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PERSPECTIVES FROM THE ENTREPRENEURIAL ECOSYSTEM: CREATING JOBS AND GROWING BUSINESSES THROUGH ENTREPRENEURSHIP

ROUNDTABLE

BEFORE THE

COMMITTEE ON SMALL BUSINESS AND ENTREPRENEURSHIP UNITED STATES SENATE

ONE HUNDRED TWELFTH CONGRESS

SECOND SESSION

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PERSPECTIVES FROM THE ENTREPRENEURIAL ECOSYSTEM: CREATING JOBS AND GROWING BUSINESSES THROUGH ENTREPRENEURSHIP

WEDNESDAY, APRIL 18, 2012

UNITED STATES SENATE,
COMMITTEE ON SMALL BUSINESS
AND ENTREPRENEURSHIP,
Washington, DC.

The Committee met in a roundtable discussion, pursuant to notice, at 10:05 a.m., in Room 428–A, Russell Senate Office Building, Hon. Mary L. Landrieu, Chair of the Committee, presiding.

Present: Senators Landrieu, Risch, Brown, and Moran.

OPENING STATEMENT OF HON. MARY L. LANDRIEU, CHAIR, AND A U.S. SENATOR FROM LOUISIANA

Chair LANDRIEU. Good morning, everyone. Let me call this third roundtable on the entrepreneurship ecosystem to order. I really appreciate the special effort that many of you made to be here and to be a part of this exciting, and I hope, productive series of roundtables that the Small Business Committee has been conducting over the course of the last few months to explore some ideas relative to strengthening the entrepreneurship ecosystem in our country. I really appreciate your participation. You have all come highly recommended.

The goal of these roundtables is to take the ideas that come from them and the discussions, and this is going to be very informal, hopefully very interactive, much different than a sort of staid, stiff, formal hearing. So, I hope that you will be enthusiastic about sharing some of your best ideas.

You are all a very impressive group of experts and leaders in your own right, and I am going to introduce you briefly in just a minute.

As we look at the definition of an ecosystem, it is defined as, "a system formed by the interaction of a community of organisms within their environment."

When I read this definition this morning in preparation, a couple of the words jumped out to me. It is a system. It is not a hodgepodge of unrelated pieces.

The word "interaction" is important. It indicates it is not action going one way but back and forth. It is not one organism but a community of organisms that have to work together for the whole to be successful, and of course, we all understand what the environment is.

Let me welcome Senator Brown, who has joined us. Thank you for joining us.

It is a very interesting definition, I think, to apply to the work that our Committee is trying to do without jurisdiction over and admitting that we do not have jurisdiction over all aspects of business.

Obviously, the Commerce Committee has their jurisdiction. The Finance Committee has jurisdiction over the tax code. Every other Committee has jurisdiction over different rules and regulations and policies related to health care, education, et cetera, et cetera.

Our Committee is really a Committee that is focusing on trying to pull as many of these ideas together and promote them as a package to the Congress to strengthen this ecosystem. Some of those bills will have to be actually marked up in this Committee. Others will have to share jurisdiction with other Committees.

So, do not be just restricted in your comments even if you think, well, this really belongs in Banking. The Banking Committee will eventually get it sooner or later.

So, with that definition while exploring what makes certain individuals into entrepreneurs is an interesting and useful endeavor, it is also ground well covered.

These discussions are taking a look at relationships between those entrepreneurs and their current environment for entrepreneurship and how we can make them more robust.

Babson College, which is represented here today, has done some exciting work. We are looking forward to hearing from them. In fact, in their many research papers and documents, Babson has identified the six domains of any entrepreneurial ecosystem.

First, they start with a conducive culture that rewards innovation, creativity, and experimentation. The question is, does our culture here in Washington do that? Do our states do that? Do our local governments do that? Does the private sector do that? Rewarding innovation, creativity, and experimentation. Are we risk-averse or taking too much risk?

Second is enabling policies and leadership that provide regulatory and capital support. What is the regulatory environment? Are we providing enough capital? Third, availability of appropriate finance including microloans, private equity, and public capital.

Four, quality human capital that includes both skilled and unskilled workers from home and abroad.

Five, venture friendly markets for products by creating distribution channels and entrepreneurship networks.

And six, a range of institutional infrastructure supports including incubation centers, legal and accounting advisers.

These are the six domains identified for Babson. Many of you have done work in this area. You may have your own domains. Please share them with us today.

Now that we have at least one idea of what makes up an entrepreneurial system, hopefully we can develop ideas that come from these discussions into policies that will strengthen this ecosystem in the United States.

My goal is for the United States to have the strongest, most vibrant, most dynamic, most finely tuned ecosystem in the world; and I think that if we do that, the country will stay number one with our economy. If we do not, we will fall behind.

Our first roundtable was focused on developing and strengthening and understanding, I would really say, the high-growth entrepreneurs and what makes or separates high-growth.

We know jobs are created from these startups. We have been told a lot up here that it is not just the new companies that are creating the jobs, obviously, but it is those companies, the new companies, that are the gazelles and the high-growth companies. There is not a complete consensus about that, but that information is coming to us loud and clear.

The second roundtable was held on March 22nd about a specific government program called SBICs, Small Business Investment Companies, which was not a new idea. It was developed in 1958. It is a 60-year-old program that authorizes $3 billion to basically create non-bank lenders, small business investment companies that have the great strength of being a public-private partnership where licensed or registered groups can go out and raise private capital and then the government matches a two-to-one match to create a pool of funding that is lent out, an idea that evidently in 1958 Senators like Lyndon Johnson (who was the other Senator involved? President Eisenhower signed it) did not think the banks were making capital readily available to main streets all over America. I think that is a challenge that we still face today.

Both Congress and the President have proposed expanding this program. It has been proven to be effective over many years and I am supporting, strongly supporting, that expansion and hoping we can get it done.

Today's discussion will focus on mentorship and technical assistance, what works and what does not, what kind of mentorship is important, what kind of technical assistance.

Entrepreneurship education, again, can you teach someone how to be an entrepreneur or is it innate? If it is or not, how do we make more of them that are successful?

What is the role of local government? We have one of our mayors here. Do local governments have a role and how do the local governments in cities or counties working with states, what is working and what is not working.

Private sector accelerators. Some of you run those. How are those effective? High risk skilled talent pools, where are they, how do we get more of them?

Then of course, promoting small business exports. It has been very disappointing so far that we have not been able to reauthorize the Export Bank. Hopefully, we can get that done sometime soon. That is because one percent of U.S. small businesses currently export their products or services to the world even though 95% of the world's customers are outside the borders of the U.S. If we could double or triple that, I think it would mean a tremendous number of jobs and wealth creation for the United States. So getting the Export Bank authorized is important.

I am going to ask each of you to introduce yourself. When we do this, either some people take too long and go on and on or some people do not say anything. We are going to try to find that happy medium. Okay?

I want you to really realize that you have an opportunity to tell in a minute or less about yourself and the one or two things that either you are most proud of or why you think you have been asked to be at this roundtable.

Then as you know, we will start off with questions from here. When you want to speak or have something to say, just stand your nameplate up like that and we will go back and forth. We will try to give everybody an opportunity, and really again, the idea is to have a free flow of discussion.

I am going to recognize Senator Brown, who is busily not listening to me or maybe listening and signing his letters, signing his letters for an opening statement and then he may have to leave.

Senator BROWN. I am listening.

Chair LANDRIEU. Go right ahead.

OPENING STATEMENT OF HON. SCOTT P. BROWN, A U.S. SENATOR FROM MASSACHUSETTS

Senator BROWN. First of all, thank you, Madam Chair, I wanted to attend as I have attended the other small business roundtables that you have held. I greatly appreciate them and I have learned a lot, and most importantly you have had folks here from Massachusetts.

We obviously have Patricia. It is good to see you. And Joe Nigro, MassChallenge. I want to thank you for holding these.

In Massachusetts, we had a field hearing on access for capital for small businesses in Boston. It was really laser focused on how to create new capital and that is why I was very happy that my amendment on Crowdfunding was able to pass.

Joe, I know you were instrumental in it. Thank you. The folks in MassChallenge actually started a site called wefunder.com and have about $6 million worth of capital ready to go out the door for new startup businesses.

In Massachusetts, we are an innovative state. We have, I think, more opportunities than some states. Not all states. But as a result of working with you on this Committee and providing SBIR reauthorization, the new Crowdfunding opportunities, looking at a lot of the SBA opportunities that we have been able to get reauthorized, it is a good thing.

It is funny. The biggest challenge I see as I travel around the country, I am sorry, around the state, is that lack of regulatory and tax certainty. You do not know what is next. That is one of the biggest challenges. You do not know if the tax policy is going to change.

FDA, EPA, NLRB, whatever the entity is, SEC, you do not know what is next. That is really scaring a lot of investment dollars away. There is upwards of $2 trillion on the sidelines. What I have tried to do is to work on those things that are going to move our country forward on Crowdfunding, for example. We are working on the Hire a Hero Veterans bill to get that tax break there so folks will actually want to hire and expand. I am concerned about a lot of the business deductions that are expiring at the end of the year as well as the individual rates for a multitude of businesses that file as S corporations. Business owners do not know, as I said, what is coming down the pike.

I spent the entire of last week in Massachusetts touring small businesses from a meatball company that is the number two meatball company in the entire country, and I know each and every one of you had.

All they want to do is make meatballs. But they are saddled with that lack of certainty as to what is the tax policy because they are a sub-S corporation. What is going to happen with the EPA and the DEP and a lot of the municipal, state, and then Federal regulations that are just saying, you know what, we may best move.

So, this is a good opportunity to work on the things that matter. I appreciate your holding them. I am looking forward to participating. I have other hearings I am attending, but I wanted to show my support for your efforts.

So, thank you.

Chair LANDRIEU. Thank you, Senator Brown, and he has been one of our more active members of our Committee. I am really grateful and very appreciative for his attendance and his interest both here and at home. I thank him very much.

Let us begin, Juliet, Ms. Gorman, with you, and again please, one minute. Do not be shy but do not be too long.

Ms. GORMAN. Sure.

Chair LANDRIEU. You have to speak right into these mics. It is a little bit awkward but press your red button and then lean into your mic.

Ms. GORMAN. Okay. Hi, guys. I am Juliet Gorman. I am the communications director at Etsy. Etsy, if you do not know us, is an online marketplace for hand-made in vintage goods and supplies. We have over 800,000 sellers on our platform, handmade and vintage goods and supplies.

I am actually wearing a few things today made by Etsy sellers from New York and California. But we have 800,000 sellers on the platform, three quarters of them, more than three quarters of them are women entrepreneurs, many of them with home-based businesses.

They sell everything from food to furniture. Like I said, I have got some accessories today. We have around 40 million unique visitors come to our market place every month.

Last year our sellers had over $525 million in gross merchandise sales. That may not sound like a big figure in the big picture of the economy, but $4000 in supplemental income at the holidays or when you have a car payment or when your kid needs braces, when you want to go out for an extra dinner with your husband or even possibly quit your day job, makes a big difference.

Chair LANDRIEU. Juliet, that is perfect. Perfect. Perfect.

Scott.

Mr. GERBER. Thank you, Madam Chair. I much appreciate you allowing the YEC to be represented today. Again, my name is Scott Gerber. I am the founder of an organization called the Young Entrepreneur Council. We represent nearly 400 of the most successful young entrepreneurs in the country who have created close to 20,000 jobs and hundreds of millions of dollars in revenue.

In addition to that, we have spearheaded a national movement called Fix Young America, which is a campaign where we have taken some members (actually some that are represented here today) and aggregated their best ideas surrounding policy, private-sector solutions, and philanthropic solutions to the youth unemployment crisis through entrepreneurial means.

Right now we actually have this book coming out of policy solutions which I would love to give to the Committee on May 9. But most importantly our mission is to provide Americans under the age of 35 and recently graduated the opportunity to become entrepreneurs in an economy in which frankly we see the traditional job losing its value.

Chair LANDRIEU. Fabulous. Terrific. And please share that book with us and hopefully you will share some of those ideas in the book today.

Mr. GERBER. Yes, ma'am.

Chair LANDRIEU. Tim. Mr. Williamson.

Mr. WILLIAMSON. Thank you, Senator. My name is Tim Williamson. I am one of the cofounders of The Idea Village, but first and foremost, I am an entrepreneur from New Orleans who moved away and came back home in the late 1990s to find a declining city.

So, The Idea Village was founded very specifically because we believe that entrepreneurship creates change. I love to hear the word "ecosystem," but back when we started, we called it an "idea village."

The answer was to build a network of university, government, and professionals that singularly would identify, support, and retain entrepreneurial talent.

The good news is we have worked with over 1800 entrepreneurs in the last 12 years. We have engaged over 2000 people to write 56,000 consulting hours and $3 million in capital.

New Orleans is becoming a laboratory for innovation and entrepreneurship, rated the number one brain magnet in the country and number two best city for jobs. But fundamentally we are seeing a model where ecosystems are coming together to support entrepreneurs and more importantly keep them in the city to make a better city.

Thank you.

Chair LANDRIEU. Thank you, Tim. And I may have to be a little partial here because, of course, that is my hometown, and my brother is the mayor of New Orleans. So, he works very closely with Tim but they really are developing quite a wonderful model that other cities could emulate. So, it is exciting, and thank you for coming again.

Mr. Daugherty, Scott.

Mr. DAUGHERTY. Good morning. I am Scott Daugherty. I am the State Director of the North Carolina Small Business and Technology Development Center, which is operated through the University of North Carolina system. I also serve as the Commissioner for Small Business for the State of North Carolina.

I am here today principally because our SBTDC has had for a number of years a very strong commitment to serving existing businesses with 10 to 150 or so employees.

Chair LANDRIEU. Fabulous.

Mr. DAUGHERTY. We think this is a significant market place. It is grossly underserved but has enormous potential for growth including growth in export markets.

Chair LANDRIEU. Thank you. We are really looking forward to your expertise in that area and we have been hearing nothing but very positive things about North Carolina.

Mr. Mitchell.

Dr. MITCHELL. Good morning. Thank you so much for having me. My name is Matthew Mitchell. I am a senior research fellow at the Mercatus Center at George Mason University.

As you may know, George Mason was sort of put on the map in 1986 when James Buchanan won the Nobel prize in economics and he won it for studying public choice. Since then, Vernon Smith also won the Nobel Prize in economics there, also for pioneering in the field of public choice.

Public choice focuses on the ways in which government policies are actually determined and carried out. I think his weighs on entrepreneurship in particular. I too appreciate the ecological metaphor. I think it is a really appropriate metaphor.

Recently, I had been looking at the public choice ways in which the ecology of entrepreneurship can sometimes be interfered with. Just like a natural ecology, entrepreneurial ecology needs to be a bottom-up process and quite often can be subject to interference from governments or otherwise.

Chair LANDRIEU. That is an excellent point, and I hope that we will have a little bit more thought provoking comment about that. Just like governments can ruin physical infrastructure, I mean physical, natural environments, governments can also, with the wrong policies, disrupt, the I do not know if you would call it natural but the strength, dormant strength or natural strength of a people to grow jobs and produce wealth.

Mr. Lowe.

Mr. LOWE. Hello. I am Craig Lowe, Mayor of Gainesville, Florida, home of the University of Florida and I am also on the U.S. Conference of Mayors Technology and Innovation Task Force.

It is really an exciting time to be Gainesville because our entrepreneurial ecosystem is really starting to take off. The latest development is a startup incubator at the University of Florida that is called the Florida Innovation Hub.

It is designed to bring together scientists and innovators and entrepreneurs. It is 48,000 square feet. It is also home to the U.S. Office of Technology Licensing. It opened in October but already there are 15 startups as well as the offices of venture capitalists, law firms that deal with entrepreneurs, design firms, and other entities that offer services to startups.

It is the first building in what we call our Innovation Square but already it is having broader economic impact. For example, we had a company that is relocating, well, is actually locating, that is based in India that will be bringing over 400 jobs to our city.

Thank you.

Chair LANDRIEU. Thank you, Mr. Mayor. That was perfect.

Mr. is it Nigro?

Mr. NIGRO. Correct.

Chair LANDRIEU. Joe.

Mr. NIGRO. So, thank you very much for having me today. I am really excited to be here. So my name is Joe Nigro. I am a founding team member of a startup company in Boston, Massachusetts called Vsnap. Vsnap is a 60-second video messaging company for your smart phones, tablets, and computers, just a more personal alternative to e-mail.

That is kind of my pitch. I should have put my 60-second pitch on Vsnap and sent it to everybody.

[Laughter.]

Maybe I will do my follow up on that. But I am part of the world's largest accelerator competition based in Massachusetts called MassChallenge. You know, you brought up earlier today, I have it here, interaction of a community. Interaction of a community is a crucial part of the ecosystem and that is exactly what MassChallenge is, hundreds of entrepreneurs running around like crazy trying to figure it out, as I like to say, and doing a great job at that.

So, I am really looking forward to this discussion.

Thank you.

Chair LANDRIEU. Well, good. When you all figure it out, please tell us.

Mr. NIGRO. Will do.

Chair LANDRIEU. Mr. Wadhwa.

Mr. WADHWA. I am Vivek Wadhwa, an entrepreneur who founded two technology companies, turned academic, and in my spare time I write for the Washington Post and for BusinessWeek.

I have been researching global policy entrepreneurship, immigration, and so on. I have been shocked at all the myths that persist in policy circles. I have researched why companies are going overseas and doing outsourcing; the education systems of our competitors; and what makes the U.S. tick and gives it a strategic advantage—this includes enterpreneurship and immigration policy.

I have been surprised that I am able to shatter so many myths that are out there and come up with more sensible policy. For example, Chile is doing an experiment called Start-Up Chile, that I helped develop. Entrepreneurship is booming there and this experiment costs very little.

Chair LANDRIEU. Wonderful. Thank you very, very much.

Ms. Friederichs.

Ms. FRIEDERICHS. Good morning. Thank you for including me today. I am Christina Friederichs, the Managing Director of HEMP, which stands for the Helzberg Entrepreneurial Mentoring Program. We are focused in the Kansas City area where we strengthen entrepreneurial leaders through excellence in mentoring by matching proven business veterans or mentors with growing business owners for a three-year program.

We focus on entrepreneurs or businesses that have a minimum of five employees or over $1 million in revenue because we have identified there is a gap of resources available between startup and mature companies.

In the 17 years that HEMP has been facilitating organized mentoring, we have witnessed over 200 entrepreneurs significantly contributing to the economy through job creation and revenue growth.

I thank you for the opportunity. We are excited to participate today.

Chair LANDRIEU. Thank you so very much.

Mr. Laskey.

Mr. LASKEY. Thank you very much for having me, Madam Chairwoman. And, Senator Brown, thank you again.

I am the President and Founder of a company called Opower. We are an energy information company. We work with 70 utilities across the globe on three continents. There are 250 of us now at the company and the most exciting number is that this year alone we will generate one terawatt hour of energy savings which is nearly two-thirds the size of the entire solar industry's output in 2011.

So, we are helping people save energy equivalent to nearly two-thirds of the size of the solar output in 2011.

We work with almost every utility in Massachusetts. I think Massachusetts has been the state in which we have gotten the biggest energy savings. We are not yet working with Entergy but working on that. And we are working with a utility in Gainesville.

There are 250 of us today but five years ago there were two of us squatting at a desk. We have had, I guess in retrospect, gazelle-type growth although it seems incremental as it has gone along.

There are two policy areas that I hope that this group addresses, domain specific on energy efficiency. There are policies that make sense that have been signed into law by Democratic and Republican governors at the state level that ought to happen at the Federal level that will untap a $40 billion market opportunity for small and big companies alike and put money back in the pockets of people across the country.

The second policy area I hope this group addresses is, as you mentioned it Chairwoman in your opening remarks, labor and the talent pool, particularly immigration.

Chair LANDRIEU. Thank you very much.

Go ahead, Senator Brown.

Senator BROWN. So, are you working like with EnerNOC and those types of companies in Massachusetts?

Mr. LASKEY. No. We work directly with National Grid and NSTAR. We deliver reports that show people how their consumption compares to neighbors in similar size homes.

Senator BROWN. Yes. I get those. So, you are working with National Grid.

Mr. LASKEY. How are you doing?

Senator BROWN. I am fine because I am never there. It is funny. You know, I am never there. I am surprised that my consumption is not down because I have unplugged everything, like nothing is on and supposedly my neighbors are still better than me. So, I am glad you are here. I might want to talk to you later. I am not quite sure how that works.

Chair LANDRIEU. He is complaining about his personal report but this is good. This is how we find out.

Mr. LASKEY. On average, people spend six minutes a year thinking about their energy use. The Senator, who is as busy as anyone, is spending some time thinking about energy use. That is a good thing.

Chair LANDRIEU. It is good for us to focus.

Ms. Hyman.

Ms. HYMAN. My name is Jennifer Hyman. I am the CEO and Co-founder of Rent the Runway, which is a site that rents designer dresses and accessories to women for 10 percent of the price but more importantly it empowers women to have aspirational experiences before all of the special events in their lives.

So, the concept of Rent the Runway and the gall is to democratize luxury in the United States and then later globally. I started the business while I was at Harvard Business School in Boston. I am funded by two Boston VCs, Bain Capital and Highland Capital as well as Kleiner Perkins.

We have grown to a company in just two years of 125 people located in New York City. We have a huge warehouse that we run as well. We have around 3 million members now. So, it has been very fast growth and I think that I have been helped along by a lot of mentorship as well as education that I think would be beneficial to other entrepreneurs.

Chair LANDRIEU. Well, may I say the men on our staff had not been familiar with your company but all the women did know about it. So, we are excited.

Senator BROWN. I am. Okay. My daughters I am sure they use you guys.

Ms. HYMAN. That is really wonderful to hear.

Chair LANDRIEU. This is a great help to parents as well. Good idea.

Senator BROWN. It is wonderful for me as well.

Chair LANDRIEU. Mr. Burfield.

Mr. BURFIELD. Yes. Again thank you, Madam Chairwoman.

Chair LANDRIEU. You have to push the button and pull it a little closer to you.

Mr. BURFIELD. Thank you, Madam Chairwoman and Senator Brown, for this opportunity to talk about these issues.

My name is Evan Burfield. I am the Chairman of StartupDC, which is a regional effort here in the Greater Washington area associated with Startup American network to help grow exactly the ecosystem you are talking about from a private sector standpoint here in Washington.

My background. I started my first venture-backed startup when I was 19 just after graduating from high school and have been building companies since then.

Most recently, I am the Founder and Chairman of Synteractive. We are a consulting firm that builds out social applications in the cloud, including building out applications like recovery.gov here for the U.S. Government.

When we look across the Greater Washington region, there is a number of challenges that we can identify that we are trying to tackle.

How do we get large corporations and small startups working together in better ways? How do we unlock latent angel capital? How do we create more flexible space options?

But the one that I want to talk the most about today is how do we unlock more talent and create more talent available to the startups because the lack of enough talent to help these startups grow is the number one issue facing startups here in the region but it is also one that we hear when we talk to all these other regions around the country through Startup America.

Chair LANDRIEU. Wonderful.

Dr. Greene.

Dr. GREENE. Good morning and thank you for having us here today. My name is Patti Greene. I am a professor at Babson College, like Vivek, a later stage academic and probably because of that I am really interested in the intersection of research, teaching, practice, and policy, how do we pull it all together in order to really have an impact in our small business economy.

I think I am probably here today also, though, because I like to connect dots which means that I spend a lot of time with different kinds of technical assistance programs around the country and through some other programs around the world.

So, I am on the SBA's advisory board for the SBDC; a Cofounder of the Diana Project, which looks at women and venture capital inside the country, but also women and all kinds of resources outside of the country; worked a lot with frankly many of you around the table.

But it is about technical assistance and what does it really take to recognize an ecosystem that is not just about startups but all kinds of businesses.

So, that is really where we play out. And as of last month, I am one of the owners of Artworks in Gettysburg, Pennsylvania.

Chair LANDRIEU. Wonderful.

Nishith Acharya.

Mr. ACHARYA. Thank you, Senator. I am Nishith Acharya. I am Director of the Office of Innovation and Entrepreneurship and Senior Advisor to the Secretary of Commerce.

I just joined the Administration a few months ago. I had been CEO of the Deshpande Foundation in Massachusetts where I got to meet many of you and moved down here primarily because I was excited about what the Administration and its partners in Congress were doing around the issues of innovation and entrepreneurship.

Just to mention a few, the Economic Development Administration where I sit we have ran the i6 Challenge for the last two years where we have given $12 million directly from EDA, an additional match from several agencies including the Department of Energy, EPA, USDA, and then private sector match from a lot of the winners including Louisiana Tech to support centers that help universities and research centers identify innovation, create processes to commercialize that innovation and actually get it out the door in the form of startups that will benefit their regions.

That has been a very exciting program to watch grow, and we will be running it again this year as well.

EDA has also run the jobs and rural innovation accelerator which has been helping later stage companies with training and other areas where they can really develop their local economy through tax credits, training money through the Department of Labor as well as the USDA and others.

Then of course, the President signed the interagency memorandum last fall requiring all agencies to develop plans for commercialization, and I look forward to working Administration-wide on seeing that have a major impact on how the U.S. Government funds for R and D really lead to more innovation and more entrepreneurship across the country.

Chair LANDRIEU. Thank you, Mr. Acharya. I really appreciate your leadership in this Administration and your efforts in this regard.

Let me start with a very broad question and then I will have a series of individual questions to just get the discussion going.

Do any of you sitting around the table think that what we, I think, want to accomplish strengthening our entrepreneurship assets in America and creating jobs can be done by the private sector alone? And what specific role do you believe that the Federal Government either should or should not be involved in?

Go ahead, Mr. Gerber.

Mr. GERBER. Madam Chairwoman, I think that everybody would agree that government regulation in some ways is always a barrier to business. Whether people agree or disagree on the specifics is always a matter of politics.

Chair LANDRIEU. Is it always a barrier?

Mr. GERBER. I think that in many cases when it comes to the specifics regarding how someone can grow a business or on a city- or state-level, how businesses are dealing with Federal and city and state regulations, these tax implications and other things, as Senator Brown mentioned, will impede many businesses' progress.

With that being said, I think that the main aspects for younger entrepreneurs where I would like to speak is specifically about creating a paradigm shift toward treating entrepreneurship in as high a regard as a traditional employment opportunity.

I believe that begins in the education system. I also believe where the government comes to play is in promoting through ecosystem development, through various different mentorship programs, expanding technology awareness and other means to really connect with the younger generations about this topic, is something that I frankly do not see enough of today.

Chair LANDRIEU. Now, be a little clearer though. What would government have to do with mentorship?

Mr. GERBER. Uh-huh. So, for example right now there are thousands of government organizations like SBDCs across the country. You also have a variety of things like SCORE, the SBA, a variety of programs that are starting to make strides in connecting with young entrepreneurs.

But ultimately an issue that is problematic is that many of them are run by government agents who ultimately have never had any business experience, who frankly have not made any real effort to connect with the community as a whole to bring in the business community in the collegiate years or in the high school years when these individuals are in their most formative years of deciding what their employment opportunity will be.

So, those are some of the things I think on a mentorship level are important.

Chair LANDRIEU. Excellent points. Of course, SCORE is private sector and so is SBA. They are government-funded but not government run.

Let us go to you, Mr. Daugherty.

Mr. DAUGHERTY. I think the question had to do with private sector alone.

Chair LANDRIEU. Yes. That was the question.

Mr. DAUGHERTY. And the answer is clearly not. There are a bunch of private sector initiatives represented here today and they are all great and good and wonderful. But unless there is an opportunity for profit, you are not going to get broad scale replication of things like an SBDC network or other kind of platforms for reaching large numbers of entrepreneurs across the nation.

The private sector needs to be participatory partners. Clearly, they need to be looked to for good ideas on new ways to do things. But if we are going to wait for the private sector to do it all, you have to do is look at the banking system right now.

They are not lending. They are awash in money but they are not lending. So, it has taken some activity out of the Congress to stimulate movement in that area. I think you would have to continue to do that.

Chair LANDRIEU. I think the government has a role and the private sector has a role. We are trying to flush some of that out.

Mr. Burfield, did you have a comment on that?

Mr. BURFIELD. I would like to respectfully disagree with Mr. Daugherty. I think the private sector is absolutely capable and is creating vibrant startup ecosystems across the country.

I mean all of the efforts that we are doing here in the DC region, you know, if anything, we are keeping our local government and our State government informed in what we are doing but we are driving it because we are passionate people that care about this and we see, you know, a vested interest for a region that we care about and actually growing the ecosystem.

But certainly, legislation like a JOBS Act which is very thoughtful, very targeted in removing some of the barriers to private sector activity has been very beneficial. I think there are other very, very targeted areas where perhaps the private sector by itself cannot tackle the full problem.

I want to come back again to the fact that, you know, we have a significant jobs crisis in this country. We have high unemployment, high underemployment but at the same time when you talk to many of our most successful startups, when you talk across our overall region, we cannot find talent fast enough. There is very clearly a labor market inefficiency across——

Chair LANDRIEU. Does the private sector provide the talent or does the government have to change the rules to provide the talents?

Mr. BURFIELD. I mean, I think the issue the issue at the end of the day is the talent that a lot of our startups need is not necessarily the talent that is being produced. It is not necessarily the talent that is available. So, you end up in a dynamic where startups are competing with other startups. They are trying to steal talent from large companies.

Chair LANDRIEU. Not to press you on this, is it the private sector that can produce that talent or is it the government that has to work with the private sector to produce it?

Mr. BURFIELD. The private sector absolutely can.

Chair LANDRIEU. Cannot or can?

Mr. BURFIELD. Can. Can. I mean, you look at programs like Hungry Academy here in D.C. where LivingSocial, one of our big success stories here in the D.C. region, has actually set up a program to train people who have never been software developers before and actually teach them how to code, teach them how to operate at startup speed, teach them the cultural values that they need.

But I think government has a role to play in helping to create those incentives because that is essentially an apprenticeship and training program.

Chair LANDRIEU. Is that a charter school?

Mr. BURFIELD. No. No. It is for grown-ups. I mean, it is for adults.

Chair LANDRIEU. It is for adults.

Mr. BURFIELD. It is for taking people who are in one career and teaching them how to transition their skills set into skills that are more relevant to what the startup economy is creating.

Chair LANDRIEU. Mr. Williamson.

Mr. WILLIAMSON. One point. If it's the private sector solely, the answer is no. I think there is a partnership.

I do think it needs to be started by the private sector. I think the most effective ecosystems are led by primarily entrepreneurs who decide that they want to do it within their community and there has to be a private sector leading this network but the government is a critical part of the network.

Secondarily, at the beginnings of an ecosystem, there needs to be an honest broker. So, if it were purely profit-led, you might not be able to build a vibrant ecosystem because some would benefit and some would not. So, the role of the government is important to be in that network to help balance out the university private sector mix.

Lastly, I do think in terms of innovations there are opportunities where the government can be a participant. We modeled the program this year as the government/entrepreneur-in-residence because most entrepreneurs do not know what they do not know. So, in dealing with government who helps them guide it?

Could there be mentorship from the government in local communities to help local entrepreneurs figure out "how do I maneuver this bureaucracy?" or "how do I do this?"

I think government is a partner.

Chair LANDRIEU. And Dr. Greene.

Dr. GREENE. I would go back to where you started really with the idea of the system of interactions and, of course, it has to be everybody involved. One of the things I think we might think about in building that ecosystem is that government means a lot of different things.

So of course, today we are sitting here, we are talking about the Federal Government. When we are looking at an ecosystem, we also have to think about how many different governments do we have to deal with and how do we really align the opportunities, resources, and challenges in order to make that ecosystem a healthy one for everybody.

I work mostly right now with the Goldman Sachs 10,000 Small Business Program. We are in six cities and in every city you have a very strong relationship with the mayor's office. In some cities we have the state involved. But it is really a matter of trying to figure out what is the best way for the ecosystem to work as a system that is aligned to meet the needs.

Chair LANDRIEU. And to challenge you all to think, and I am going to get to all of you, the difference between the skills and experience necessary to build one or a series of successful businesses, entrepreneur businesses, and the skills and experience necessary to strengthen the entrepreneurship ecosystem and how many ecosystems—what is the optimal size of an ecosystem?

That is an interesting question. Is it a national ecosystem or is it a national ecosystem with hubs, subsets? Is it a locally developed ecosystem? That is what we are trying to pull some ideas out of you but stay on the original question.

Does government have a role? Help us define it. Or can the private sector do this alone?

Mayor.

Mr. LOWE. Yes. Actually, I think government definitely has a role and sometimes government does have to come first. For example, with the innovation hub that I was just speaking about, that was enabled by an EDA grant that helped develop this economic incubator that develops commercial applications from academic research, academic research that was done at a public university which, in turn, gets funding from the state and Federal level.

Also, the ecosystem is also fostered by other means such as community redevelopment agencies. Our community redevelopment agency took very much so a leading role in our downtown community, and the business community is actually thriving there as a result of it.

In addition to that, of course, we have local and state incentives which help spur entrepreneurialism as well.

Thank you.

Chair LANDRIEU. Excellent point. Dr. Mitchell.

Dr. MITCHELL. Thank you so much. So, what I would argue is that governments do play a role but it goes back to that ecosystem metaphor. Economist from Milton Friedman on left have long recognized that governments play an incredibly important role in setting the environment in which business can grow.

They need to protect property rights. They need to ensure that contracts are enforced, and they need to police fraud and things like that.

But otherwise, there is a large, large literature that suggests that when governments get involved in particular types, trying to promote particular types of businesses there are a lot of problems associated with that.

So, setting an environment is good but then targeting the particular firms or types of firms for special privileges can set up and enormous number of problems.

So, by "privileges" I mean things like subsidies or loan guarantees. Regulations is an interesting one. A minute ago I think you appropriately ask, are all regulations harmful, and the answer interestingly enough is no.

Many regulations are bad for the economy but they are very, very helpful for particular firms and that is part of the problems with regulations is that they—take, for example, the regulation, sort of ripped from the headlines some famous regulations that required financial firms to use the three major credit rating agencies as they had a mandate to use their services.

So, this is the kind of regulation that is of great benefit to the three major credit rating agencies. It is a de facto monopoly. But it is very, very harmful in the sense that it creates a number of other problems along the way.

Chair LANDRIEU. Excellent point.

Ms. Hyman.

Ms. HYMAN. I just want to speak my personal experience. I am a Bloomberg fellow in New York City, and Mayor Bloomberg has set up a group of entrepreneurs every year who are all young. We are all under the age of 35 years old, and he connects us with other leaders, CEOs of other companies in New York City who become our mentors over the course of years and help us develop quickly all of the leadership skills and all the skills that we need to continue being the CEOs of our company.

I am only 31 years old now. I am managing a 125-person team. I have certainly never done that before but I am being coached by the CEO of NBC Universal and the former chairman of Bloomingdale's who are able to give me real management advice.

Bloomberg set up a system whereby young people can accelerate their growth as leaders by nature of connecting them to other mentors.

The other thing that I think is really interesting in New York City is Bloomberg is just opening up a campus for entrepreneurship through Cornell University in New York.

One of the biggest hurdles to growth in New York is the non-presence of engineers. There is basically trench warfare amongst the startups in New York for engineering talent. The starting salary of an engineer in New York City is about $110,000. That is how much in demand young engineers are.

I would claim that one of the reasons why the bay area has been such a hot bed for entrepreneurial growth is really because of Stanford University and how amazing it has been as a technology center.

By nature of the government going in and helping to funnel talent into an area both to train the leaders of those companies as well as to funnel younger talent in in areas that are going to be fundamentally important like technology to companies like ours I think that there is no other city that I would rather be in right now to be an entrepreneur because of what the government is doing to help startups like ours.

Chair LANDRIEU. So interesting, and of course, Mayor Bloomberg is an extraordinarily excessive entrepreneur himself, creating one of the most famous and most profitable businesses in the recent history and then went on to be Mayor.

So, he has a unique, really not singularly unique, but special talent that some mayors have, some do not and it brings to mind that we are going to give him a ring and get him to come and make a presentation.

How many fellows are there?

Ms. HYMAN. Every year there are around 30 to 40 fellows.

Chair LANDRIEU. And this has been going on for 10 years or so?

Ms. HYMAN. It has been going on for the majority of his time.

Chair LANDRIEU. Of his term. Okay.

Let us see Mr. Nishith.

Mr. ACHARYA. Nish.

Chair LANDRIEU. We will just call you Nish.

Mr. ACHARYA. That is fine.

I will make a couple of comments. I think the evidence is that the Federal Government and State governments have played a great role in supporting both innovation and entrepreneurship.

Most of the incubators around the country have gotten some government funding at some level, whether they were starting out, whether the buildings they are in received support to renovate, whatever it might mean.

I would look at three buckets. One of the opportunities I have is to manage the National Advisory Council on Innovation and Entrepreneurship for the President and for the Secretary.

There are really three buckets of interest areas that they focus on where the Federal Government has a very important role. The first is around the risk of supporting innovation.

There are a lot of technologies, particularly expensive technologies in clean tech and in life sciences that are not yet ready for the private sector to fund entirely.

The business models are not clear. The technology itself is very nascent, and at EDA our i6 Challenge is meant primarily to support some of that really cutting edge technology and helping it move just a little bit closer to market readiness.

The second part of that, and I think the SBIC program at SBA, and then EDA's funding as well around innovation is to support funding in regions that do not have a plethora of capital.

So, there are some parts of the country that do not have ventured capital, that do not have a lot of large banks, and they certainly do not have a shortage of good ideas as well. So, government plays a great role in matching those ideas and getting them out the door if you will.

The second part is on a business process if you will. I think the Patent and Trade Office does an amazing job of helping support our competitive edge as a Nation which is in our most innovative ideas and giving them the protection that they need.

I mentioned SBA and the SBIC program which is, again, helping alleviate risk in those areas that do not have it, creating funding vehicles.

And then thirdly, the Federal Government obviously works heavily on the issues of immigration and then STEM education which at every entrepreneurship meeting I have ever attended those two things come up over and over, and I think we play a huge role in that. So, I think the role is enormous.

Chair LANDRIEU. Getting back to educating engineers. I wanted to take a minute, this is a little political and I do not have a Republican here but I will try to be an honest broker as I can on this.

The Solyndra issue is an interesting example. Highly politicized. The loan went bad, taken a lot of hits, the Administration has taken a lot of hits on that.

But I do not know if there exists a venture capital firm or venture capital enterprise that does not have one or two of their deals go bad. Right? Do you all know of anyone, a venture capital company that has all winners? Does anybody know that?

So, the nature of venture capital which is that the government is trying, now whether it is a good idea or not for the government to do this, that is a question. But when the government tries to set up a venture capital fund, the nature of it is that you are going to have some spectacular failures, correct? And you are going to lose money, but the idea is that the two or three that make it pay you back 10 fold.

While this has been highly politicized, it is, in essence, the government's effort, whether that was a good idea or not, to try to set up a venture capital fund that would invest in certain industries that did not really exist in the United States and this Administration thought they should.

It has not really been described that way but I think everybody at the table understands it. As I said, whether it was good or not I do not know.

Mr. Laskey.

Mr. LASKEY. Thank you. Certainly, we have had investments from Accel Partners and Kleiner Perkins and NEA, three of the most successful venture capital funds. They invest far more in companies that do not work out than in companies that do.

Chair LANDRIEU. Say that again. They invest in far more companies that what?

Mr. LASKEY. They invest in far more companies that do not succeed than in companies that do. They hope that companies like ours will make them whole and their investors more than whole in the end.

But I wanted to respectfully disagree with Mr. Burfield and Mr. Gerber about the role of regulation and of government in promoting and ensuring the success of entrepreneurship.

I think others have already talked to the importance of STEM education. But there is no question that no matter how good any kind of secondary training can be, unless we have, to use the ecosystem analogy for a moment, the sort of core nutrients for an ecosystem, that ecosystem will not succeed. In an entrepreneurial ecosystem those nutrients are the people doing the work. I am a product of public schools and a private university that receives a lot of public funding and I suspect that is true of everybody around this table. Our public education needs continued investment and innovation.

In addition, twelve and a half percent of the people in this country are immigrants, but 40 percent of the founders of Silicon Valley startups are people who either came to this country directly for better educational opportunities, or whose parents came so that their children could have better educational opportunities. So, I think we would be remiss if we did not think about the importance of both good immigration policy and good STEM education in creating a strong entrepreneurial ecosystem.

Specifically on regulation, if you think of three of the big industries that require the most innovation around this table, I think we would agree that education is one of them. Healthcare is another and energy is the third, with which I am most intimately familiar. All of them are heavily regulated industries and businesses.

Our business would not exist without smart regulation, regulation that is now in place in 26 states that aligns the utilities' interests with the public interest, by driving toward energy efficiency which everybody agrees is a good thing and putting money back into the pockets of people in small towns and big cities across the U.S.

Chair LANDRIEU. Alex, you have given us two words that will stay with this Committee. Core nutrients, excellent thought and concept; and smart regulation. It is not no regulation, it is not a lot of regulation, it is just smart regulation that is aligned with specific goals.

I think we do have a challenge, I have to say, with the regulatory environment that we have right now at both the Federal, state, and local level.

This is very interesting. Do you all want to go on on this subject for a little bit longer or do you want to switch? Do you all have something really to say? That is fine. Dr. Greene or Juliet, I will get you. Juliet, go ahead.

Ms. GORMAN. I just wanted to echo what Jennifer mentioned about the trench warfare over software engineering talent in New York and in terms of private-sector kind of nontraditional educational solutions for that we are doing a similar thing specifically around women in software engineering.

We are working with a group called Hacker School, hacker not in the sense of like infiltrating security but the traditional tinkerer.

Chair LANDRIEU. Not the CIA.

Ms. GORMAN. No, no, no. The traditional definition of hacker as a tinkerer, solution builder, to fund grants specifically to women who want to move into software engineering. It is a three-month, fully-paid school and we are hosting it at our offices. So, I think that is one example.

But to your point about what it is kind of the culture and the network that encourages mentoring, I think sometimes we as entrepreneurs can provide tools to other entrepreneurs to do that peer-to-peer mentoring.

We do this on Etsy. We have a teams program. 200,000, more than 200,000 of our members are members of a team. They organize either by geographical area or by subject area. So, you know, jewelry makers or the Atlanta Street Team.

They will pool resources. They will put on events. They will do cooperative advertising. They will advise each other and we have given them very simple tools to do this.

So, that desire, that community of creativity is there and you allow the face-to-face connection. I think it does not take much.

Chair LANDRIEU. That is a wonderful segue into mentorship or technical assistance because I have decided that one of the pieces of the bill that we are putting together is going to be focused on this issue because it comes up at every single roundtable.

Every roundtable that we have had mentions the importance, at some point, on mentorship opportunity for that entrepreneur. We are searching for is the right way to strengthen, I am searching for the right way to strengthen either the Federal Government's role in that or state or local government or some non-government entity that could be an honest broker.

So, let us talk about that. What the Federal Government has done sort of so far is through a network of small business centers that are at our public universities.

We give out "X" amount of money. My staff is going to give me that number before the end of this hearing. We also have Women's Business Development Centers. We have Minority Business Development Centers.

One of the pieces of that that I have been particularly high on is the SCORE chapters which are not government chapters. They are private-sector individuals that have come together. It has been a long-standing major organization. There are others.

They receive $7 million from the Federal Government but they take that $7 million. That is it, and leverage it 10 times to reach thousands of entrepreneurs because it is really a volunteer mentorship network.

What would be your best suggestions if the Federal Government could come up with a new sort of approach to mentorship? I have become aware of the Vistage organization. I do not know if you all know Vistage out of California, the Milken organization?

This is a for-profit mentorship network. They make money mentoring which is fine, I mean they have made a business model out of mentoring.

But there are some nonprofit entities. You just talked about in your own company, Juliet, you all are doing this mentorship. So, (a) what could we give out, highly competitive grants from the Federal Government through, you know, an agency that is well-positioned to really identify those great mentorship opportunities out there and scale them up, should it be coming from our universities, should it be coming from certain businesses that are good at it?

Mayor Bloomberg obviously has a wonderful program, but it is small. As you said, it is 30, 40 a year. We have a country of 350 million people.

So, let us hear some ideas about mentorship and I am so happy to be joined by two Senators. Senator Moran and Senator Risch, and of course, this is very informal. You are welcome to jump in right now and give any comments that you like, Senators.

So, why do we not ask our Senators to say a word. Everybody from all over the country is giving us excellent ideas about strengthening the entrepreneurialship ecosystem in the United States and at every level in every region down to every Main Street and community in our country.

Senator.

Senator MORAN. Madam Chairman, I will defer. I do want to say a couple of things but I will defer to Senator Risch.

Senator RISCH. Go ahead. I am going to pass anyway.

Chair LANDRIEU. Okay.

Senator RISCH. First of all, thank you for holding this hearing. Currently, entrepreneurship is so important. We all know that. It is where jobs are created. Thank you, Madam Chairman, and I yield to Senator Moran.

Senator MORAN. Senator Landrieu, this is the third roundtable that I have at least attended in part.

Chair LANDRIEU. Thank you.

Senator MORAN. I think these are very valuable. As I indicated the last time we were together, I think that the conversations that occur here may be more useful than the hearing setting that we often have in the United States Senate, and so, I appreciate the individuals coming to Washington, D.C., and sharing with us their thoughts.

I have, over the course of my Senate career which is now only slightly more than a year, tried to become somebody who is an advocate for entrepreneurship and innovation.

And in large part because I saw the failure of the President and the Congress to deal with the deficit issues that our country faces, if we have the unwillingness or inability to deal with those things in regard to spending and revenues, maybe we can address this issue on the growth side.

You look at what the potential is it seems to me it is in entrepreneurship, startup businesses, and innovation. So, I have been very interested in all the comments that I have heard now in three of these roundtable discussions.

As I started down this path of trying to find what the necessary ingredients are to create an environment in which startups have a better shot at success and in the process of pursuing success put people to work, I mean there is a regulatory component and I had heard that talked about. There is a tax component. Capital formation. We have passed the JOBS Act.

A wide array of things. A lot of research that goes on using Federal dollars, how can we make sure it is available and can be commercialized.

But the one I want to highlight today is this global search for talent, the battle for it, and I understand before I got here at least three of you have talked about this topic.

I am trying to figure out how I can play a greater role in moving Congress in the direction of visas for highly skilled, trained, educated workforce.

I spent some time in Silicon Valley a day or two last week during the recess, met with a number of startups as well as some who were startups a few years ago and now are significant corporations.

The global battle for talent is, it seems to me, to be perhaps the most important issue we face in being able to grow our economy. I wanted to relay to the Chairman and now to Senator Risch the story that I heard in which one of those companies had dozens, I think it was 68 employees, ready to be hired. The visas did not work and now they are expanding in Canada, not in the United States, as a result of the workforce there.

We heard a bit about repatriation, the money that companies have abroad that they are trying to figure out, tax code-wise, how do we get it back. It occurs to me that if your money is abroad and the workforce is abroad, what do we do to encourage you not to grow your company abroad, and this workforce issue, I think, is the significant one.

So, I want to highlight the importance of that, lots of areas in which we need to work on and to create an entrepreneurial environment in the United States, but it seems to me that the vast majority of members of the Senate, of Congress perhaps, could agree upon the desirability of a policy that would allow foreign-born but U.S. educated, highly trained individuals to remain in the United States and use their skill set and intellect for our economy's benefit and yet we get caught in his immigration, broad and all-encompassing kind of conversation and the politics never seem to allow us to do what at least I think the vast majority of policy makers in Washington, D.C., know that we should do, or if told the facts would easily reach the conclusion that we need to do this.

So, if you can help me find the way to get the political environment that we need in order to advance the economic environment that we need, I am interested in that conversation.

Chair LANDRIEU. Absolutely, and I look forward to working with the Senator on that. I think there is a common ground that can be found by giving opportunities to U.S.-educated foreign students.

There is also an issue of people being born in the United States, educated in the United States, and giving them an equal opportunity to compete against those born elsewhere. That is part of the debate that we have to find a balance on but I think that we can.

But let us talk about mentorship because I literally am so impressed that every entrepreneur I have talked to reminds me of all the evangelists that I know. They are so anxious to share how they did it and how it worked and it is like they do not try to keep it a secret. It is an amazing thing to me.

You would think they would be thinking I built my business and I have made a lot of money and I do not want anybody else to know. It is the opposite. They have the most interesting desire, almost a need, to share how they did it and are happy to tell you everything about it. It is just quite wonderful. I think that we should try, if we can, to capture that and scale it.

Mr. Gerber.

Mr. GERBER. So, a few things regarding my personal role with the Young Entrepreneurship Council, which is a 501(c)(3) nonprofit corporation.

We educate roughly 10,000 young people through ongoing mentorship utilizing technology, live chats with successful entrepreneurs, content we create for every major media outlet in the United States and so on.

The first point regarding the grants you discussed earlier is you would think that I would have a better sense just from being so entrenched in the entrepreneurial ecosystem that I live and breathe, that I would know even what is available to a nonprofit like ours if we're to continue to facilitate not only the education of 10,000 individuals but hundreds of thousands if not millions. Simply from a research perspective that information is very difficult to find. So, putting that out in the forefront would be very helpful.

I want to address a statistic that we found in a national survey that we did where 90 percent of young people that were recent college grads found that entrepreneurship education was vital but literally nearly half of them never even had a single entrepreneurship education experience in college, and those that did found them highly ineffective.

And there are now a few reasons I think for that. The first is going back to the SBDCs, most college campuses have no concept of what SCORE is, no concept of what the SBDCs are; and these are great facilitators of community organizers that can actually bring in these ecosystems.

So, I think along with the monies given to these entities that they should be mandated to throw competitions, bring a certain level of public relations to college campuses, and educate through their various opportunities not just business and MBA students but more importantly those who do not have a business degree or are going for that level of education.

Lastly, just looking into technology to scale things that actually makes sense. You know, obviously again, SCORE is a perfect example. I have worked with Ken and that group a few years now. Ultimately it is very much a person-to-person experience.

Your cost for education is very high whereas utilizing technology you can still have a one-on-one experience in many ways but on a mass scale.

So, I think that those are the kinds of government grants and other programs that should be looked at.

Chair LANDRIEU. Thank you. That is exactly what SCORE is hoping to do. Of course, their allocation is $7 million, that is going to require some additional investment but I think it would be well spent.

Tim.

Mr. WILLIAMSON. Well, thank you. I think you hit on the core issue or opportunity, and Ms. Hyman's idea of a fellowship and a mentorship is incredible. That really is how you build those networks in cities like New Orleans or other or other “B”, “C”, “D” cities that do not have that network of lawyers and CEOs, and I think what we have been looking at is how do you import that.

So, in a city where the lawyers and the accountants and the CEOs do not have experience or entrepreneurship is relatively new, you need to bring CEOs and investors and universities into the community to build those mentorship networks; and so really I guess a post-Katrina phenomenon where universities like Stanford, Harvard, MIT, Babson, and others who brought in teams of MBAs to directly provide consulting and mentorship to local entrepreneurs is an opportunity, I think, to scale where these individuals can actually come into communities.

They can provide direct consulting to an entrepreneur which is valuable, but as Scott was saying, to get that experience of being an entrepreneur is incredible.

So, I look at that answer as how do the second-tier cities that do not have the built-in networks bring those networks in.

The last part of your question, “What is the size of the ecosystem?” There is one real ecosystem, but how do you create local ecosystems that engage those networks? I would love to have the network that Ms. Hyman has in New Orleans. How do we incentivize corporations and universities to go directly into the second-tier cities or third-tier cities, to provide that mentorship?

Chair LANDRIEU. Well, you know, Goldman Sachs has really stepped out with their entrepreneurship 10000. I think that is exactly what they are trying to do.

I am not sure if I know. I know New Orleans was one of your cities, but I do not know all of your other cities.

If I could ask Goldman, was that your idea to kind of reach out to cities that might not be in the top tier of this entrepreneurship or did you just not care, did you just go wherever? Kind of explain how Goldman shows what ingredients you were looking for when you reached out to create this kind of really it is like an entrepreneurship training and mentorship program.

Dr. GREENE. Thank you, Senator. We really did look for areas that were underserved in entrepreneurship education. Now, New Orleans, of course, has a great deal of things going along in entrepreneurship but we are looking for the educational piece of it. So, we are in New York which was the first one. New York, New Orleans, Houston, Chicago, and LA and Long Beach at the moment with two more coming quite soon.

Chair LANDRIEU. See, I would think that all of these cities except for New Orleans were already sort of, had a lot of the components of it.

Dr. GREENE. And that is the issue right there. They have the components. They do not have the system. New Orleans is working hard in the system. There is another ecosystem meeting coming back up shortly sponsored by the mayor's office.

But how do you actually turn it into a system of interaction where the educational pieces are connected with the finance pieces are connected with the business assistance pieces.

So, we actually talk about our program as an intervention where we come in. We provide the education. They are given their business advisors. At the end we basically say, okay, you are being released back into the wild of the ecosystem and part of the training is how do you identify and how do you use all the other resources that are out there.

Chair LANDRIEU. Joe.

Mr. NIGRO. So, thank you. In Massachusetts and the city of Boston more specifically in MassChallenge the mentorship, I believe, falls in the laps of the entrepreneurs themselves.

We are incredibly enthusiastic. We have a lot to say. I see how the public and private sector in Massachusetts works together to create this incredible district called the Innovation District, which I was living in California for a couple of years a few years ago and when I came back to Boston, that area in the Seaport District in Boston was just completely transformed into literally an innovation district within two years.

Mayor Menino in the city of Boston, you know, put MassChallenge right there to build out this infrastructure where, you know, students from all the surrounding area of colleges around Massachusetts can go.

It is almost like, if you build it they will come, and entrepreneurs want a place to go. They want a place to exist. It is now in the hands of the entrepreneurs to kind of foster that mentorship.

Chair LANDRIEU. Do you know how many Federal research dollars land at those universities every year?

Mr. NIGRO. Oh, man. Probably a lot; I am not sure. A lot.

Chair LANDRIEU. That might be one of the reasons why entrepreneurs flock there because it is not the private capital that is invested there first, you could argue that, but it is the Federal dollars that go to those universities.

What I am going to ask my staff to do, we do not have it done for today, but we are going to put up a map that is going to show where the Federal research dollars go. I bet there is a direct correlation, I could be wrong, a direct correlation between the entrepreneurship strength around Federal research dollars.

Now, you want to think about NIH. You want to think about National Science Foundation. You want to think about the research that goes on for the Department of Defense.

We are not spending, to my mind, and I am an appropriator, we are not spending the percentage of our total overall spending on research and development that your companies would.

Your companies, if you want to grow, I think have to invest between what? Five and 10 percent in research and development? The Federal Government overall is somewhere between two and three. That should be frightening to everyone.

Now, it will go a little higher, I think, for defense. But overall we are spending less than three percent in long-term research and development. When you look at the research and development, though, and where it is, I think there will be a direct correlation to this, you can tell, Silicon Valley with Stanford and some of the research that is done there. Massachusetts, New York.

I represent the South, and not to get on a high horse about this, but our delegations way before I even got here were very concerned about the lack of investments in some of the southern universities because, and maybe it is like this in the Midwest, I do not know, but we do not get those same dollars.

When we try to create that same kind of dynamic technology sector, it is not that our people are not smarter, that our people do not work hard, we just do not seem to have the same, I do not know, opportunity or maybe because the universities in other parts of the country got a head start on us, and we are recovering from lots of things. The Civil War being one, but other things.

It is very interesting to me and I am going to really push the data on this to find out if there is a correlation.

Senator MORAN. Chairman Landrieu, it would be interesting to know which came first.

Chair LANDRIEU. That is true.

Senator MORAN. The map will be interesting. I am anxious to see it. But the environment, which environment existed first, the Federal dollars and the research occurring——

Chair LANDRIEU. Or the reverse.

Senator MORAN. Right.

Chair LANDRIEU. That would be interesting to see. Go ahead.

Dr. Mitchell.

Dr. MITCHELL. Thank you. I just wanted to address that last point because that is a really interesting question, just address it from sort of it on my research design hat.

With all due respect, I am not sure if we would learn that much from that kind of a study and the reason is if you look at the way people do, say, macroeconomics. You tend not to do studies that it would be very, very surprising if we could tax everyone at this table and redistribute the money to me and I could not, then studied and found out later that—and then we would investigate that I would do well after that.

It would be very, very surprising if I did not do very well after that. So, that is why we do not do studies of, say, stimulus that way. We do not do studies of research investment that way because it would be very, very surprising if taxpayer dollars that were raised throughout the country and redistributed to certain research centers did not somehow produce greater growth.

I would suggest a different type of research design, and the nice thing is that there has actually been a number of studies that have done this which is to look across countries.

The nice thing about that is that the tax dollars come from within the country and are spent within the country. So, it does not have that research design problem.

A number of studies have examined this and found that there is a very, very strong correlation between entrepreneurship and what economists refer to as economic freedom. So, economic freedom is largely designed as well protected property rights, low and stable tax regimes, nondiscriminatory tax regimes.

That is just as important as having low taxes is you do not have a complicated tax code that rewards some and punishes others. Few limited regulations that are reasonable, that are thoughtful regulations as you suggest.

Again, to me, it gets back to creating an environment that is nurturing for growth and nurturing for entrepreneurship but it is not one and where you are trying to push your buttons and sort of from the top down and say I am going to redistribute here and we are going to get growth.

Chair LANDRIEU. Mr. Mayor, please go ahead and then we will get you Ms. Friederichs.

Mr. LOWE. Yes. With respect to mentoring, the innovation hub that I have been talking about is set up to promote mentoring and to allow those in startups to be able to first mentor each other because there are actually those who have been entrepreneurs before they are sort of serial entrepreneur you might say.

And also there are plans for a new program at the University of Florida specifically for entrepreneurs. It will actually operate on a slightly different calendar year, actually January through August.

But another interesting thing about the program is that it will include a residence hall designated essentially for entrepreneurs and it is located right across from the innovation hub so that there will be a high degree of interaction with respect to that.

Thank you, Madam Chair.

Chair LANDRIEU. Thank you. I will get one more comment on this and then we are going to switch subjects to make sure we cover everything before 12:00.

Ms. Friederichs.

Ms. FRIEDERICHS. Thank you. You mentioned before that entrepreneurs are eager to share, that they are not private about it. I think a large portion of that is if you are a business owner and you are struggling to make payroll that month and you cannot pay your house payment, only another business owner is going to understand that.

It is very lonely for business owners and it is a community that they work together and they understand one another and everyone is seeking out a mentor, whether it be formal or informal, as a business owner.

If you have an organized, facilitated mentoring program such as the one that I run HEMP, Helzberg Entrepreneurial Mentoring Program, and you measure the results, it can make a huge impact on the economy.

In an eight-year period where we measured the one-on-one mentoring of entrepreneurs with another seasoned entrepreneur, 43 percent of revenue growth and 30 percent employee increase count as well as contributing over $750 million to the economy in that eight-year period.

So, the impacts of mentorship are very impactful and we work also with the SBDC in Kansas City and helped them start a mentoring program as well called CEO Coaching and More, and they rose to the top five in the country the year after they starting the mentoring program again because of the effect.

Chair LANDRIEU. Are you all a nonprofit or for-profit?

Ms. FRIEDERICHS. We are a nonprofit, 501(c)(3). We were started by Barnett Helzberg, who had a company called Helzberg Diamonds. He had a mentor of Ewing Kauffman who ran Marion Laboratories, and he mentored him.

Once Barnett sold his company, he wanted to give back to the Kansas City area. So, he started this nonprofit of mentoring other entrepreneurs. He said it has been the greatest investment he has made.

Again, the entrepreneurs are willing to invest the dollars. They are seeking for the help to have someone who has been in these shoes. A lot of times it will save several years and several dollars because you are preventing mistakes because you are talking to someone who has been there and done that.

Chair LANDRIEU. Well, let me ask you all. This record will be open for two weeks and you could be very, very helpful to our Committee if you have identified any successful mentoring organizations in your area, whether they are not-for-profit, for-profit, or government-sponsored like SCORE, please let this Committee know because we are trying to collect the universe of what is out there so we can have a discussion about whether we should help strengthen it or whether it is sort of okay on its own and what the Federal Government might do.

And when I mean government, it is the Federal Government but we are also in a position, of course, to encourage local government, state, and municipal level governments to follow suit or at least encourage them to do so.

We want to hit three more areas very quickly. We sort of touch this but if anybody has anything they want to say or add to entrepreneurialship education, any ideas about what the Federal Government can do or not do to prepare people more. Are entrepreneurs born, are they trained, et cetera?

And then private sector accelerators. We want to talk a minute about that. And then the small business export efforts that the Federal Government is doing. Do you think this is helping or not.

But let us start. A few comments on entrepreneurial education, what works, what does not work, what have we seen out there. Go ahead. We will start with one of the experts here.

Dr. GREENE. Who will remember to pull the microphone toward her this time.

Of course, you can teach entrepreneurship. I mean, there is a skills set that is about starting and about growing businesses. So, breaking down that skill set and adding on training about a mindset, you can actually teach entrepreneurial behaviors and you can watch entrepreneurial outcomes.

I would suggest that one of the most important things about entrepreneurship education is that it should not be just for the business owners. One of the challenges entrepreneurs run into all the time is working with professional service providers and policymakers and educators who do not understand who they are and what their businesses need to grow.

So, an expansion for the attorneys, for the accountants, for again all of the professional service providers to actually understand that this is a not large corporate business, it is a different entity, could make a huge difference. So that was, you know, just one part of thinking about it differently.

Chair LANDRIEU. Okay.

Ms. HYMAN. So, I actually think there were three key things that I needed in order to start Rent the Runway in addition to, you know, learning about merchandising, learning about operations, learning about technology.

But the three applicable things were, first of all, I needed legal guidance and advice from the very beginning. I was lucky enough to have procured free legal advice from Latham and Watkins, who took me on as a client for six months without me paying anything because they believed that we would get funded and I would be able to pay them at some point in time.

But had they not given me that legal advice from the beginning, my company would not actually be, I would not hold the same ownership and equity in my business. I would not have the right sort of contract with my cofounder. I would not have set up the organization in the way that we needed to in order to get venture capital funding.

So, that was number one. Number two is actually understanding how do you hire people. So, I learned a lot at Harvard Business School about how are you strategic or how do you, you know, build a service operation.

But no one told me how do you actually hire someone, what is insurance, how do you execute payroll, how do you care for people's health care.

And these were huge problems that sunk up a lot of time in the beginning of starting the company that were like the tactics of how you actually formulate that team that were really important to us.

And the third thing was not just access to capital because I think that access to capital is always going to be limited by things like where you are from and what your educational background is and, you know, my access to capital was solely because I was at Harvard Business School and I had that brand name behind me that I was given credibility with the venture capital community in Boston because I had no previous entrepreneurial experience.

But more important than access to capital was teaching the skills of how do you actually procure capital, how do you pitch yourself, what are investors whether they are venture capitalists or they are angel investors or they are private investors, what do they want to hear in those first few minutes because 95 percent of all companies are nixed in the first 5 to 10 minutes when they talk to and investors.

So, if you are not given the training on what are you coming in with, I think that a lot of great ideas are probably nixed at the beginning. So, I think that these are just more needs building blocks that people need in addition to just being smart individuals who are educated about the areas of, you know, expertise.

Chair LANDRIEU. Jennifer, thank you for being so honest because I am sitting here thinking about exactly what you said and from a perspective from a United States Senator it is, I do not know what the word is, it is difficult for me to really, I accept everything that you said, I agree with everything that you said, but I just want to repeat what you said so that you all can think of this from what I hear.

Because she was from Harvard, she got in the door. Because she had been trained to make her pitch in two minutes, she got the money. Now, I am thinking about the 4.5 million people I represent. I am thinking about all the smart wonderful kids in Mississippi and Alabama and Texas and Florida, a few of them do go to Harvard. Lots of good kids at LSU.

They do not get in the door because you go to Harvard, you go to Stanford, you go to "X" and "X", the door opens. If you do not, it does not. My job is to open the door for the kids that cannot get in, and I am having a hard time figuring out how to do this.

Ms. HYMAN. Well, it is even harder if you are a woman.

Chair LANDRIEU. Yes, and if you are an African-American woman, you can just go down the line. I am sorry that my colleagues are not here, but when I hear some of my colleagues say, "Oh, anybody can get access to capital," I know the truth and that is not the truth.

Capital does not flow to the smartest most able, it flows to those that are most connected. Period. That is the truth. Now every now and then an unconnected, very smart person will get the capital they need but it is the exception not the rule.

My job to figure out how to switch that, how to get the smartest people regardless of where they went, the most able people, the ones with the best ideas and the strength to carry them out whether they are connected or not, connected.

That is the only way this country is going to move forward. The country that figures that out the fastest will get there the soonest. This is a very difficult question. So, that is what I need you all to think about.

Evan.

Mr. BURFIELD. Entrepreneurship education is personally for me a very important subject. Again, I literally graduated from high school and set out to try to build a company; and it was a really, really painful the first two or three years because I did not know anything.

Chair LANDRIEU. But your parents gave you or somebody had to tell you or somebody gave you some idea, huh?

Mr. BURFIELD. Absolutely. Uh-huh.

Chair LANDRIEU. It was your parents?

Mr. BURFIELD. My parents and, you know, ultimately I went down and found some business school professor down at Darden at the University of Virginia and convinced them to help me and built my mentor network and did all that stuff.

I actually went back to my own high school this last year which to your point, you know, Thomas Jefferson High School for Science and Technology here in Virginia, it is the number one-ranked high school in the country by U.S. News and World Report but there was no curriculum around entrepreneurship.

There was not any structure, any program related to it. I agree with the idea that there is content that you need to teach related to entrepreneurship but I think learning to be entrepreneurial is something that fundamentally has to be done by doing.

The biggest thing that struck me in trying to set up, we actually set up a venture accelerator inside the high school so students were encouraged sophomore year, junior year to actually start companies, build those companies.

We brought in a tremendous network of mentors from the top venture capitalists in the region, all of this. But the biggest thing that struck me is the nature of the way that we educate our children goes in some significant way fundamentally counter to the values set that is important to entrepreneurship.

So, we have an education system that teaches kids do not challenge the status quo, to teach to the test, to regurgitate what they are told, to not fail whereas the essence of being an entrepreneur, not the actual nuts and bolts contents you need but the essence of challenge the status quo, be creative, persevere no matter what——

Chair LANDRIEU. Be willing to fail.

Mr. BURFIELD. You are going to fail, fail, fail, fail, fail; and to Alex's point, I am sure when Alex thinks about what it feels like to go from zero to 250 employees in a few years it feels like week after week after week of failure and some level of surprise when you get to the end and you go, wow, we have gotten there.

But that challenge of, you know—when we talk about the role of government, one of the things I was struck with was Jefferson is a pretty innovative. For a public high school, it is about as innovative as you can get. But even then it was a challenge to work almost against the regulations, against the rules, against wait a second you want to set up a venture pitch competition and actually give high school kids money to invest in their companies. How is the school going to control the money? Well, it is not.

Chair LANDRIEU. Yes.

Mr. BURFIELD. These are a lot of the challenges you face when you really try to talk about instilling a culture of entrepreneurship in the way we educate our children.

Chair LANDRIEU. Which is why we are pushing some charter schools that are more accepting to new ideas. New Orleans is full of them. So, we will get back to that.

Alex.

Mr. LASKEY. I just wanted to connect what you had said earlier about the feeling when you talk to entrepreneurs that they sound like evangelicals.

I think we have one big thing in common, in spite of a great deal of evidence that says we are wrong or that the answer is no. We keep pursuing yes in a semi-psychotic way.

And yes, there is a lot of failure along the way, but it actually feels like success if one in 10 things go right.

You know, I too am concerned. In full disclosure, I also went to Harvard, and I am concerned about access to capital for people elsewhere across the country.

There are great stories of people. I think one of the things that government can do really well, in addition to investing in education so that there are more talented people better trained across the country, is to highlight success stories.

So, highlight success stories of businesses that have started in unusual places or by unlikely people. We should highlight those success stories because venture capitalists are not stupid. They will follow the money. If we can begin to highlight great successes in places like New Orleans or Birmingham, Alabama, businesses that are doing well, then money will follow.

Chair LANDRIEU. Excellent idea.

Scott and then Juliet and then we will have to start wrapping it in about 10 minutes.

Mr. GERBER. Thank you. I will be very quick with comments. I have four specific things that we have uncovered that would help train young entrepreneurs especially starting at the high school level.

The first is there currently is something known as the well-rounded funds Title V. It is under the current No Child Left Behind Act. Currently, there is no check box that would allow high schools to purchase any form of entrepreneurship education materials. This is not abstract. This is literally that you cannot check a box to buy entrepreneurship-related materials.

When you look at programs like, case in point, where we share a lot of interest, Madam Chairwoman, is around especially minority entrepreneurs. I worked with a group called the Network for Teaching Entrepreneurship which has educated nearly 400,000 young people from mainly African-American communities across the United States with incredible success rates compared to other case studies.

They have to actually raise money in order to sell into school districts their various educational platforms and curriculum, unlike a physical education curriculum which you can easily just buy based on allocated funds.

The second is looking at other kinds of school concepts——

Chair LANDRIEU. Hang on. Do you run that as a nonprofit or for-profit?

Mr. GERBER. Which one?

Chair LANDRIEU. The one you just said.

Mr. GERBER. The Network for Teaching Entrepreneurship is a nonprofit.

Chair LANDRIEU. Nonprofit.

Mr. GERBER. That is correct.

Another is gearing specific schools toward the realities of the new economy and the workforce. There is currently a program in New York called the Academy for Software Engineering that we have uncovered. It is done by Fred Wilson, members of the state government and local government in New York. The concept basically being to create a charter school around software specific training.

I think that these are the kinds of concepts that the government from an educational funding level should be looking at so that they are also keeping in mind what the workforce readiness needs to be.

The last thing just to bring up is, you know, personally going to schools and speaking to thousands of students a year, the first thing I really get teared up about in many ways is the fact that I will have students come up to me, say I am about to graduate with $25,000 in debt, I have a liberal arts degree or I am an auto body shop mechanic. They have no concept of how to take that relevant training they have into the world of business.

So, I think that when we look at ways that you are funding federally these institutions in any capacity, there should be some parameters set around the fact that if you leave school as an auto body mechanic and you do not know how to run an auto body shop, that is a big problem.

I would encourage, especially around the mentorship discussions that we are having today, that we not just talk about mentorship in the abstract. Of course, I do not think anybody would say that mentorship is not incredibly important. It is a lot of the reason why I am even here today.

But the fact that you cannot, as a young person, use mentorship to, let us say, go after a microloans as the SBA because there are intermediaries that ultimately will block you from funding because a kid who does not have any credit is a problem. So we are talking from not just the intangible experience, but making it a tangible experience using that.

Thank you very much.

Chair LANDRIEU. Thank you very much.

Juliet.

Ms. GORMAN. Quickly, I hear the challenge you are facing around access to capital and folks that do not usually get it and I just wanted to just add one optimistic note from the standpoint of kind of the do-it-yourself manufacturing movement.

The barriers to entry are dropping. For basically like the price of a gym membership, you can join an organization called Tech Shop, which has locations nationwide, and have access to millions of dollar of machining tools.

I think platforms like Etsy what they are basically doing is lowering the barrier to entry to have a product idea, get it manufactured, and reach a global market quickly, and also they are lowering the barrier to entry for consumers to support those kind of independent creative businesses.

So, I do think, I mean Etsy has had 39 million in venture capital funding but entrepreneurs on Etsy have not and they are still supplementing their income and in many cases quitting their day jobs, and it is not about, you know, that classic entrepreneurship story of Instagram getting sold to Facebook and making, you know, however many hundreds of millions of dollars.

It is, again, about making your car payment. It is about quality of life. It is about time with your family. You know, a lot of small businesses are formed for non-pecuniary benefit reasons like control over your time, creative satisfaction, being your own boss.

So, I do think there is a bit of an optimistic story about how the manufacturing ecosystem is changing in terms of access to folks who do not have the traditional education or the means to raise a lot of money.

Chair LANDRIEU. Okay. That is an excellent segue into two things. One, this bill that we just passed that was somewhat controversial but the President supported it, many people supported it.

I did not vote for final passage but I did vote for the Crowdfunding piece that Scott Brown and others put forward, and I was actually a cosponsor. We cosponsored that piece of Crowdfunding because it had more safeguards than the bill that came from the House.

Very interesting to me to those of you that have raised money by venture capital and what you had to do to get their money. Now that you can go basically to the Internet and take your business up to $1 billion.

Have you all followed this bill or are you thinking about it? Could you comment about what advantage or disadvantage you think this will have to you or to the world that you are in?

I know that is a broad question but I am very interested particularly, Juliet, to hear from you and Jennifer. But go ahead.

Ms. GORMAN. I think the issue is education. A lot of the folks we are working with do not necessarily see themselves as business people when they get started and so they are not thinking about financing from day one.

We see a lot of folks again in the creative community using platforms like Kickstarter, which is not so much about raising money in exchange for equity in your business but more frankly just about community charity essentially.

But the power, I guess, there is the network effect. That is the thing that platforms like Etsy are banking on. It is not that traditional hierarchical incumbent model.

So, I think the issue is just how do we as Etsy get this information about Crowdfunding and what is enabled and the government resources in front of folks who are just thinking about a lot more of the tactical stuff that Jennifer alluded to.

Chair LANDRIEU. Jennifer.

Ms. HYMAN. I am skeptical of things like just crowd sourcing for funding or Kickstarter mostly because I think money has to be tied to accountability as well.

So, one of the reasons why I wanted to raise from institutional investors is because I wanted board meetings every single month where I was accountable for the metrics of how the business was doing.

I wanted people who had been there, done that on my board with the ability to actually, you know, fire various people in the company if we were not doing a good job.

If you are just going to give young people money when they do not necessarily have someone guiding them, watching over them, and some idea that they are accountable for that, I do not know how successful that is going to be especially because most entrepreneurs are young and without the necessary experience.

So, even angel investors, some of them are going to be quite involved and give you that mentorship and give you that advice. So, I think there has to be a combination of capital with accountability for how you use that capital.

Chair LANDRIEU. And there was very little of that in this bill and I think we have to be very careful about what we did but it is done. Evan.

Mr. BURFIELD. I think a lot of the Crowdfunding provisions are going to have a democratizing effect on the ability to raise capital. I think you have already been seeing those changes occurring in the venture capital industry before the JOBS Act.

I mean, the reality is, you know, we probably spent $16 million in venture capital in my first business back in the late 1990s before we ever really understood what our product was or our market.

You know, nowadays companies can find that out for a couple of hundred thousand dollars in capital. I mean, the cost of innovation, the cost of experimentation and discovery has just dropped like crazy.

That has been having a significant impact. You are having accelerators now, you know 500 startups, the goal is to find 500 startups at a couple of hundred thousand dollars each and, you know, see which ones really succeed or fail. You know, a lot of those accelerator problems I think do take a much broader swath of entrepreneurs than you might have seen even five years ago from traditional venture capital.

I think, you know, any platform, any of those Crowdfunding platforms to be successful I think they are going to tend to be tied to some sort of accountability model.

I think you are going to see Crowdfunding paired with accelerators being probably the most successful model because somebody needs to put that imprimatur of credibility on it.

But anything, to your point, that starts moving it to the value of the idea versus the value of who you know immediately is beneficial, and I think that has been the history of a lot of what the Internet has done to various other markets to date and I think it is going to do the same thing to venture capital, and that is a good thing.

Chair LANDRIEU. Okay. We are going to get Scott and Christina and then I am going to ask Nishith, as a representative of the Administration, to have the opportunity to close.

We did get the numbers on the research. California is the leading state to receive Federal research money. They received $47 billion. Michigan is second at $18 billion dollars New York is third at $14 billion. Texas is fifth, I am sorry, fourth at $12. Massachusetts is fourth at $12 billion.

The lowest is Idaho, Delaware. Let us see. I am sorry that is not true. But those are the figures and I am sorry I do not have the lowest states. But anyway, we are going to get that out to you all and go head, Christina.

Ms. FRIEDERICHS. I think it goes back to what you were saying earlier too about the connections and trying to open the doors for those that cannot get in, whether it be venture capital or any other needs that you might have, and it goes back to building support systems for entrepreneurs, whether it be mentoring or common groups, education, things of that nature so that they can build those connections.

And then once you get those referrals, they can move you on to those and you have a better success rate of getting venture capital or the support that you need.

It also goes along with, have you read the book, The E–Myth? It is about how entrepreneurs usually have a skill or an idea and they take that and that is how they start their business, but beyond that, they do not know how to actually operate a business. It is a great book and it really supports everything we are talking about here.

Chair LANDRIEU. Wonderful. Let us get it and put it on our shelf. We are collecting your books and papers.

Alex, final word. And then we will have Nishith Acharya.

Mr. LASKEY. I just wanted to touch on the topic that you said you wanted us to talk about that we did not have time to which is the Export Bank and small-business exports.

Chair LANDRIEU. Yes.

Mr. LASKEY. The last year I have spent the majority of my time outside the U.S. In fact, my passport is today getting extra pages added to it because I have run out of space. And I have benefitted some from the Commerce Department, State Department, Department of Energy.

But I think there are many opportunities to expand the ability for small businesses like ours to export our products and services overseas. One particular problem that I see with the Export Bank is that it seems that the ability to export capital goods is supported under the Ex-Im bank but that——

Chair LANDRIEU. But not services.

Mr. LASKEY. Not services and software. And particularly as we move to a software-based economy, the entrepreneurs in this room, I think, would benefit from the expansion of those support services being linked to software and IP, not just capital.

So, I look forward to continuing to travel around. We have now just opened an office in London and that is——

Chair LANDRIEU. Because if you think about it, I mean, it makes just common sense without even having to be an expert that America who has been the most successful country in the world for this entrepreneurial, democratic, open society, we would have a lot of ideas and services that help to create this country that the world is desperately in need of and we could make a lot of money selling it or sharing it or whatever your model is.

So, we have got to get about that because there is nobody better than America that can go over and tell everybody, until you get your private property rights done over here, you are not going to be able to do anything. Until you set up a mortgage system where you can mortgage your home, have a mortgage system, you are not going to be able to build a middle class.

I mean, there are things we know even though we beat ourselves up and say how terrible we are, the fact is we are pretty great and we still are.

So anyway, thank you very much. All right.

Mr. ACHARYA. Thank you, Senator.

I think one of the things you are hearing that is the great struggle here is that entrepreneurship is inherently a very personal journey and it is a very local experience even though we live in a globalized world and we are talking about Federal policy which affects a very large country, a very complex dynamic economy and how do we reconcile the two issues there.

I think the exciting thing is that you are seeing nationally a common agenda around innovation and entrepreneurship. In my last position and now with the Commerce Department, what I am seeing is that everybody at the higher education level and then regionally is thinking about innovation and entrepreneurship.

I would imagine that all our major research universities, our community colleges, they are all focusing on innovation and entrepreneurship.

Some, like MIT, are very focused on lab to market and how to commercialize more high-growth entrepreneurship. Others, like Tulane in your home State, are the leaders around student entrepreneurship and civic engagement.

Then community colleges, we have actually 170 community colleges in this country that have signed a letter promoting entrepreneurship programs in community colleges.

So, this is a national effort. The reality is that everybody is in a different place in the work that they are doing and I think the flexibility that we need in our Federal policy should reflect that, that what MIT is working on will require a set of focus, a different set of circumstances, a different amount of money than maybe what the community colleges are doing as they get started.

Also, I was at the University of Wyoming which has over 50 startups in Laramie, Wyoming. Clearly, their needs are going to be very different than what some of the other universities are doing.

But nonetheless we should support the development of that ecosystem where they may be at level "A" and MIT might be at level "D" that is okay. They still need the same support around the issues we have talked about, mentorship, access to capital, access to business models that can support them and then the right economic development conditions in their region.

On the entrepreneurship side, similarly I think every regional economic development agency is now looking at entrepreneurship. At EDA most of the applications we get for business accelerators, and we have funded over 700 over the years at University centers and regionally economic agencies, really focus on entrepreneurship and where are we in the continuum of developing entrepreneurship.

Some, like Idea Village and MassChallenge, are really, really far ahead nationally, you know, over 1200 applications for each program and robust mentorship and entrepreneurship programs for each of the applicants.

So, what they need is at one level of funding and support, probably more money, more technical support, more agencies that can work with them at the Federal level, Labor, Energy, Commerce, SBA, they can all do something for these programs because they are so big and have such a vast array of startups under them.

Then again, I bring up Wyoming and other places where they are just getting started, or Lowell, Massachusetts. Their needs are similar but at a different level.

They are looking at money to refurbish old mill warehouses and buildings to create incubators. They are looking at retraining local workforces that used to be good at manufacturing or agriculture or telecommunications and transitioning those skills.

Or they are looking at middle aged workers whose expertise is in financial services but are not going to go weatherize homes now because they have been laid off. They are going to maybe figure out another way to work and maybe entrepreneurship is the path they need and what is their development strategy to help those workers.

So, I think we are seeing a vast array of programming around the country that is very different. I think Crowdfunding will actually help that significantly as we are seeing.

Most organizations are trying to develop ideas and culture around the entrepreneurship and that little bit of money to help the culture is going to be critical.

So, I hope we can continue the discussion around a broad national policy that reflects the diversity of where organizations and regions are.

Chair LANDRIEU. Well, thank you very much. It is almost the bewitching hour of 12 noon and I know that you all have a lunch to get to and planes to catch so we are going to end but thank you again.

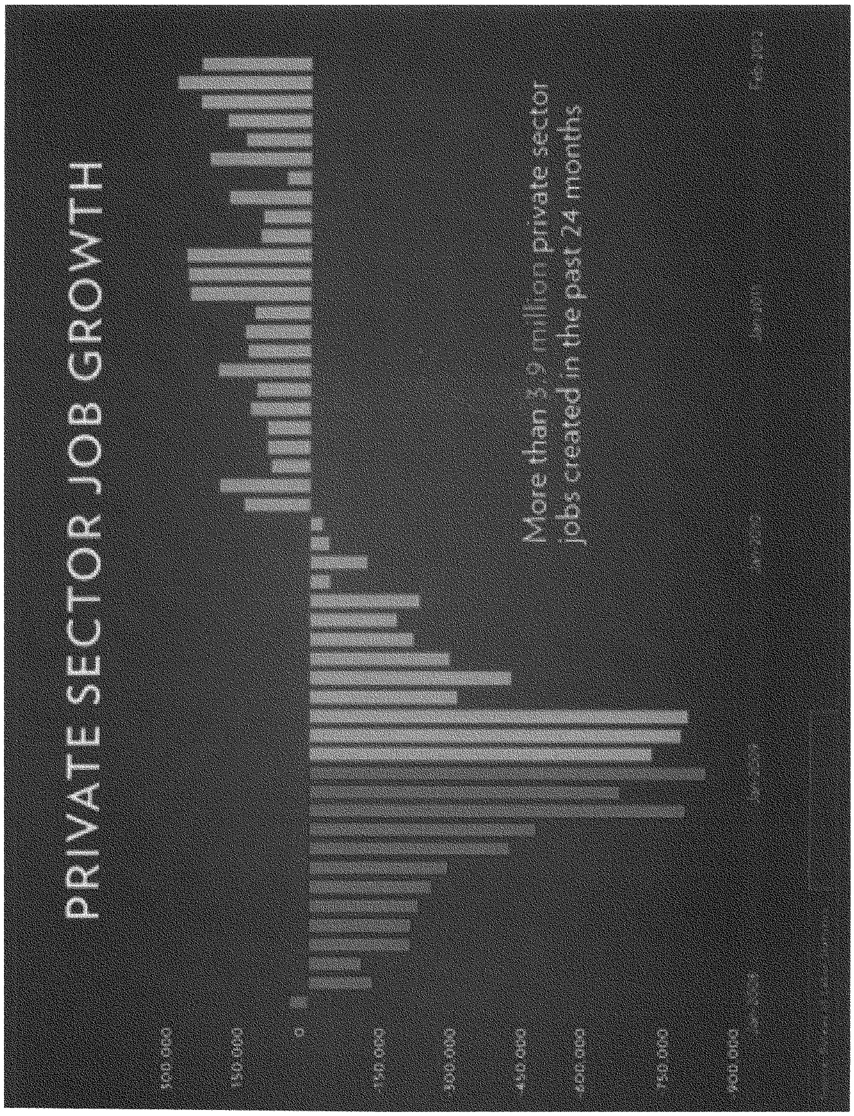
This has been very, very stimulating. I hope you feel like you have been challenged with your own ideas and the thoughts that have been very invigorating to the discussion. I can promise you the ideas that you put out today and emphasized will be included in the reports, of course, from the Committee this morning itself but hopefully some of your ideas will actually get into legislation that we hope to put together literally in the next few weeks to introduce.

So, thank you all very much.

The meeting is adjourned. The record will stay open for two weeks.

[Whereupon, at 11:56 a.m., the Committee was adjourned.]

APPENDIX MATERIAL SUBMITTED


PRIVATE SECTOR JOB GROWTH
More than 3.9 million private sector jobs created in the past 24 months
300,000 150,000 0 -150,000 -300,000 -450,000 -600,000 750,000 -900,000
Jan 2008 Jan 2009 Jan 2010 Jan 2011 Feb 2012

2009 Graduate Students in STEM Fields

Field of Study	Total Students Enrolled	Foreign Nationals (Percentage of Student Body)
Science*	237,004	74,987 (32%)
Engineering	144,677	66,035 (45%)
Health	77,306	8,654 (11%)
ALL FIELDS	445,320	149,676 (34%)

Source: National Science Foundation

**Data Totals Exclude Social Sciences and Psychology Degrees*

Top 10 U.S. Engineering Graduate Degree Programs

2011 SCHOOL RANKINGS	STUDENTS	FOREIGN NATIONALS (Percentage of Student Body)
1. Massachusetts Institute of Technology	1,042	426 (40%)
2. Stanford University	1,296	516 (39%)
3. University of California-Berkley	564	169 (30%)
4. Georgia Institute of Technology	1,585	839 (52%)
5. University of Illinois Urbana-Champaign	816	359 (44%)
California Institute of Technology (Tied for5th)	*n/a*	*n/a*
6. Carnegie Mellon University	324	172 (53%)
7. University of Michigan-Ann Arbor	1,048	486 (46%)
8. University of Texas (Austin)	660	319 (48%)
9. Cornell University	922	404 (44%)
10. Purdue University-West Lafayette	702	335 (47%)
TOTALS	8,959	4,025 (45%)

Sources: US News & World Report (rankings); American Association of Engineering Societies (student numbers).

SENATE COMMITTEE ON SMALL BUSINESS AND ENTREPRENEURSHIP
Perspectives from the Entrepreneurial Ecosystem:
Creating Jobs and Growing Businesses through Entrepreneurship
Ranking Member Olympia J. Snowe
April 18, 2012 (DRAFT #1, 04-16-12, 5:00 PM)

Thank you, Chair Landrieu, for holding this timely and informative roundtable, and to our participants for your willingness to discuss the essential roles of entrepreneurship, business growth, innovation, and mentorship. We value your input on the economic climate facing our nation's small businesses; and particularly those high-growth firms whose development is integral to creating jobs and reviving our stagnant economy.

Members from both sides of the aisle recognize the necessity of crafting policy that results in an economic game-changer. As America continues to suffer from unprecedented levels of unemployment, it is imperative that we look towards our nation's job creators, small businesses, to bridge the gap. There is no question that America's entrepreneurs have the tenacity and innovation pivotal to our country's success, and Congress must ensure that the Federal government helps, rather than hinders, their growth.

At a time when 14 million Americans are still unemployed, and have been so for the longest period since record keeping began in 1948, our government should be taking every possible step to ease the burden on job creators. We must help create an environment that is conducive to small businesses' job creation and results in more success stories about high-growth firms hiring American workers, and growing here at home.

I recently met with David Friend, Chairman and CEO of Carbonite, a technology company ranked #9 in Inc. Magazine's list of the top 500 fastest

growing private companies. On November 4, 2011 Carbonite opened a facility in Lewiston, Maine that provides technical service to customers attempting to retrieve damaged or deleted data. The company currently employs approximately 150 people in Maine and plans to expand to 250 by the end of 2012. These technical support jobs were being performed overseas but Carbonite has now repatriated all the jobs to the facility in Lewiston.

Today's roundtable is about companies like Carbonite, and other startup businesses that have found success, even in the worst of economic times. I'm eager to hear from all of the stakeholders here today to determine ways we can replicate this success on an even larger scale. What practices work? What hasn't worked? What lessons have you learned? An entrepreneurial ecosystem to bolster business growth and development will play a prominent, if not the lead role, in driving the economy out of the current economic morass.

As a tremendous first step in helping entrepreneurial firms at their various stages of growth and development, I applaud the recent passage of the bipartisan Jumpstart Our Business Startup, or JOBS, Act which the President signed into law earlier this month. Two Republican members of our Committee, Senators Brown and Moran, were instrumental in the passage of this legislation, which will make it easier for start-ups to raise money and go public by lifting U.S. Securities and Exchange Commission (SEC) restrictions on soliciting new investors and permit "crowdfunding" so that entrepreneurs can raise equity capital from larger pools of small investors. This is a paramount move in transforming the ability of small businesses to raise capital and help companies generate sustainable economic growth and jobs.

At the same time, Congress must do more. This means providing tax certainty to our small businesses and curtailing onerous regulations which act as

barriers to startups – prohibiting companies from becoming high-growth job creators. While the myriad of variables affect individual businesses and industries differently, everywhere I go in Maine and nationally, I hear about the onerous impact of regulations on hardworking small business owners.

That is why I, along with Senator Tom Coburn (OK), introduced S. 1030, the Freedom from Restrictive, Excessive, Executive Demands and Onerous Mandates (FREEDOM) Act on May 19, 2011. The FREEDOM Act is a targeted regulatory reform bill that would provide small businesses with much needed relief from burdensome, one-size-fits-all federal regulation. This legislation will modernize the Regulatory Flexibility Act (RFA), to require that federal agencies conduct more comprehensive analyses of the potential impacts that regulations have on small businesses.

Additionally, while I continue to advocate for comprehensive tax reform, there are certain measures that, although not a silver bullet, should be passed right away to help improve the economic environment for small businesses. The Small Business Tax Extenders Act of 2011 is a critical example! This legislation, which I have recently reintroduced with Chair Landrieu and Senator Brown, contains provisions we have championed for years to provide small businesses greater cash flow, incentivize their investments, and increase tax fairness.

While brilliant, innovative ideas have the potential to spur business growth and employment; these ideas will fail to flourish if our tax code and regulatory system remain broken. I welcome your input on how these crucial issues challenge entrepreneurs, and on potential solutions going forward.

I look forward to hearing from all our witnesses, who know first-hand the value and role entrepreneurship plays in boosting our struggling economy. Your

contributions are truly invaluable as this committee makes developing an entrepreneurial ecosystem a top priority in the year to come.

Thank you, Madam Chair.

Economic Development Administration
2011 i6 Green Challenge Winners

Igniting Innovation, Florida I^2 Cleantech Acceleration Network, University of Central Florida, Technological Research and Development Authority, and the University of Florida, establishes a Proof-of-Concept model that links Florida based universities, incubation networks, investors, and industry resources to create a network of proof-of-concept centers to accelerate the creation and commercialization of innovative clean technology research. **Atlanta Region**

Proof of Concept Center, Louisiana Tech University, serving the I-20 corridor in north Louisiana, south Arkansas, west central Mississippi, and northeast Texas to increase the speed with which new green technology innovations enter the market by fostering an ecosystem that includes proof of concept process, the development of business plans, leveraging private investment, promoting interdisciplinary collaboration between university and private sector partners, and creating entrepreneurial opportunities. **Austin Region**

Michigan State University Centers to Commercialize Research supports a proof of concept center for green scale-up chemistry working with entrepreneurs and client firms to commercialize research discoveries. **Chicago Region**

Iowa Innovation Network, State of Iowa Department of Economic Development, and Iowa State University development of innovative proof of concept and proof of commercialization supports the relevance centers that will accelerate the launch of new firms spur job creation, and contribute to economic growth in Iowa. **Denver Region**

New England i6 Green Partnership Proof of Concept Center, New England Clean Energy Foundation serves communities across a six state region, the project creates a commercialization network infrastructure that enables collaborators to increase job creation and private sector investment. **Philadelphia Region**

Washington Clean Energy Partnership Project, Puget Sound Regional Council, South Seattle Community College, Cleantech Open, SIRTI supports collaboration between industry and institutions of higher education for the expansion of the clean energy sector throughout Washington State. The project will develop resources for testing energy efficiency solutions, establishing public private partnerships focused on clean energy, and facilitating the testing of clean energy products and services. **Seattle Region**

i6 Green Challenge 2011

Region:	Atlanta
Grant Program:	i6 Challenge
Project Name:	Igniting Innovation (I2) Cleantech Acceleration Network
Grantee Name:	University of Central Florida / Technological Research and Development Authority / University of Florida
Award Amounts:	$1,000,000 (EDA) + $613,155 (Applicant) + $149,487 (DOE) = **$1,762,642 Total**
Identified Region:	East Central Florida: Counties include Brevard, Volusia, Orange and Seminole. The eligibility is based on Brevard County, FL.
Identified Cluster:	A particular emphasis will be given to research areas in which FL excels - solar energy, biofuels, green building technologies, and smart grid.
Project Description and Objectives:	The Igniting Innovation Cleantech Acceleration Network (I2 CAN) is a unique distributed proof-of-concept model that consists of a network of Florida-based universities, incubation networks, investors and industry resources that are coming together to accelerate the commercialization of innovative clean technology research into new technology companies or to license into existing firms. The I2 CAN will provide commercialization resources to entrepreneurs, scientists and established companies that are interested in commercializing clean technology research conducted within Florida's research institutions. A particular emphasis will be given to research areas in which Florida excels - solar energy, biofuels, green building technologies, and smart grid (energy storage and software/sensors).
Brief Description of Activities:	This investment will support the Florida I2 Cleantech Acceleration Network's (I2 CAN) Proof-of-Concept model. It will implement a unique model that links Florida-based universities, incubation networks, investors and industry resources together to create a network of POC centers to accelerate the creation and commercialization of innovative clean technology research. This investment will support The University of Central Florida (UCF), the Technological Research and Development Authority (TRDA), and the University of Florida's Florida Energy Systems to implement a unique model that links Florida-based universities, incubation networks, investors and industry resources together to create a network of POC centers to accelerate the creation and commercialization of innovative clean technology research.
All Project Partners:	The University of Central Florida (UCF), the Technological Research and Development Authority (TRDA), and the University of Florida's Florida Energy Systems

i6 Green Challenge 2011

Region:	Austin
Grant Program:	i6 Challenge
Project Name:	Louisiana Tech Proof of Concept Center
Grantee Name:	Louisiana Tech University
Award Amounts:	$1,000,000 (EDA) + $679,622 (Applicant) + $649,500 (other) + $100,000 (EPA) = **$2,429,122 Total**
Identified Region:	Serving the I-20 corridor region in north Louisiana, south Arkansas, west central Mississippi, and northeast Texas
Identified Cluster:	Green Technology innovation
Project Description and Objectives:	Establishing a proof of concept center, called LA_i6, based at and operated by Louisiana Tech, serving the I-20 corridor region in north Louisiana, south Arkansas, west central Mississippi, and northeast Texas. LA_i6 will focus on increasing the speed with which new green technology innovations enter the market and amplifying their subsequent social, environmental, and economic impacts.
Brief Description of Activities:	The broad goals of LA_i6 include: 1. Linking proposed LA_i6 activities with other related, ongoing efforts to conduct technology market evaluations, design and build prototypes, and develop business plans; 2. Leveraging public investment to attract private seed funding to support commercialization; 3. Promoting interdisciplinary collaboration between the university and private sector partners in the development and deployment of new green technologies and applications; 4. Providing experiential education opportunities for students that engage them in innovative entrepreneurial challenges and with new technology; 5. Enhancing the regional network of innovators, entrepreneurs, and investors through specific interaction on green technology development projects. LA_i6 will support technology product development, entrepreneurs, and startup or growing companies focused on each of the major areas listed as priorities for the i6 Green Challenge.

i6 Green Challenge 2011

Region:	Chicago
Grant Program:	i6 Challenge
Project Name:	Proof of Concept Center for Green Chemistry Scale-up
Grantee Name:	Michigan State University/ Lakeshore Advantage /New North Center /Prima Civitas Foundation
Award Amounts:	\$500,000 (EDA) + \$500,000 (Applicant)+ \$80,000 (EPA) = **\$1,080,000 Total**
Identified Region:	West Michigan: The project site is located in the City of Holland, a municipality that straddles Allegan and Ottawa Counties in Michigan. Surrounding West Michigan counties include Muskegon and Kent.
Identified Cluster:	Chemical and bioeconomy industries.
Project Description and Objectives:	The project involves operating the Michigan State University Proof-of-Concept-Center for Green Scale-Up Chemistry (PCCGSC), training and advising PCCGSC clients on green technology innovation and recruiting capital investment in PCCGSC clients. In addition, supplemental EPA assistance will help fund research and development at the PCCGSC in drinking water filtration and safety.
Brief Description of Activities:	The project scope of work includes the following: 1) Operating the physical site of the MSU Bioeconomy Institute and the Michigan State University Proof-of-Concept-Center for Green Scale-Up Chemistry (PCCGSC) including all safety, regulatory compliance, maintenance, and other site operational tasks, and the installation of videoconferencing capacity; 2) Planning and executing all chemical scale-up services to entrepreneurs and client firms provided by the Proof of Concept Center; 3) Assisting qualified and interested PCCGSC client firms in obtaining USDA BioPreferred designations; 4) Augmenting existing Bioeconomy-related research and development efforts centering on arsenic removal from drinking water, through an EPA supplemental i6 Green award; 5) Training and advising entrepreneurs and PCCGSC client firms on "Green technology"-related innovation, product design aesthetics, and human factors accommodations; 6) Operating the BioBusiness Accelerator at the MSU Bioeconomy Institute; 7) Recruiting "Green technology" incubator tenants; 8) Providing entrepreneurs and PCCGSC client firms with advice on business planning, marketing, and sales; 9) Providing entrepreneurs with assistance in pursuing MEDC, SBIR and STTR grants and NineSigma solicitations; 10) Organizing "showcase events" for the PCCGSC client companies and their technologies; 11) Facilitating collaborations with Grand Valley State University, local community colleges, and the regional SBTDC structure; 12) Coordinating PCCGSC publicity with MSU and other partnering organizations; 13) Identifying and recruiting potential PCCGSC client companies, especially beyond West Michigan.

i6 Green Challenge 2011

Region:	Denver
Grant Program:	i6 Challenge
Project Name:	Iowa Innovation Council i6 Green Project
Grantee Name:	Iowa Economic Development Authority/ Iowa State University
Award Amounts:	$1,000,000 (EDA) + $1,000,000 (Applicant) = **$2,000,000 Total**
Identified Region:	State of Iowa
Identified Cluster:	Technology
Project Description and Objectives:	EDA funds will be used to expand the proof of concept development model by adding the next stage, Proof of Commercial Relevance Center (POCRC).
Brief Description of Activities:	POCRC takes early stage processing further by providing market validation of new technology. The focus will be on product, production or manufacturing process, customer acceptance, and overall economics. POCRC would increase the commercialization activity from these centers by: • Prospect development; • Proactively work with Center/Institute leadership and faculty to build a culture within these initiatives that encourages and supports commercial application of research; • Utilize seminars, personal contact, educational programs to build knowledge of commercialization opportunities among students and faculty; • The POCC will be the vehicle for delivery of commercialization programming and services; • Deliver analysis and services to advance research to commercialization; • Provide feedback to researchers on the commercial potential of their research program through evaluation of technical risks and intellectual property potential, including examination of opportunities to build a portfolio of IP; market assessment in relation to risk assessment and competition demonstrating the potential for growth and job creation; paring with advisors form industry or the entrepreneurial sector; development of a plan to advance the research to commercial application; analysis of and assistance with regulatory requirements; staged funding to advance the research through proof of concept and towards prototype/testing stage.

i6 Green Challenge 2011

Region:	Philadelphia
Grant Program:	i6 Challenge
Project Name:	Cleantech Innovations New England
Grantee Name:	New England Clean Energy Foundation
Award Amounts:	$1,000,000 (EDA) + $1,650,000 (Applicant)+ $75,000 (DOE) + $100,000 (EPA) = **$ 2,825,000 Total**
Identified Region:	All of New England
Identified Cluster:	Green Technology Sector
Project Description and Objectives:	The Cleantech Innovations New England will create a Proof of Concept Network that will focus its efforts on renewable energy, energy efficiency, and water technologies. The Partnership is a multi-state network that will collaborate to provide promising cleantech lab and pre-venture projects with funding, business assistance, technical resources, and testing infrastructure.
Brief Description of Activities:	The scope of work consists of two principle initiatives: 1. First, the Proof of Concept Center (PoCC) will develop the New England Innovation Connector System to facilitate and foster the exchange of ideas among New England's cleantech stakeholders. 2. Second, the PoCC will provide services and funding to assist in the commercialization of promising cleantech innovations. These initiatives are composites of the following elements: (i) market pull through the identification of business challenges; (ii) research labs to accelerate initial technology research, testing and development; (iii) funding for pre-commercial research and development;(iv) mentorship, team building, business model development; and (v) connection with corporate partners and investors for follow-on funding. Cleantech Innovations New England leverages the Deshpande Center and other successful programs to create a multi-state proof of concept center model that serves the entire New England region, connecting innovations to valuable, multi-state assets.
All Project Partners:	The New England Clean Energy Foundation, the Connecticut Clean Energy Finance and Investment Authority, the Maine Technology Institute, the Massachusetts Clean Energy Center, the New Hampshire Office of Energy and Planning, the Rhode Island Renewable Energy Fund, and the Vermont Agency of Commerce and Community Development, and 40+ other supporters.

i6 Green Challenge 2011

Region:	Seattle
Grant Program:	i6 Challenge
Project Name:	Washington Clean Energy Partnership Project
Grantee Name:	Puget Sound Regional Council / South Seattle Community College / Cleantech Open
Award Amounts:	$1,000,000 (EDA) + $1,569,434 (Applicant) + $150,000 (DOE) = $2,719,434 Total
Identified Region:	State of Washington
Identified Cluster:	Clean Energy Sector
Project Description and Objectives:	The applicant seeks to develop a partnership that will foster collaboration between industry and institutions of higher education for the expansion of the clean energy sector.
Brief Description of Activities:	Project activities will include the development of resources for the testing of energy efficiency solutions, establishment of a public-private partnership focused upon the clean energy industry, and the facilitation of the testing of clean energy products and services to enable their commercialization.

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April 17, 2012

Senator Mary Landrieu, Chair
Committee on Small Business and Entrepreneurship
U.S. Senate
Washington, DC 20510-6350

Attn: Darla Ripchensky,
Chief Clerk for the Committee

Dear Senator Landrieu:

I am pleased to have the opportunity to participate in the Committee's roundtable entitled "Perspectives from the Entrepreneurial Ecosystem: Creating Jobs and Growing Businesses Through Entrepreneurship", on Wednesday April 18, 2012. As I understand it, the purpose of this roundtable is to discuss proposals on high growth entrepreneurship and job creation including the federal government's role in strengthening entrepreneurial ecosystems.

Started in 1984, the SBTDC is a statewide program of the University of North Carolina System with offices based at each of the 16 campuses of the system. It is well recognized for its innovation, high quality services and exceptional connectivity to the state's economic development infrastructure.

We were the first SBDC to adopt a client market segment based service delivery system. These segments include start-ups, existing small businesses with less than10 employees and existing businesses with 10 or more employees (up to roughly 150 or so). Services provided are specifically focused on meeting the different needs of each segment.

We adopted this approach because of our recognition that a portfolio approach to service delivery provided a basis for broader service and greater long-term economic impact. This also included a growing understanding that businesses with 10 or more employees had great potential for further growth in both sales and employees. We also quickly learned that these firms were largely un-served by the existing service delivery system.

We have followed a client market segmentation model for service delivery for a decade. However, it has only been the last few years that we've had the capacity to be able to be much more aggressive in our outreach and service to companies with more than 10 employees. This focus, frankly, resulted from the recession and the painful need to stem job losses and help rebuild our economy.

With the support and engagement of our Governor, our University, our Department of Commerce and the SBA we have significantly increased our outreach and services to small to medium sized firms. We've used supplemental funding for SBDCs provided through SBA under the Small Business Jobs Act and other support from our State Commerce Department to add staff, develop and deploy new tools and resources and closely monitor business satisfaction and performance outcomes. We've significantly increased our outreach to targeted companies under a program brand – BIZ BOOST – which has achieved a significant level of recognition in the business community across our state.

The focus of services under the BIZ BOOST initiative includes an in-depth analysis of the past performance (sales / financial), capacities and current positioning of the businesses in their marketplace. This is followed by the engagement of owners and managers in a review of their strategies and an assessment of their strengths and weaknesses. The firms are then helped in the development of their near to mid-term action plan for growth which is essentially customized for their business. It will include market expansion targets, operational improvement requirements, adequacy of capital to support growth and staff training and development. Regular on-going counseling support and leveraging of other resources is provided, as well, when the firms are implementing their action plans.

We've learned some key lessons thru the BIZ BOOST initiative. Among these are the following:

- These firms are not using the existing business assistance resource network in our state
- They do not view themselves as "small" and do not believe there are any relevant services available to help them.
- They reserve judgment on the effectiveness of services provided – at 6 months they are most likely to indicate they are "not sure" whether the assistance provided has been beneficial.
- At the 12 month mark, however, these firms are providing the highest satisfaction ratings of all client segments; and
- They are achieving remarkable business success in terms traditionally measured such as jobs, sales growth and other factors.

The North Carolina SBTDC is not the only SBDC program with a client segment approach to services. Many have adopted this model; but there are, as yet, only a few SBDC (such as Michigan and Florida) that have made an in-depth commitment to "second stage" companies.

Attached is a brief synopsis of the outcomes and impact of the BIZ BOOST initiative over the period 2010 - 2011. This includes a state-wide summary and a summary for firms in each of the state's seven economic development regions to show state-wide distribution. Performance and outcome includes only what the firms themselves have directly reported.

More consistent focus on these types of companies is clearly warranted. They are literally everywhere, they are important economically and they have significant capacity for growth, if they have access to the right resources and services. Finally, a service commitment to this segment can be very cost effective – as has certainly been the case in North Carolina.

We would urge a stronger federal level focus on "second phase" companies; principally through its SBA's Small Business Development Center Program. The focus and results of a number of SBDCs can serve as a model for broader replication.

Sincerely yours,

Scott R. Daugherty
Asst. Vice Chancellor and Executive Director

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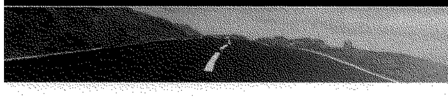
ADVANTAGEWEST
Economic Development Group

Biz Boost Report

Jan. 2010–Dec. 2011



We're proud to announce the results of our Biz Boost initiative over the past two years. Working with the SBTDC program has shown significant impact in our region on jobs and the success of existing businesses.

OUTCOMES AND IMPACT

- Client Businesses Served: 260
- Jobs Created: 457
- Jobs Retained: 536
- Total Jobs Created or Retained: 993
- # Loans obtained: 14
- Total Capital Formation: $12,381,800
- # Government Contracts Awarded: 416
- $ Government Contracts Awarded: $21,328,649
- Cost Per Job Created Across the Statewide Biz Boost Initiative: $813

Outcomes and impact are based on the number of client businesses currently reporting data (19.2%).

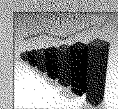
PARTICIPATING COMPANIES

Biz Boost clients served between January 2010 and December 2011 represent 16,146 full-time jobs (average 62 jobs per business), 781 part-time jobs, and over $1 billion in sales.

Industry types: Manufacturing (49.6%); Construction (9.2%); Professional, Scientific, Technical Services (5.8%); Retail Trade (5.8%); Accommodation & Food Service (5.4%); Wholesale Trade (2.7%); Health Care & Social Assistance (2.3%); Agriculture, Forestry, Fishing, & Hunting (1.2%); and all others (18%).

Participating company data is based on all 260 clients receiving SBTDC services between January 2010 and December 2011.

REAL BUSINESS SUCCESS



A family-owned agribusiness came to the SBTDC for help in areas in which they lacked business experience. Their challenges were in human resources, branding, financial and inventory management, and planning for expansion.

The SBTDC worked with this client extensively over six years to customize a financial analysis of revenue streams and products lines, create a HR strategy and resolve HR issues, and plan for expansion and rebranding. As a result, the client's sales have grown significantly, allowing for five new jobs to be created. The client added an e-commerce feature to the website and became a "North Carolina Companies to Watch" recipient in 2011.

UTILIZING UNIVERSITY ASSETS

Biz Boost leverages the assets of the universities in our state to help businesses survive and succeed. The SBTDC is able to connect businesses with students, faculty, and other university resources and programs as necessary to provide the greatest help.

The SBTDC has been a program of the University of North Carolina System since 1984. Through offices at Appalachian State and Western Carolina universities, the SBTDC is able to deliver assistance to businesses in all 23 of our counties.

As a statewide program, the SBTDC has also drawn assistance and expertise from other universities across our state to help local businesses in the Biz Boost effort.

ABOUT BIZ BOOST

Biz Boost is an innovative program developed by the SBTDC to serve small to medium sized businesses with growth potential. It is designed specifically to engage established businesses with 10-200 employees to provide them with expert business advice to help owners and management teams sustain and grow their businesses.

The SBTDC services to these businesses are focused on helping them develop and implement strategies for enhanced competiveness and growth. This includes support for access to capital, identification of new market opportunities, domestically with government and abroad, enhanced supply chain capacities and improved operational management.

JobsNOW sbtdc NORTH CAROLINA

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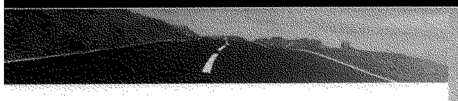
Biz Boost Report

Jan. 2010–Dec. 2011



We're proud to announce the results of our Biz Boost initiative over the past two years. Working with the SBTDC program has shown significant impact in our region on jobs and the success of existing businesses.

OUTCOMES AND IMPACT

- Client Businesses Served: 204
- Jobs Created: 478
- Jobs Retained: 364
- Total Jobs Created or Retained: 842
- # Loans obtained: 14
- Total Capital Formation: $4,899,500
- # Government Contracts Awarded: 376
- $ Government Contracts Awarded: $47,637,999
- Cost Per Job Created Across the Statewide Biz Boost Initiative: $813

Outcomes and impact are based on the number of client businesses currently reporting data (21%).

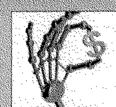
PARTICIPATING COMPANIES

Biz Boost clients served between January 2010 and December 2011 represent 16,653 full-time jobs (average 82 jobs per business), 710 part-time jobs, and over $1.7 billion in sales.

Industry types: Manufacturing (31.9%); Construction (16.2%); Retail Trade (9.3%); Wholesale Trade (6.4%); Health Care and Social Assistance (6.9%); Professional, Scientific, Technical Services (4.9%); Accommodation and Food Services (2.0%); Transportation & Warehousing (2.0%); Administrative Support (1.5%); Information (1%); and all others (17.9%).

Participating company data is based on all 204 clients receiving SBTDC services between January 2010 and December 2011.

REAL BUSINESS SUCCESS



The recent efforts of the SBTDC helped a 25-year-old convenience store determine a marketing and inventory strategy to propel future sales and increase profitability. The client had seen a steady decrease in sales over the past several years and had tried expanding into different markets. The SBTDC researched market trends, product placement best practices, and did a complete financial analysis of each business division.

Because of SBTDC's research and financial help, the client can now assess which sales items should be cycled out to make way for more profitable items. The client is also better equipped to track inventory. The SBTDC's strategy for the client focused on current strengths of the business, cut out an unprofitable division, and made changes to focus on existing division profitability.

UTILIZING UNIVERSITY ASSETS

Biz Boost leverages the assets of the universities in our state to help businesses survive and succeed. The SBTDC is able to connect businesses with students, faculty, and other university resources and programs as necessary to provide the greatest help.

The SBTDC has been a program of the University of North Carolina System since 1984. Through offices at ECU, UNC Wilmington, and NC State universities, the SBTDC is able to deliver assistance to businesses in all 13 of our counties.

As a statewide program, the SBTDC has also drawn assistance and expertise from other universities across our state to help local businesses in the Biz Boost effort.

ABOUT BIZ BOOST

Biz Boost is an innovative program developed by the SBTDC to serve small to medium sized businesses with growth potential. It is designed specifically to engage established businesses with 10-200 employees to provide them with expert business advice to help owners and management teams sustain and grow their businesses.

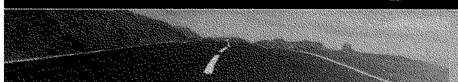
The SBTDC services to these businesses are focused on helping them develop and implement strategies for enhanced competiveness and growth. This includes support for access to capital, identification of new market opportunities, domestically with government and abroad, enhanced supply chain capacities and improved operational management.

JobsNOW sbtdc NORTH CAROLINA DEPARTMENT OF COMMERCE

Research Triangle Region
NORTH CAROLINA

Biz Boost Report

Jan. 2010–Dec. 2011



We're proud to announce the results of our Biz Boost initiative over the past two years. Working with the SBTDC program has shown significant impact in our region on jobs and the success of existing businesses.

OUTCOMES AND IMPACT

- Client Businesses Served: 356
- Jobs Created: 1,971
- Jobs Retained: 1,929
- Total Jobs Created or Retained: 3,900
- # Loans obtained: 47
- Total Capital Formation: $32,689,269
- # Government Contracts Awarded: 351
- $ Government Contracts Awarded: $219,295,796
- Cost per Job Created Across the Statewide Biz Boost Initiative: $813

Outcomes and impact are based on the number of client businesses currently reporting data (24.7%).

PARTICIPATING COMPANIES

Biz Boost clients served between January 2010 and December 2011 represent 47,077 full-time jobs (average 132 jobs per business), 1,265 part-time jobs, and over $2.1 billion in sales.

Industry types: Manufacturing (23.3%); Professional, Scientific, Technical Services (18%); Construction (7.9%); Retail Trade (5.9%); Health Care & Social Assistance (5.6%); Wholesale Trade (3.9%); Information (3.7%); Accommodation & Food Service (3.7%); Administrative & Support (3.7%); Educational Services (3.4%); Transportation & Warehousing (2.0%); Arts, Entertainment, & Recreation (1.4%); and all others (17.5%).

Participating company data is based on all 356 clients receiving SBTDC services between January 2010 and December 2011.

REAL BUSINESS SUCCESS

This veteran-founded technology consulting firm helps customers leverage technology to achieve better results. The company is involved with DoD and federal contracting and employs more than 25 people serving roughly 2,000 customers. After receiving feedback from several federal clients, the company determined that a General Services Administration (GSA) Schedule contract would enhance and improve current and prospective relationships.

The company contacted a Procurement Technology Assistance Center (PTAC) counselor at the SBTDC for targeted assistance with preparing a GSA Schedule proposal before submission. With the SBTDC's help, the proposal was accepted and the contract was awarded. More recently, the client has also benefited from SBTDC assistance with the engagement of area legal students and business majors in reviewing contract issues and hiring processes. Since contacting PTAC/SBTDC, employment has increased over 30%.

UTILIZING UNIVERSITY ASSETS

Biz Boost leverages the assets of the universities in our state to help businesses survive and succeed. The SBTDC is able to connect businesses with students, faculty, and other university resources and programs as necessary to provide the greatest help.

The SBTDC has been a program of the University of North Carolina System since 1984. Through offices at UNC Chapel Hill, NC State, NC Central, and Fayetteville universities, the SBTDC is able to deliver assistance to businesses in all 13 of our counties.

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ABOUT BIZ BOOST

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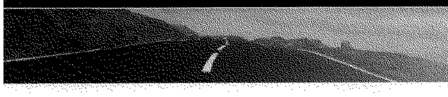
JobsNOW sbtdc NORTH CAROLINA

NORTH CAROLINA'S NORTHEAST
DISCOVER THE DIFFERENCE

Biz Boost Report

Jan. 2010–Dec. 2011



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OUTCOMES AND IMPACT

- Client Businesses Served: 344
- Jobs Created: 116
- Jobs Retained: 224
- Total Jobs Created or Retained: 340
- # Loans obtained: 6
- Total Capital Formation: $3,551,000
- # Government Contracts Awarded: 15
- $ Government Contracts Awarded: $7,975,390
- Cost per Job Created Across the Statewide Biz Boost Initiative: $813

Outcomes and impact are based on the number of client businesses currently reporting data (9.8%).

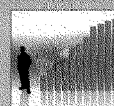
PARTICIPATING COMPANIES

Biz Boost clients served between January 2010 and December 2011 represent 3,242 full-time jobs (average 9 jobs per business), 845 part-time jobs, and over $606 million in sales.

Industry types: Manufacturing (16.9%); Retail (13.4%); Construction (11.0%); Accommodation and Food Services (7.3%); Professional, Scientific, Technical Services (6.4%); Arts, Entertainment and Recreation (4.1%); Wholesale Trade (3.8%); Agricultural, Forestry, Fishery and Hunting (3.8%); Health Care and Social Assistance (2.9%); Educational Services (1.2%); Real Estate, Rental and Leasing (1.2%); and all others (28%).

Participating company data is based on all 344 clients receiving SBTDC services between January 2010 and December 2011.

REAL BUSINESS SUCCESS



This marine construction company had experienced significant negative impact due to economic downturn in coastal areas. This shift had forced them to retool their business model and focus on residential marine construction. Luckily, their competitive market advantage is their superior quality in appearance and durability, along with a lengthy guarantee on their work.

The SBTDC helped the company identify areas to improve internal efficiency, including better employee management and reducing costs. These improvements and ongoing support from the SBTDC counselor helped this company navigate a surge in growth after Hurricane Irene. Sales have increased by 30% and they added four additional staff.

UTILIZING UNIVERSITY ASSETS

Biz Boost leverages the assets of the universities in our state to help businesses survive and succeed. The SBTDC is able to connect businesses with students, faculty, and other university resources and programs as necessary to provide the greatest help.

The SBTDC has been a program of the University of North Carolina System since 1984. Through offices at Elizabeth City State and NC State universities, the SBTDC is able to deliver assistance to businesses in all 16 of our counties.

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ABOUT BIZ BOOST

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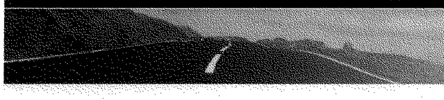
JobsNOW sbtdc NORTH CAROLINA

Piedmont Triad PARTNERSHIP

Biz Boost Report

Jan. 2010–Dec. 2011



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OUTCOMES AND IMPACT

- Client Businesses Served: 264
- Jobs Created: 1,537
- Jobs Retained: 241
- Total Jobs Created or Retained: 1,778
- # Loans obtained: 13
- Total Capital Formation: $11,264,373
- # Government Contracts Awarded: 178
- $ Government Contracts Awarded: $88,148,839
- Cost per Job Created Across the Statewide Biz Boost Initiative: $813

Outcomes and impact are based on the number of client businesses currently reporting data (17%).

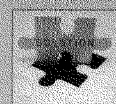
PARTICIPATING COMPANIES

Biz Boost clients served between January 2010 and December 2011 represent 22,350 full-time jobs (average 85 jobs per business), 1,846 part-time jobs, and over $2.3 billion in sales.

Industry types: Manufacturing (47.7%); Construction (6.4%); Professional, Scientific, Technical Services (6.8%); Wholesale Trade (6.4%); Retail Trade (6.1%); Transportation & Warehousing (5.3%); Accommodation & Food Service (2.3%); Health Care & Social Assistance (1.9%); Educational Services (1.9%); and all others (15.2%).

Participating company data is based on all 264 clients receiving SBTDC services between January 2010 and December 2011.

REAL BUSINESS SUCCESS



This small business has owned an animal healthcare center for nearly 20 years. The business saw direct implications of a downturned economy beginning in 2008, and instinctively sought additional financing to bridge the fiscal gap. After an initial assessment with the SBTDC, it was clear that additional financing was secondary to other issues. Human resources and marketing needed to be addressed first.

Since working with the SBTDC, the client has restructured HR to improve cash flow; the website has been improved; and new programs have been developed to attract existing and new clients. The client's next step with the SBTDC counselor is to develop a business plan that conveys a financial picture with future goals for securing SBA or USDA funds.

UTILIZING UNIVERSITY ASSETS

Biz Boost leverages the assets of the universities in our state to help businesses survive and succeed. The SBTDC is able to connect businesses with students, faculty, and other university resources and programs as necessary to provide the greatest help.

The SBTDC has been a program of the University of North Carolina System since 1984. Through offices at NC A&T, UNC Greensboro, Winston-Salem State, UNC Chapel Hill, and UNC Charlotte universities, the SBTDC is able to deliver assistance to businesses in all 12 of our counties.

As a statewide program, the SBTDC has also drawn assistance and expertise from other universities across our state to help local businesses in the Biz Boost effort.

ABOUT BIZ BOOST

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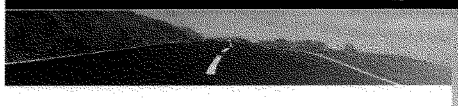
JobsNOW sbtdc NORTH CAROLINA DEPARTMENT OF COMMERCE

NORTH CAROLINA'S SOUTHEAST

Biz Boost Report

Jan. 2010–Dec. 2011



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OUTCOMES AND IMPACT

- Client Businesses Served: 276
- Jobs Created: 816
- Jobs Retained: 275
- Total Jobs Created or Retained: 1,091
- # Loans obtained: 22
- Total Capital Formation: 13,078,207
- # Government Contracts Awarded: 141
- $ Government Contracts Awarded: $41,478,257
- Cost per Job Created Across the Statewide Biz Boost Initiative: $813

Outcomes and impact are based on the number of client businesses currently reporting data (26%).

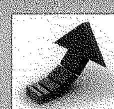
PARTICIPATING COMPANIES

Biz Boost clients served between January 2010 and December 2011 represent 9,317 full-time jobs (average 34 jobs per business), 2,244 part-time jobs, and over $744 million in sales.

Industry types: Manufacturing (17.4%); Construction (15.2%); Retail Trade (9.8%); Health Care & Social Assistance (9.8%); Professional, Scientific, Technical Services (9.1%); Wholesale Trade (6.2%); Accommodation & Food Service (3.3%); Educational Services (2.9%); Transportation & Warehousing (2.5%); Agriculture, Forestry, Fishing, & Hunting (1.4%); Administrative & Support (1.1%); Arts, Entertainment, & Recreation (1.1%); Information (1.1%); and all others (19.1%).

Participating company data is based on all 276 clients receiving SBTDC services between January 2010 and December 2011.

REAL BUSINESS SUCCESS



This regional publishing company produces two monthly magazines, one of which is a national publication that is franchised out to the company. This industry is very competitive as numerous publications are competing for each advertising dollar. The client came to the SBTDC to strengthen their marketing and sales. Additionally, the client wanted assistance in hiring sales personnel and general business counseling in order to work on business growth and possible expansion.

The SBTDC provided in-depth sales assistance through assessment and training as well as an extensive review of current sales staff. Geographical territories were assigned, allowing the client to focus on sales strategically.

UTILIZING UNIVERSITY ASSETS

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The SBTDC has been a program of the University of North Carolina System since 1984. Through offices at UNC Wilmington, UNC Pembroke, and Fayetteville State universities, the SBTDC is able to deliver assistance to businesses in all 11 of our counties.

As a statewide program, the SBTDC has also drawn assistance and expertise from other universities across our state to help local businesses in the Biz Boost effort.

ABOUT BIZ BOOST

Biz Boost is an innovative program developed by the SBTDC to serve small to medium sized businesses with growth potential. It is designed specifically to engage established businesses with 10-200 employees to provide them with expert business advice to help owners and management teams sustain and grow their businesses.

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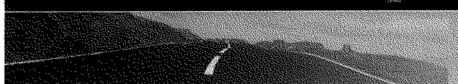
JobsNOW sbtdc NORTH CAROLINA

CHARLOTTE REGIONAL PARTNERSHIP

Biz Boost Report

Jan. 2010–Dec. 2011



We're proud to announce the results of our Biz Boost initiative over the past two years. Working with the SBTDC program has shown significant impact in our region on jobs and the success of existing businesses.

OUTCOMES AND IMPACT

- Client Businesses Served: 278
- Jobs Created: 635
- Jobs Retained: 56
- Total Jobs Created or Retained: 691
- # Loans obtained: 40
- Total Capital Formation: $28,623,632
- # Government Contracts Awarded: 267
- $ Government Contracts Awarded: $53,308,443
- Cost per Job Created Across the Statewide Biz Boost Initiative: $813

Outcomes and impact are based on the number of client businesses currently reporting data (67.6%).

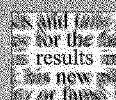
PARTICIPATING COMPANIES

Biz Boost clients served between January 2010 and December 2011 represent 18,410 full-time jobs (average 66 jobs per business), 603 part-time jobs, and over $1.8 billion in sales.

Industry types: Manufacturing (45%); Construction (9.5%); Professional, Scientific, Technical Services (10.3%); Retail Trade (5.4%); Wholesale Trade (3.7%); Health Care and Social Assistance (2.9%); Transportation and Warehousing (2.5%); Accommodation and Food Services (2.1%); all others (18.6%).

Participating company data is based on all 278 clients receiving SBTDC services between January 2010 and December 2011.

REAL BUSINESS SUCCESS



This private agency provides holistic counseling services to families and individuals. The firm has expanded operations, relocated the facility and restructured ownership on several occasions. They were faced with determining the future direction of the practice. Key issues included forecasting profitability; marketing for growth; operating with part-time management and meeting conflicting goals.

The practice has worked with the SBTDC in the past, and recently re-engaged the relationship. SBTDC counselors have provided research on legal and regulatory issues, along with a financial analysis through ProfitCents. With the counselors' support, the practice personnel are in progress of completing a strategic assessment that will map a specific plan of action for future growth.

UTILIZING UNIVERSITY ASSETS

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The SBTDC has been a program of the University of North Carolina System since 1984. Through offices at UNC Charlotte and Appalachian State universities, the SBTDC is able to deliver assistance to businesses in all 12 of our counties.

As a statewide program, the SBTDC has also drawn assistance and expertise from other universities across our state to help local businesses in the Biz Boost effort.

ABOUT BIZ BOOST

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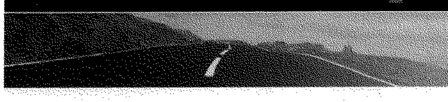
JobsNOW sbtdc NORTH CAROLINA

STATEWIDE

Biz Boost Report

Jan. 2010–Dec. 2011



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OUTCOMES AND IMPACT

- Client Businesses Served: 1,710
- Jobs Created: 5,742
- Jobs Retained: 3,522
- Total Jobs Created or Retained: 9,264
- # Loans obtained: 124
- Total Capital Formation: $98,224,827
- # Government Contracts Awarded: 1,677
- $ Government Contracts Awarded: $466,823,793
- Cost per Job Created Across the Statewide Biz Boost Initiative: $813

Outcomes and impact are based on the number of client businesses currently reporting data (20.8%).

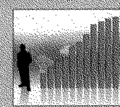
PARTICIPATING COMPANIES

Biz Boost clients served between January 2010 and December 2011 represent 132,411 full-time jobs (average 77 jobs per business), 7,601 part-time jobs, and over $10 billion in sales.

Industry types: Manufacturing (35%); Construction (10.6%); Professional, Scientific, Technical Services (9.4%); Retail Trade (6.9%); Wholesale Trade (4.7%); Health Care & Social Assistance (5.0%); Accommodation & Food Service (3.8%); Transportation & Warehousing (2.2%); Educational Services (1.9%); Information (1.3%); Administrative & Support (1.3%); and all others (17.9%).

Participating company data is based on all 1,710 clients receiving SBTDC services between January 2010 and December 2011.

REAL BUSINESS SUCCESS



This marine construction company had experienced significant negative impact due to economic downturn in coastal areas. This shift had forced them to retool their business model and focus on residential marine construction. Luckily, their competitive market advantage is their superior quality in appearance and durability, along with a lengthy guarantee on their work.

The SBTDC helped the company identify areas to improve internal efficiency, including better employee management and reducing costs. These improvements and ongoing support from the SBTDC counselor helped this company navigate a surge in growth after Hurricane Irene. Sales have increased by 30% and they added four additional staff.

UTILIZING UNIVERSITY ASSETS

Biz Boost leverages the assets of the universities in our state to help businesses survive and succeed. In addition to the professional staff they provide, the SBTDC is able to connect businesses with students, faculty, and other university resources and programs as necessary to provide the greatest help.

The SBTDC has been a program of the University of North Carolina System since 1984. Through their 16 offices statewide, each affiliated with a local UNC campus, the SBTDC is able to deliver assistance to businesses in all 100 counties.

ABOUT BIZ BOOST

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JobsNOW sbtdc NORTH CAROLINA

Scott D. Gerber – Statement for the Record
April 18, 2012
Roundtable: "Perspectives from the Entrepreneurial Ecosystem: Creating Jobs and Growing Businesses through Entrepreneurship"

Chairman Landrieu and Members of the Senate Committee on Small Business and Entrepreneurship, on behalf of the Young Entrepreneur Council, an organization comprising many of our nation's most successful young entrepreneurs, and the #FixYoungAmerica movement, a solutions-based effort that aims to highlight proven solutions to youth unemployment, I'd like to thank you for inviting me to speak today about how to help our nation's young people create much-needed jobs for Americans through entrepreneurship.

In the past year and a half, the Young Entrepreneur Council has been working diligently to mentor, train and develop young American entrepreneurs—because we strongly believe entrepreneurship is a viable, practical solution to youth un- and underemployment. I address you today on behalf of those young entrepreneurs, because they need your help in order to lead this country forward.

Our urgency is real: Youth employment is at a sixty-year low.[1] Student loan debt has surpassed $1 trillion. And default rates are rising quickly.[2]

As a result, one in four young Americans moved back in with their parents after living on their own. Thirty-one percent postponed marriage or starting a family.[3] And many would-be entrepreneurs are sidelined indefinitely due to student loan repayments and lack of cash flow.

Despite these harsh realities, youth entrepreneurship is ever-present, as demonstrated by the recent college graduate segment of the 2011 Young Entrepreneur Council/Buzz Marketing Group annual youth entrepreneurship survey—which found that 29 percent of recent grads are self-employed, up from 20 percent in 2010. Thirty percent started a business in college, up from 19 percent in 2010. Fourteen percent started a business as a result of being unemployed and 35 percent have started a side business to earn extra income.[4]

We believe that the bipartisanship displayed during the recent passage of the JOBS Act in Congress sends a strong message to all Americans, but especially to our youth, that their elected officials believe in US citizens' ability to empower themselves to improve their

[1] Paul Taylor, et al., *Young, Underemployed and Optimistic: Coming of Age, Slowly, in a Tough Economy*, Pew Research Center, (Pew Social & Demographic Trends, February 9, 2012), http://www.pewsocialtrends.org/files/2012/02/SDT-Youth-and-Economy.pdf.
[2] "Default Rates Rise for Federal Student Loans," U.S. Department of Education, September 12, 2011, http://www.ed.gov/news/press-releases/default-rates-rise-federal-student-loans.
[3] Paul Taylor, et al., *Young, Underemployed and Optimistic.*
[4] Data is from YEC and Buzz Marketing Group's annual youth entrepreneurship survey of over 1600 American males and females ages 16-39.

economic situation. These are exactly the kind of proactive reforms YEC has been fighting for.

But I believe our elected representatives must be even bolder—in fact, I believe we *owe* it to our youngest entrepreneurs to be so bold. Millennials must be empowered to funnel their entrepreneurial energy into solving joblessness and economic malaise, or risk becoming a lost generation.

Members of the Committee, this is not an abstract endeavor. The YEC, along with partners like Junior Achievement, Babson College, Codecademy, Network for Teaching Entrepreneurship, National Association for Community College Entrepreneurship and Venture for America, have identified a handful of tried-and-true approaches that are *already* successfully fostering entrepreneurship education initiatives and youth business creation all over America.

Today, I want to address three specific areas that the YEC and our partners wish to call attention to: young veterans, young entrepreneurs in general, and the Startup Visa.

First, let's talk about our veterans. While overall unemployment is a little over 8 percent, 29.1 percent of male veterans and 36.1 percent of female veterans ages eighteen to twenty-four were unemployed in 2011—compared to 17.6 and 14.5 percent, respectively, of nonveteran young men and women of the same age.[5]

Veterans are hard-working, passionate risk takers who put the mission before the man—qualities that also describe successful entrepreneurs. Overall, they own about 2.4 million, or 9 percent, of all American businesses. When you count businesses in which they're at least half-owners, those numbers rise—to 3.7 million businesses and 8.2 million employees.[6] Given this, we must ask ourselves: Instead of only helping returning young vets *seek* jobs, why aren't we doing even more to help them *create* jobs?

To do exactly that, we ask the Committee to consider including provisions from two important bills in your efforts to support entrepreneurship through new legislation. The first is the **Veterans Entrepreneurial Transition (VET) Act of 2011,** a game-changing bill (that's gotten zero fanfare in the media) that would allow qualifying veterans to use GI Bill entitlements to start or purchase a business or franchise.[7]

Then there's the **Help Veterans Own Franchises Act,** first introduced in 2009 and then again in 2011 as part of the **American Growth, Recovery, Empowerment and Entrepreneurship (AGREE) Act.** [8] It establishes a tax credit for qualified returning veterans to offset startup costs equal to 25 percent of franchise fees, up to $100,000.

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[5] Bureau of Labor Statistics, U.S. Department of Labor, "Employment Situation of Veterans Summary," March 20, 2012, http://www.bls.gov/news.release/vet.nr0.htm.
[6] U.S. Census Bureau, *Survey of Business Owners – Veteran-Owned Firms: 2007*, (2007), http://www.census.gov/econ/sbo/get07sof.html?17.
[7] Veterans Entrepreneurial Transition Act of 2011, H.R. 3167, 112th Congress (2011).
[8] American Growth, Recovery, Empowerment and Entrepreneurship Act, S. 1866, 112th Congress, (2011).

Direct economic output in the franchise sector is projected to grow 5 percent in 2012, and employment, 2.1 percent—and young Americans are clamoring to get on board.[9]

Next, to address the needs of young entrepreneurs in general, my organization has co-authored the **Youth Entrepreneurship Act (YEA)**[10] with Young Invincibles. YEA is a set of policy initiatives designed to support and foster young entrepreneurs, some of which were introduced by Rep. Cedric Richmond as part of the Microenterprise and Youth Entrepreneurship Act of 2011.[11]

I'd like to highlight five of YEA's common-sense provisions—provisions that we believe will accelerate the growing youth entrepreneurship movement:

- One, **we'd like to see greater flexibility in the use of Title V "Well-Rounded" funds under the Elementary and Secondary Education Act (ESEA)** so that local and state educators can better support entrepreneurship education programs. Within No Child Left Behind, Title V identifies certain federal programs (such as those for foreign languages, physical education and arts in education) as innovative assistance programs that educators can direct funding toward—but as of yet, there is no checkbox that allows state and local education agencies to buy entrepreneurship-related materials.[12] Reauthorizing ESEA is a low-to-no-cost way for the government to quickly expand young peoples' access to entrepreneurship education and resources.
- Two, the centerpiece of YEA is a **common-sense federal student loan deferment, reduction and forgiveness program** for young people who start growing businesses after college. This proposal leverages the existing Income-Based Repayment system (put into place by President George W. Bush and reformed recently by President Obama)[13] and is modeled after the current Public Service Loan Forgiveness Program (PSLF), which forgives the federal student loans of borrowers who obtain government jobs or jobs in nonprofits. We're not reinventing the wheel—we're just taking good, bipartisan programs one logical step further and applying them to job creators too. Requiring young entrepreneurs to meet certain qualifying benchmarks (and ongoing goals and metrics, including revenue and job creation) is a smart, cost-effective way to extend PSLF benefits to the people who need it most: America's young business leaders who are actively creating new jobs. Based on current rates of new business creation, we

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[9] *2012 Franchise Business Economic Outlook*, prepared by IHS Global Insight for the International Franchise Association, January 2012, 1, http://emarket.franchise.org/EconOutlookFactSheetfinal.pdf.
[10] Young Invincibles, *Growing Our Economy Through Young Entrepreneurs: Proposals to Remove Barriers to Young People Starting Businesses*, 2011, http://theyec.org/wp-content/uploads/Youth-Entrepreneurship-Act-Policy-Brief.pdf.
[11] Microenterprise and Youth Entrepreneurship Act of 2011, H.R. 2809, 112th Congress (2011).
[12] See 20 U.S.C. § 6454(4), 20 U.S.C. § 7267b, 20 U.S.C. § 7175(a)(4).
[13] "Income-Based Repayment Plan," Federal Student Aid, U.S. Department of Education, last modified December 7, 2011, http://studentaid.ed.gov/PORTALSWebApp/students/english/IBRPlan.jsp.

predict that the program could create between 25,000 and 125,000 new jobs in the first five years alone.[14]

- Three, **increasing access to capital** is key to ensuring young people don't just start businesses, but grow and hire. The JOBS Act is a great start, but ramping up the SBA Microloan Program (rather than slowing it down) and targeting a significant percentage of those loans to young people is simply good thinking, given that the vast majority of their businesses will be technology-driven and service-based—thereby costing only a few thousand dollars to start. While the federal government spent $33.686 million on its microlending program in 2010,[15] fiscal year 2011 funding received was only $19.266 million, and the Small Business Administration only requested $16.378 million for 2012.[16] Beyond expanding its size, we also need the SBA to ensure that young entrepreneurs whose business models are worthy of investment—but who have limited credit history and collateral—can still access microfinance through intermediaries, perhaps using metrics like co-signing, the assessment of a qualified local mentor, or by asking them to contribute a percentage of income to self-funding.
- Next, there are several existing government activities we can harness to support the growth of youth-owned businesses. The first area is **procurement.** Currently, the President establishes goals for procurement contracts awarded to small businesses; certain percentages of prime contracts and subcontracts must go to socially and economically disadvantaged businesses, including women-owned businesses, HubZone (historically underutilized) businesses, and service-disabled veteran-owned businesses. We seek to have young entrepreneurs added as a mandatory category.
- The second activity is the practice of running **low-cost competitions** for students to solve various public-private challenges. For example, the Department of Health and Human Services (HHS) ran a successful competition in which college students were called on to create the best mobile app to improve public health. Not only does this spur innovation and interest in the sciences—an area where US students typically fall short—but many of these students go on to turn their products into businesses. The prizes cost the government almost nothing; they're often under $1,000. We would like to see these competitions happen government-wide; we also would like to see increased government grants or funds reallocated from other underperforming programs used to support business competitions on the high school and collegiate levels with guidance from the SBA (or another government agency) to foster real-world entrepreneurship among students.

Finally, **more resources for entrepreneurship education** are needed in general—in the 2011 YEC/Buzz Marketing Group survey, 88 percent of respondents said

[14] Small businesses typically create about four jobs, and about 80% of those jobs typically remain after 5 years. Moreover, while half of small businesses will fail after five years, some percentage will grow substantially. Therefore, these numbers could even be conservative.

[15] In 2009, ARRA provided $6 million in loan subsidies and $24 million in technical assistance grants for the microloan program, in addition to the 2009 appropriation of $22.5 million.

[16] U.S. Small Business Administration, *FY 2012 Congressional Budget Justification and FY 2010 Annual Performance Report*, http://www.sba.gov/sites/default/files/FINAL%20FY%202012%20CBJ%20FY%202010%20APR_0.pdf.

entrepreneurship education is vitally important given the new economy, but 74 percent of them had no access to entrepreneurship resources during their college years. When resources were available, most respondents felt they were inadequate.[17] This is unacceptable; today, adaptability, creativity and financial literacy are core work skills in the new economy—and we face a shortfall of science, technology, engineering, and mathematics (STEM) graduates.[18]

This growing shortfall, combined with current immigration policy, has led to more and more foreign-born entrepreneurs taking their revenue-positive companies off of US soil. The **StartUp Visa Act of 2011** provides a solution that both creates jobs and helps increase US competitiveness. Notably, the StartUp Visa doesn't just hand out visas—it's conditional and employment-based. After two years, it requires visa-holders to have raised additional capital investment, demonstrate they are not a burden to taxpayers, and create new American jobs.[19]

In doing so, the StartUp Visa accomplishes several things: it allows entrepreneurs to make key hires in instances where in-demand talent is otherwise lacking (enabling them to grow and hire faster), and it incentivizes immigrants who are educated and trained in the US to stay, build businesses and create new jobs. One of our YEC members is an immigrant from Colombia who has built multiple businesses in the US, generating millions of dollars in revenue and creating several dozen American jobs. But if he had not married an American citizen, his contribution to our economy would have been impossible under current immigration law.

If we agree that small businesses truly are the engine of job creation in America—as President Obama himself has said—then it's imperative for us to spur youth entrepreneurship *and* to ensure the young employees of tomorrow are ready to compete in a global economy. The solutions we propose here represent the beginning of a much larger conversation about reform, but these areas represent some of the most challenging issues young entrepreneurs face right now.

Importantly, this is not about making life easier for Millennials, but rather about helping transition the young American workforce into a more entrepreneurial one capable of thriving in the new economy. We believe reforms like this are the key to initiating a paradigm shift away from the antiquated policies and mindset of yesteryear, so that when today's young people become the 30-, 40- and 50-something leaders of tomorrow, they will have the capacity and ability to lead America forward.

Today, the Young Entrepreneur Council, our partners, and the tens of thousands of young entrepreneurs we mentor are asking you to help us as we set out to do what's right: Fix

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[17] YEC and Buzz Marketing Group survey.

[18] Richard Dobbs, James Manyika and Charles Roxburgh, "What business can do to restart growth," McKinsey & Company, September 2011, http://www.mckinsey.com/Features/Growth/What_business_can_do_to_restart_growth.

[19] StartUp Visa Act of 2011, S.565, 112th Congress (2011).

Young America. And on their behalf, I thank you for giving me the opportunity to discuss these vital issues and offer you achievable, practical solutions to resolve them.

Entrepreneurship and Economic Freedom:

A number of studies have examined the relationship between entrepreneurship and economic freedom. Overwhelmingly, they have found that those times and places with greater economic freedom tend to have greater levels of measured entrepreneurial activity:

Joshua Hall, John Pulito, and Benjamin VanMetre, "Freedom and Entrepreneurship: New Evidence From the 50 States," *Mercatus Center at George Mason University* Working Paper no. 12-13 (April 2012).

> In this paper, we extend the growing literature on economic freedom as a determinant of entrepreneurship. We employ a new general measure of freedom that encompasses both economic and personal freedoms to test whether general freedom is related to entrepreneurial activity. While we find a positive and statistically significant relationship between overall freedom and entrepreneurship, disaggregating overall freedom into personal and economic freedom shows that economic freedom is driving the relationship. We find that a one standard-deviation increase in a state's economic freedom is associated with over 100 new businesses started per 100,000 residents every month.

Russell Sobel, "Testing Baumol: Institutional Quality and the Productivity of Entrepreneurship," *Journal of Business Venturing* 23 (2008): 641-655.

> When institutions provide for secure property rights, a fair and balanced judicial system, contract enforcement, and effective constitutional limits on government's ability to transfer wealth through taxation and regulation, it reduces the profitability of unproductive political and legal entrepreneurship. Under this incentive structure, creative individuals are more likely to engage in the creation of new wealth through productive market entrepreneurship. (p. 641)
>
> I find that better institutional structures produce higher venture capital investments per capita, a higher rate of patents per capita, a faster rate of sole proprietorship growth, and a higher establishment birth rate. (p. 642)

Note: institutional quality is measured by the Economic Freedom of North America index. Its three principal components are size of government, takings and discriminatory taxation, and labor market freedom.

Joshua Hall and Russell Sobel, "Institutions, Entrepreneurship, and Regional Differences in Economic Growth," *Southern Journal of Entrepreneurship* 1, No. 1 (March 2008): 69-96.

> The measure of institutions we employ in this paper is the Economic Freedom of North America (EFNA) index released annually by the Fraser Institute. (p. 80)
>
> The evidence presented here suggests that differences in institutional quality help to explain differences in entrepreneurship across states. (p. 89)

Kristina Nyström, "The Institutions of Economic Freedom and Entrepreneurship: Evidence from Panel Data," *Public Choice* 136 No. 3-4 (2008): 269-282.

> This paper provides new evidence on the determinants of entrepreneurship across countries. The paper investigates the relationship between the institutional setting, in terms of economic freedom, and entrepreneurship, measured by self-employment, in a panel data setting covering 23

> OECD countries for the period 1972-2002. The measure of economic freedom includes five aspects: size of government, legal structure and security of property rights, access to sound money, freedom to trade internationally, and the regulation of credit, labour and business. The empirical findings show that a smaller government sector, better legal structure and security of property rights, as well as less regulation of credit, labour and business tend to increase entrepreneurship. (p. 270)

Determinants of Government-Granted Privilege:

Despite what may be the best of intentions, government-granted privileges such as tax credits, subsidies, loan guarantees, etc., are often dispensed on the basis of political-connections and not on the basis of merit. In recent years, a number of academic studies have examined this question:

Mara Faccio, Ronald W. Masulis, and John J. McConnell, "Political Connections and Corporate Bailouts," *The Journal of Finance* 61, no. 6 (December 2006): 2597-2635.

> We analyze the likelihood of government bailouts of 450 politically connected firms from 35 countries during 1997-2002. Politically connected firms are significantly more likely to be bailed out than similar nonconnected firms.... Further, among bailed-out firms, those that are politically connected exhibit significantly worse financial performance than their nonconnected peers at the time of and following the bailout. This evidence suggests that, at least in some countries, political connections influence the allocation of capital through the mechanism of financial assistance when connected companies confront economic distress. (p. 2597).

Jordi Blanes i Vidal, Mirko Draca, and Christian Fons-Rosen, "Revolving Door Lobbyists," (Centre for Economic Performance [CEP] Discussion Paper no. 993, London School of Economics and Political Science, London, UK, 2010), conditionally accepted by the *American Economic Review*:

> Washington's 'revolving door'—the movement from government service into the lobbying industry—is regarded as a major concern for policy-making. We study how ex-government staffers benefit from the personal connections acquired during their public service. Lobbyists with experience in the office of a US Senator suffer a 24% drop in generated revenue when that Senator leaves office. The effect is immediate, discontinuous around the exit period and long-lasting. Consistent with the notion that lobbyists sell access to powerful politicians, the drop in revenue is increasing in the seniority of and committee assignments power held by the exiting politician. (1)

Daron Acemoglu, Simon Johnson, Amir Kermani, James Kwak, and Todd Mitton, "the Value of Political Connections in the United States, Working Paper, December 2010.

> The announcement of Timothy Geithner as President Obama's nominee for Treasury Secretary in November 2008 produced a cumulative abnormal return for Geithner connected financial firms of around 15 percent from day 0 (when the announcement was first leaked) to day 10. The quantitative effect is comparable to standard findings in emerging markets with weak institutions, and much higher than previous studies have found for the United States or other relatively rich democracies. The results hold when we control for how much firms were affected by the financial crisis, as well as in a wide range of other robustness checks. There were subsequently abnormal negative returns for connected firms when the news broke that Geithner's confirmation might be derailed by tax issues. Since the Geithner nomination announcement, policy has been supportive of the financial services sector and Geithner-connected firms have continued to show positive cumulative abnormal returns, but there is no compelling evidence that Treasury implemented the

> exact form of favoritism implied by the stock market reaction. Our results pick up market expectations and the perceived value of connections at a moment of intense financial crisis, rather than how policy was subsequently designed or implemented. (p. 1)

Benjamin Blau, Tyler Brough, and Diana Thomas, "Corporate Lobbying, Political Connections, and the 2008 Troubled Asset Relief Program," Working Paper, October 2011.

> Political involvement has long been shown to be a profitable investment for firms that seek favorable regulatory conditions or support in times of economic distress. But how important are different types of political involvement for the timing and magnitude of political support? To answer this question, we take a comprehensive look at the lobbying expenditures and political connections of banks that were recipients of government support under the 2008 Troubled Asset Relief Program (TARP). We find that firms that lobbied or had other types of political connections were not only more likely to receive TARP funds, they also received a greater amount of support earlier than firms that were not politically involved through lobbying or direct political connections. For every dollar spent on lobbying during the five years prior to the TARP bailout, firms received between $485.77 and $585.65 in TARP support. (p. 1)

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WORKING PAPER

FREEDOM AND ENTREPRENEURSHIP: New Evidence from the 50 States

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Freedom and Entrepreneurship: New Evidence from the 50 States

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Abstract

In this paper, we extend the growing literature on economic freedom as a determinant of entrepreneurship. We employ a new general measure of freedom that encompasses both economic and personal freedoms to test whether general freedom is related to entrepreneurial activity. While we find a positive and statistically significant relationship between overall freedom and entrepreneurship, disaggregating overall freedom into personal and economic freedom shows that economic freedom is driving the relationship. We find that a one standard-deviation increase in a state's economic freedom is associated with over 100 new businesses started per 100,000 residents every month.

JEL Codes: D020, L260, R110

Keywords: Institutions, Economic Freedom, Entrepreneur, Entrepreneurship

Freedom and Entrepreneurship: New Evidence from the 50 States

1 Introduction

Entrepreneurship is the act of exploiting an opportunity for profit.[1] It is the exploitation of profit opportunities in the private sector that drives economic progress forward, which is why so many policy makers at the local, state, and national levels seem to be focused on spurring entrepreneurial activity. While many actions fit into the above definition of entrepreneurship, most policy makers typically think of entrepreneurship as the creation of new businesses. Thus, many empirical studies of entrepreneurship have focused on different measures of new businesses, such as the growth rate of sole proprietorships or the number of new business starts. However, when looking at the determinants of good entrepreneurial growth, it is important to remember that behind each potential organization is an individual who is weighing the costs and benefits of starting the new business. If a potential entrepreneur fears that the returns from starting a new business will not be high enough because of the economy, or that the future is uncertain, or that public policy will raise the cost of operating the business, then the person may go on to do something else, which might not contribute to economic growth and development in the same way that starting a business would. In some cases, such as lobbying, these contributions may actually lead to lower growth.

The link between economic institutions and entrepreneurship was made famous by William Baumol.[2] Before Baumol, there was a tendency among scholars to think of entrepreneurship only in positive-sum terms. Thomas Edison and Garrett Morgan were not just

[1] Randall Holcombe, *Entrepreneurship and Economic Progress* (New York: Routledge, 2007), 29.
[2] William Baumol, "Entrepreneurship: Productive, Unproductive, and Destructive," *Journal of Political Economy* 98, no. 5 (1990): 893–921.

famous inventors, nor were they businessmen who made their living merely by buying low and selling high. These men were true entrepreneurs, and for Baumol, this focus on the heroic inventor was problematic since it cannot not explain a decline in positive-sum entrepreneurship (i.e., entrepreneurship in which society as well as the entrepreneur is better off), except by suggesting that entrepreneurial energies or innovations are exhausted. Given the very basic human desire to improve one's condition, Baumol argued, one should instead assume that the stock of entrepreneurial energy in society is fixed.[3] Under this assumption, if the amount of positive-sum entrepreneurship changes over time, it must be because entrepreneurs are having their time and attention diverted away from positive-sum entrepreneurship and toward bad (negative-sum) entrepreneurship. According to Baumol, the rules of the game (i.e., economic institutions) have an important effect on positive-sum entrepreneurship—as illustrated by a series of case studies focusing on ancient Rome, early China, and the Middle Ages.[4] The rules of the game that determine the rewards for different types of entrepreneurship have changed over time, and entrepreneurial behavior has changed in response to these changes in the rules of the game. Societies that keep taxes low, do not demonize business, and minimize the amount of resources distributed through the government steer their citizens' entrepreneurial energies toward good entrepreneurship, such as starting a new business, and away from bad entrepreneurship, such as finding a better way to lobby politicians for favors. Over time, the countries that have higher rates of entrepreneurial growth (positive-sum) tend to experience more innovation and higher rates of economic progress.

Many scholars have explored the relationship between economic institutions and various measures of entrepreneurship. However, in order to study the rules of the game, scholars must

[3] Ibid.
[4] Ibid.

first measure them. A popular measure of institutions in economics literature is economic freedom, which is measured by indices at both the national and state levels.[5] Broadly speaking, economic freedom is present when individuals have the freedom to make private choices, including the freedom to interact with other free individuals, provided that they do not harm others or their property.[6] The indices are designed to measure the quality of a country's or state's formal and informal institutions. Countries and states that protect private property rights while keeping taxes low and refraining from creating barriers to trade and entry into markets have more economic freedom than those that do a poor job of protecting private property or that engage in high levels of taxation or regulation.

At the national level, several studies have found a positive link between economic freedom and different measures of entrepreneurial activity. Some studies have looked at the relationship between economic freedom and the total entrepreneurial activity in a country, as measured by the *Global Entrepreneurship Monitor*.[7] Total entrepreneurial activity is measured as the number of individuals out of every 100 in a country who are in the start-up phase of a new business or are managing a business that has been in existence for fewer than 42 months. There is a positive and statistically significant relationship between the level of economic freedom in a country and that country's total entrepreneurial activity.[8] By disaggregating economic freedom,

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[5] At the national level see James Gwartney, Robert Lawson, and Joshua Hall, *Economic Freedom of the World Report: 2011 Report* (Vancouver: Fraser Institute, 2011). At the sub-national level there are two indices. The oldest measures economic freedom at the level of US states and Canadian provinces and is published by the Fraser Institute in Canada. The most recent edition is Nathan Ashby, Avila Bueno, and Fred McMahon, *Economic Freedom of North America: 2011* (Vancouver: Fraser Institute, 2011). A recent competitor that measures both personal and economic freedom at the U.S. state level is William Ruger and Jason Sorens, *Freedom in the 50 States: An Index of Personal and Economic Freedom*, 2nd ed. (Arlington, VA: Mercatus Center at George Mason University, 2011).
[6] For more on the definition of economic freedom, see Gwartney, Lawson, and Hall, *Economic Freedom of the World*, 1.
[7] Paul D. Reynolds, William Bygrave, Erkko Autio, and Michael Hay, *Global Entrepreneurship Monitor: 2002 Executive Report* (Kansas City, MO: Ewing Marion Kauffman Foundation, 2002).
[8] See, for example, Russell Sobel, J. R. Clark, and Dwight Lee, "Freedom, Barriers to Entry, Entrepreneurship, and Economic Progress," *Review of Austrian Economics* 20, no. 4 (2007): 221–36.

it is found that access to sound money is positively related to total entrepreneurial activity.[9] A sound and stable currency is important in order for voluntary exchange to occur. Thus, it is useful to measure the extent to which governments provide access to sound money by keeping inflation low and stable and allowing their citizens access to alternative currencies.[10] Other studies have also disaggregated economic freedom, but measured entrepreneurship using self-employment rates. These studies have found that countries with smaller governments, stronger legal systems and rules of law, secure property rights protection, and fewer regulations have higher self-employment.[11]

Similar work has looked at the relationship between economic freedom and various measures of entrepreneurship at the state level. Steven Kreft and Russell Sobel measured entrepreneurship using the growth rate of sole proprietorships from 1996 to 2000 and the index of economic freedom provided in earlier editions of the annual report *Economic Freedom of North America* (*EFNA*).[12] Controlling for other factors that may influence the growth rate of sole proprietorships, Kreft and Sobel found a positive relationship between economic freedom and their measure of entrepreneurship.[13] Following their research, a large number of papers have examined the relationship between the *EFNA* and different measures of entrepreneurship. The *EFNA* measures economic freedom using 10 variables in three areas: size of government, takings and discriminatory taxation, and labor market freedom; and it includes key measures such as

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[9] Christian Bjørnskov and Nicolai Foss, "Economic Freedom and Entrepreneurial Activity: Some Cross Country Evidence," *Public Choice* 134, no. 3 (2008): 307–28.
[10] Gwartney, Lawson, and Hall, *Economic Freedom of the World*.
[11] Kristina Nyström, "The Institutions of Economic Freedom and Entrepreneurship: Evidence from Panel Data," *Public Choice* 136, no. 3 (2008): 269–82.
[12] Steven Kreft and Russell Sobel, "Public Policy, Entrepreneurship, and Economic Freedom," *Cato Journal* 25, no. 3 (2005): 595–616.
[13] Ibid.

total tax revenue as a percentage of gross domestic product, top marginal income tax rates and the threshold at which they apply, and union density.[14]

Noel Campbell and Tammy Rogers used the index to study the determinants of net business formation, and in addition to finding a positive relationship between economic freedom and entrepreneurship, they also noted that increasing economic freedom on net business formation has "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."[15] Similar results on the effect of economic freedom on entrepreneurship have been found in studies looking at firm births and deaths[16] and the Kaufmann Index of Entrepreneurial Activity (KIEA), a state-based measure of the number of businesses started by non-business-owning adults during the past year.[17]

In this paper, we extend the existing literature by exploring the effect of economic freedom more generally on state-level entrepreneurship in the United States. Recently, political scientists William Ruger and Jason Sorens developed a state-based measure of overall freedom for the Mercatus Center called the *Freedom in the 50 States* index, which includes measures of both personal and economic freedoms.[18] We used their measures of overall freedom, personal freedom, and economic freedom to deepen our understanding of the relationship between government intervention and entrepreneurial activity. In addition, their measure of economic freedom uses a more expansive set of variables than the *EFNA* index does; thus our results also

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[14] For more details on how these variables are measured, see Ashby, Bueno, and McMahon, *Economic Freedom of North America*.
[15] Noel Campbell and Tammy Rodgers, "Economic Freedom and Net Business Formation," *Cato Journal* 27, no. 1 (2007): 33.
[16] Noel Campbell, Tammy Rodgers, and Kirk Heriot, "The Economic Freedom Index as a Determinant of Firm Births and Firm Deaths," *Southwest Business and Economics Journal* 16 (2007–8): 37–50.
[17] Joshua Hall and Russell Sobel, "Institutions, Entrepreneurship, and Regional Differences in Economic Growth," *Southern Journal of Entrepreneurship* 1, no. 1 (2008): 69–96.
[18] Ruger and Sorens, *Freedom in the 50 States*.

act as a robustness check on the previous literature. The most important difference between the *Freedom in the 50 States* index and the *ENFA* index is the sheer number of factors included in the former's measure of economic freedom. Ruger and Sorens broke down each factor into fiscal policy and regulatory policy. In the area of fiscal policy alone they had 10 variables, while regulatory policy contained 38 variables. While, based on their study, we find that overall freedom is positively related to entrepreneurship, we also conclude that the relationship is primarily driven by the influence of economic freedom, rather than by a strong positive relationship between personal freedom and entrepreneurship. However, our results suggest that the findings presented in the previous literature on economic freedom and entrepreneurship, most notably those of Joshua Hall and Sobel,[19] were not strongly influenced by the particular measure of economic freedom that was used.

We proceed as follows: Section 2 describes our data, empirical approach, and some additional relevant literature. Section 3 presents a first look at the measures of overall freedom, personal freedom, and economic freedom, and how they relate to entrepreneurship. In Section 4 we present our empirical results, and in Section 5 we conclude.

2 Data and Empirical Approach

One of the greatest difficulties in empirical research on entrepreneurship is how best to measure it. While there are numerous reasons to employ measures such sole-proprietorship growth rates and new business starts, in this paper we follow the work of Hall and Sobel and employ the KIEA, designed and calculated by economist Robert Fairlie and published annually by the Ewing

[19] Hall and Sobel, "Institutions, Entrepreneurship, and Regional Differences in Economic Growth."

Marion Kauffman Foundation.[20] The KIEA is an important indicator of new entrepreneurial activity at the state level, as it measures new businesses started by current nonbusiness owners. That is, it measures the flow of new individuals into entrepreneurship. In addition, it is derived from current population surveys, not payroll data. This is important, since many new businesses operate without adding employees for some time, and thus their activity is not picked up using payroll data.[21]

For each state, the KIEA measures the monthly percentage of non-business-owning adults who have started a business with more than 15 hours worked per week in the following month. In 2009, Oklahoma's KIEA score was 0.47, the highest in the US for that year. This score translates to 470 out of every 100,000 adults in Oklahoma starting a new business every month. In contrast, Mississippi's score of 0.17 was the lowest in 2009. Montana, Arizona, Texas, and Idaho were also among the five states with the highest KIEA scores in 2009, while Nebraska, Pennsylvania, Alabama, and Minnesota were among the five states with the lowest scores. While the KIEA data goes back as far as 1996, the limited data available on overall freedom confines us to explaining the determinants of entrepreneurship in 2007 and 2009.

In our empirical analysis, we employ three different categories of independent variables that may explain state-level entrepreneurship. The first and most important category is associated with economic freedom. The variables of interest in this category come from the first and second editions of the *Freedom in the 50 States* index.[22] Similar to other measures of economic freedom, this index measures freedom from an individual rights perspective. According to the authors, "Individuals should be allowed to dispose of their lives, liberties, and properties as they see fit,

[20] Robert Fairlie, *Kauffman Index of Entrepreneurial Activity: 1996–2010* (Kansas City, MO: Ewing Marion Kauffman Foundation, 2011).
[21] Hall and Sobel, "Institutions, Entrepreneurship, and Regional Differences in Economic Growth."
[22] Ruger and Sorens, *Freedom in the 50 States*.

as long as they do not infringe on the rights of others."[23] Recognizing that individual freedom extends beyond the economic sphere, the authors constructed an overall measure of freedom that is the summation of both personal and economic freedom. They gathered data on dozens of variables and calculated a score for each policy variable by measuring how many standard deviations above or below the mean each state was for that variable. Thus, when aggregated into a summary index, scores have a mean of zero and are generally between plus or minus 0.50. In 2009, according to this measure, the freest states in terms of overall freedom were New Hampshire, South Dakota, Indiana, Idaho, and Missouri. The states with the lowest levels of overall freedom were Massachusetts, Hawaii, California, New Jersey, and New York.

Ruger and Sorens calculated personal freedom using data on topics such as education, gun control, marriage and civil union laws, gambling, alcohol regulations, drug laws, etc. The exact weighting given to each of these areas varied depending on the number of people affected by the infringement, as well as on a subjective determination of its overall salience. While a relationship exists between personal freedom and overall freedom—given that personal freedom comprises half the weighting of overall freedom—according to their results, the freest states in terms of personal freedom were not necessarily the freest overall. For example, Oregon had the highest level of personal freedom in 2009, but in terms of overall freedom the state was only eighth, as its ranking of twenty-fifth in economic freedom lowered its overall score.[24]

In constructing their economic freedom index and ranking each state, Ruger and Sorens first created scores and rankings in two separate areas: fiscal policy and regulatory policy. Fiscal policy included data on spending and taxation, while regulatory policy included data on labor

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[23] Ruger and Sorens, *Freedom in the 50 States*, 5.

[24] Ruger and Sorens, *Freedom in the 50 States*. Readers interested in better understanding the data and weighting process are encouraged to read Ruger and Sorens's extremely detailed description of how their index is constructed, which begins on page 60 of their 2011 report.

regulation, health insurance regulation, occupational licensing, land use, etc. Both areas were weighted equally for calculating the overall economic freedom score. According to the results, South Dakota was the most economically free state in 2009, with New Hampshire, North Dakota, Idaho, and Virginia rounding out the top five. By way of comparison, the *EFNA* listed the most economically free states at the subnational level as South Dakota, Delaware, Tennessee, and Virginia.[25] Remember that part of the reason for employing the *Freedom in the 50 States* index of economic freedom is as a robustness check on the previous literature that exclusively employed the *EFNA* index.

One drawback to the *Freedom in the 50 States* index is that it has only been calculated for 2007 and 2009. This limits our analysis to a pooled data set with two observations for each state. We first use the overall freedom index measure in our baseline regressions as our dependent variable. We then disaggregate overall freedom into its personal and economic freedom components to see whether personal or economic freedom is driving the results. Finally, we take an individual look at both fiscal policy and regulatory policy to see which is more important to explaining state-level entrepreneurship as measured by the KIEA.

The two remaining categories of explanatory variables in our analysis are relatively straightforward. The first group centers on the overall conditions within a state that may influence entrepreneurship. These variables include the unemployment rate, population density, percentage of service employment, and data on property and violent crime rates per 100,000 persons. Our choice of these economic variables is informed by economic theory and previous literature. For example, some studies have found that entrepreneurship in certain sectors, such as retail and wholesale, is positively related to higher violent crime rates, controlling for other

[25] Ashby, Bueno, and McMahon, *Economic Freedom of North America.*

factors.[26] There is also a positive relationship between service employment and the growth rate of sole proprietorships.[27] Other studies have showed that a 10 percent increase in population density increased the percentage of people who wanted to become entrepreneurs by 1 percent.[28] In densely populated areas, idea and knowledge creation as well as the flow of goods and services occurs at a higher rate. The dynamism of more densely populated areas leads to more entrepreneurial opportunities being taken by individuals. Finally, a negative relationship between self-employment and the unemployment rate has been found across a sample of Organisation for Economic Co-operation and Development countries.[29] However, there does not appear to be a relationship between unemployment rates and the number of new businesses at the state level.[30]

The final category of control variables in our analysis focuses on the characteristics of entrepreneurs. These variables include the percentage of the labor force that is male and white, the percentage of individuals over the age of 25 with a four-year college degree, and the median age of a person in the state. These are typical explanatory variables in previous literature.[31] For example, according to some studies, men are more likely than women to be entrepreneurs.[32] It has also been found that a positive relationship exists between self-employment and an individual's level of education.[33] While in some cases education may enable people to become entrepreneurs, as in high-tech start-up firms, in most cases education is negatively related to an

[26] Stuart Rosenthal and Amanda Ross, "Violent Crime, Entrepreneurship, and Cities," *Journal of Urban Economics* 67, no. 1 (2011): 135–49.
[27] Kreft and Sobel, "Public Policy, Entrepreneurship, and Economic Freedom."
[28] Yasuhiro Sato, Takatoshi Tabuchi, and Kazuhiro Yamamoto, "Market Size and Entrepreneurship," *Journal of Economic Geography* (forthcoming).
[29] David Blanchflower, "Self-Employment in OECD Countries," *Labour Economics* 7, no. 5 (2000): 471–505.
[30] Martin Carree, "Does Unemployment Affect the Number of Establishments? A Regional Analysis for U.S. States," *Regional Studies* 36, no. 4 (2002): 389–98.
[31] For example, see Kreft and Sobel, "Public Policy, Entrepreneurship, and Economic Freedom," and Hall and Sobel, "Institutions, Entrepreneurship, and Regional Differences in Economic Growth."
[32] Nan Langowitz and Maria Minniti, "The Entrepreneurial Propensity of Women," *Entrepreneurship Theory and Practice* 31, no. 3 (2007): 341–64.
[33] Stephan Gohmann, "Institutions, Latent Entrepreneurship, and Self-Employment: An International Comparison," *Entrepreneurship Theory and Practice* 36, no. 2 (2012): 295–321.

individual's willingness to start a new business. While this may seem counterintuitive, formal education opens numerous opportunities in pre-existing organizations, thus reducing the incentive to invest in a risky start-up business. Table 1 presents summary statistics for all the variables used in our analysis.[34]

Table 1: Summary Statistics

Variable	Mean	StDev	Min	Max
Dependent Variable				
Kauffman Index	307.75	85.41	81.66	471.72
Measures of Freedom				
Overall Freedom	0.00	0.26	−0.75	0.44
Fiscal Freedom	0.00	0.15	−0.48	0.35
Regulatory Freedom	0.00	0.10	−0.24	0.16
Personal Freedom	0.00	0.10	−0.27	0.25
Economic Freedom	0.00	0.22	−0.57	0.47
Other Independent Variables				
Percentage Male	0.53	0.01	0.50	0.57
Median Age	37.75	2.39	28.46	43.40
Percentage White	0.83	0.13	0.20	0.97
Population Density	162.11	201.40	1.03	998.45
Unemployment Rate	6.37	2.59	2.70	13.60
Percentage Service Employment	0.75	0.05	0.67	0.88
Percentage with Bachelor's Degree	0.17	0.03	0.10	0.23
Property Crime Rate	3,052.02	693.22	1,652.30	4,414.00
Violent Crime Rate	394.75	171.14	118.00	788.30

[34] Precise definitions of our data, as well as sources, are provided in Appendix table 1.

3 Freedom and Entrepreneurship: A First Look

Figure 1 provides some initial evidence in favor of a positive relationship between overall freedom, as measured by the *Freedom in the 50 States* index, and entrepreneurship. The vertical axis shows our entrepreneurship variable—a state's KIEA score measured per 100,000 residents—while the horizontal axis shows the state's overall freedom score. The data in figure 1 includes observations for both 2007 and 2009. While the raw scatter plot does not clearly exhibit a positive relationship, a linear trend line reveals a positive relationship between overall freedom and the KIEA measure of entrepreneurship. Figures 2 and 3 show a similar relationship for personal freedom and economic freedom, respectively. A first look at the data suggests that a positive relationship exists between personal freedom and entrepreneurship. However, a more in-depth examination is warranted, and is covered in Section 4.

Figure 1: A First Look at Overall Freedom and Entrepreneurship

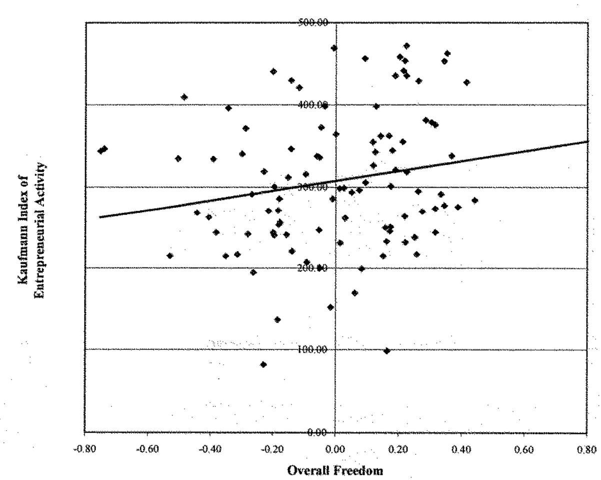


Figure 2: A First Look at Personal Freedom and Entrepreneurship

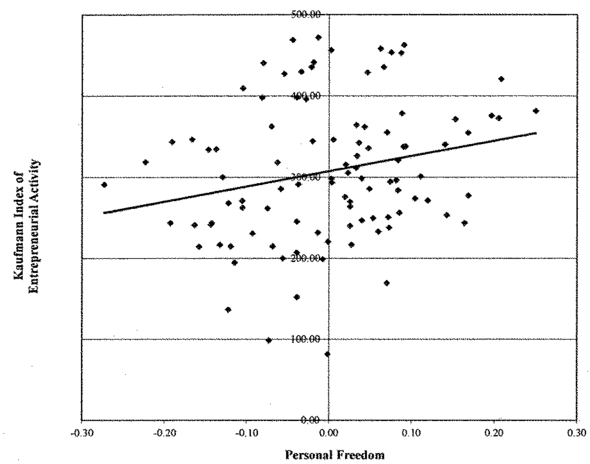
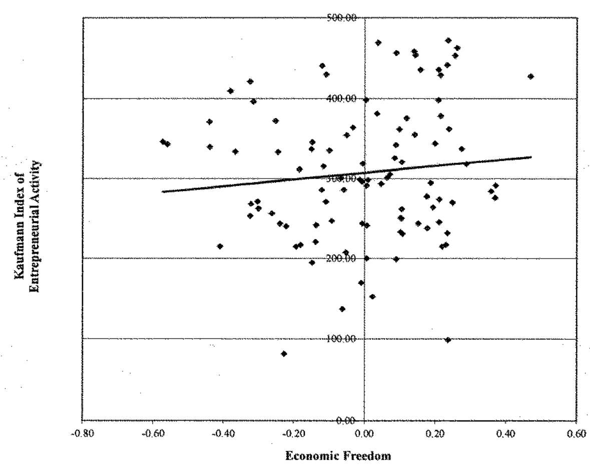


Figure 3: A First Look at Economic Freedom and Entrepreneurship



4 Empirical Results

We begin our empirical analysis of the effects of overall freedom on entrepreneurial activity by estimating the following equation:

$$KIEA_{it} = \alpha + \sum_{j=1}^{9} \beta_j X_{it}^j + \gamma Freedom_{it} + h_i + \varepsilon_{it} \tag{1}$$

where $KIEA_{it}$ is an index of entrepreneurial activity, X_{it} is a vector of regressors, $Freedom_{it}$ is the overall freedom as measured by the *Freedom in the 50 States* index, h_i is the fixed-effect estimator, and ε_{it} is the disturbance; the subscripts $i = 1, \ldots, 50$ and $t = 2007$ and 2009 represent the states and years, respectively. The regressors X_{it} include the other explanatory variables previously discussed in Section 2. The results of this pooled cross-section are presented in table 2.

The first column of table 2 includes only a constant term and overall freedom in order to get a sense of the baseline relationship between overall freedom and KIEA. As expected based on the scatter plots presented in Section 3, the relationship is positive and it is statistically significant. The second column in table 2 introduces the control regressors related to the characteristics of potential entrepreneurs: gender, age, race, and education. In this specification, the sign on overall freedom is still positive, but is not statistically significant at the 10 percent level. Among the personal characteristics of male, median age, percentage white, and bachelor's degree, all had the expected signs, but only age is statistically significant at conventional levels.

Finally, in the third column of table 2 we present our complete specification as discussed in equation 1. Here, we introduce the control regressors representing external state-level influences on entrepreneurship, including population density, unemployment rate, the size of the service sector, and violent and property crime rates. The first important thing to note is that overall freedom is both positive and statistically significant at the 10 percent level. The coefficient of 275.56 on overall freedom suggests that if a state increases its overall freedom score by one standard deviation (0.26) it should experience an increase of approximately 72 (275.56 × 0.26) new businesses started for every 100,000 non-business owners. That is nearly 85 percent of one standard deviation in the KIEA index.[35]

Table 2: Determinants of Entrepreneurial Activity (Overall Freedom)

Dependent Variable: Kauffman Index of Entrepreneurial Activity						
Variables	Model 1		Model 2		Model 3	
Constant	307.75	***	−596.34		−2,153.63	
	(56.55)		(0.36)		(1.01)	
Overall Freedom	282.72	*	241.73		275.56	*
	(1.77)		(1.46)		(1.82)	
Percentage Male			1,180.26		2,887.94	
			(0.61)		(1.54)	
Median Age			18.83	**	1.10	
			(2.32)		(0.05)	
Percentage White			−756.43		−1,294.13	
			(0.62)		(1.04)	
Percentage with Bachelor's Degree			1,145.74		665.59	
			(0.51)		(0.31)	
Population Density					9.09	**
					(2.11)	
Unemployment Rate					10.72	
					(1.11)	
Percentage Service Employment					−411.05	
					(0.49)	
Violent Crime Rate					0.93	***
					(2.70)	
Property Crime Rate					0.08	
					(1.39)	
R^2 Adjusted	6.01%		19.24%		43.19%	

Note: * indicates significance at the 10% level, ** at the 5% level, and *** at the 1% level. Absolute t-statistics in parentheses.

[35] For example, if the state with the lowest entrepreneurship rate in 2009, Montana, increased its economic freedom score by one standard deviation, it would increase the number of new businesses started per month by approximately 70.

All the other explanatory variables had the expected signs, except for the service sector variable, which was expected to be positive based on the previous literature.[36] The signs for both crime variables are positive, which is also consistent with the literature, and the violent crime variable is statistically significant at the 1 percent level.[37] At first glance, this relationship may seem puzzling. However, in the face of high violent crime rates that deter potential customers, we should expect to see less entry from risk-averse large corporations and more entry from mom-and-pop enterprises. With the exception of population density, no other explanatory variables are statistically significant. Overall, the model explains 43 percent of the variation in KIEA scores across the states.

In tables 3 and 4, we run the same specifications as in the third column of table 2, with one exception. Recall that overall freedom consists of two separate measures: personal freedom and economic freedom. While the full specification in table 2 suggests a positive and significant relationship between overall freedom and entrepreneurship, that relationship could be largely driven by economic freedom. This would not be surprising given the large body of research finding such a relationship between economic freedom and entrepreneurship. Therefore, we replace overall freedom with personal freedom in table 3, and with economic freedom in Table 4. The regressions in these two tables show that the relationship between overall freedom and entrepreneurship observed in table 2 is likely driven by economic freedom. While the coefficient on personal freedom is positive, it is not statistically significant, and the economic magnitude is relatively small. However, the coefficient on economic freedom from the third column of table 4 is positive and statistically significant at the 5 percent level. Following from this coefficient of 482.99, a state that increases its economic freedom score by one standard deviation (0.22) could

[36] See, for example, Kreft and Sobel, "Public Policy, Entrepreneurship, and Economic Freedom."
[37] Rosenthal and Ross, "Violent Crime, Entrepreneurship, and Cities."

expect an increase of 106 per month in the number of new businesses started per 100,000 persons (482.99 × 0.22). That is more than a one standard deviation increase in KIEA scores across our sample.

Table 3: Determinants of Entrepreneurial Activity (Personal Freedom)

Dependent Variable: Kauffman Index of Entrepreneurial Activity			
Variables	Model 1	Model 2	Model 3
Constant	307.75 ***	−743.23	−2,634.10
	(55.46)	(0.45)	(1.20)
Personal Freedom	297.48	338.34	95.83
	(1.07)	(1.21)	(0.34)
Percentage Male		1,412.70	3,534.92 *
		(0.74)	(1.78)
Median Age		22.00 ***	9.68
		(2.77)	(0.42)
Percentage White		−685.33	−1,137.59
		(0.56)	(0.88)
Percentage with Bachelor's Degree		240.95	−89.48
		(0.45)	(0.04)
Population Density			7.81 *
			(1.76)
Unemployment Rate			9.20
			(0.91)
Percentage Service Employment			−332.98
			(0.38)
Violent Crime Rate			0.94
			(2.55) **
Property Crime Rate			0.07
			(1.16)
R^2 Adjusted	2.28%	18.07%	38.68%

Note: * indicates significance at the 10% level, ** at the 5% level, and *** at the 1% level. Absolute t-statistics in parentheses.

While not exhaustive, these results suggest that more personal freedom is not related to entrepreneurship as measured by the KIEA. This should not be taken to suggest that the individual rights embodied in this measure of personal freedom are not important. Rather, it is just a confirmation that personal freedom is not directly related to entrepreneurship.

Table 4: Determinants of Entrepreneurial Activity (Economic Freedom)

Dependent Variable: Kauffman Index of Entrepreneurial Activity						
Variables	Model 1		Model 2		Model 3	
Constant	307.75	***	−986.89		−2,029.28	
	(55.93)		(0.61)		(0.98)	
Economic Freedom	286.56		199.01		482.99	**
	(1.41)		(0.93)		(2.32)	
Percentage Male			1,706.72		3,297.56	*
			(0.90)		(1.85)	
Median Age			19.01	**	−12.52	
			(2.25)		(0.55)	
Percentage White			−634.84		−1,417.70	
			(0.51)		(1.16)	
Percentage with Bachelor's Degree			1,163.76		1,311.31	
			(0.49)		(0.61)	
Population Density			−986.89		10.62	**
			(0.61)		(2.46)	
Unemployment Rate					14.46	
					(1.51)	
Percentage Service Employment					−688.64	
					(0.83)	
Violent Crime Rate					1.06	***
					(3.15)	
Property Crime Rate					0.10	
					(1.67)	
R^2 Adjusted	3.90%		17.00%		45.80%	

Note: * indicates significance at the 10% level, ** at the 5% level, and *** at the 1% level. Absolute t-statistics in parentheses.

The finding that personal freedom is not directly related to entrepreneurship is somewhat surprising given that at least some research has shown that educational choice—a type of personal freedom—is positively related to youth entrepreneurship.[38] However, at the same time these results are in agreement with the previous literature on the positive relationship between economic freedom and entrepreneurial activity. This is important to note, as our findings are the first to employ the *Freedom in the 50 States* measure of economic freedom.

Finally, in table 5 we again ran the full specifications from the third column of table 2. However, this time we split economic freedom into its two component parts: fiscal policy and regulatory policy.

Table 5: Determinants of Entrepreneurial Activity (Fiscal and Regulatory)

Dependent Variable: Kauffman Index of Entrepreneurial Activity

Variables	Fiscal		Regulatory	
Constant	−2,397.38		−2,361.02	
	(1.16)		(1.08)	
Measure of Freedom	583.12	**	379.29	
	(2.19)		(0.98)	
Percentage Male	3,994.51	**	3,230.53	
	(2.23)		(1.67)	
Median Age	−11.55		4.61	
	(0.50)		(0.20)	
Percentage White	−1,063.06		−1,407.19	
	(0.87)		(1.08)	
Percentage with Bachelor's Degree	1,714.90		−147.51	
	(0.77)		(0.07)	
Population Density	8.80	**	9.49	**
	(2.09)		(2.04)	
Unemployment Rate	13.33		11.16	
	(1.39)		(1.12)	
Percentage Service Employment	−741.03		−391.01	
	(0.88)		(0.45)	
Violent Crime Rate	0.90	**	1.09	***
	(2.67)		(2.94)	
Property Crime Rate	0.10		0.08	
	(1.66)		(1.25)	
R^2 Adjusted	45.08%		39.95%	

Note: * indicates significance at the 10% level, ** at the 5% level, and *** at the 1% level. Absolute t-statistics in parentheses.

[38] Russell Sobel and Kerry King, "Does School Choice Increase the Rate of Youth Entrepreneurship?" *Economics of Education Review* 27, no. 4 (2008): 429–38.

One advantage of the *Freedom in the 50 States* measure of economic freedom is that because it focuses solely on the United States, its formulators are able to incorporate measures of regulation into their definition of economic freedom. Regulatory policy comprises 50 percent of their economic freedom measure. This should allow researchers to better study the impact of regulatory policy on entrepreneurship, building off work done at the international level.[39]

The regressions in table 5 point to fiscal policy being most important to entrepreneurship, with the coefficient on fiscal policy both positive and statistically significant at the 5 percent level. While regulatory policy (more regulatory freedom) is positively related to KIEA scores, it is not statistically significant. Given the large number of regulatory policies included in the regulatory policy index, it is possible that regulations in some areas are more relevant to entrepreneurship than others, which would be a great exercise for future scholars.

5 Conclusion

Entrepreneurship is important for at least two reasons. At the individual level, the opportunity to pursue one's dreams has value, regardless of how others in the marketplace might value what is produced. In the aggregate, entrepreneurship is valuable because it leads to economic growth and progress.[40] Over the past decade, a large body of empirical research has confirmed this relationship.[41] Previous findings have given researchers a better understanding of the determinants of entrepreneurship. Many have identified economic freedom as an important factor

[39] For example, see Leora Klapper, Luc Laeven, and Raghuram Rajan, "Entry Regulation as a Barrier to Entrepreneurship," *Journal of Financial Economics* 82, no. 3 (2006): 591–629.
[40] See Holcombe, *Entrepreneurship and Economic Progress*, and David Audretsch, Max Keilbach, and Erik Lehmann, *Entrepreneurship and Economic Growth* (New York: Oxford University Press, 2006).
[41] See Donald Bruce, John Deskins, Brian Hill, and Jonathan Rork, "Small Business Activity and State Economic Growth: Does Size Matter?" *Regional Studies* 43, no. 2 (2009): 229–45; and Daniel Berkowitz and David DeJong, "Entrepreneurship and Post-Socialist Growth," *Oxford Bulletin of Economics and Statistics* 67, no. 1 (2005): 25–46.

in creating the conditions under which positive-sum entrepreneurship can occur.[42] In this paper we extended the findings of previous literature to look at freedom more broadly, using a new index of freedom at the US state level.[43] While we find that the overall measure of freedom is positively related to entrepreneurship as measured by the KIEA, disaggregation of overall freedom into both personal and economic freedom shows that economic freedom is driving the relationship. Controlling for other relevant factors, we found that an increase of one standard deviation in economic freedom is associated with an increase of over one standard deviation in entrepreneurship. To put it simply, if the average state increased its economic freedom score by 0.22 points this would translate to 106 additional new businesses started per month. For a state such as Ohio, with an economic freedom score of −0.11 in 2009, an increase in its economic freedom score to 0.11 would likely increase the number of new businesses started per month from 270 to over 370! This finding confirms and supports the previous literature showing a positive relationship between economic freedom and entrepreneurship.

However, perhaps even more important is that fact that our findings are the first to show that the *Freedom in the 50 States* measure of economic freedom leads to results consistent with those of previous economic freedom literature, which used the *EFNA* index. Given the differences in methodology and coverage, this finding is important because it creates the opportunity for more research in the area of regulatory policy. In addition, interested researchers will benefit from having access to a different measure of economic freedom for robustness checks and to ensure proper coverage.

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[42] Hall and Sobel, "Institutions, Entrepreneurship, and Regional Differences in Economic Growth."
[43] Ruger and Sorens, *Freedom in the 50 States*.

Appendix Table 1: Data Descriptions

Variable	Definition	Source
Kauffman Index	Number of entrepreneurs per 100,000 people	*Kauffman Index of Entrepreneurial Activity*
Overall Freedom	Overall Freedom Index Score	*Freedom in the 50 States: Index of Personal and Economic Freedom*
Fiscal Freedom	Fiscal Freedom Index Score	*Freedom in the 50 States: Index of Personal and Economic Freedom*
Regulatory Freedom	Regulatory Freedom Index Score	*Freedom in the 50 States: Index of Personal and Economic Freedom*
Personal Freedom	Personal Freedom Index Score	*Freedom in the 50 States: Index of Personal and Economic Freedom*
Economic Freedom	Economic Freedom Index Score	*Freedom in the 50 States: Index of Personal and Economic Freedom*
Percentage Male	Percentage of the labor force that is male	Bureau of Labor Statistics, *www.data.bls.gov*
Median Age	Median age of the total population	US Census Bureau, *www.census.gov*
Percentage White	Percentage of the labor force that is white	Bureau of Labor Statistics, *www.bls.gov/gps/*
Population Density	Persons per square mile of land area	US Census Bureau, *www.census.gov*
Unemployment Rate	Percentage of the labor force that is unemployed	Bureau of Labor Statistics, *www.data.bls.gov*
Percentage Service Employment	Percentage of the labor force that is employed in the service sector	Bureau of Labor Statistics, *www.bls.gov/gps/*
Percentage with Bachelor's Degree	Percentage of the population over 25 that has at least a bachelor's degree	US Census Bureau, *www.census.gov/compendia/statab/*
Property Crime Rate	Number of property crimes per 100,000 people	Federal Bureau of Investigation, *Uniform Crime Reports*, *www.fbi.gov/about-us/cjis/ucr/ucr*
Violent Crime Rate	Number of violent crimes per 100,000 people	Federal Bureau of Investigation, *Uniform Crime Reports*, *www.fbi.gov/about-us/cjis/ucr/ucr*

Note: All data at the state level is for the years 2007 and 2009, except for percentage with bachelor's degree, which is for the years 2007 and 2008.

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Testing Baumol: Institutional quality and the productivity of entrepreneurship ☆

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Abstract

Baumol's [Baumol, W.J., 1990. Entrepreneurship: productive, unproductive and destructive. Journal of Political Economy 98 (5), 893–921] theory of productive and unproductive entrepreneurship is a significant recent contribution to the economics of entrepreneurship literature. He hypothesizes that entrepreneurial individuals channel their effort in different directions depending on the quality of prevailing economic, political, and legal institutions. This institutional structure determines the relative reward to investing entrepreneurial energies into productive market activities versus unproductive political and legal activities (e.g., lobbying and lawsuits). Good institutions channel effort into productive entrepreneurship, sustaining higher rates of economic growth. I test and confirm Baumol's theory, and discuss its significance to the literature, economic prosperity, and policy reform.

Keywords: Entrepreneurship; Institutional quality; Economic freedom; Economic growth

1. Executive summary

One of the major recent contributions to the economics of entrepreneurship literature is William Baumol's theory of productive and unproductive entrepreneurship. Baumol theorizes that entrepreneurial individuals have a choice to devote their labor effort toward either private-sector wealth creation, or toward securing wealth redistribution through the political and legal processes (e.g., lobbying and lawsuits). This decision is influenced by the corresponding rates of return–or profit rates–to the activities, which in turn is shaped by the quality of existing political and legal institutions.

When institutions provide for secure property rights, a fair and balanced judicial system, contract enforcement, and effective constitutional limits on government's ability to transfer wealth through taxation and regulation, it reduces the profitability of unproductive political and legal entrepreneurship. Under this incentive structure, creative individuals are more likely to engage in the creation of new wealth through productive market entrepreneurship. Thus, differences

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in measured rates of *private sector* entrepreneurship are partially due to the different directions entrepreneurial energies are channeled by prevailing economic and political institutions, through the rewards and incentive structures they create for entrepreneurial individuals.

This paper examines the relationship between measures of the quality of state political and legal institutions and measures of both productive and unproductive entrepreneurship. I find that better institutional structures produce higher venture capital investments per capita, a higher rate of patents per capita, a faster rate of sole proprietorship growth, and a higher establishment birth rate. The results also show that those states with the worst institutions have the worst records on total lobbying activity and legal quality/lawsuit abuse—the unproductive types of entrepreneurship.

This paper constructs a state index and ranking of 'net entrepreneurial productivity' in which productive entrepreneurship is measured relative to unproductive political and legal entrepreneurship. The relationship between having good institutions and the index of net entrepreneurial productivity across states is highly significant. The index of net entrepreneurial productivity also helps to explain differences in the levels of economic prosperity across states.

This paper not only provides the first empirical evidence in support of Baumol's theoretical contribution, but also examines the effects of unproductive entrepreneurship on state economic prosperity. The paper concludes with a set of recommended policy reforms that would help to improve the quality of institutions and create higher levels of productive private sector entrepreneurship.

2. Introduction

For almost three hundred years, economists have been making contributions to the academic literature on entrepreneurship. Among the most significant historical contributions were those of Cantillon, Say, Mill, Knight, Schumpeter, and Kirzner, who advanced our understanding of the entrepreneur's role in the economy. One recent contribution that might someday make this list comes from economist William Baumol, who first published his theory of 'productive and unproductive entrepreneurship' in 1990. His contribution is significant because it fundamentally shifts the focus of academic inquiry toward the role of institutions in affecting entrepreneurship.[1]

Baumol's theory is founded on the idea that entrepreneurs exploit profit opportunities not only within private markets but also within the political and legal arenas. Thus, differences in measured rates of *private sector* entrepreneurship are partially due to the different directions entrepreneurial energies are channeled by prevailing economic and political institutions, through the rewards and incentive structures they create for entrepreneurial individuals.

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 productive market entrepreneurship—activities that create wealth (e.g., product innovation). In areas without strong institutions, these same individuals are instead more likely to engage in attempts to manipulate the political or legal process to capture transfers of existing wealth through unproductive political and legal entrepreneurship—activities that destroy wealth (e.g., lobbying and lawsuits). This reallocation of effort occurs because the institutional structure largely determines the relative personal and financial rewards to investing entrepreneurial energies into productive market activities versus investing those same energies instead into unproductive political and legal activities.[2]

In this paper I attempt to provide the first complete empirical test of Baumol's theory, examining the impact of institutional quality on both the levels of productive and unproductive entrepreneurship. My results confirm Baumol's conjecture that areas with better institutions have both more productive entrepreneurship, and also less unproductive entrepreneurship. A tradeoff clearly exists between the levels of these two activities in an economy. The policy implications of Baumol's theory are clear; rather than focusing on expanding government programs like subsidized loans, workforce education, or programs aimed at increasing 'entrepreneurial inputs' as a way to foster productive entrepreneurship, the better path is through institutional reform that constrains or minimizes government's role, lowering the return to unproductive types of entrepreneurship. Government programs too often encourage entrepreneurial individuals to devote effort toward figuring out how to obtain the transfers or subsidies, rather than devoting those efforts toward satisfying consumers and creating wealth.

[1] The idea that free-market institutions, such as secure private property rights, are vital to economic growth was also stressed in the works of Peter Bauer, see Dorn (2002) for a good discussion of Bauer's contributions in this area.

[2] For example, a steel entrepreneur might react to competition by trying either to find a better way of producing steel (productive entrepreneurship), or by lobbying for subsidies, tariff protection, or filing legal anti-trust actions (unproductive entrepreneurship).

This paper continues by first reviewing economists' contributions to our understanding of entrepreneurship, from Cantillon through Baumol. A framework is then presented to highlight the difference between academic inquiries into the role of entrepreneurial inputs versus the role of institutions. Measures of unproductive and productive entrepreneurship, as well as of institutional quality, are discussed and analyzed to see if the predictions of Baumol's theory hold.

3. Economists' contributions to entrepreneurship

In 1730, economist Richard Cantillon identified the willingness to bear the personal financial risk of a business venture as the defining characteristic of an entrepreneur.[3] In the early 1800s, economists Jean Baptiste Say and John Stuart Mill further popularized the academic usage of the word 'entrepreneur.' Say stressed the role of the entrepreneur in creating value by moving resources out of less productive areas and into more productive ones. Mill used the term 'entrepreneur' in his popular 1848 book, *Principles of Political Economy*, to refer to a person who assumes both the risk and management of a business. In this manner, Mill provided a clearer distinction than Cantillon between an entrepreneur and other business owners (such as shareholders of a corporation) who assume financial risk, but do not actively participate in the day-to-day operations of the firm.

Building on Cantillon and Mill, economist Frank Knight emphasized that entrepreneurs deal with uncertainty about the future, not with risk. Probabilities can be estimated for risky activities and thus are insurable. Entrepreneurs, however, are dealing with uncertainty about the profitability of their new combinations of resources. Since entrepreneurs cannot insure against the probability that new goods and services will fail, entrepreneurs bear the burden of the uncertainty associated with the market process.

Two other economists, Joseph Schumpeter and Israel Kirzner, also greatly advanced our understanding of the role of the entrepreneur. Schumpeter ([1911] 1934, 1942) stressed the role of the entrepreneur as an innovator. To Schumpeter, an entrepreneur is someone who finds new combinations of resources and creates products that did not previously exist. From a Schumpeterian view, the entrepreneur is a disruptive force in an economy because the introduction of these new combinations leads to the obsolescence of others. The introduction of the compact disc, and the corresponding disappearance of the vinyl record, is just one of many examples of this process Schumpeter termed 'creative destruction.' Cars, electricity, aircraft, and personal computers are others. Schumpeter viewed this disruptive force as the source of true economic progress. In addition to stressing the disruptive role of entrepreneurs, Schumpeter differentiated between innovators and creditors. Innovators serve the creative function while creditors serve the financing function. True entrepreneurship is the creative, or innovative aspect of business formation—not the financing component.

Kirzner's (1973, 1997) view of entrepreneurship stands in some contrast to Schumpeter's. Instead of focusing on the disequilibrating role of the entrepreneur, Kirzner views entrepreneurship as an equilibrating force in which entrepreneurs discover previously unnoticed profit opportunities and act on them, bringing markets toward their zero economic profit, long-run equilibria. Thus Kirzner's 'arbitraging' entrepreneur initiates a change that moves a market toward equilibrium, rather than disrupting an existing equilibrium as does Schumpeter's entrepreneur. Holcombe (1998) attempts to bring together the Schumpeterian and Kirznerian views by explaining that a Schumpeterian innovation (such as, say, the introduction of the automobile) creates multitudes of new profit opportunities (in areas like auto accessories and fuel delivery) that are there to be exploited by Kirznerian entrepreneurs.

Perhaps the most significant theoretical contribution to our understanding of entrepreneurship since the time of Kirzner is Baumol's theory of productive and unproductive entrepreneurship. First published in his 1990 article, this theory has been further elaborated in Baumol (1990, 1993, 2002), Boettke (2001), Boettke and Coyne (2003), Coyne and Leeson (2004), Kreft and Sobel (2005), and Ovaska and Sobel (2005). Baumol conjectures that entrepreneurship is an omnipresent feature of human nature, and what differs across areas is not the degree of underlying entrepreneurial spirit, but instead how that spirit is channeled. In the political and legal arenas, just like in the market sector, there are both Schumpeterian 'innovation' and Kirznerian 'arbitrage' opportunities that can and do generate profit for entrepreneurial individuals.

These entrepreneurial individuals have a choice to devote their labor efforts toward either private sector wealth creation, or toward securing wealth redistribution through the political and legal processes. This decision is influenced by the corresponding rates of return to the two activities. Institutions providing secure property rights, a fair and

[3] For additional discussion and references on this historical material see Sobel (2008).

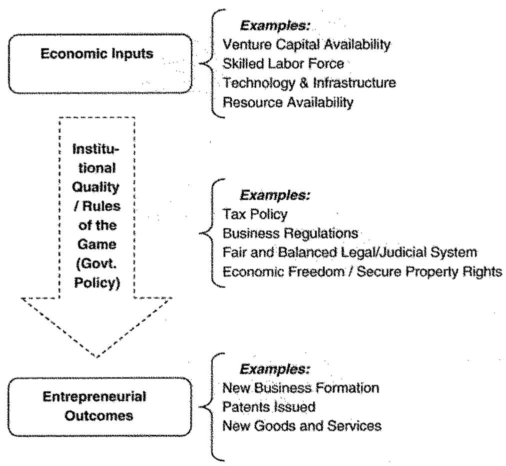

Fig. 1. The entrepreneurial process.

balanced judicial system, contract enforcement, and effective limits on government's ability to transfer wealth through taxation and regulation, have a lower return to unproductive political entrepreneurship. Under this incentive structure, creative individuals are more likely to engage in the creation of new wealth through productive market entrepreneurship. In areas without good institutions, the rate of return to unproductive entrepreneurship is higher and creative individuals engage in attempts to capture transfers of existing wealth through unproductive political entrepreneurship—such as lobbying and lawsuits.

Baumol's theory may be viewed as a one period model of an individual entrepreneur's utility maximization over a private consumption good c, with a normalized price of $1. Income, Y, is entirely spent on consumption, so $c=Y$. The individual maximizes utility subject to a normalized labor allocation constraint in which the share of entrepreneurial effort devoted to productive entrepreneurship, e_p, plus the share devoted to unproductive entrepreneurship, e_u, equals one, or $e_p+e_u=1$. Finally, the budget constraint, in terms of the returns to productive entrepreneurial activity, r_p, and unproductive entrepreneurial activity, r_u, is $Y=e_p r_p+e_u r_u$.

Optimization produces the familiar result that the individual will allocate his or her effort so as to equate the marginal return per hour worked across the two activities. In a world of heterogeneous agents, comparative advantages will dictate that some individuals will arrive at corner solutions in which they are either full time political entrepreneurs (i.e., lobbyists) or full time private entrepreneurs.

The economy's '*net entrepreneurial productivity*' (NEP) is given by: $\text{NEP}=e_p-e_u$. The economy's net entrepreneurial productivity (NEP) is a function of returns to the two activities, so $\text{NEP}=f(r_p, r_u)$. Net entrepreneurial productivity rises as either the reward to productive entrepreneurship rises [i.e., $\partial\text{NEP}/\partial r_p>0$], or as the return to unproductive entrepreneurship falls [i.e., $\partial\text{NEP}/\partial r_u<0$]. We will return to this theoretical model later to derive the empirical measures employed in this study.

Baumol's theory is important because it fundamentally redirects the academic focus of policy-relevant questions about how best to foster entrepreneurship and economic growth. This can more clearly be understood by considering Fig. 1.

Fig. 1 illustrates the process by which entrepreneurial outcomes are generated. Economic inputs, such as venture capital and resource availability, are converted into entrepreneurial outcomes like new businesses created or patents issued. However, the quantity of entrepreneurial outcomes generated from a given amount of economic inputs depends primarily on the institutions, or 'rules of the game,' under which entrepreneurs operate. Prior to Baumol, most economists and policy makers focused only on the relationship between entrepreneurial inputs and entrepreneurial outcomes, essentially assuming away the rules of the game from the analysis. Baumol's theory also considers the institutional context, and rules of the game, under which entrepreneurs operate.

His theory also helps to explain why so many government programs aimed at subsidizing entrepreneurial inputs, such as government loan and education programs, have shown little success in actually promoting entrepreneurship. Increasing inputs has little impact on outcomes when the rules of the game are poor. Baumol's theory suggests that the policy focus should, instead, be on how to improve the quality of institutions to get the largest productive entrepreneurial output out of an economy's entrepreneurial inputs.

4. Entrepreneurship, institutions, and economic growth

Productive entrepreneurship is important to an economy because it is the fundamental source of economic growth and wealth creation. Reynolds et al. (1999), for example, show that one-third of the differences in national economic growth rates can be attributed to differences in entrepreneurial activity. Zacharakis et al. (2000) study sixteen developed economies and find that entrepreneurial activity explains approximately one-half of the differences in GDP growth between countries. More recently, Henderson (2002) shows that entrepreneurs significantly impact economic activity at a more local level through fostering localized job creation, increasing wealth and local incomes, and connecting local economies to the larger, global economy. The research seems to conclude that productive entrepreneurial activity is the primary source of economic growth.

Yet there exists an entirely different and unrelated strand of economic literature attempting to explain economic growth differentials by differences in the quality of institutions. This literature has arisen in large part due to the publication of the *Economic Freedom of the World* index by economists James Gwartney and Robert Lawson (2005, first published in 1996). This index is updated annually, and has now been used in hundreds of studies published in academic journals and books. Because state and local policies also impact the degree of 'economic freedom', authors Amela Karabegovic and Fred McMahon released their *Economic Freedom of North America* ranking individual U.S. states and Canadian provinces with respect to each other in terms of their institutional quality.

Generally these indices attempt to condense into a single number the degree of 'economic freedom' individuals have in a geographic area. The index measures institutional quality specifically with respect to the extent of capitalism and limited government on a scale from zero to ten. Zero means that a state is completely economically unfree. Ten means it is completely free, or has the best institutions. Three subcomponents compose this index: (1) the size of government, which considers measures of government spending and ownership as a percent of the state economy, (2) takings and discriminatory taxation, which measures how well government protects private property rights and the presence of low tax rates that allow owners to keep residual income, (3) labor market freedom, which covers government regulation and control of labor markets including measures of state minimum wages and government employment.[4] In sum, these measures provide a broad index of the extent to which states adopt policies consistent with the ones that best discourage unproductive political entrepreneurship. Studies using these indices such as Farr et al. (1998), Gwartney et al. (1999), Cole (2003), and Powell (2003) have consistently shown that countries with higher economic freedom scores not only have larger per capita incomes, but also tend to have higher rates of economic growth.

Baumol's theory provides a way to make sense of, or synthesize, these two seemingly separate 'fundamental' explanations for economic growth. The index of economic freedom measures precisely those institutional structures that should lower the return to unproductive entrepreneurship, promoting productive entrepreneurship over unproductive entrepreneurship. Thus, underlying economic freedoms generate economic growth *because* they more heavily promote productive entrepreneurial activity, which is the source of economic growth. Both sets of literature are indeed correct, economic freedom and entrepreneurship are both highly correlated with economic growth. It is the institutional structure as measured by economic freedom, however, that promotes productive, wealth-generating entrepreneurial activity which is the source of economic growth.

It is worthwhile to make a distinction between the total supply of entrepreneurs and the allocation of entrepreneurs between productive and unproductive activities. Within a specific geographic area, from year to year, changes in total

[4] A list of the specific subcomponents of each of these areas can be found in Karabegovic and McMahon (2005), which is available online at: http://www.freetheworld.com/.

productive entrepreneurship, Baumol argues, are largely caused by changes in institutional structures, rather than changes in the population's underlying propensity to be entrepreneurial. When comparing different geographic areas, however, there are other factors that may influence the total supply of entrepreneurs. This is why in the subsequent empirical work other control variables are included, and is also why the main test is performed using a newly created index that measures these two activities as relative proportions.

To appreciate Baumol's contribution to economic growth theory requires understanding the difference between positive-sum, zero-sum, and negative-sum economic activities. Activities are positive-sum when net gains are created. Private market activities are positive-sum because both parties gain in voluntary transactions. Government actions that transfer wealth, regulate, subsidize, or protect industry from competition are instead zero-sum. One party's gain (e.g., the subsidy) is offset exactly by another party's loss (e.g., the taxes). However, the fact that it requires an investment of resources into lobbying to secure the zero-sum transfer means that the overall impact on the economy is negative-sum. Magnifying this is the fact that others will devote resources to political lobbying on the other, defensive, side as well. The resources devoted toward securing (and fighting against) zero-sum political transfers have an opportunity cost—in essence we have more lobbying firms and fewer DVD manufacturers.[5] Unproductive entrepreneurship is unproductive precisely because it uses up resources in the process of capturing zero-sum transfers, and these resources had alternative, productive uses.

The remainder of this paper is devoted toward using different measures of both productive and unproductive entrepreneurship and seeing whether they indeed relate, as Baumol's theory would predict, to the level of institutional quality as measured by the index of economic freedom.

5. Institutional quality and the levels of productive and unproductive entrepreneurship

One of the issues to overcome in testing Baumol's theory is that all three of the required variables are truly unobserved. This necessitates the use of proxies or indices, and my hope is to present enough alternatives to show that the results are not sensitive to any single measure. I examine cross-sectional data from the continental 48 U.S. States. Measures, particularly those of the unproductive entrepreneurship, simply are not consistently available internationally to examine this part of the hypothesis using international data.

As measures of productive entrepreneurship I use venture capital investments per capita, patents per capita, the growth rate of self-employment activity, the establishment birth rate (all new firms), and the large-establishment birth rate (new firms with 500 or more employees). All variables, their precise definitions, years, sources, and descriptive statistics are provided in Appendix A. In each case a multi-year average (generally centered around the year 2000) is used to lessen the potential that a particularly good or bad single year is used. These measures attempt to span the spectrum of what could be considered productive entrepreneurship, from small lifestyle entrepreneurs to gazelle firms, and within-firm innovation.

For measures of unproductive entrepreneurship, I use three measures developed in Sobel and Garrett (2002) of the number of political and lobbying organizations in each state's capital. In addition, a measure of unproductive entrepreneurship through legal channels/lawsuits is examined. This measure is derived from the well-regarded 'Harris Poll' index of legal and liability system quality and fairness.[6] States scoring poorly on this index generally have significant legal fraud and abuse, particularly in the areas of class-action, medical malpractice, and workers compensation lawsuits.[7] Because this index measures judicial quality, I invert the index score to arrive at the measure of unproductive legal entrepreneurship.[8]

[5] This notion is the seminal insight of political economist Gordon Tullock in his theory of rent seeking published in 1967 (Tullock, 1967). For additional information and background on the economic literature on rent seeking see Tollison (1982) and McChesney (1987).

[6] This index, a cooperative effort of the Institute for Legal Reform, the Harris Poll, and the U.S. Chamber of Commerce ranks the 50 states based on how fair their court systems are perceived to be, particularly with regard to liability system abuse. The study is based on a survey of over 1400 practicing attorneys and general counsels who answered a comprehensive battery of questions.

[7] Many of these poorly-scoring states are that way because of their unusual method of electing state supreme court judges by partisan elections (see Sobel and Hall, 2007). Candidates for the court in these few states often run on clearly biased political platforms, for example Democrats promising voters they will use their position to side with workers over large corporate businesses in rulings.

[8] The scale of the index is 0 to 100, so it is inverted by subtracting it from 100 to arrive at the new score (e.g., so a 25 becomes a 75, a 99 becomes a 1, etc.).

Table 1
Institutional quality and productive entrepreneurship: regression results

	Dependent variable				
Independent variable	Venture capital investment per capita	Patents per capita	Sole proprietor- ship growth rate	Total establishment birth rate	Large firm establishment birth rate
Constant	−836.182 (1.124)	−64.462 (0.382)	86.924 (1.327)	64.003*** (2.782)	46.180*** (3.076)
Institutional quality	32.127** (2.041)	8.178** (2.348)	4.206** (2.999)	0.838* (1.823)	0.873*** (2.717)
Median age	−1.251 (0.298)	−0.398 (0.425)	−0.266 (0.712)	−0.320 (2.653)	−0.146* (1.713)
Population density	−0.0125 (0.308)	0.0201** (2.268)	−0.0003 (0.089)	0.0012 (0.998)	0.0030*** (3.688)
Percent college degree	11.908*** (6.024)	1.246*** (2.896)	−0.252 (1.443)	0.009 (0.145)	0.042 (1.048)
Percent male	8.836 (0.621)	0.222 (0.069)	−1.741 (1.376)	−0.928** (2.079)	−0.736 (2.538)
Observations	48	48	48	48	48
R-squared	0.875	0.659	0.347	0.504	0.571

Notes: Absolute *t*-statistics in parentheses; asterisks indicate significance as follows: ***=1%, **=5%, *=10%. All regressions were checked to ensure outliers were not driving the results, and that there were no problems with multicollinearity. In the regressions in which there were statistically significant outliers, robust regression techniques were employed to obtain unbiased coefficient estimates. I follow Barnett and Lewis (1995) outlier identification techniques using both the T_n and Dixon's Q test statistics. Statistical significance was found in three of the regressions in Table 1 and none of the regressio4ns in Table 2. Rather than excluding these observations, they are 'dummied out' in the list of independent variables for that equation only. They were all fairly obvious cases: CA (Silicon Valley) and MA (Boston), the two major 'home' VC markets, in the venture capital equation; CA (Silicon Valley) and ID (Boise, home of DRAM patent giant Micron Technology) in the patent equation; and the two least populated rural states, MT and WV, in the total establishment birth rate equation (likely a relic introduced through including the population density variable). The corresponding coefficients on these dummy variables (and absolute *t*-ratios) were respectively: 382.9 (7.935), 426.8 (8.347), 18.07 (1.694), 55.08 (5.115), 2.10 (1.875), and 1.62 (1.126). In each of these three cases, effectively, the remaining 46 states are used to fit the equation, similar to the results that would be produced by a least median squares estimation technique.

First I examine the relationship between the level of productive entrepreneurship in each state and the state's institutional quality score from Karabegovic and McMahon (2005). Ordinary least squares regressions are performed for each measure of productive entrepreneurship. In addition to including institutional quality, I also include several control variables. It is important not to include any variables that could potentially be endogenous, or are simply alternative measures of the same phenomenon (e.g., state income would be one that is rejected for both reasons). Thus, I use only a selection of geographic and demographic controls such as median age, population density, percent of the population that is male, and the percent of the population with a college degree. However, additional variables and measures will be explored later for robustness checking.

Table 1 presents the results of the regressions. Institutional quality is found to be of the correct sign, and statistically significant at a 5% level in two of the specifications, and at 1% in the other two. The estimated coefficients for institutional quality are also economically significant. The coefficient may be interpreted as the difference in entrepreneurial activity associated with a one unit difference in the state's institutional quality score. Given the within-sample range of this index, a one unit difference would be roughly equivalent to comparing the 35th ranked state's level of entrepreneurial activity with the 15th ranked state.

The state with a one unit higher institutional quality score is predicted to have $32 larger per capita venture capital investments, which relative to the cross-state average of $82, converts roughly into a 39% higher level of venture capital investments.[9] A one unit higher institutional quality score is associated with 8.2 additional patents for every 100,000 residents, or 36.6% higher level of patent activity. A state with a one unit higher score also has roughly a 4.2 percentage point higher rate of growth in self-employment activity (note this is a cumulative 5 year growth rate), a difference that would reflect typical growth rates of 15% compared to 11%. Establishment birth rates (both total and large) are higher by about 0.8 percentage points, a difference of about 7 to 8%.

[9] Percentage changes are calculated based on the within sample mean for the variable of interest.

Table 2
Institutional quality and unproductive entrepreneurship: regression results

	Dependent variable			
Independent variable	Unproductive political entrepreneurship (lobbying orgs. per capita measure 1)	Unproductive political entrepreneurship (lobbying orgs. per capita measure 2)	Unproductive political entrepreneurship (lobbying orgs. per capita measure 3)	Unproductive legal entrepreneurship (100 minus Harris judicial index)
Constant	72.493** (2.127)	229.125* (1.797)	553.552* (1.786)	−44.020 (0.388)
Institutional quality	−1.718** (2.460)	−6.362** (2.435)	−13.898** (2.189)	−6.177** (2.544)
Median age	0.700 (0.359)	−0.309 (0.423)	−1.226 (0.691)	−1.236* (1.913)
Population Density	0.136 (0.721)	0.559 (0.792)	0.277 (1.611)	0.0031 (0.505)
Percent college degree	−0.876 (0.957)	−0.139 (0.406)	−0.291 (0.350)	−0.912*** (3.010)
Percent male	−1.165* (1.750)	−3.207 (1.288)	−7.698 (1.272)	3.795* (1.732)
Observations	48	48	48	48
R-squared	0.183	0.152	0.168	0.424

Notes: Absolute *t*-statistics in parentheses; asterisks indicate significance as follows: ***=1%, **=5%, *=10%. All regressions were checked to ensure outliers were not driving the results, and that there were no problems with multicollinearity. None of the regressions in this table required robust regression techniques, as Barnett and Lewis (1995) T_n and Dixon's Q outlier identification tests did not show any statistically significant results for any of these regression equations.

The evidence presented in Table 1 uniformly supports the first part of Baumol's hypothesis—that better institutional quality results in a higher level of productive entrepreneurial activity. The second part of Baumol's theory would suggest that due to the nature-imposed constraint of scarcity, these additional resources flowing toward productive entrepreneurship should also be reflected in a negative relationship between institutional quality and measures of unproductive entrepreneurship. Table 2 presents similar regressions as in Table 1, but here the dependent variables are the measures of unproductive entrepreneurship.

Again the measure of institutional quality is uniformly significant, both statistically and economically, and with the expected sign. A state with a one unit higher score on institutional quality would have fewer measured political interest group organizations (by 1.7, 6.4, and 13.9 per 1,000,000 residents depending on the measure). While these numbers may differ, they convert to roughly equal predictions of the percentage reduction in unproductive entrepreneurial activity of 67, 60, and 56% respectively. Examining the measure of unproductive legal entrepreneurship, the coefficient would suggest that unproductive entrepreneurship is lower by 6.2 units on the legal index, or around 11%, in a state with a one unit higher institutional quality score.

5.1. Robustness checks

Several techniques were employed to check for the robustness of these estimates. Specifications were run including additional variables, such as the percent voting republican among the population, and using lagged values for institutional quality to check for potential problems of endogeneity. In all specifications, the results remained robust to these changes, and the full estimates from these models are included as Appendix B. The only noteworthy result is that the percent voting republican was sometimes negatively associated with productive entrepreneurship and positively associated with unproductive entrepreneurship.

As an additional check of robustness, Spearman's rank correlation tests were run among all variables in Tables 1 and 2 with the institutional quality score. This is worthwhile because of the non-continuous nature of the institutional quality score. The results of the rank tests universally supported the findings in Tables 1 and 2. When converted to rankings, however, the measures of unproductive entrepreneurship seemed more subject to outlier issues, although because this is a simple two-variable correlation, there are no additional control variables to help explain outlier observations. The full results from these rank correlation tests are presented in Appendix C.

Thus, the data support both predictions of Baumol's theory. Institutional quality is found to be highly correlated with all of the measures and proxies for both the amounts of productive and unproductive entrepreneurship. However, it is

Table 3
State productive and unproductive entrepreneurship scores

Rank	State	Net entrepreneurial productivity (NEP) score ($e_p - e_u$): (scale −47 to +47)	(e_p) Productive entrepreneurship score (Borda Count avg. points: scale 1–48)	(e_u) Unproductive entrepreneurship score (Borda Count avg. points: scale 1–48)	Institutional quality score (scale 1–10)
1	Delaware	+31.95	41.20	9.25	7.8
2	Washington	+25.70	30.20	4.50	6.2
3	New York	+22.90	33.40	10.50	6.4
4	Nevada	+22.70	33.20	10.50	7.3
5	Florida	+22.25	33.00	10.75	6.7
6	California	+19.80	37.80	18.00	6.7
7	Oregon	+14.80	32.80	18.00	6.7
8	Illinois	+14.45	28.20	13.75	6.9
9	Texas	+13.90	35.40	21.50	7.2
10	Virginia	+12.90	25.40	12.50	6.8
11	New Jersey	+12.50	30.00	17.50	6.7
12	Michigan	+12.30	19.80	7.50	6.5
13	Maryland	+11.85	28.60	16.75	6.3
14	Colorado	+11.25	43.00	31.75	7.6
15	North Carolina	+10.80	27.80	17.00	7.1
16	Utah	+9.25	40.00	30.75	7.0
17	Missouri	+9.20	22.20	13.00	6.8
18	Georgia	+8.40	34.40	26.00	7.3
19	Arizona	+6.35	38.60	32.25	7.1
20	Pennsylvania	+4.10	18.60	14.50	6.7
21	New Hampshire	+3.20	31.20	28.00	7.3
22	New Mexico	+1.35	23.60	22.25	6.2
23	Massachusetts	+1.30	33.80	32.50	7.1
24	Minnesota	−0.15	25.60	25.75	6.8
25	Alabama	−0.20	19.80	20.00	6.8
26	Ohio	−0.40	16.60	17.00	6.5
27	Kentucky	−1.35	13.40	14.75	6.5
28	Kansas	−1.80	15.20	17.00	6.8
29	South Dakota	−2.00	10.00	12.00	7.3
30	Idaho	−3.25	33.00	36.25	6.6
31	Connecticut	−3.70	27.80	31.50	7.1
32	Tennessee	−3.90	22.60	26.50	7.2
33	South Carolina	−7.05	19.20	26.25	6.9
34	Indiana	−8.10	14.40	22.50	7.0
35	Vermont	−9.05	11.20	20.25	6.3
36	Wisconsin	−10.30	13.20	23.50	6.5
37	Wyoming	−11.55	14.20	25.75	6.9
38	Mississippi	−11.95	17.80	29.75	6.2
39	Louisiana	−12.80	19.20	32.00	7.2
40	Maine	−14.55	18.20	32.75	5.9
41	Nebraska	−16.60	11.40	28.00	6.8
42	Iowa	−18.40	9.60	28.00	6.5
43	Arkansas	−22.90	13.60	36.50	6.2
44	Rhode Island	−23.10	20.40	43.50	6.1
45	Montana	−24.85	18.40	43.25	5.7
46	Oklahoma	−25.85	14.40	40.25	6.4
47	West Virginia	−29.60	7.40	37.00	5.4
48	North Dakota	−36.05	3.20	39.25	6.2

important to note that both in Baumol's theory and in the Karabegovic and McMahon institutional quality index, institutional quality has a very specific meaning. It reflects the extent to which states have secure private property rights, a fair and balanced judicial system, contract enforcement, small government sectors, and effective limits on

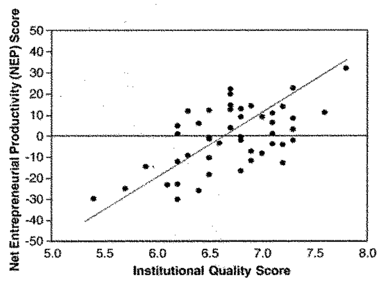

Fig. 2. Institutional quality and the productivity of entrepreneurship.

government's ability to transfer wealth through taxation and regulation. These are precisely the institutional structures that lower the relative reward to unproductive entrepreneurship.

6. Income and the level of productive and unproductive entrepreneurship

While the previous section examined both productive and unproductive entrepreneurship separately, this section calculates an index of *net* entrepreneurial productivity across U.S. states. This index will then be examined to see how closely it correlates with both institutional quality and with measures of state income.

Because the scales of the five measures of productive entrepreneurship and of the four measures of unproductive entrepreneurship vary considerably, they cannot simply be averaged or summed. In order to compute a single index number we must employ an index classification system, such as the Borda Count, that normalizes all variables over the same range, and weights them equally. Table 3 presents these index measures for both the level of productive entrepreneurial activity (column 2) and the level of unproductive entrepreneurial activity (column 3).[10] Column 1 of the table presents Baumol's overall net entrepreneurial productivity (NEP) score that, recall from earlier, is given by: $NEP = e_p - e_u$. A positive NEP score ($NEP > 0$) means the state has relatively more productive than unproductive entrepreneurship, while a NEP score of zero reflects roughly equal proportions of the two. A negative NEP score means the state has relatively more unproductive entrepreneurship than productive entrepreneurship.

Table 3 presents states ranked by their level of net entrepreneurial productivity. The first column shows the state's NEP score, and the second and third columns show the underlying e_p and e_u subcomponent scores. Each state's institutional quality score is presented for comparison in the final column. First, it is worthwhile to note that the states ranked as having the top five NEP scores are: Delaware, Washington, New York, Nevada, and Florida. These five states have the most productive entrepreneurship in comparison with their levels of unproductive entrepreneurship. The five states ranking the lowest were North Dakota, West Virginia, Oklahoma, Montana, and Rhode Island. These states have the highest levels of unproductive entrepreneurship relative to their levels of productive entrepreneurship. Even from the raw data presented in the table, a clear correlation with institutional quality is present. Delaware, the state with the best institutional quality score, also tops the list of having the highest level of net entrepreneurial productivity. West Virginia, the state with the worst institutional quality score, ranks 47th out of 48 in net entrepreneurial productivity. Fig. 2 shows the high correlation between the NEP and institutional quality scores.

[10] With 48 states in the sample, the range of the computed index for both e_p and e_u is from one to 48. Because $NEP = e_p - e_u$, its range is from −47 to +47. The Borda Count sorts each variable from smallest to largest. One point is given to the state with the smallest value, two points to the state with the second smallest value, and so forth, until the state with the largest value is given 48 points. An average Borda score is found across the five productive entrepreneurship measures to arrive at e_p and an average Borda score is found across the four unproductive entrepreneurship measures to arrive at e_u. The net entrepreneurial productivity (NEP) is computed as: $NEP = e_p - e_u$.

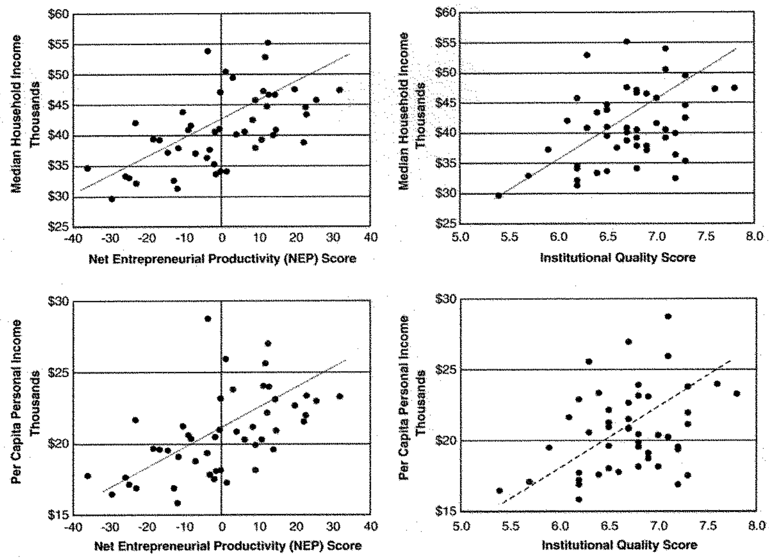

Fig. 3. State income, institutional quality, and net entrepreneurial productivity.

As is clear in Fig. 2, states with better institutional quality tend to have higher levels of net entrepreneurial productivity. This is perhaps the most direct test of Baumol's theory yet, as it simultaneously looks at the relative amounts of productive and unproductive entrepreneurship as compared to institutional quality, rather than examining the two separately. A simple regression line, illustrated in Fig. 2, confirms the statistical relation is highly significant. The slope coefficient has a t-ratio of 4.112, which is significant at the 1% level, and the R-squared is 0.27. A Spearman's rank correlation test confirms a 1% significance level of this correlation even when only using the ranks of the two variables.[11] States with better institutional quality clearly have entrepreneurial efforts channeled relatively more toward productive entrepreneurship.

The four panels in Fig. 3 show how both the net entrepreneurial productivity and institutional quality scores relate to two different measures of state income, median household income and average per capita personal income. In the figures, both appear to be highly correlated with either measure of economic well-being in the state, but simple regressions suggest that net entrepreneurial productivity is a much closer correlate than institutional quality. The slope coefficients in all four regressions are significant at the 1% level.[12] However, the R-squares from the regressions using net entrepreneurial productivity to predict income are 0.34 (median household) and 0.30 (per capita personal) relative to 0.16 and 0.12 R-squares when using institutional quality to predict income. Thus, even though the net entrepreneurial productivity score I calculate is based on methodologically simplifying assumptions and averages, it is more closely related to the level of state income

[11] Appendix B contains the results of the Spearman's rank correlation tests for all of the variables in this paper.

[12] Letting (D) indicate the dependent variable, and (I) the independent variable, the respective slope coefficients, with absolute t-ratios in parenthesis, are: (D) Median Household Income and (I) Institutional Quality: 5137.888 (2.959), (D) Median Household Income and (I) NEP Score: 229.899 (4.871), (D) Per Capita Personal Income and (I) Institutional Quality: 2060.659 (2.471), (D) Per Capita Personal Income and (I) NEP Score: 101.846 (4.484).

Table 4
Reforms that increase the reward to productive (market) entrepreneurship relative to unproductive (political and legal) entrepreneurship

Specific policy reforms that increase the reward to productive entrepreneurship and/or decrease the reward to unproductive entrepreneurship in a state
Reducing or eliminating state personal and corporate income taxes
Reducing or eliminating state turnover or business and occupation taxes
Workers compensation reform (privatization, damage caps, rule enforcement)
Medical malpractice reform (privatization, damage caps, rule enforcement)
Judicial reform (eliminating partisan elections for state courts, liability limits)
Eliminating state minimum and maximum price and wage limits and restrictions
Reducing occupational licensing restrictions (and enacting right-to-work laws)
Constitutional limits on eminent domain and environmental property takings
Reducing government ownership of productive resources (e.g., land holdings)
Broad reductions in government employment, expenditures, and levels of taxation
Broadly applied, simplified tax codes that reduce the ability of groups to lobby for specific exemptions, credits, and rate reductions
Reduce the returns to lobbying by eliminating state 'budget digests' and other forms of pork-barrel legislation that use state money to fund local pet projects
Increased use of market-based reforms such as medical savings accounts, school vouchers,[1] and privatized retirement funds

Notes: [1]For evidence that school choice reforms increase youth entrepreneurship, see Sobel and King (in press).

than is the measure of institutional quality. The method by which the score is constructed might seem somewhat simplifying, but it passes the test of predictive validity in the state income data. The Spearman's rank correlation tests provided in Appendix B, also show that the correlation among the rankings of these two measures of income and the rankings of states on the net entrepreneurial productivity index is greater than it is for the institutional quality measure.

In conjunction with the finding from Fig. 2 that institutional quality is highly correlated with net entrepreneurial productivity, these results would seem to confirm my hypothesis that institutional quality creates wealth primarily because it promotes productive entrepreneurship, which in turn creates wealth and income. This finding explains why researchers have found separately that both institutional quality and entrepreneurship each largely explain the different growth paths of economies. They both do explain it, but the causal link flows from institutions through entrepreneurship to wealth.

To grow richer, states and nations need more productive entrepreneurship and less unproductive entrepreneurship. The specific reforms necessary are those that: (a) increase the relative reward to productive market entrepreneurship, and/or (b) decrease the relative reward to unproductive political and legal entrepreneurship. Repealing state income taxes would be one way to accomplish (a), and it is interesting to note that 3 of the top 5, and 4 of the top 10 states in the net entrepreneurial productivity index were ones who do not have a state income tax.[13] The reward to unproductive entrepreneurship can be reduced through reforms that increase the security of private property rights, create a fairer and more balanced judicial and liability system, strengthen contract enforcement, lessen government pork-barrel spending, and more effectively limit government's ability to transfer wealth through taxation, regulation, and subsidies. Table 4 lists some specific programmatic reforms that could accomplish these goals. All of the reforms listed in the table either lower the reward to political/legal entrepreneurship or increase the reward to productive market entrepreneurship.

As one will notice by looking at the table, the real contribution of Baumol's theory, returning to the framework presented in Fig. 1 depicting the entire entrepreneurial process, is that it shifts attention toward institutional reform, and constrained government, as the way to promote entrepreneurship. This is a rather large change in thinking given the conventional wisdom in the 1990s advocated promoting entrepreneurship through enacting additional government education programs, or subsidies and interventions in venture capital markets. Given the failure of these types of government programs in practice, and the ever continuing search for new ways to promote entrepreneurship, Baumol's theory and its policy implications could potentially form the foundation of 21st century

[13] Although, as a counter example, note that Wyoming also has no state income tax and it ranks 37th, so clearly other factors are important as well.

economic development policy. After all, good institutional reforms have already allowed Ireland to increase significantly its rate of economic growth, and have allowed some of the former Soviet republics, like Estonia, to rival the success of Western economies in less than two decades after abandoning complete central planning. At the same time, states like West Virginia, whose economic freedom ranks lower than that of Estonia, have struggled economically and will continue to do so without significant institutional reform.

The policy implications of Baumol's theory are clear; rather than focusing on expanding government programs like subsidized loans, workforce education, or programs aimed at increasing 'entrepreneurial inputs' as a way to foster entrepreneurship, the better path is through institutional reform that constrains or minimizes government's role, lowering the return to unproductive entrepreneurship. Government programs too often encourage entrepreneurial individuals to devote effort toward figuring out how to obtain the transfers, rather than devoting those efforts toward satisfying consumers and creating wealth.

Appendix A. Data description and sources

Variable name (source)	Description	Mean	S.D.
Measures of productive entrepreneurship			
Venture capital investment per capita (1)	Average annual venture capital investment (from all sources) per capita (1995–2001 period)	81.56	120.04
Patents per capita (2)	Average annual number of utility patents granted (1995–2001 period) per 100,000 population	22.34	16.02
Sole proprietorship growth rate (1)	Cumulative percent change in nonfarm proprietor employment as percent of labor force (NPE), as calculated as: ((NPE2000–NPE1996)/NPE1996)*100	11.03	4.85
Total establishment birth rate (3)	Average annual number of new establishment births as % of existing firms (1999–2002 period)*100	11.54	1.68
Large firm establishment birth rate (3)	Average annual number of new 500+employee establishment births as % of existing large firms (1999–2002 period)*100	10.94	1.37
Measures of unproductive entrepreneurship			
Unproductive political entrepreneurship (lobbying measure 1) (4)	Number of establishments in SIC code 8650 (Political Orgs.) in state capital per 1,000,000 population (1995)	2.57	2.29
Unproductive political entrepreneurship (lobbying measure 2) (4)	Number of establishments in SIC codes 8650 and 8690 (Political Orgs. and Membership Orgs., n.e.c.) in state capital per 1,000,000 population (1995)	10.75	8.40
Unproductive political entrepreneurship (lobbying measure 3) (4)	Number of establishments in SIC codes 8650, 8690, and 8390 (Political Orgs., Membership Orgs., and Social Services Orgs., n.e.c.) in state capital per 1,000,000 population (1995)	24.86	20.63
Unproductive legal entrepreneurship (5)	100 minus the Harris Poll score measuring the quality of a state's liability system on a 100 point scale (2002)	57.34	8.94
Other variables used			
Median household income (6)	Median household income (2000)	40,982	6,174
Per capita personal income (6)	Per capita personal income (2000)	20,712	2,893
Institutional quality score (6)	All government economic freedom index score (1995 used for political orgs. regressions, 2001 for all others)	6.71	0.48
Median age (6)	Median age of state population (2000)	35.59	1.89
Population density (6)	Population density in state per unit of land area (2000)	185.52	254.03
Percent college degree (6)	Percent of population with a Bachelor's degree or higher (%*100 for year 2000)	23.71	4.35
Percent male (6)	Percent of population male (%*100 for year 2000)	50.90	0.67
Percent voting bush in 2004 (7)	Percent of popular vote for Bush in 2004 Presidential Election (%*100)	53.14	8.36

Sources:
1. U.S. Department of Commerce, Bureau of Economic Analysis, *State and Local Area Data*, Washington, D.C.
2. U.S. Patent and Trademark Office, *Utility Patent Counts by Country/State and Year*, Washington, D.C. (2001).
3. Office of Advocacy, U.S. Small Business Admin., from U.S. Census Bureau, Statistics of U.S. Business.
4. Sobel and Garrett (2002) and *County Business Patterns*, U.S. Census Bureau, Washington, D.C.
5. Institute for Legal Reform and U.S. Chamber of Commerce, *State Liability Systems Ranking*, Wash. D.C.
6. U.S. Department of Commerce, Census Bureau, *Census 2000*, Washington, D.C.
7. Federal Election Commission, Federal Elections 2004, Washington, DC, May 2005.

Appendix B. Institutional quality and entrepreneurship: extended regression results

Independent variable	Dependent variable								
	Measures of productive entrepreneurship					Measures of unproductive entrepreneurship			
	Venture capital investment per capita	Patents per capita	Sole proprietorship growth rate	Total establishment birth rate	Large firm establishment birth rate	Unproductive political entrepreneurship (lobbying orgs. per capita measure 1)	Unproductive political entrepreneurship (lobbying orgs. per capita measure 2)	Unproductive political entrepreneurship (lobbying orgs. per capita measure 3)	Unproductive legal entrepreneurship (100 minus Harris judicial index)
Constant	−496.621 (0.603)	160.075 (0.926)	166.855** (2.548)	79.023*** (3.171)	67.891*** (4.489)	35.372 (1.093)	87.212 (0.682)	293.653 (0.924)	177.16 (1.423)
Lagged institutional quality	22.757* (1.764)	5.807* (1.794)	3.984*** (3.130)	0.660* (1.749)	0.663** (2.254)	−2.073*** (3.573)	−6.291*** (2.746)	−14.367** (2.523)	−4.189* (1.724)
Median age	−3.173 (0.670)	−1.774* (1.801)	−0.734* (1.937)	−0.384*** (2.940)	−0.277*** (3.171)	0.241 (1.272)	0.406 (0.542)	−0.005 (0.003)	1.057 (1.462)
Population density	−0.009 (0.207)	0.018** (2.058)	−0.001 (0.329)	0.001 (1.027)	0.003*** (3.486)	0.003 (1.642)	0.011 (1.532)	0.038** (2.200)	−0.002 (0.288)
Percent college degree	12.289*** (5.339)	0.876* (1.856)	−0.373* (2.000)	−0.007 (0.096)	0.003 (0.081)	0.069 (0.737)	0.406 (1.099)	0.743 (0.808)	1.086*** (3.046)
Percent male	5.254 (0.350)	−1.971 (0.625)	−2.587** (2.120)	−1.108** (2.389)	−0.947*** (3.360)	−0.701 (1.149)	−1.612 (0.669)	−4.600 (0.768)	−4.154* (1.784)
Percent voting bush in 2004	−0.611 (0.470)	−0.716** (2.616)	−0.286*** (2.785)	−0.036 (1.005)	−0.073*** (3.059)	0.124** (2.440)	0.441** (2.200)	0.773 (1.551)	0.005 (0.024)
Observations	48	48	48	48	48	48	48	48	48
R-squared	0.869	0.684	0.423	0.498	0.615	0.355	0.253	0.234	0.382

Notes: Absolute t-statistics in parentheses; asterisks indicate significance as follows: *** = 1%, ** = 5%, * = 10%. All regressions identical to those in Tables 1 and 2 except lagged institutional quality (1995 replaces 2001 and 1990 replaces 1995) and percent Bush vote are included in these specifications. See notes accompanying Tables 1 and 2.

Appendix C. Spearman's rank correlation tests

Spearman rank correlation test of each variable against economic freedom ranking (except where noted in parenthesis)		Using all 50 observations		Without outliers	
		R^2	P-value	R^2	P-value
Measures of productive entrepreneurship	Venture capital investment per capita	0.1180	0.0168**	0.1146	0.0214**
	Patents per capita	0.0699	0.0693*	0.0897	0.0432**
	Sole proprietorship growth rate	0.1709	0.0035***	n/a	n/a
	Total establishment birth rate	0.0866	0.0424**	0.0810	0.0552*
	Large firm establishment birth rate	0.1746	0.0031***	n/a	n/a
Measures of unproductive entrepreneurship	Unproductive political entrepreneurship (lobbying orgs. per capita measure 1)	0.0103	0.4921	0.0700	0.0865*
	Unproductive political entrepreneurship (lobbying orgs. per capita measure 2)	0.0107	0.4849	0.0850	0.0578*
	Unproductive political entrepreneurship (lobbying orgs. per capita measure 3)	0.0095	0.5093	0.0667	0.0945*
	Unproductive legal entrepreneurship (100 minus Harris judicial index)	0.0982	0.0301**	n/a	n/a
Other measures	Net entrepreneurial productivity score	0.1452	0.0075***	n/a	n/a
	Median household income (w/EF)	0.1210	0.0154**	n/a	n/a
	Median household income (w/NEP)	0.3734	0.0000***		
	Per capita personal income (w/EF)	0.0843	0.0453**	n/a	n/a
	Per capita personal income (w/NEP)	0.3953	0.0000***		

Notes: Asterisks indicate significance as follows: ***=1%, **=5%, *=10%. Outliers excluded from regressions were: CA and MA in the venture capital equation; CA and ID in the patent equation; MT and WV in the total establishment birth rate equation, and CO, WA, MI, KY, NY in the unproductive entrepreneurship regressions. See note to Table 1 for more information on outlier detection.

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REMARKS
Senate Small Business Committee
4.18.12

Opower Overview

Thank you Chairwoman Landrieu for inviting me to share a few thoughts with you this morning about entrepreneurship. It's an honor to be here today.

My name is Alex Laskey and I am the President and Founder of Opower.

Opower is an energy information software company that works with utilities to engage millions of residential customers on their energy use.

When my partner and I founded our company in 2007, we were looking for ways to start a company that would create sustainable change. We realized that although most people want to save energy, very little time is spent thinking about actual energy consumption. In fact, Accenture recently reported that the average American only spends 6 minutes a year thinking about their home energy use.

So we created a company to help utilities engage customers on their energy bills through insight and information.

We do this through the delivery of Home Energy Reports and web tools that use cutting-edge behavioral science techniques and data-analytics to provide people with information and motivation to cut back on their energy.

Our reports let families understand how their energy use compares to similarly sized neighborhood homes and supply personalized tips on how to save energy.

Since our founding in 2007 we have grown rapidly to almost 250 employees and now work with 70 utility clients on three continents.

On behalf of our utility clients we serve more than 13 million customers and that number is growing quickly.

Why Opower

Utilities work with us to drive measurable business results across a range of strategic initiatives. Our programs consistently generate cost-effective, verified, sustainable energy savings, along with increased participation in other utility-marketed programs.

We know this because we design our program like a pharmaceutical trial: when we deploy with a utility we have a "treatment group," of homes that receive information, and a "control group," of randomly selected homes that don't get information. We look at the actual difference in performance.

Our program saves average customers 2-3% on their energy bills and has been independently verified by 12 external evaluators.

Now, 2-3% may sound not sound like a lot, but added up across millions of homes it has a big impact: $120 million in savings for families and more than 1 billion pounds CO2 abated.

Next month we will pass 1 TWh of energy saved, enough energy to power a city the size of a quarter of a million people, such as Orlando. To put that into context, last year, the entire solar industry generated 2 TWh's of energy.

This year alone, we will save another TWh. According to the Environmental Defense Fund, which analyzed about a dozen of our utility programs, we would save American consumers more than $3 Billion per year if we went to scale.

Based on analysis of our data – and we have 40% of the US energy data under management -- we will be publishing a study that demonstrates 20-30% of all energy in the home is wasted. That's energy that serves no purpose – leaving the air-conditioning on to cool down your couch when you aren't home. That's approximately $40B that is wasted every year. That's a huge opportunity for the American economy.

Policy Drivers

There are two main policy areas that are important for our growth: energy policy and immigration policy.

Energy Policy

The biggest energy policy driver for our business to date has been Energy Efficiency Resource Standards.

Twenty-six states have taken the lead at passing these standards. Not only have policies been passed in places where you would expect them – California, Massachusetts, New York – they have also been signed into law in other states – Texas, Arkansas, Indiana, Minnesota. Almost 90% of states are meeting or achieving their goals – and many are far exceeding them.

These standards work, because energy efficiency is an attractive policy to both utility companies and the general public. Energy efficiency costs roughly 3 cents per kWh – cheaper than any other form of energy generation.

And in many states, utilities can receive incentives for meeting efficiency targets, and are able to pay for the programs through rates.

Essentially, we need to make energy use more productive. One sector to look to is the agriculture sector. Between 1950-2010, every acre became 3x more productive (291% increase in output/acre). Today, American families are spending half as much on food (from 20% of income to 9%) than they were in 1950.

Immigration Policy

The other policy area that is important to our business is immigration.

One of our highest objectives as a company is to hire and retain the best talent in the world. I believe that smart immigration laws are needed to create access to workers and also to attract entrepreneurs who will start businesses here in America and create jobs for Americans.

Foreign-born residents made up just 12.5% of the US population in 2008, but nearly 40% of technology company founders and 52% of founders of companies in Silicon Valley.

This doesn't apply to only founders. Our big challenge is hiring talented people. The US attracts some of the smartest people in the world to come study here, but we don't do a good job of retaining talent.

The H-1B visa process has been plagued with backlogs because the number of H-1N visas for skilled workers is currently capped at 85,000 (arguably up to about 120,000 per year including all the exceptions.) In 2008, companies made 163,000 applications for the 85,000 H-1B visa slots.

This makes it extremely difficult for entrepreneurs to obtain an H-1B visa. As a result, high-skilled immigrants are looking for opportunities elsewhere.

H-1B visas and green card limitations have a detrimental impact on the economy – between 2003-2007 these foreign graduates of US universities in science, technology, engineering and math fields would have raised GDP by about $13.6B and contributed to $2.7 - $3.6B in taxes.

This has a direct impact on our ability as a country to lead in innovation. In an op-ed from Senator Udall, he notes that for the first time in 2009, foreign-born innovators earned more patents than Americans. Only a decade earlier, Americans earned 57% of all patents worldwide.

One piece of legislation that I'm excited about is The Startup Visa Act, proposed by Paul Graham, founder of Y Combinator and mostly recently introduced by

Senators Kerry and Lugar. The Act proposes a two-year visa for any immigrant entrepreneur who can raise a $250,000 investment and then creates a pathway to legal residency.

I appreciate the opportunity to be here today and to discuss Opower and our policy priorities. I am excited to work with you to advance both energy and immigration policies that create jobs, and I look forward to your questions.