PAST EXPERIENCE AND FUTURE SUCCESS:

NEW EVIDENCE ON OWNER CHARACTERISTICS AND FIRM PERFORMANCE

by

Ron Jarmin *
U.S. Bureau of the Census

and

C.J. Krizan *
U.S. Bureau of the Census

CES 10-24 September, 2010

The research program of the Center for Economic Studies (CES) produces a wide range of economic analyses to improve the statistical programs of the U.S. Census Bureau. Many of these analyses take the form of CES research papers. The papers have not undergone the review accorded Census Bureau publications and no endorsement should be inferred. Any opinions and conclusions expressed herein are those of the author(s) and do not necessarily represent the views of the U.S. Census Bureau. All results have been reviewed to ensure that no confidential information is disclosed. Republication in whole or part must be cleared with the authors.

To obtain information about the series, see www.ces.census.gov or contact Cheryl Grim, Editor, Discussion Papers, U.S. Census Bureau, Center for Economic Studies 2K130B, 4600 Silver Hill Road, Washington, DC 20233, CES.Papers.List@census.gov.

Abstract

Because the ability of entrepreneurs to start their own businesses is key to the success of the U.S. economy and to the economic mobility of many disadvantaged demographic groups, understanding why entrepreneurship activity varies across groups and geography is an increasingly important issue. As a step in this direction we employ a novel set of metrics of business success to the growing literature and find great variation across groups and metrics. For example, we find that black-owned firms grow slower than white or Asian-owned firms. However, once we condition on firm survival, the differences disappear. Interestingly, we also find differences across groups in their start-up histories. For example, Asian-owned firms are less likely than white-owned firms to have started-out as nonemployers but firms owned by all other minority groups, as well as women-owned firms, are more likely to start-out without employees.

* Any opinions and conclusions expressed herein are those of the author(s) and do not necessarily represent the views of the U.S. Census Bureau. All results have been reviewed to ensure that no confidential information is disclosed.

I. Introduction:

The ability of entrepreneurs to start their own businesses is widely recognized as a key factor to the success of the U.S. economy and many members of disadvantaged demographic groups have used it to achieve economic success. (Fairlie and Robb 2008). Yet there is also a great deal of self-employment heterogeneity across people groups and the self-employment rate for blacks in particular is far below the national average (Fairlie and Robb 2008). Given the high and increasing degree of income inequality in U.S. cities, disparities that are strongly correlated with lower economic growth and higher crime rates (Glaeser, Ressenger, and Tobio (2008)), understanding how and why entrepreneurship activity varies across groups and geography is an increasingly important issue.

Consequently, a great deal of work has been done to help us understand the factors underlying income and self-employment rate differences across demography and geography. For example Glaeser, Ressenger, and Tobio (2008, hereafter GRT) point out that 20 years ago income inequality was linked to poverty, but now it is linked to presence of the wealthy. Furthermore, most of the income inequality we observe across geography can be explained by skill mix distributions, history, and immigration patterns. Glaeser and Kerr (2008) show that the key determinants affecting the number of local start-up companies include: the abundance of small suppliers, customers, and workers as well as regional fixed effects that may partially reflect local attitudes towards failure and success. In related work Glaeser (2007) finds that differences in self-employment rates are largely explained by differences in local industry mix and demographic characteristics.

Another take on the effects of the local environment is provided by Porter (1997) who argues that that inner city neighborhoods have been overlooked by most entrepreneurs and are one of the most profitable locations for new firms. Bates and Robb (2008) investigated Porter's hypothesis and found little evidence that minority markets offer entrepreneurs untapped markets. In fact the survival rates for firms located in and serving minority neighborhoods were lower than that of firms

in non-minority neighborhoods. In related work, Fairlie and Robb (2008) found that firms located in urban areas in general are more likely to close.

Within any given geographic region, self-employment and success rates vary considerably across the entrepreneurs' personal characteristics. For example, Robb and Wilken (2002) found that woman-owned firms are younger, smaller and more likely to be engaged in retail trade. The age of the potential entrepreneur can also affect business entry and success. It is also an important factor in both the likelihood of starting a business as well as a predictor of the business' success. For example, Kim (2007) studies the incidence of self-employment over a person's life cycle and finds that self-employment probabilities increase with age (and education). Several studies have examined the interaction of owner age with business performance with mixed results. Harhoff, Stahl, and Woywode (1998) show that voluntary liquidation increases with age but business insolvency does not, suggesting that retirement is an important factor in the decision of older entrepreneurs to close their business. Headd (2002) found that businesses owned by younger people are more likely to close – but also more likely to be profitable at the time of closure. Similarly Van Praag (2001) found that the older an entrepreneur is when they start a business, the longer the business will survive but that there is a negative correlation between the owner's age and the profitability of the business when it shuts down.

The owner's race is also strongly correlated with several measures of business success including survival, size, and profitability. Robb and Fairlie (2006) show that black-owned firms have lower sales, profits, and probability of having employees and are more likely to close than are white- or asian-owned businesses. Robb and Fairlie (2007) show that asian-owned businesses are less likely to close, and more likely to have higher profits and be bigger than white-owned firms. Finally, Fairlie (2008) argues that immigrant businesses make big contributions to the U.S. economy.

These cross-group differences in firm performance are generally thought to arise from differences across the groups in prior work experience, family business backgrounds, and availability of capital. Fairlie and Robb (2007) report that more than half of the white business owners had another family member who was already self-employed when they started their own business while compared to only a third for black owners. In fact, they point to a long history of studies showing that weak family ties and networking opportunities put potential black entrepreneurs at a disadvantage compared to their white (and asian) counterparts.[3] Moreover, Fairlie and Robb (2007) show that white-owned businesses often get passed-down to future generations.

By contrast asian entrepreneurs may be slightly less likely than their white counterparts to have had a self-employed family member than white entrepreneurs and the key factors of their relative success are higher levels of human and start-up capital (Robb and Fairlie (2007)). Differences in the availability of start-up capital are also a contributing factor to why women-owned businesses are less successful than male-owned businesses (Fairlie and Robb (2008)) although systematic differences in firm and owner characteristics have been found to explain large parts of the observed differences in lending patterns (Robb and Wilken (2002)). Nonetheless, new studies continue to document a disparity between men and women in the amount of start-up capital they can raise and in the sources of the debt they incur (Coleman and Robb (2008)).

II. Methodology and Contribution:

Through use of a unique combination of proprietary datasets we are able to make several new contributions to the literature. Our data link the 2002 Survey of Business Owners (SBO) to the Longitudinal Business Database (LBD), the Integrated Longitudinal Dataset (ILBD), the 2000 Demographic Census sample file, and the 2002 Linked/Longitudinal Firm Trade Transaction Database File. They allow us not only to measure the firm and owner characteristics typically

[3] See for example Glazer and Moynihan (1970), Hout and Rosen (2000), and Fairlie (1999).

associated with the SBO (race, age, gender, education, etc.) but also give us a better sense of the business' history as well as its current and future performance.

As mentioned above, an open question in the literature is: How do we define successful entrepreneurship? The most common answer, at least in the literature that also considers the owners' demographic characteristics are: survival rates, profits, and size (revenue and likelihood of being an employer firm).[4] Yet other studies, such as that in Glaser and Kerr (2008), question this approach and instead suggest we consider other metrics of entrepreneurial success such as: self-employment, high growth rates, product innovations, and the ability to win venture capital backing. Our data allow us to experiment with several new measures of business success, including: being an exporter, becoming a multi-unit company, and employment growth.

The most common explanations for why businesses performance varies systematically by the sex and race of its owners involve the owners' ability to gain human and financial capital. Recall Fairlie and Robb's (2007) argument that the reason why black-owned businesses underperform white-owned businesses is that black business owners are less likely to have had the opportunity to learn from other family members who have their own successful businesses. That is, they have less experience running a family business before they start their own.

As will be explained below, the ILBD allows us to identify employer firms that have had a history as a non-employer firm. One way for a person to overcome a lack of experience running a business would be to "start small" as a non-employer and if the business seems profitable, expand by hiring one or more employees. One might expect therefore that disadvantaged groups with less

[4] Fairlie and Robb (2007), Robb and Wilken (2002), Robb and Fairlie (2006), Fairlie and Robb (2008), Robb and Fairlie (2007)

experience in a family business might be more likely to have a history as a non-employer business than those with greater confidence in their knowledge of how to run a business.[5]

The SBO contains another variable that is particularly interesting in this context. It asks whether or not the business is a franchise. It might be expected that a person with less business experience might be more attracted to an "out of the box" business model such as that offered by most franchises. Therefore we might expect that blacks and women would be more likely to have franchise businesses. On the other hand, as noted above, these same groups often start their businesses with less financial capital and the capital requirements for many franchise businesses are formidable.[6] To better understand the start-up funding choices of women and minorities we also make use of the SBO's questions about the sources of the start-up capital for the business. In particular we examine how the use of bank loans and savings varies across the demographic characteristics of business owners.

In addition to sex and age we also examine how owner age is correlated with business histories and outcomes. The SBO includes information on owner age and we include it in our specifications. As discussed above, there is ample reason to believe that businesses owned by older people will behave differently than those owned by younger people.

III. Data:

As mentioned above, we linked several major data sources together for this exercise, including: the 2002 SBO, the 2002-2005 LBD, the 1977-2002 ILBD, the 2000 Demographic Census sample files and the 2002 export transactions files. We describe each in turn below.

---

[5] An alternative explanation offered by Rosti and Chelli (2005) is that businesses owned by groups facing discrimination might perform less well than other businesses because labor market and workplace discrimination compel people who otherwise would not start their own businesses (and might be underprepared) to become entrepreneurs.

[6] According to Entrepreneur.com the total investment involved in opening a McDonald's Restaurant is between $950,200 and $1,800,000 - and Dunkin' Donuts requires it's owners to have a net worth of at least $1.5 million.

The SBO is a comprehensive, regularly collected survey of the demographic and economic characteristics of business owners. It is a firm-level survey and includes all nonfarm businesses with receipts of one thousand dollars or more a year. However, for reasons that are explained below, for this paper we selected only single-unit employer businesses. We use the the SBO to get information on key demographic and business variables such as: race, gender, age, education, funding source, and franchise (yes/no). The SBO is conducted every 5 years in years ending in a "2" or a "7". We use the 2002 SBO for this work because it is the most recent file available that also allows us to look a few years into the future to see how the businesses perform. While the SBO samples all firm types in the U.S., we focused on single-unit employer firms because they have two key advantages. First, we can use the ILBD to see if they were once nonemployers which can give us some idea of the experience of the business owner. Secondly we can use the LBD to look forward in time to see if they become multi-unit firms which is a measure of firm success.

The LBD developed by Jarmin and Miranda (2002) covers all establishments and firms in the non-farm business sector from 1976 to 2005 and includes information about payroll, employment, detailed location, detailed industry, and ownership structure. We link the 2002 SBO file to the 2002 LBD using an establishment identifier common to both files. Once the SBO is linked to the LBD, we can look forward in time to 2005 to see if the firm survives, and if it does, whether it grew, shrank, or became a multi-unit firm since 2002.

The LBD also contains the employer firm identifier that we use to link the ILBD. The ILBD is a longitudinal research dataset of firms without paid employees for the years 1977, 1982, 1987, 1992 and 1994-2005. It contains information on the non-employer firms' geography, industry, and receipts and, when a link can be established, the firm ID of the employer firm that is associated with it. We match our combined SBO-LBD data to the ILBD using the common employer firm identifier. This allows us to identify which employer firms had a history as a nonemployer firm. Firms that transition from non-employers to employers have at least two distinctions from firms that start out as

employers. First, because the firm has existed for some time prior to becoming an employer the owner is known to have had at least some experience running the business. Secondly, because the firm grew from being a single-person operation (the owner) to having one or more employees, it can already be considered something of a success. These are key distinctions given the literature's focus on outcome and experience differences across demographic groups.

The demographic census data include information on whether or not the county is urban as well as a measure of the poverty status of its residents. We measure the share of the population in each county at or below the poverty level ("low income") and also the share of residents with incomes less than one half of the poverty level ("very low income"). We link the demographic data to the firm data by state and county using the geographic information from the LBD (recall also that these are single-unit firms).

Finally, we link the combined demographic and firm data to the 2002 Linked/Longitudinal Firm Trade Transaction Database (LFTTD) which links individual trade transaction data from the U.S. Customs and Census Bureaus to firm data from the LBD. This export data, as described in Bernard, Jensen, and Schott (2005) is collected jointly by the U.S. Census Bureau and the U.S. Customs Bureau and the files include all U.S. export transactions between 1993 and 2005. Each record is an individual transaction and includes information on the product classification, the value and quantity shipped, the date of the shipment, the destination (or source) country, the transport mode, whether the transaction takes place at "arm's length" or between "related parties", and most importantly for our purposes, a numeric firm identifier from the LBD.

IV. Results:

A) Basic Characteristics:

Our final dataset contains 786,473 observations of single-unit employer firms.[7] Table 1 summarizes some of the key economic and demographic characteristics of our sample.

The owners in our sample are generally young (less than 55), white, male, and well educated (about half have at least a college degree). While most of the businesses are not franchises or exporters, a non-trivial number are. A fairly large number of businesses have nonemployer histories. Davis et al. (2006) found that about 7-14% of small employer businesses had non-employer histories. However, they were focusing on the transition years while we are looking for any history at all. That is, they had strict requirements about when the connection occurred (in the previous year) while we include all firms with any prior connection to a nonemployer.

B) Job Flows:

One of the advantages of our rich dataset is that we can measure not only current size but also employment growth rates. We calculate job creation and destruction rates following the methodology of Davis, Haltiwanger, and Schuh (1996) and display the results in Table 2. The overall growth rate is fairly high: 5.4%. This is somewhat surprising given that we do not have any births in our sample (by construction) and that 2002-2005 was a period of low GDP growth.

Looking next to the "Age" category, we note that the highest net growth rate, and greatest turmoil (as measured by the Excess Reallocation metric) was among businesses owned by people less than 25 years old. Their firms also were more likely to close outright than to simply contract (77.1% of negative job growth came from deaths). By contrast, businesses owned by older people also grew at a respectable 6.0% but experienced the least churning and a much lower share of negative growth from business deaths. These results are broadly in-line with the existing literature

[7] The SBO contains a sample weight variable and all results that follow are weighted.

on age and entrepreneurship. Recall that Harhoff, Stahl, and Woywode (1998) showed that voluntary liquidation increases with age while Headd (2002) found that businesses owned by younger people are more likely to close.

The results from the Race, Sex, and Education categories also largely support the existing literature. For example, just as Robb and Fairlie (2006) found that black-owned firms have lower sales, profits, and probability of having employees and are more likely to close than are white- or asian-owned businesses, we find that black-owned businesses have lower net growth rates than either group. However, unlike Robb and Fairlie (2007), we find that white-owned businesses had higher net growth rates than asian-owned businesses. Businesses owned by islanders and native americans had the lowest net growth rates and highest share of negative growth from deaths of all the groups. Interestingly, although like Fairlie and Robb (2008) we find that women-owned businesses do not perform as well as male-owned businesses, we also find that those businesses owned equally by men and women have substantially lower net growth rates. Finally, like Bates (1997), Asterbro and Bernhardt (2003), and Headd (2003), we find that there is a positive correlation between performance, in this case net job flows, and education. In fact, net growth increases substantially and monotonically with education.

We expected that franchises, exporters, and businesses that started as nonemployers would all have higher net growth rates but only the exporters fulfilled this expectation. As reported in Bernard and Jensen (1999), exporters grow faster than non-exporters however, franchise businesses and those that start as non-employers do not. We expected that franchises and businesses that started as non-employers would out-perform other businesses since they have already gone through a bit of a selection and learning process. That is, the non-employers history firms started out as smaller businesses and grew to become employer firms while franchises are already a “proven” business model that we assumed would outperform the general population. On the other hand, the standardized business plan associated with franchise operations may make it unlikely that they

would change their employment a much as other firms. That, along with their higher variable costs (e.g. the franchise fee) may explain why deaths play a larger role in their negative growth rates.

C) Regression Results:

Next we test some of the key results in the literature using a series of regression models of the general form:

$$Y = \beta_0 + \beta_1 Race + \beta_2 Sex + \beta_3 Age + \beta_4 Education + \beta_5 NEhist + \beta_6 Franchise + \beta_7 Exporter + \beta_8 FirmAge + \beta_9 FirmSize + \beta_{10} Sector + \beta_{11} LowIncomeShare + \beta_{12} Urban + \beta_{13} Rural \quad \textbf{(1)}$$

Where *Race*, *Sex*, *Age*, and *Education* are owner characteristics and *NEHistory*, *Exporter*, *FirmAge*, *FirmSize*, and *Sector* are firm characteristics, and *LowIncomeShare*, *Urban*, and *Rural* refer to the county in which the firm is located. Note that we include several control variables not commonly found in models testing for differences in firm performance by owner characteristics but that are standard in most other reduced form models of business performance. In particular we control for the businesses' age and size because we linked the SBO to the LBD. Prior studied that relied on the SBO alone did not have this information available to them and could not include these controls. Also, while previous work has found that urban firms underperform non-urban firms, we include additional controls for the whether or not the county is rural and *LowIncomeShare* measures the percentage of the county's population living below the poverty line. Finally, note that we are also unique in including dummies for whether or not the firm is part of a franchise or an exporter.

1. Business Performance:

A pervasive finding in the literature is that firms owned by blacks and women underperform white/male-owned firms and that asian-owned firms outperform all others so our first models test a set of performance metrics on our set of control variables from equation (1). The results are displayed in Table 3 below.

Model 1 is perhaps the most common model in the literature and it regresses survival on our set of firm and owner characteristics and our results are similar to those of most other studies. We

find that the likelihood of death is higher for most minority and women-owned firms. As in Robb and Fairlie (2007) however, we also find that asian-owned firms are more likely to survive. The likelihood of death is also decreasing in education (the omitted group is those owners with less than a high-school diploma). Unlike other studies (Fairlie and Robb (2008)) we find that the likelihood of firm death is lower for firms located in urban areas. It is also lower for rural firms but it increases with the local poverty rate. As is well-established in the literature, we find that firm size is an important predictor of death, as is age. Interestingly, and in line with our earlier results, being part of a franchise or having had a connection to a non-employer firm both increase the chance that the firm will exit. As in other studies, businesses owned by younger (<25) or older (55+) people are more likely to die than those owned by middle-aged people. Finally, as expected, firms that export are more likely to survive – even controlling for size, industry, and age.

While most other studies have used survival as their main dynamic measure of firm performance, our ability to link the SBO to the LBD (and ILBD) allows us to experiment with several new measures of performance. Models 2 and 3 regress employment growth rates on our set of control variables. The key difference between them is that Model 2 includes deaths but Model 3 conditions on firm survival and some interesting patterns emerge from each. For example, Model 2 shows that employment growth generally follows the same pattern as firm death. That is, firms owned by blacks, women, and other minorities (except asians) grow slower than white/male-owned firms. Table 3 also shows that although franchised businesses are more likely to die than non-franchises, they also grow faster – particularly if they survive. Also, businesses owned by people over 25 grow faster than those with younger owner. Finally, businesses in both rural and urban areas grow faster than ones in suburban areas, and the growth rate for all businesses is increasing in the share of people living in poverty in the county.

Turning next to Model 3, we see that a key difference from conditioning on survival is that many of the race-based differences in growth rates disappear. There is no significant difference

between asian and white or black and white businesses' employment growth rates after conditioning on survival. Also, while businesses with nonemployer backgrounds grow slower in general than those without, the differences also disappear once we condition on survival. Urban-based surviving businesses do not outperform their suburban counterparts. Finally, note that surviving young and small businesses actually grow faster than older, mature surviving businesses.

Another metric of business success, particularly for retail-trade and services businesses, is expansion from single to multi-unit status. Many types of businesses can only expand by opening additional stores/locations and this is the success metric used in Model 4. Just as with conditioning on survival, using multi-unit status in 2005 also gives a slightly different picture of the characteristics of successful businesses and their owners. For example, there is no difference between white businesses and most minority owned businesses' probability of becoming a multi-unit businesses once we control for other factors such as education, industry, and age. Interestingly, the main exceptions seem to be asian- and women-owned businesses which are both less likely to become multi-units than white/male-owned businesses. Education is still an important predictor of success using this metric however. Businesses with college-educated and post-college educated owners are more likely to expand than those owned by people with less education.

Most studies have concluded that these cross-group differences in firm performance are due to differences in prior work experience, family business backgrounds, and the availability of financial capital. For example, Fairlie and Robb (2007) reported that more than half of the white business owners had another family member who was already self-employed when they started their own business while compared to only a third for black owners. In fact, they point to a long history of studies showing that weak family ties and networking opportunities put potential black entrepreneurs at a disadvantage compared to their white (and asian) counterparts. On the other hand, although asian entrepreneurs were slightly less likely than their white counterparts to have had a

self-employed family member than white entrepreneurs, they also had more financial and human capital (Robb and Fairlie (2007)).

2. Business Experience:

The emerging consensus that a lack of prior experience plays a critical role in explaining differences in business performance motivates our next set of models, displayed in Table 4 below. For example, in Model 5 we regress whether or not the business began as a non-employer on our set of owner and business characteristics. Recall that previous studies have linked the lower performance of black-owned businesses to a lack of exposure to family members with their own businesses and a lack of prior business experience (Glaeser (2007)). Interestingly, Model 5 shows that black-owned businesses are more likely to have started as non-employers than are white-owned businesses. This finding dovetails nicely with the emerging consensus since it indicates that black entrepreneurs are more likely to "start small" with a non-employer business when they start their firms, possibly because it allows them to gain the business experience that their environment did not provide.

Women and most minority-group owners, with the exception of asians, are also more likely to start-out with non-employer businesses. This also dovetails with other findings in the literature such as Rosti and Chelli (2005) who argue that members of groups (women) facing labor market discrimination who would otherwise not become entrepreneurs often start their own businesses as a way to avoid workplace bias. Less prepared people are less likely to have abundant start-up capital or experience and may be more likely to start with a non-employer firm. Note also that Robb and Fairlie (2007) found that asian-owned businesses begin a greater amount of start-up capital and these are the only group of businesses less likely to have a non-employer history than white-owned businesses. Note also that businesses owned by older people (especially those over 55 years of age) and those operating in counties with a larger share of low income people are more likely to begin as nonemployers.

It is also easy to imagine that disadvantaged groups such as minorities and immigrants might be more attracted to franchised businesses. Franchises offer a ready-made business model and help solve many of the problems faced by a less experienced owner such as site selection, product development, advertising, and brand recognition. However, as noted above, they can also require a great deal of start-up capital and typically require the regular payment of franchise fees. The results from Model 5 indicate that the costs and benefits are weighed differently by different demographic groups. For example, asians, blacks and native americans are more likely to own franchises but women and hispanics and people over 25 are not. Women and hispanics are less likely than males/whites to own franchised businesses while the effects among older workers are negative but not significantly different from zero. Note also that franchises are less likely to operate in rural, urban, or lower income counties.

Numerous studies have documented that many asian and hispanic business owners are immigrants and the often operate within networks of people from similar backgrounds which provide them with sources of customers, labor, and start-up capital.[8] It is easy to imagine that these networks also tie in to their countries of origin and that they may facilitate (or encourage) the business owners to engage in foreign trade. We test this hypothesis by regressing a dummy variable for whether or not a business is an exporter on our set of demographic and control variables and report the results under Model 7 in Table 4. Perhaps not surprisingly, businesses owned by asians, hispanics, and native americans/islanders are more likely to be exporters than white-owned businesses. Black and women-owned businesses are less likely to be exporters as are businesses owned by older people. Given the previously cited benefits of exporting activity, it could be that this is an overlooked factor in explaining differences in business performance.

[8] See Robb and Fairlie (2007) for an excellent review and Fairlie (2008) for an extended look at the role of immigrant businesses in the U.S.

3. Business Finance:

The availability of start-up capital is a well-known factor in business success and several studies have documented persistent differences among the ability of various demographic groups to raise it. For example, differences in the availability of start-up capital are also a contributing factor to why women-owned businesses are less successful than male-owned businesses (Fairlie and Robb (2008)) although systematic differences in firm and owner characteristics have been found to explain large parts of the observed differences in lending patterns (Madill, Riding, and Haines (2006) and Robb and Wilken (2002)). Nonetheless, new studies continue to document a disparity between men and women in the amount of start-up capital they can raise and in the sources of the debt they incur (Coleman and Robb (2008)).

These findings motivate the models in Table 5 which regress the probability of a business raising its start-up capital through savings and/or bank loans on our control variables. Interestingly, savings is more likely to be a financing source for blacks, asians, hispanics, and those businesses that have an non-employer history and that go on to become exporters. Perhaps not surprisingly (since they are more likely to have savings to draw upon), older people are also more likely to use personal savings to start their businesses. Note also that savings is a more common funding source in urban areas but not in rural or low income counties.

By contrast, bank loans are a less common funding source for all minority groups and women than they are for white male-owned businesses. Franchises are also more likely to be funded in-part through bank loans. The effects of age are mixed however. The oldest and youngest groups of owners (below 25 and over 55) are less likely than those in middle-age to use bank loans as a source of financing. Bank loans are more common in suburban, and rural areas than they are in urban counties. Interestingly, business operating in counties with a greater share of low income people are more likely to have used bank-loans for start-up capital.

V. Conclusions:

Because the ability of entrepreneurs to start their own businesses is key to the success of the U.S. economy and to the economic mobility of many disadvantaged demographic groups, understanding why entrepreneurship activity varies across groups and geography is an increasingly important issue. We used a unique set of metrics of business success to add to our understanding of this process and obtained some interesting findings. For example, we found a great deal of variation across race, sex, age, geography for any given metric of success. And while our regression results largely bear-out the literature: black- and women-owned businesses underperform, asian-owned businesses overperform on most metrics, we found that the results change when we condition on business survival or if we use obtaining MU status as an alternative metric of success. Finally, we note that black-owned businesses are more likely to have started as non-employers than are white-owned businesses. This finding dovetails nicely with the emerging consensus that black entrepreneurs are more likely to "start small" with a non-employer business when they start their firms.

References:

Arenius, P. and Stefan Ehrstedt. 2008. "Variation in the Level of Activity Across the Stages of the Entrepreneurial Startup Process – Evidence From 35 Countries", Estudios de Economia, 35(2) 133-52.

Asterboro, Thomas and Irwin Bernhardt. 2003. "Start-Up Financing, Owner Characteristics and Survival", Journal of Economics and Business, 55(4), 303-320.

Bates, T., and Alicia Robb. 2008. "Analysis of Young Neighborhood Firms Serving Urban Minority Clients", Journal of Economics and Business, 60(1): 139-48.

Bates, Timothy. 1990. "Entrepreneur Human Capital Inputs and Small Business Longevity", Review of Economics and Statistics, 72 (4): 551-59.

Bernard, Andrew and J. Bradford Jensen. 1999. "Exceptional Exporter Performance: Cause, Effect, or Both?", Journal of International Economics, 47(1): 1-25.

Coleman, S. and Alica Robb. 2009. "A Comparison of New Firm Financing by Gender: Evidence from the Kauffman Firm Survey Data", Small Business Economics,

Fairlie, Robert W. 2008. "Estimating the Contribution of Immigrant Business Owners to the U.S. Economy", Final Report for the U.S. Small Business Administration, Office of Advocacy.

Fairlie, R. and Alicia Robb. 2008. "Gender Differeneces in Business Performance: Evidence from the Characteristics of Business Owners Survey", IZA Discussion Paper # 3718.

Fairlie, R. and Alicia Robb. 2008. "Why Are Black-owned Businesses Less Succesful than White-Owned Businesses? The Role of Families, Inheritances, and Business Human Capital", Journal of Labor Economics, 25(2): 289-323.

Glaeser, Edward L. 2007. "Entrepreneurship and the City" NBER Working Paper # 13551.

Glaeser, E and William Kerr. 2008. "Local Industrial Conditions and Entrepreneurship: How Much of the Spatial Distribution Can We Explain?" NBER Working Paper # 14407.

Glaeser, E , Resseger, M. and Kristina Tobio. 2008. "Urban Inequality", NBER Working Paper # 14419.

Harhoff, D., Konrad, S. and Michael Woywode 1998. "Legal Form, Growth and Exit of West German Firms – Empirical Results for Manufacturing, Construction, Trade, and Service Industries". Journal of Industrial Economics, 46(4): 453-88.

Headd, Brian. 2003. "Redefining Business Success: Distinguishing Between Closure and Failure", Small Business Economics, 21(1): 51-61.

Kim, GiSeung. 2007. “The Analysis of Self-Employment Levels Over the Life-Cycle”, Quarterly Review of Economics and Finance, 47(3): 397-410.

Madill, J., Riding, A., and George H. Haines Jr. 2006. “Women Entrepreneurs: Debt Financing and Banking Relationships”, Journal of Small Business and Entrepreneurship, 19(2): 121-42.

Robb, A. and Robert W. Fairlie. 2006. “Access to Financial Capital Among U.S. Businesses: The Case of African-American Firms”, Center for Economic Studies Working Paper # 06-33

Robb, A. and Robert W. Fairlie. 2007. “Determinants of Business Success: An Examination of Asian-Owned Businesses in the United States”, IZA Discussion Paper # 2566.

Robb, A. and John Wolken. 2002. “Firm, Owner, and Financing Characteristics: Differences Between Female- and Male-owned Small Businesses”, Finance and Economics discussion Series 2002-18, Board of Governors of the Federal Reserve System (U.S.).

Rosti, Luisa and Francesco Chelli. 2005. “Gender Discrimination, Entrepreneurial Talent and Self-employment”. Small Business Economics, 24(2): 131-42.

Van Praag, C. Mirjam. 2003. “Business Survival and Success of Young Small Business Owners”. Small Business Economics. 21: 1-17.

Wagner, Joachim. 2003. “Taking a Second Chance: Entrepreneurial Re-Starters in Germany”, Applied Economics Quarterly, 49(3): 255-72.

Table 1

	Characteristic	Percent
Age	< 25	0.2
	25 to 54	64.0
	55 +	35.8
Race	Asian	5.5
	Black	1.5
	Islande & Native American	0.4
	White	91.3
Sex	Equal	13.9
	Female	17.1
	Male	68.3
Education	Some High School	4.3
	High School Graduate	20.7
	Some College	28.7
	College Graduate	23.6
	Post College	22.7
Franchise	No	96.3
	Yes	3.7
Exporter	No	97.9
	Yes	2.1
NE History	No	76.4
	Yes	23.6

Table 2:

Variable	Category	Pos	Neg	Death Share of Neg	Net	Excess Reallocation
Overall		28.7	23.3	49.5	5.4	46.6
Age	< 25	60.8	37.5	77.1	23.3	75.0
	25 to 54	29.0	24.2	49.5	4.8	48.4
	55 +	28.2	22.2	49.5	6.0	44.4
Race	Asian	30.4	26.3	48.7	4.1	52.6
	Black	29.7	33.3	47.4	-3.6	59.4
	Islander	22.6	25.5	62.8	-2.9	45.2
	Native American	23.5	34.3	53.8	-10.8	47.0
	White	28.5	23.0	49.4	5.5	46.0
Sex	Equal	22.1	25.6	51.1	-3.5	44.2
	Female	26.6	25.6	46.1	1.0	51.2
	Male	29.7	22.7	49.8	7.0	45.4
Education	Some High School	21.8	28.7	51.1	-6.9	43.6
	High School Graduate	26.6	23.9	50.8	2.7	47.8
	Some College	27.5	24.3	48.0	3.2	48.6
	College Graduate	28.4	23.0	49.2	5.4	46.0
	Post College	33.0	21.7	50.8	11.3	43.4
Franchise	No	29.1	23.4	48.9	5.7	46.8
	Yes	22.4	22.3	59.0	0.1	44.6
Exports	No	27.9	24.1	49.8	3.8	48.2
	Yes	35.2	16.8	46.2	18.4	33.6
NE History	No	28.3	22.6	49.1	5.7	45.2
	Yes	29.6	25.3	50.5	4.3	50.6

Table 3:

Dependent Variable:	**Model 1** ***Death in 2005***		**Model 2** ***Employment Growth***		**Model 3** ***Employment Growth Given Survival***		**Model 4** ***Multi-Unit in 2005***	
	Parameter	T-Statistic	Parameter	T-Statistic	Parameter	T-Statistic	Parameter	T-Statistic
Intercept	**0.1841**	14.83	**-0.4134**	-13.88	**-0.0259**	-1.16	**0.0284**	29.68
Black	**0.0549**	13.80	**-0.1077**	-11.28	**0.0028**	0.40	**0.0000**	0.07
Asian	**-0.0041**	-1.92	**0.0077**	1.50	**-0.0008**	-0.22	**-0.0005**	-3.11
Hispanic	**0.0114**	4.16	**-0.0218**	-3.33	**0.0010**	0.22	**-0.0002**	-0.85
Naïve Amer / Islander	**0.0311**	4.58	**-0.0921**	-5.66	**-0.0377**	-3.27	**-0.0005**	-0.88
Female	**0.0254**	19.79	**-0.0627**	-20.36	**-0.0150**	-6.96	**-0.0003**	-3.45
NE History	**0.0244**	21.60	**-0.0485**	-17.88	**-0.0012**	-0.62	**-0.0001**	-0.85
Exports	**-0.0415**	-11.85	**0.1557**	18.55	**0.0821**	14.92	**0.0046**	17.17
Franchise	**0.0151**	5.89	**0.0175**	2.86	**0.0564**	13.37	**0.0004**	2.25
HS Graduate	**-0.0191**	-7.54	**0.0506**	8.35	**0.0167**	3.93	**0.0001**	0.59
Some College	**-0.0140**	-5.63	**0.0469**	7.89	**0.0247**	5.91	**0.0000**	0.01
College Graduate	**-0.0227**	-8.93	**0.0675**	11.06	**0.0286**	6.68	**0.0005**	2.46
Post College	**-0.0479**	-18.43	**0.1344**	21.54	**0.0495**	11.35	**0.0005**	2.38
Age 25 to 54	**-0.1110**	-10.47	**0.1832**	7.21	**-0.0659**	-3.33	**-0.0008**	-0.97
Age 55 +	**-0.0729**	-6.86	**0.0648**	2.54	**-0.1195**	-6.02	**-0.0006**	-0.69
Mining	**-0.0170**	-2.07	**0.0724**	3.67	**0.0462**	3.44	**-0.0021**	-3.33
Construction	**-0.0014**	-0.62	**-0.0302**	-5.48	**-0.0402**	-10.68	**-0.0030**	-16.79
Transport	**0.0277**	8.09	**-0.0609**	-7.40	**-0.0048**	-0.84	**-0.0029**	-10.97
Wholesale	**-0.0151**	-5.59	**0.0158**	2.44	**-0.0170**	-3.89	**-0.0027**	-12.78
Retail	**0.0113**	5.17	**-0.0357**	-6.78	**-0.0171**	-4.75	**-0.0025**	-14.91
FIRE	**-0.0344**	-13.57	**0.0543**	8.92	**-0.0176**	-4.24	**-0.0019**	-9.51
Services	**-0.0072**	-3.44	**-0.0222**	-4.40	**-0.0457**	-13.29	**-0.0025**	-15.35
Low income Share	**0.0245**	2.60	**0.0455**	2.01	**0.1189**	7.65	**-0.0025**	-3.49
Urban	**-0.0128**	-9.60	**0.0243**	7.61	**-0.0010**	-0.47	**-0.0005**	-4.52
Rural	**-0.0126**	-8.58	**0.0352**	9.99	**0.0128**	5.29	**-0.0004**	-3.53
Firm <= 2 Years	**0.1343**	98.22	**-0.1925**	-58.67	**0.0971**	41.97	**0.0006**	5.97
3 <=Firm<=10 Years	**0.0538**	48.1	**-0.0993**	-37.01	**0.0060**	3.27	**0.0003**	3.55
0 < Emp <=5	**0.1112**	19.49	**-0.1606**	-11.73	**0.0664**	7.44	**-0.0249**	-56.72
6 <= Emp <=25	**0.0209**	3.65	**-0.0489**	-3.56	**-0.0112**	-1.25	**-0.0243**	-55.14
26 <= Emp <=100	**0.0009**	0.14	**0.0001**	0.01	**0.0007**	0.08	**-0.0198**	-43.04

Table 4:

	Model 5		*Model 6*		*Model 7*	
***Dependent Variable*:**	***NE_Hist***		***Franchise***		***Exporter***	
	Parameter	T-Statistic	Parameter	T-Statistic	Parameter	T-Statistic
Intercept	0.2190	16.01	0.0501	8.30	0.2190	49.67
Black	0.0413	9.42	0.0153	7.92	-0.0056	-3.99
Asian	-0.0099	-4.22	0.0283	27.22	0.0186	24.5
Hispanic	0.0324	10.76	-0.0059	-4.44	0.0081	8.38
Naïve Amer / Islander	0.0185	2.47	0.0080	2.42	-0.0005	-0.2
Female	0.0035	2.46	-0.0102	-16.27	-0.0021	-4.68
NE History					0.0035	8.79
Exports	0.0339	8.80				
Franchise	0.0006	0.21				
HS Graduate	-0.0174	-6.26	0.0112	9.09	0.0039	4.33
Some College	-0.0090	-3.29	0.0187	15.48	0.0083	9.36
College Graduate	0.0003	0.10	0.0203	16.41	0.0205	22.68
Post College	-0.0060	-2.10	0.0005	0.40	0.0184	19.85
Age 25 to 54	0.0377	3.23	-0.0095	-1.84	-0.0138	-3.65
Age 55 +	0.0483	4.13	-0.0052	-1.01	-0.0124	-3.27
Mining	0.0812	8.98	0.0052	1.31	-0.1062	-36.4
Construction	0.0322	12.71	0.0000	0.00	-0.1082	-133.94
Transport	0.0475	12.58	0.0102	6.12	-0.0868	-71.46
Wholesale	0.0028	0.96	0.0072	5.46	0.0057	5.99
Retail	-0.0237	-9.82	0.0811	77.38	-0.1063	-138.6
FIRE	0.0677	24.26	0.0427	35.09	-0.1105	-124.1
Services	0.0198	8.53	0.0235	23.32	-0.1101	-149.7
Low income Share	0.1330	12.79	-0.0040	-0.87	-0.0033	-0.98
Urban	-0.0033	-2.25	-0.0106	-16.39	-0.0021	-4.47
Rural	-0.0059	-3.65	-0.0057	-7.97	-0.0089	-17.12
Firm <= 2 Years	0.0893	59.44	0.0212	32.01	-0.0039	-7.98
3 <=Firm<=10 Years	0.0843	68.73	0.0125	23.14	-0.0022	-5.62
0 < Emp <=5	-0.0792	-12.60	-0.0640	-23.11	-0.1065	-52.59
6 <= Emp <=25	-0.1371	-21.74	-0.0308	-11.07	-0.0951	-46.74
26 <= Emp <=100	-0.0977	-14.84	0.0208	7.15	-0.0470	-22.11

Table 5:

	Model 8 Savings		Model 9 Bank Loan	
Parameter	T-Statistic	T-Statistic	Parameter	T-Statistic
Intercept	0.6099	40.46	0.3397	25.17
Black	0.0253	5.23	-0.0354	-8.19
Asian	0.0735	28.32	-0.0250	-10.75
Hispanic	0.0423	12.77	-0.0662	-22.30
Naïve Amer / Islander	0.0122	1.48	-0.0160	-2.17
Female	-0.0026	-1.68	-0.0343	-24.56
NE History	0.0078	5.71	-0.0126	-10.22
Exports	0.0453	10.67	-0.0605	-15.92
Franchise	0.0001	0.05	0.0903	32.46
HS Graduate	0.0191	6.23	0.0220	8.01
Some College	0.0518	17.20	0.0081	3.00
College Graduate	0.0831	26.91	-0.0026	-0.94
Post College	0.0174	5.52	0.0816	28.86
Age 25 to 54	0.0380	2.95	0.0106	0.92
Age 55 +	0.0413	3.20	-0.0061	-0.53
Mining	-0.1039	-10.42	0.0460	5.15
Construction	0.0053	1.90	-0.1025	-40.95
Transport	-0.0568	-13.64	0.0534	14.34
Wholesale	-0.0098	-2.99	-0.0367	-12.52
Retail	-0.0191	-7.16	0.0333	13.95
FIRE	-0.0380	-12.34	-0.0573	-20.80
Services	-0.0436	-17.05	-0.0259	-11.32
Low income Share	-0.4473	-39.04	0.2028	19.77
Urban	0.0232	14.31	-0.0308	-21.26
Rural	-0.0425	-23.82	0.0859	53.84
Firm <= 2 Years	0.0239	14.37	-0.0185	-12.44
3 <=Firm<=10 Years	0.0361	26.60	-0.0184	-15.16
0 < Emp <=5	0.0485	7.00	-0.1536	-24.77
6 <= Emp <=25	0.0274	3.94	-0.0625	-10.04
26 <= Emp <=100	0.0146	2.01	-0.0170	-2.62