MEASURING CREATIVE DESTRUCTION: A SOURCE OR INDICATOR OF ECONOMIC GROWTH?

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Introduction

Creative destruction, a term first coined by the economist Joseph Schumpeter, is the idea that the process of economic growth "incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one."[1] Despite the violent connation of the phrase, Schumpeter believed that creative destruction is the driving force of the capitalist economy. He even called it the "essential fact of capitalism."[2] Within the capitalist economy, according to Schumpeter, as new businesses are created they break up or destroy existing businesses. In doing so these new businesses create untapped sources of wealth which fuels new growth within the economy. Of course, for this process to occur a number of economic actors must be present. For Schumpeter, the key actor within the creative destruction process was the entrepreneur as their work directly leads to the creation of new businesses within the economy.[3] Other scholars alongside Schumpeter point towards functioning financial institutions as another necessary piece of creative destruction as their presence enables entrepreneurs to more

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[1] Joseph Schumpeter, *Capitalism, Socialism, and Democracy* (Harper & Brothers, 1942), 82.

[2] Ibid.

[3] Ibid.

efficiently introduce new businesses.[4] Both of these actors, entrepreneurs and financial institutions, were prevalent within economies such as those of the United States and western Europe that Schumpeter was observing when he wrote his theory on creative destruction.

Today, the economies described by Schumpeter are the same ones that benefit the most from global economic growth. The richest 10% of countries, many of which are the same industrialized nations examined by Schumpeter, have GDP per capita values five times that of the world's average. The poorest 40% of countries, on the other hand, all fall well below the world's average GDP per capita.[5] Unlike the rich countries analyzed by Schumpeter, these poorer countries may not have the necessary actors for creative destruction to properly occur. This could be a possible explanation for why such a drastic difference in GDP per capita still exists between rich and poor nations. Schumpeter, himself said, creative destruction was a necessary part of economic growth, yet most poor nations do not appear to possess the economic actors needed for creative destruction to best occur. Could this be what is limiting their ability to grow? This paper will look to see how the presence of creative destruction affects GNI per capita levels around the world in order to see if a lack of creative destruction is a contributing reason for the slow economic growth that plagues much of the undeveloped world.

Previous Research

To explore if a lack of creative destruction is a possible cause of the slow economic development featured in poor countries around the world, we must see if these countries lack the economic actors required for creative destruction to occur. A functioning financial system is an important part of Schumpeter's theory of creative destruction and has often been suggested as a source of long-term economic growth.[6] However, large amounts of businesses and people

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[4] Robert King and Ross Levine, "Finance and Growth: Schumpeter Might Be Right," *The Quarterly Journal of Economics* 108, no. 3 (1993): 717-737.

[5] "World Development Indicators," World Bank, accessed November 2020, https://data.worldbank.org.

[6] Ross Levine, "Finance and Growth: Theory and Evidence," *Handbook of Economic Growth* 1, no. 12 (2004): 865-934.

in developing countries do not have access to banks or domestic credit.[7] For example, in high income countries domestic credit provided by banks accounts for 81.7% of GDP, while in low income countries it accounts for only 13.4%.[8] The idea that the presence of a strong financial sector may lead to increased economic growth also extends beyond the theory of creative destruction. For instance, Alexander Hamilton thought that the financial sector and more specifically banks, were the best engines for spurring economic development.[9] More recently, Levine, Loayza, and Beck empirically found that increased growth in the financial sector, can lead to increased growth within the entire economy.[10]

While few economists doubt that a relationship exists between economic growth and financial intermediaries, many wonder if financial institutions actually cause this growth or are merely indicators of growth.[11] Hugh Patrick coined the two differing views on this relationship as "demand-following," where a growing economy increases the demand for domestic credit and "supply-leading"[12] where increased financial credit is a driving factor of economic growth.[13] Recent empirical literature tends to side with the supply-leading side of this argument as increases in financial intermediaries have larger effects on growth in developing countries

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[7] Paul Freedman and Reid Click, "Banks That Don't Lend? Unlocking Credit to Spur Growth in Developing Countries," *Development Policy Review* 24, no. 3 (2006): 279–302.

[8] World Bank, "World Development Indicators."

[9] Bray Hammond, *Banks and Politics in America: From the Revolution to the Civil War* (Princeton University Press, 1957), 36.

[10] Ross Levine, Norman Loayza, and Thorsten Beck, "Financial intermediation and growth: Causality and causes," *Journal of Monetary Economics* 46, no. 1 (2000): 31-77.

[11] Levine, Loayza, and Beck, 31-77.

[12] Hugh Patrick, "Financial Development and Economic Growth in Underdeveloped Countries," *Economic Development and Cultural Change* 14, no. 2 (1966): 174-189.

[13] Levin. Loayza, and Beck, 31-77.

than already industrialized countries, suggesting that the increase in growth is caused by the increase of the financial sector.[14]

Of course, the presence of strong financial institutions and available domestic credit does not guarantee that creative destruction will occur. Other political and economic factors also have strong influences over economic growth. For example, past literature suggest that legal institutions play an important role in the effectiveness financial institutions and domestic credit have in increasing growth.[15] A given level of savings must also exist within the economy as financial institutions largely impact growth by making existing wealth more productive.[16] Drawing on the Solow model, other literature states that financial institutions increase the level of technological progress and capital accumulation,[17] both of which further promote economic growth.[18] Finally, circling directly back to Schumpeter, financial institutions are proven to increase investment in innovation and entrepreneurial enterprises.[19] Schumpeter wrote that "the banker… authorizes people in the name of society…to innovate."[20] By increasing innovation and entrepreneurship, financial institutions better enable creative destruction to occur leading to increased economic growth.

Data

This paper will extend on previous literature to attempt to more fully examine the role creative destruction plays in a country's development. There are, of course, a number of ways to empirically explore Schumpeter's concept. This paper will look at the effect

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[14] César Calderón and Lin Liu, "The direction of causality between financial development and economic growth," *Journal of Development Economics* 72, no. 1 (2003): 321-334.

[15] Levine, Loayza, and Beck, 31-77.

[16] Patrick, 174-189.

[17] Robert Solow, "A Contribution to the Theory of Economic Growth," *The Quarterly Journal of Economics* 70, no. 1 (1956): 65-94.

[18] Calderón and Liu, 321-334.

[19] King and Levine, 717-737.

[20] Joseph Schumpeter, *The Theory of Economic Development* (Harvard University Press, 1911), 74.

creative destruction has on economic growth measured in terms of per capita gross national income (GNI). This measurement is preferred to other measures of economic growth for a handful of reasons. First, the design of this research is to see the impact creative destruction has on economic growth. While this can be measured in terms of national GNI, a per capita measurement provides a measure of the average income level of individuals in a country which allows for deeper insight into how economic growth is distributed. Secondly, the process of creative destruction creates new economic growth by destroying former sources of growth. This cycle of destruction and creation should benefit more individuals within the economy as old sources of wealth are being broken up and wealth is being distributed among new actors entering the economy. This should arguably lead to overall increases in per capita GNI. Finally, this paper will also test the theory of creative destruction by examining the effect it has on overall country income level. The World Bank ranks country income level into four different categories based on GNI per capita.[21] It is, therefore, operationally best to use per capita GNI in order that the measurements of growth are consistent across the various tests conducted within this research.

In terms of measuring creative destruction itself, there is no single empirical measurement that captures the entire process. Instead, variables that have been deemed essential actors of the creative destruction process, according to past literature, will be used. One of these key variables is financial intermediaries.[22] In this paper the presence of financial intermediaries will be measured by the percentage of domestic credit provided to the private sector through banks. This captures not only if banks are present and functioning but also if the key actors in creative destruction, businesses, are receiving credit from banks. Private sector businesses are the main proponent of creative destruction. If creative destruction is a cause of economic growth, then per capita GNI should increase as the percentage of domestic credit increases as it promotes the occurrence of creative destruction.

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[21] "The World Bank Atlas method – detailed methodology," World Bank, accessed November 8, 2020, https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups.
[22] Freedman and Click, 279-302.

A measurement of financial intermediaries does not totally encapsulate the process of creative destruction, however. For while the presence of financial institutions is important it must lead to the creation of new business for creative destruction to occur. To measure if new businesses are being introduced into the economy, the number of new businesses registered yearly, and the start-up costs for a new business will be tested. For creative destruction to benefit the economy, as Schumpeter suggests, it must not only increase the number of new businesses but also make it easier for these businesses to enter the economy. As the number of new businesses increases and the cost to start a new business decreases, GNI per capita should increase.

Finally, economic growth has a number of causes outside of creative destruction. In order to account for these causes; capital, savings, labor and technological progress will be controlled. These variables were chosen based on previous literature[23] and theories[24] on economic growth. All data used in the research is from the World Development Indicators dataset provided by The World Bank.[25] The data used in this paper is measured from 217 countries over a span of 11 years from 2007-2018. Full operational definitions for all variables used can be found in Table 1. Descriptive statistics for the tested variables are listed in Table 2. Variables that are logged within the statistical tests are also noted in Table 2.[†]

Table 1: Variable Description

Variable name:	Description:	Variable type:
GNI per capita	Gross national income divided by the midyear population. Measured in current USD according to the Atlas method[‡].	Dependent

[23] Calderón and Liu, 321-333.

[24] Solow, 65-94.

[25] World Bank, *World Development Indicators,* (2020), distributed by World Bank Group, https://data.worldbank.org.
† Measurements for each variable are listed in the variable description section of Table 1. Most variables were measured as a percent of national GDP and should therefore be interpreted as percentages.

Domestic credit provided to private sector by banks	Refers to loans, purchases of nonequity securities, trade credits and other accounts receivable, that establish a claim for repayment. (% of GDP).	Independent
Number of new businesses	Number of new limited liability corporations registered in the calendar year.	Independent
Start-up costs	Cost to register a new business (% of GNI per capita).	Independent
Liquid reserves to asset ratio	Ratio of liquid reserves to asset held by banks (%).	Independent (Instrumental)
Capital	Gross fixed capital accumulation (% of GDP).	Independent (Control)
Savings	Gross domestic savings (% of GDP).	Independent (Control)
Labor	Total number of laborers. Includes people over the age of 15 who are currently employed and people who are unemployed but seeking work as well as first-time job-seekers.	Independent (Control)
Technological progress	Research and development expenditure. R&D covers basic research, applied research, and experimental development. (% of GDP)	Independent (Control)

Descriptions for variables are based on definitions provided by The World Bank.
‡ The Atlas conversion method is a way of calculating per capita GNI taking into consideration "the average of a country's exchange rate for that year and

its exchange rates for the two preceding years, adjusted for the difference between the rate of inflation in the country and international inflation." Local currencies are converted into current U.S. Dollars (World Bank, 2012).

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
GNI per capita (logged)	834	9.36	1.25	5.86	11.56
Domestic credit	834	72.01	48.06	2.47	308.98
New businesses (logged)	834	9.73	1.38	6.33	13.41
Startup costs	834	10.99	19.06	0	178.1
Capital	834	22.81	5.39	6.76	48.41
Savings	834	23.11	13.65	-38.11	60.49
Technological progress	834	1.11	1.02	.01	4.95
Labor (logged)	834	15.42	1.41	12.1	20.01

Methodological Approach

The effect creative destruction has on economic growth will first be tested through an OLS regression estimated based on the following equation:

$$
\begin{aligned}
\ln{(per\ capita\ GNI)_{it}} \\
= \beta_0 + \beta_1 (domestic\ credit)_{it} \\
+ \beta_2 \ln(new\ businesses)_{it} + \beta_3 (startup\ costs)_{it} \\
+ \beta_4 (capital)_{it} + \beta_5 (savings)_{it} + \beta_6 \ln(labor)_{it} \\
+ \beta_7 (technology)_{it} + \theta_i + \mu_t + \varepsilon_{it}
\end{aligned}
$$

where *i* is the country and *t* is the year. This will serve as a benchmark equation for the study as it provides a general estimation on how the process of creative destruction impacts economic growth measured through per capita GNI. As GNI per capita is a continuous variable, an OLS regression is an appropriate method of testing this relationship. In this equation, country and time fixed effects (θ_i and μ_t, respectively) are included to control for inherent variabilities in per capita GNI across countries and time.

Next, the effect of creative destruction will be measured by examining overall country income levels. This will be estimated using an ordered logit approach according to this equation:

$$Income\ level = \beta_0 + \beta_1(domestic\ credit)_{it} + \beta_2 \ln(new\ businesses)_{it}$$
$$+ \beta_3(startup\ costs)_{it} + \beta_4(capital)_{it} + \beta_5(saving)_{it}$$
$$+ \beta_6 \ln(labor)_{it} + \beta_7(technology)_{it} + \mu_t + \varepsilon_{it}$$

Income level is divided into four categories based on GNI per capita such that

$Income\ level_{it} =$
1. If country *i* in year *t* is classified as low income (GNI per capita of \$1,035 or less)
2. If country *i* in year *t* is classified as lower-middle income (GNI per capita between \$1,036 and \$4,045)
3. If country *i* in year *t* is classified as upper-middle income (GNI per capita between (\$4,046 and \$12,535)
4. If country *i* in year *t* is classified as high income (GNI per capita of \$12,536 or more)
5.

These definitions for income level are based on The World Bank's definition[26] as of 2020 and are measured in terms of current U.S. Dollars. Difference in income level are naturally sequenced categories; as income of a country increases that country is categorized in a higher income group. Therefore, an ordered logistic regression is an appropriate means to test this relationship. Only time fixed effects are controlled for in this regression due to the limited sample size.

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[26] World Bank, "The World Bank Atlas method – detailed methodology."

Controlling for both time and country fixed effects results in a loss of degrees of freedom such that the results of the test may be inaccurate.

Finally, the effects of creative destruction on economic growth will be tested using a two-stage least squares approach. Past literature suggests that endogeneity may exist regarding measurements of economic well-being, such as per capita GNI, and the amount of domestic credit provided to the private sector by banks.[27] In this paper, the ratio of bank liquid reserves to bank assets will serve as the instrumental variable. This variable is relevant as the ratio of liquid reserves to bank assets affects the rate at which domestic credit can be lent to the private sector. The more liquid reserves a bank holds the more that bank is able to lend out credit. However, this ratio's relationship to per capita GNI is spurious as there is no clear correlation between the two. This qualifies this variable to be used as an instrument as it is both relevant and exogenous. Within this study the regression is exactly identified as there is one instrumental variable and one endogenous variable. The first stage equation used in this approach is listed below:

$$
\begin{aligned}
Domestic\ credit_{it} &= \delta_0 + \delta_1(liquid\ reserve\ ratio)_{it} \\
&+ \delta_2 \ln(new\ businesses)_{it} + \delta_3(startup\ costs)_{it} \\
&+ \delta_4(capital)_{it} + \delta_5(savings)_{it} + \delta_6 \ln(labor)_{it} \\
&+ \delta_7(technology)_{it} + \theta_i + \mu_t + \varepsilon_{it}
\end{aligned}
$$

The second stage equation used in this approach is as follows:

$$
\begin{aligned}
\ln(per\ capita\ GNI)_{it} &= \gamma_0 + \gamma_1(\widehat{domestic\ credit})_{it} \\
&+ \gamma_2 \ln(new\ businesses)_{it} + \gamma_3(startup\ costs)_{it} \\
&+ y_4(capital)_{it} + y_5(savings_{it}) + y_6 \ln(labor)_{it} \\
&+ y_7(technology)_{it} + \theta_i + \mu_t + \varepsilon_{it}
\end{aligned}
$$

in which domestic credit is now a predicted value calculated from the first stage equation. This predicted value better captures the actual effect domestic credit has on a country's per capita GNI as it mitigates the endogeneity in the estimation equation providing a more accurate

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[27] Freedman and Click, 279-302.

measurement of the relationship between GNI per capita and domestic credit. Since previous literature has been unable to determine if domestic credit causally impacts economic growth or is merely an indicator of growth, not using a predicted value for domestic credit may undermine the results of these tests. If a predicted value for domestic credit is not used, the relationship between per capita GNI and domestic credit may be caused by the effect per capita GNI has on domestic credit. Conclusions drawn based on tests that do not account for this may therefore not be representative of the actual relationship between domestic credit and per capita GNI.

Results

The results of the initial, benchmark OLS regression can be found in Table 3. Within this regression the dependent variable per capita GNI is logged. Per capita GNI is a dollar denoted value and has a large range therefore it is best tested as a logged value. Other logged variables include the number of new businesses and labor, which are noted within the table. New businesses and labor are also logged as they too have large ranges. Since these variables are logged, per capita GNI, the new number of new business and labor are to be interpreted in terms of percent change. All other variables were originally measured as percentages and will, therefore, also be interpreted in terms of percent change. Because the data tested in this regression is panel data, variations caused by inherent differences between countries and differences caused by comparing countries over multiple years are controlled though fixed effects. Dummy variables for each country and for each year were included in the regression. These are noted accordingly within Table 3.

The results of the OLS regression show that both domestic credit and startup costs are statistically significant at the one percent level. Looking specifically at the coefficient for domestic credit, a one percentage point increase in domestic credit leads to 0.187 percent increase in per capita GNI. The other significant variable of note, start-up costs, has an inverse relationship with GNI per capita. Since startup costs are measured as percent of GNI per capita, a one percentage point increase in startup costs decreases per capita GNI by around 0.315 percent. Based on the theory of creative destruction and surrounding literature this negative relationship between start-up

costs and per capita GNI is expected as creative destruction should decrease start-up costs allowing more business to enter the economy.

Table 3: Effects of Creative Destruction Process on Per Capita GNI (logged)

VARIABLES	
Domestic credit	0.00187***
	(0.000323)
New businesses (logged)	0.00748
	(0.0181)
Startup costs	-0.00315***
	(0.000948)
Capital	0.00491**
	(0.00199)
Savings	0.00371**
	(0.00146)
Technological progress	-0.0978***
	(0.0227)
Labor (logged)	0.542***
	(0.134)
Country dummies	Yes
Year dummies	Yes
Constant	-2.874
	(2.339)
Observations	834
R-squared	0.993

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

For the sake of robustness, an ordered logistic regression was conducted in addition to the OLS regression. Within the ordered logistic regression country income level, as defined by The World Bank, was tested as the dependent variable. The results of this test can be found within Table 4. Within the ordered logistic regression only year fixed effects were included in the model. Due to the relatively small sample size of 834 entities, the model was unable to correctly converge when both year and country fixed effects were included.

Since a lack of convergence within the ordered logistic regression jeopardizes the accuracy and validity of the results only time fixed effects were included. To control for any inherent variability that may exist when comparing different countries, entities were clustered by country in this model.

Table 4: Effects of Creative Destruction Process on Country
Income Level (Ordered Logistic Regression)

VARIABLES	
Domestic credit	0.0189***
	(0.00725)
New businesses (logged)	0.225
	(0.263)
Startup costs	-0.0368***
	(0.0129)
Capital	-0.122***
	(0.0267)
Savings	0.0860***
	(0.0159)
Technological progress	3.210***
	(0.570)
Labor (logged)	-0.770***
	(0.245)
Country dummies	No
Year dummies	Yes
Observations	834
Pseudo R-squared	0.543

Robust standard errors in parentheses. Entities clustered by country.
*** p<0.01, ** p<0.05, * p<0.1

The results of the ordered logistic regression support the findings of the original OLS regression regarding all three independent variables. As domestic credit increases a country is more likely to be of a higher income level. Meanwhile, as startup costs rise a country is more likely to fall into a lower income level category. These findings match the relationships found between these two variables and per capita GNI in the OLS regression. Furthermore, the number of new

businesses was not determined to be statistically significant within this test nor was it significant in the initial OLS regression.

Finally, due to the endogeneity that likely exists between per capita GNI and domestic credit, a two-stage least squares regression was run to provide a more robust measurement of their relationship. These results of this regression can be found in Table 5.

Table 5: Two-Stage Least Squares Regression

VARIABLES	(Stage 1)	(Stage 2)
Liquid reserves ratio	-0.1734**	-
	(0.07804)	
Domestic credit	-	0.00474
		(0.00513)
New businesses (logged)	6.9738***	-0.0129
	(2.224)	(0.0341)
Startup costs	0.03596	-0.00255**
	(0.1045)	(0.00120)
Labor (logged)	11.304	0.487**
	(15.622)	(0.202)
Capital	0.40994**	0.00214
	(0.18848)	(0.00312)
Savings	-0.556***	0.00506
	(0.1518)	(0.00389)
Technological progress	26.68***	-0.160
	(3.9459)	(0.146)
Country dummies	Yes	Yes
Year dummies	Yes	Yes
Constant	-246.75	3.024
	(294.47)	(3.178)
Observations	543	543
R-squared	0.933	0.992

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

The instrument used in this regression, liquid reserves ratio, can be found within the Stage 1 regression results. As the variable is significant at the five percent level it is a relevant instrument. When examining the predicted value of domestic credit found in Stage 2, domestic credit no longer has a statistically significant impact on per capita GNI. This finding supports past literature which claims that an endogenous relationship exists between domestic credit and per capita GNI. Startup costs, however, was found to be significant as it was in the OLS and ordered logistic regressions. According to the results of the two-stage least squares regression, a one percentage point increase in startup cost decreases per capita GNI by around 0.255 percent. This value is similar to the -0.315 coefficient for startup costs found within the original OLS regression (see Table 3).

Discussion

From the initial findings, it seemed that this research provided clear evidence for the effects creative destruction has on per capita GNI. Within the benchmark OLS regression, an increase in the amount of domestic credit provided by banks led to an increase in per capita GNI. While an increase in start-up costs led to a decrease in per capita GNI. These are the expected relationships based on Schumpeter's explanation of creative destruction. However, a more robust testing of these variables reveals that these findings are by no means definitive. For instance, when controlling for the endogeneity that likely exists between GNI per capita and domestic credit by testing through a two-squares least squares approach, there is no longer a significant relationship between the amount of domestic credit provided to the private sector and per capita GNI. Introducing the issue that the initial significance found in the OLS regression may be due to endogeneity. The significant results shown in Table 3 and also Table 4 could be occurring due to the effect per capita GNI has on domestic credit. This would suggest that domestic credit is an indicator not a source of economic growth. The results shown in Table 5 are a more accurate representation of the actual effects the creative destruction process has on a country's per capita GNI. This does not necessarily mean, however, that domestic credit has no statistically significant effect on per capita GNI as suggested by the results of this regression (see Table 5). It is likely that instruments that better capture the relationship domestic credit has on per capita GNI are needed to more accurately test this relationship. For example, variables that

describe how a country's banking sector functions and how businesses put to use loans they receive from banks could be used in further research on this subject.

Finally, looking once more at the results of the ordered logit regression, there is little else besides the direction of the relationship that can be interpreted from the coefficients. However, by examining the margins of the regression, one can speak more about the trends regarding creative destruction and income level.

Table 6: Predicted Country Income Level based on Creative Destruction Process

Income-Level:	Likelihood (%)
Low	0.03
Lower-middle	1.27
Upper-middle	28.90
High	69.82

Margins taken from the ordered logistic regression (Table 4) when all variables are held at average values.

The table above lists the likelihood of a country falling within a given income level when holding the independent variables at average values[†]. For instance, the average level of domestic credit provided to the private sector by banks is around 72 percent[‡] of a country's GNI. The results show that countries with average levels of economic factors that theoretically promote creative destruction, such as domestic credit and start-up costs, are extremely likely to be either upper-middle or high income countries. This suggests that the creative destruction process may be a vital source of economic growth as it appears that average levels of creative destruction essentially guarantees that a country is well developed. Countries with average levels of domestic credit, start-up costs, etc. have a 98.72 percent chance of being classified as an upper-middle or high income country (see Table 6). It is important to note that this high likelihood could be in part attributed to endogeneity as discussed earlier. These findings should therefore be tested more robustly in further research. However, these results still suggest that countries with below average

levels of creative destruction are unlikely to be experiencing substantial economic growth.

Conclusion

There is no singular reason why much of the developing world has been unable to sustain economic growth and become developed. This paper suggests creative destruction, a concept coined by Joseph Schumpeter, may be a possible explanation for the drastically differing levels of economic development that exist throughout the world. On one hand, the results of these tests suggest that creative destruction may be an important source of economic growth that is lacking in the developed world. If this is the case, then more resources should be allocated to make creative destruction a more frequent and efficient process within developing countries. This could include strengthening financial intermediaries in order to make it easier for new businesses to access the resources necessary to profit. It could also mean restructuring laws and regulations to make it less costly to start a new business.

On the other hand, these results support previous claims that creative destruction is an outcome, not a source of economic growth. It is clear that higher income countries have a larger supply of the economic factors required for creative destruction to occur. Higher levels of domestic credit and a higher number of new businesses exist far more frequently in the developed world. These actors, which promote creative destruction, may therefore exist largely as a result of economic growth. Creative destruction may simply be the vehicle through which economic growth occurs, not the engine that drives economic growth. This does not mean, however, that the concept of creative destruction should be ignored in regard to the developing world. Although it may not be the source of economic growth the developing world is missing, it is certainly a piece of the puzzle and one that must be considered if the economic problems of the developing world are to be solved.

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† Average values for all independent variables can be found in Table 2.

‡ The measure of average domestic credit used in this paper is similar to averages identified in past literature (See Freedman and Click 2004).

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