
	L1.	6.958039	5.539151	1.26	0.298	-10.67001	24.58609
	L2.	-3.942224	4.633559	-0.85	0.457	-18.68828	10.80383
	_cons	-.7209652	.5814257	-1.24	0.303	-2.571321	1.129391
HDI	GDP						
	L1.	-.0790038	.0428651	-1.84	0.163	-.2154198	.0574122
	L2.	.0742584	.0522358	1.42	0.250	-.0919792	.240496
	HDI						
	L1.	.9008691	.4445158	2.03	0.136	-.5137785	2.315517
	L2.	.0006609	.3718421	0.00	0.999	-1.182707	1.184029
	_cons	.0616333	.0466593	1.32	0.278	-.0868574	.210124

Afghanistan (Turmoil)

H_O: Does not Granger-cause H_A: Does Granger-cause

HDI to GDP

F-critical: 5.79

F-cal: 12.00718

Conclusion: The null is rejected, hence, ***HDI granger-causes GDP.***

GDP to HDI

F-critical: 5.79

F-cal: 45.00159

Conclusion: The null is rejected, hence, ***GDP granger-causes HDI.***

Bilateral causality exists.

Table 12

Sample: 2004 - 2011			No. of obs	=	8
Log likelihood =	49.49013		AIC	=	-9.872533
FPE =	2.73e-07		HQIC	=	-10.54228
Det(Sigma_ml) =	1.45e-08		SBIC	=	-9.773231

Equation	Parms	RMSE	R-sq	F	P > F
GDP	5	.11873	0.9702	24.40552	0.0126
HDI	5	.002768	0.9638	19.96934	0.0168

		Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
GDP	GDP						
	L1.	.1329161	.3941221	0.34	0.758	-1.121356	1.387189
	L2.	-.3794606	.388953	-0.98	0.401	-1.617283	.8583615
	HDI						
	L1.	-2.977416	22.07767	-0.13	0.901	-73.23841	67.28358
	L2.	37.98479	24.58702	1.54	0.220	-40.26207	116.2317
	_cons	-14.0335	4.141639	-3.39	0.043	-27.21404	-.8529527
HDI	GDP						
	L1.	-.0017137	.0091875	-0.19	0.864	-.0309523	.0275249
	L2.	-.0048308	.009067	-0.53	0.631	-.0336859	.0240244
	HDI						
	L1.	.7944023	.5146577	1.54	0.220	-.8434681	2.432273
	L2.	.1287774	.5731536	0.22	0.837	-1.695253	1.952808
	_cons	.0906956	.0965467	0.94	0.417	-.2165592	.3979503

Syria (Turmoil)

H_o: Does not Granger-cause H_A: Does Granger-cause

HDI to GDP

F-critical: 5.79

F-cal: 24.40552

Conclusion: The null is rejected, hence, ***HDI granger-causes GDP.***

GDP to HDI

F-critical: 5.79

F-cal: 19.96934

Conclusion: The null is rejected, hence, ***GDP granger-causes HDI.***

Bilateral causality exists

CONCLUSIONS AND CONJECTURES

As is evident from the inferences drawn above, 1 out of 3 countries in the 'developed' category shows bilateral causality (U.S.A). The observation holds true for 2 out of 3 countries under constant turmoil (Afghanistan and Syria). However, 5 out of 5 countries in the developing category show statistically significant bilateral Granger causality. Developing countries thus show a highly tilted trend towards a bilateral causality between economic growth and economic development indicating that **the growth in one feeds into the growth of other.**

The authors thus claim that the synergies between economic growth and development (using trade and institutions) can be best utilized when the countries are in their developing stage vis-a-vis the developed and turmoil ridden stages.

The researchers have also tried to analyze the possible reasons for such causality-

When a country is in its developing stage,

1. Various factors (as pointed out in the literature review) come into action easily and any change in economic growth(as measured by a country's GDP) triggers economic development (as measured by the various factors covered under HDI.) which in turn alleviates economic growth creating a bilateral causal cycle of prosperity. The reason for the same may be the huge unutilized potential and its (the developing country's) openness for development even with a small catalyst.

2. In terms of trade and institutions: Developing countries like India are home to a ready domestic market owing to their fast burgeoning national incomes and high population growth rates. This serves to boost the size of both national markets and the level of imports. These countries are manufacturing hubs of the new world order under the umbrella of globalization and thus serve as massive exportrs.

3. Similarly, developing countries have a lot of potential for institutional improvement. Owing to these factors, it is viable for economic growth to get channelized into economic development via the mediums of trade and institutions.

4. Better trade and institutions, in turn, contribute to increased trade, production and productivity thereby creating a cycle of causality between economic growth (as measured by GDP) and economic development (as measured by HDI).

5. In terms of human and social capital: Institutions like health and education are directly linked to improvements in human and social capital. Such improvements further strengthen the two way causal relationship between economic growth and

development. Improved human and social capital means a more meaningful translation of economic growth into economic development and also a higher potential of the economy to generate income. At the same time, better institutions of health and education (arising out of a holistic economic development) in turn lead to high growth of human capital which is naturally followed by economic growth (due to now improved human resources) thus creating infinite loops of bilateral causality.

6. In terms of idea and object gaps: While improvement in trade and institutions contribute to a lessening of object gaps, the improvement in social and human capital leads to filling of idea gaps. Thus, the narrowing of these two gaps is another reason contributing to the bilateral causality between economic growth and economic development.

The above stated possible causes are drawn from observations of the current world order and examples all around us.

If the trend is to be believed (more rigorous research with a larger and wider data set can provide a clearer idea.), there is no reason for seeing economic growth and economic development as not being complementary to each other. Rather both support each other and as observed by the authors**, growth in one feeds into the growth of the other**.

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STRIDES – A STUDENTS' JOURNAL OF SHRI RAM COLLEGE OF COMMERCE

HISTORY OF THE JOURNAL

The idea to launch this Journal was discussed in December 2016 by the former Officiating Principal, **Dr. R.P. Rustagi** with **Dr. Santosh Kumari**, the Editor of the Journal. Since the idea appealed to **Dr. Santosh Kumari**, she took the initiative to contribute to SRCC by creating this new academic research Journal and took the responsibility for its Creation, Registration, License and ISSN (International Standard Serial Number) etc. along with *Editorship*. Therefore, **Dr. Santosh Kumari, Assistant Professor in the Department of Commerce, Shri Ram College of Commerce** was appointed as the Editor of the Journal vide. Office Order – SRCC/AD-158/2017 dated March 14, 2017. She meticulously worked hard in creating the concept and developing the structure of the Journal. She introduced the concept of COPE (Committee on Publication Ethics) to maintain high academic standards of publication.

On behalf of the college, **Dr. Santosh Kumari** made every effort in seeking License from Deputy Commissioner of Police (Licensing), Delhi to register the Journal at "The Registrar of Newspapers for India, Ministry of Information and Broadcasting, Government of India". The paper work for seeking license started under the former Officiating Principal, **Dr. R.P. Rustagi** on March 27, 2017. The foundation Issue of the Journal **"Strides – A Students' Journal of Shri Ram College of Commerce, Volume 1, Issue 1, 2016-17"** was successfully released on the 91st Annual Day of SRCC held on April 13, 2017 by **Shri Prakash Javadekar, Honb'le Union Minister of Human Resource Development, Government of India.** The title of the Journal got verified and approved by the Registrar of Newspapers for India, Ministry of Information and Broadcasting, Government of India on April 21, 2017. On September 1, 2017, **Prof. Simrit Kaur** joined SRCC as Principal and signed each and every legal document required for further processing and supported **Dr. Santosh Kumari**.

On December 18, 2017, the College got the license **"License No. - DCP / LIC No. F. 2 (S / 37) Press / 2017"** to publish 'Strides – A Students' Journal of Shri Ram College of Commerce'. Due to change of Printing Press, the License got updated on March 09, 2018. On April 26, 2018, the SRCC Staff Council unanimously appointed **Dr. Santosh Kumari** as the **'Editor of Strides'** for the next two academic years.

On April 27, 2018 (The Foundation Day of the College), **Dr. Santosh Kumari** submitted the application for the registration of the Journal. On May 04, 2018, the college received the 'Certificate of Registration' for Strides – A Students' Journal of Shri Ram College of Commerce and got the **Registration No. DELENG/2018/75093** dated May 04, 2018. ***On behalf of SRCC, it was a moment of pride for Dr. Santosh Kumari to receive the 'Certificate of Registration' on May 04, 2018 at the Office of Registrar of Newspapers for India, Ministry of Information and Broadcasting, Government of India (website - www.rni.nic.in).***

On May 07, 2018, **Dr. Santosh Kumari** submitted the application for seeking ISSN (International Standard Serial Number) at "ISSN National Centre – India, National Science Library, NISCAIR (National Institute of Science Communication and Information Resources). Weblink - http://nsl.niscair.res.in/ISSNPROCESS/issn.jsp". Finally, the College received the International Standard Serial Number **"ISSN 2581-4931 (Print)"** on June 01, 2018.

We are proud that this journal is an add-on to the enriched catalogue of SRCC's publications and academic literature.

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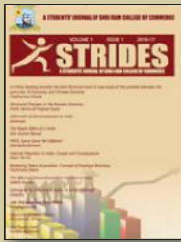

RELEASE OF FOUNDATION ISSUE OF STRIDES

Foundation Issue of the Journal *"Strides - A Students' Journal of Shri Ram College of Commerce, Volume 1, Issue 1, 2016-17"* was successfully released on the 91st Annual Day held on April 13, 2017 by Shri Prakash Javadekar, Honb'le Union Minister of Human Resource Development, Government of India.

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