

ECONOMIC FREEDOM AND NET BUSINESS FORMATION

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Economic freedom indexes, especially the Fraser Institute/Cato Institute *Economic Freedom of the World* (EFW) index and the Heritage Foundation/Wall Street Journal *Index of Economic Freedom*, are becoming increasingly important as researchers seek to explore the link between economic freedom and prosperity. The consistent finding is that nations with more economic freedom—as indicated by security of property rights, free trade, limited government, low marginal tax rates, and so forth—enjoy higher per capita incomes and general living conditions compared with countries that are less free.¹

In a less aggregated study, Karabegovic et al. (2003) find that differences in economic freedom across U.S. states and Canadian provinces are significantly and positively related to differences in the level and growth of economic activity across states and provinces. Various researchers have used the *Economic Freedom of North America* (EFNA) index, published by the Fraser Institute (Karabegovic, McMahon, and Mitchell 2005), to address questions of income differentials between states, income growth, and entrepreneurship.² Scholars have also used the EFNA index to study migration. Ashby (2007), not surprisingly, finds that people tend to move from less free to more free areas.

In this article, we apply the EFNA index to the question of business

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¹See, for example, Atukeren (2005), Berggren and Jordahl (2005), Gwartney, Lawson, and Clark (2005), Powell (2005), Gwartney, Holcombe, and Lawson (2004), Nieswiadomy and Strazichich (2004), and Cole (2003).

²See, for example, Kreft (2003), Kreft and Sobel (2005), Wang (2005), and Doucouliagos and Ulubasoglu (2006).

formation, similar to Kreft (2003) and Kreft and Sobel (2005). Specifically, we ask whether the governmental, judicial, and social activities observed in the index are significantly related to net business formation among the states. We posit that greater economic freedom results in higher income levels for state residents because such freedom increases the opportunities to pursue entrepreneurial activities. Thus, such freedom should be positively and significantly correlated to net business formation, as measured by the net change in the number of businesses as a percentage of total businesses by state.

Consistent with our expectations, we find that there is a strong positive relationship between economic freedom in a state and net business formation, after controlling for state population, income, median age, federal intergovernmental revenue, minority percentage in the population, and commercial lending.

Our results are qualitatively consistent with the arguments advanced by Sobel, Clark, and Lee (2007), Clark and Lee (2006), and Kreft and Sobel (2005): When economies become politicized, effort is channeled away from wealth creation and into securing protection from market forces. Consistent with our empirical results, states with less economic freedom—and therefore more intrusive government—experience a lower rate of business formation because the benefits of private, for-profit entrepreneurial activity decline relative to other forms of economic and political activity.

Entrepreneurship, Economic Freedom, and Economic Performance

Promoting entrepreneurship has emerged as a significant policy tool for regional economic growth and job creation (Friar and Meyer 2003; Laukkanen 2000; Rosa, Scott, and Klandt 1996). Indeed, Mailat (1998) argues that economic development policy has shifted to promoting endogenous economic growth via entrepreneurship and away from competitive growth via attracting businesses from elsewhere.

The relevant policy question becomes how best to promote entrepreneurship. One answer repeatedly championed in the literature is to increase economic freedom, conceptualized as follows:

Policies are consistent with economic freedom when they provide an infrastructure for voluntary exchange, and protect individuals and their property from aggressors seeking to use violence, coercion, and fraud to seize things that do not belong to them. However, economic freedom also requires governments to refrain from actions

that interfere with personal choice, voluntary exchange, and the freedom to enter and compete in labor and product markets [Gwartney and Lawson 2002: 5].

There is now strong evidence that economic freedom promotes economic prosperity and growth.³

Most of the work using economic freedom indexes emphasizes differences in economic freedom across countries. Those indexes emphasize that differences in institutions largely create the observed differences in economic freedom. It is interesting to consider whether similar differences in institutions exist among the U.S. states. Under a federalist system each state has its own constitution, and there are significant differences in economic rules and regulations. For example, the costs of doing business in Colorado and West Virginia are markedly different.

Kreft and Sobel (2005: 604) forcefully state the argument that ties together economic freedom, entrepreneurship, and growth:

Underlying economic freedoms generate growth primarily *because* they promote underlying entrepreneurial activity. . . . In areas with institutions providing secure property rights, a fair and balanced judicial system, contract enforcement, and effective limits on government's ability to transfer wealth through taxation and regulation, creative individuals are more likely to engage in the creation of new wealth through productive market entrepreneurship. In areas without these institutions, creative individuals are more likely to engage in attempts to capture transfers of existing wealth through unproductive political entrepreneurship.

Neither the literature nor policymakers have consistently defined either the differences or the overlap between entrepreneurship and business formation. Kreft and Sobel (2005) follow the Bureau of Economic Analysis and proxy entrepreneurial activity with the number of sole proprietorships. Indeed, in popular parlance, entrepreneurship and business formation are used nearly synonymously. Correspondingly, we choose to focus on business creation and business destruction as a proxy for entrepreneurship.

Economic Freedom of North America

We observe the EFNA index as a panel of all U.S. states from 1990 to 2001. Karabegovic et al. (2003) choose to group 10

³See, for example, Gwartney and Lawson (2002), Farr, Lord, and Wolfenbarger (1998), Gwartney, Lawson, and Holcombe (1999), Cole (2003), and Powell (2003).

variables—usually expressed as ratios of gross state product (GSP)—into three categories: size of government, takings and discriminatory taxation, and labor market freedom. For *size of government*, the authors measured general consumption expenditures by government as a percentage of GSP, transfers and subsidies as a percentage of GSP, and Social Security expenditures as a percentage of GSP. For *takings and discriminatory taxation*, the authors measured total state government revenue as a percentage of GDP, top marginal income tax rate and the income threshold at which it applies, indirect tax revenue as a percentage of GSP, and sales taxes collected as a percentage of GSP. They rate top personal income tax rates by the income thresholds at which they apply, where higher thresholds result in a better economic freedom score. For *labor market freedom*, the authors measure minimum wage legislation, government employment as a percentage of total state employment, and union density.

Karabegovic et al. (2003) construct a scale from 0 to 10 to represent the underlying distribution of the 10 variables in the index, with higher values indicating higher levels of economic freedom. Thus, the EFNA index is a relative ranking of economic freedom across jurisdictions and across time.

The Data and the Tests

We draw our data from a variety of sources. Economic freedom data for the U.S. states are from Karabegovic, McMahon, and Mitchell (2005); firm and employment data are from the Small Business Administration Office of Advocacy; lending data are from the Federal Deposit Insurance Corporation; and all other data are from the U.S. Bureau of the Census. We construct a panel using the U.S. states as our cross-sectional element, covering the years 1990 through 2001 (see Table 1 for a description of our variables and Table 2 for summary statistics).

Our dependent variable in each case is net new business formation in the state as a percentage of total businesses in the state.

$$(1) \text{ Business}_i = (\text{business births}_i - \text{business deaths}_i) / \text{total businesses}_i \times 100.$$

We observe total net new businesses, net new businesses of 99 or fewer employees, net new businesses of 500 or fewer employees, and net new businesses of more than 500 employees. We focus on *net* business formation—business births minus business deaths—rather than on business formation or business collapse because net business formation is a better indicator of business conditions in a state.

TABLE 1
VARIABLE DEFINITIONS

Total	Total net new firms as percent of total firms in the state
Income	State real income per capita
Change Income	Annual percent change in real income per capita
Age	Median age of a state's population
Minority	Combined population percentage of a state's African Americans and Latinos
Loans	Dollar volume of commercial and industrial loans
Pop	State population
Change Pop	Annual percent change in a state's population
FIGR	Real total federal intergovernmental revenues per capita
Change FIGR	Annual percent change in federal intergovernmental revenues per capita
Freedom	Economic freedom (EFNA index)

TABLE 2
DESCRIPTIVE STATISTICS

Variable	Mean	Standard Deviation	Minimum	Maximum
Total	1.59	1.27	-1.75	7.27
Income (log)	155.60	23.95	106.66	250.85
Change Income	1.83	2.94	-18.50	33.66
Age	34.74	1.94	26.70	39.30
Minority	18.02	12.29	1.09	49.77
Loans (log)	1.87	3.37	2.87	2.24
Pop (millions)	5.78	6.21	0.57	34.50
Change Pop	1.27	1.94	-26.99	11.58
FIGR	16.50	24.40	0.44	106.18
Change FIGR	10.74	87.01	-94.53	1,247.89
Freedom	6.91	0.74	5.10	8.40

Conceptually, this measure accounts for new firms forming from the resources of failing firms.

Though some of the literature focuses on sole proprietorships, we choose to focus on new businesses regardless of organizational

structure. Wong, Ho, and Autio (2005) and Friar and Meyer (2003), among others, demonstrate that new growth ventures stimulate economies, but new ventures do not. In addition, new growth ventures tend to form around an entrepreneurial team with significant industry experience (Friar and Meyer 2003, Bygrave 1997, Timmons and Spinelli 2006). Many small businesses may also be formed as Subchapter S corporations to provide their owners with the limited liability benefits of the corporate form while allowing for the preferential tax treatment of the sole proprietorship. Counting only sole proprietorships therefore may omit the most economically significant type of entrepreneurship.

Our model is an amalgam drawn from the economic freedom literature and the firm formation literature, and is essentially a derivative of the Solow (1956) growth model common in the literature on freedom indexes. Similar to the Solow model, we include income and population (a proxy for the labor force) as explanatory variables, and also include capital investment (as measured by the volume of commercial and industrial loans in a state). Those variables are similar to firm birth and firm death models, such as Johnson and Parker (1994, 1996). We also include the median age of each state's population, the combined percentage of African Americans and Latinos in the state's population, real federal intergovernmental revenues (FIGR) per capita, and the dollar volume of all commercial and industrial loans by all FDIC-insured institutions, by state by year.

In fitting models incorporating median age, one needs to address a subset of questions regarding "lifestyle entrepreneurship" versus "income entrepreneurship." One may expect the incidence of lifestyle entrepreneurship to be higher among older populations, as retirees begin second careers as entrepreneurs. Conversely, one may expect income entrepreneurship—in which the entrepreneurial activity is an individual's primary labor market activity, and is conducted with the intent to earn income—to be higher among a younger population. Entrepreneurship is commonly discussed as a viable method for minority populations to improve their economic status. Accordingly, we include each state's nonwhite percentage to test for minority entrepreneurship.

We expect FIGR to act as an exogenous demand boost within a state—that is, a boost in spending that will be met in part by business start-ups. We assume that each state's taxpayers have paid their federal taxes into a common pool of federal revenue. Taxes paid represent purchasing power that has left the state. Somewhat independently of taxes paid, revenues return from the common pool to the

state via FIGR, hence our treatment of FIGR as an exogenous increase in purchasing power.

As an additional issue, researchers have investigated the direct versus the indirect effects of economic freedom on economic outcomes (Dawson 1998, 2006; Gwartney, Holcome, and Lawson 2004, 2006). For example, suppose one argues that income growth depends on labor force growth, capital growth, and economic freedom. It is very plausible that capital formation is itself a function of economic freedom. The solution is to regress capital growth on all of the other independent variables from the original income growth equation and then use the residuals to reestimate the equation. Comparison of the original income growth model and the “residual” model may then shed light on the relative strength of the direct versus indirect effects of economic freedom.

We follow this approach when considering economic freedom, income per capita, and commercial and industrial loans. We argue that in addition to the “total” or “direct” effect that economic freedom has on creating economic opportunities and allowing individuals to pursue those opportunities through entrepreneurship, economic freedom will also have an “indirect” impact on labor productivity (changes in income) and capital productivity (proxied by our commercial and industrial loans variable).

We estimate models as a pool using ordinary least squares (OLS). In addition, given our data set and research question, we estimate “fixed effects” models fitting an intercept adjustment for each state. The essential structure of a fixed effects model is that variation across groups (such as across states) is captured in shifts of the regression function, by calculating a separate adjustment to the intercept for each group (state).

The Empirical Results

Our key results appear in Table 3. We estimate all models using White’s correction for heteroskedasticity. We estimate the first two models using OLS and the second two models using the fixed effects estimator. The R-squared statistics range from 0.30 to 0.47, all models have very large F-statistics ranging from 30.66 to 40.42, and all additional F-statistic testing the joint significance of the state fixed effects are significant at the 99 percent level. This evidence supports our choice of fixed effects estimation. In all cases our dependent variable is “Total”—that is, the total net number of new firms as a percentage of all firms in a state. We also observed this variable broken down by the number of employees. However, a very strong,

TABLE 3
REGRESSION RESULTS: FREEDOM LEADING TO FIRM CREATION

Variable	Dependent Variable: Total Net New Firms Created			
	1	2	3	4
Intercept	6.34***	6.45***	3.26	10.65**
Freedom	0.47***	0.46***	2.01***	1.62***
Income	0.00	—	-0.05***	—
Change Income	—	0.01	—	0.01
Age	-0.21***	-0.21***	-0.21***	-0.48***
Minority	-0.01**	-0.01**	-0.08	-0.19***
Loans	-3.42E-9***	-5.01E-9***	-5.82E-9***	-5.52E-09***
Pop	-1.33E-8	—	1.26E-7***	—
Change Pop	—	0.02	—	-0.08
FIGR	-0.00	—	-0.01	—
Change FIGR	—	0.00	—	-0.00
R ²	0.47	0.47	0.34	0.30
F-Statistic	30.66	29.29	46.89	40.42

NOTES: Models 1 and 2 are estimated with OLS. Models 3 and 4 are estimated with a “fixed effect” for each state. All models include year effects. Asterisks *, **, and *** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively, using White’s robust standard errors.

positive correlation exists among Total, net new start-ups with fewer than 100 employees, and net new start-ups with fewer than 500 employees. Due to the high correlation, we chose to use Total exclusively. The dissimilar variable is net new firms of more than 500 employees. However, given the rarity of such large new start-ups, we chose not to estimate models using that variable.

The coefficients on age are negative, relatively stable, and significant across models. These results have intuitively appealing explanations. *Ceteris paribus*, states with younger populations have more economic activity, including new firm start-ups, supporting the proposition that more firms are founded as “income producers” rather than “lifestyle businesses.” Somewhat surprisingly, the coefficients on income and changes in income were generally insignificant. The sole exception is a *negative* and significant coefficient on income in the fixed effects model. Therefore, what evidence we do find is indicative of “survivalist” entrepreneurship—people turning to entrepreneurship to escape poor incomes—rather than “gazelle” entrepreneurship, where new businesses are formed to take advantage of the opportunities created by a wealthy economy. However, this evidence is very weak. To an extent, the results on income are determined by the relatively high correlation between FIGR and income. Dropping FIGR from the model produces generally negative and significant coefficients on income in the fixed effects models.

The coefficient on minority percentage is uniformly negative and significant, indicating that fewer new businesses form in states with high nonwhite population percentages. Entrepreneurship has long been understood to be a route to economic attainment frequently taken by minorities, but our evidence indicates that this message has not particularly penetrated. FIGR and changes in FIGR are insignificant in all specifications.

The results on loan volume seem counterintuitive. Though always small in effect, the volume of commercial lending is *negatively* related to new business formation—that is, a greater volume of commercial and industrial loans within a state is associated with the formation of fewer businesses within a state. Though counterintuitive, the result is not entirely unexpected. Johnson and Parker (1996) report inconsistent, but possibly negative, results from the literature regarding home equity, a proxy for loan availability.

The variable of main interest is “Freedom” (i.e., economic freedom). Consistent with expectations, its coefficient is positive, stable, and highly significant across models. As measured by the EFNA index, greater economic freedom in a state leads to more new business formation as entrepreneurs take advantage of opportunities.

That result continues to hold even after controlling for other factors expected to have an impact on new business formation.

We now turn to the question of whether the greatest impact of economic freedom on new business formation is direct or indirect. We hypothesize that the independent variables most likely to be a function of economic freedom are income and commercial lending. Accordingly, we implement the procedure suggested by Gwartney, Holcombe, and Lawson (2004, 2006) and Dawson (2006). In separate equations we regress income and loans on the remainder of the independent variables, and save the residuals as new variables, “income-hat” and “loans-hat.” In the second step, we reestimate the original model of net new firm formation, but substitute income-hat for income and loans-hat for loans. Table 4 presents side-by-side comparisons of our models. In all models, the results on freedom, income, and loans are qualitatively and quantitatively unchanged. From this we conclude that the primary impact of economic freedom on new business formation is direct, rather than indirect through effects on income and commercial lending. In other words, the primary impact of economic freedom on entrepreneurial activity lies in permitting entrepreneurs to see and exploit economic opportunities.

Turning to the question of the “economic” or “practical” significance of economic freedom, we evaluate model OLS 1 in Table 3 at the sample means. An increase in the median age by one standard deviation increases the median age from 34.74 years to 36.67 years, which results in a *decrease* of total net new businesses by 0.40 percentage points, to 1.19 percent of the state’s total businesses. An increase in minority percent by one standard deviation increases the minority percent from 18.02 to 30.31, which results in a *decrease* of total net new businesses by 0.12 percentage points, to 1.47 percent of the state’s total businesses. An increase in commercial and industrial loans by one standard deviation increases the mean by \$33.7 million to \$51.5 million, which results in a *decrease* of total net new businesses by 0.15 percentage points, to 1.44 percent of the state’s total businesses.

Turning to Freedom, we observe that an increase in the EFNA index by one standard deviation increases the mean from 6.909 to 7.65, which results in an increase of total net new businesses by 0.34 percentage points, to 1.94 percent of the state’s total businesses. In absolute value, this impact is more than twice the marginal effect of a similar increase in commercial lending and nearly three times the marginal effect of a similar increase in minority percentage. In

TABLE 4
REGRESSION RESULTS: FREEDOM LEADING TO FIRM CREATION CONSIDERING THE DIRECT AND
INDIRECT EFFECTS

Variable	Dependent Variable: Total Net New Firms Created			
	1	2	3	4
Intercept	6.34***	6.16***	6.45***	6.39***
Freedom	0.47***	0.47***	0.46	0.47***
Income	0.00	—	—	—
Income-hat	—	0.00	—	—
Change Income	—	—	0.01	—
Change Income-hat	—	—	—	0.01
Age	-0.21***	-0.20***	-0.21***	-0.21***
Minority	-0.01**	-0.01*	-0.01***	-0.01***
Loans	-3.42E-9***	—	-5.01E-9***	—
Loans-hat	—	-3.59E-9***	—	-5.00E-9***
Pop	-1.33E-8	-2.29E-8	—	—
Change Pop	—	—	0.02	0.04
FIGR	-0.00	-0.00	—	—
Change FIGR	—	—	0.00	0.00
R ²	0.47	0.47	0.47	0.47
F-Statistic	30.66	30.66	29.29	29.29

NOTES: All models include year effects. Asterisks *, **, and *** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively, using White's robust standard errors.

absolute value, Freedom's marginal impact is 85 percent of the marginal impact of a similar change in median age.

Conclusion

Given Freedom's statistical significance, relatively large marginal effects, and primacy of its direct effects—and the relative political and social undesirability of using policy to reduce median age and minority percentage—we conclude that the effects of increasing economic freedom in a state trump any other effect we discovered. Compared with the other variables we examined, pursuing public policies consistent with increasing freedom will have a more direct and powerful impact on new business formation than will policies aimed at demographics or lending.

Our results are qualitatively consistent with the arguments advanced by Sobel, Clark, and Lee (2007), Clark and Lee (2005), and Kreft and Sobel (2005): When economies become overly politicized and less free, effort is channeled away from wealth creation and into securing protection from market forces. Therefore, consistent with our empirical results, less free states experience a lower rate of business formation as the benefits to market entrepreneurship fall relative to nonmarket behavior.

Compared with the other variables we examined, pursuing public policies consistent with increasing economic freedom will have a direct and powerful impact on new business formation. Rather than succumb to the understandable temptation to “fix the problem” through government intervention, state governments should focus instead on creating an environment that safeguards property rights and allows entrepreneurs the freedom to flourish. A smaller, less active government that leaves more income in consumers' and entrepreneurs' pockets, disengages from income redistribution, and avoids a large payroll will do more to promote prosperity than the conventional state development model.

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