Iowa Department of REVENUE

Iowa Angel Investor Tax Credit

Tax Credits Program Evaluation Study

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Preface

Iowa Code section 2.48 directs the Legislative Tax Expenditure Committee to review all tax expenditures with assistance from the Department of Revenue. The schedule included in this law requires a review in 2019 of Angel Investor Tax Credit authorized by Iowa Code sections 15E.41-46. This is the Department of Revenue's second economic study completed for this expenditure. A prior study of property tax increment financing was completed in 2014.

As part of the evaluation, an advisory panel was convened to provide input and advice on the study's scope and analysis. The panel's assistance implies no responsibility on its part for the content and conclusions of the evaluation study. We wish to thank the members of the panel:

Kristin Hanks-Bents	Iowa Economic Development Authority
Curt Nelson	EDC, Inc.
Peter Orazem, PhD	Iowa State University
Matt Rasmussen	Iowa Economic Development Authority

This study and other evaluations of Iowa tax credits can be found on the Tax Credits Tracking and Analysis Program web page on the Iowa Department of Revenue website.

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I. Introduction

The Iowa Angel Investor Tax Credit is a tax credit allowed for equity investments in qualifying Iowa businesses. With a particular focus on early-stage business development, the tax credit program is intended to create wealth and accelerate the creation of new ventures. This evaluation study comprises seven sections.

Section II of this report provides background on the Angel Investor Tax Credit, including a brief history of the tax credit and a description of program provisions, including limits and eligibility requirements.

Section III provides an overview of similar tax credits among the 50 states.

Section IV provides a review of literature concerning investment tax credits, including reports of academic research as well as other published information.

Section V provides an overview of descriptive statistics concerning the Angel Investor Tax Credit; these pertain to basic program parameters such as awards and claims.

Section VI provides an analysis of the economic effects of the Angel Investor Tax Credit, with particular attention to state-level policy implications.

Section VII of this report provides a brief discussion of conclusions.

II. Background of the Angel Investor Tax Credit

A. Program Description and Provisions

According to its enabling legislation (Iowa Code §15E.41), the purpose of the Angel Investor Tax Credit is to stimulate job growth, create wealth, and accelerate the creation of new ventures to incentivize the transfer of capital from investors to entrepreneurs, particularly during early-stage growth. An Angel Investor tax credit is equal to 25 percent of an equity investment made into a qualifying business approved by the Iowa Economic Development Agency. Prior to 2015, the tax credit was also allowed for investments in community-based seed capital funds.

The tax credit may be claimed against various tax types, including individual income tax, corporation income tax, franchise tax, insurance premium tax, and moneys and credits tax. Credits are not transferable.

Since fiscal year 2016, tax credit claims against individual income tax are refundable. However, credits are nonrefundable when claimed against corporation income, franchise, insurance premium, and moneys and credits taxes. Nonrefundable credits in excess of tax liability may be carried forward for up to three years.

Limits to the tax credit apply to the overall program, to investors, and to businesses receiving investments for which the tax credit is awarded. Caps applicable at these respective levels have varied since 2002, the first year of the tax credit. Currently, at the program level, Angel Investor tax credits are capped at $2 million per year. In addition, the program is subject to a broader cumulative tax credit cap applicable to certain tax credits awarded by EDA. At the level of the individual investor, tax credit awards are capped at $100,000 per calendar year, including awards to the investor's spouse or dependents. Credit caps also apply at the business level. Total tax credits awarded for investments in any single qualifying business in a year are limited to $500,000.

To be certified as a qualifying business whose investors are eligible to receive a tax credit, businesses must satisfy the following criteria at the time an investment is made:

- the business's principal operations must be located in Iowa;
- the business must have been in operation for six years or less;
- business principals must participate in an entrepreneurial assistance program or have other applicable experience;
- the business cannot be primarily engaged in retail sales, real estate, health care, or other services requiring a professional license;
- the business's net worth must be no more than $10 million;
- the business must have secured at least two investors and total equity financing or binding investment commitments of at least $500,000.

For their part, in order to be eligible to receive tax credits, investors must make investments in the form of cash for equity and must have less than a 70 percent ownership stake in the qualifying business.

B. Brief History of the Angel Investor Tax Credit

The Angel Investor Tax Credit[1] program went into effect on January 1, 2002. Effective January 1, 2011 the program has an award cap of $2 million per fiscal year. Administrative responsibilities for the tax credit was transferred from the Iowa Capital Investment Board to the Iowa Economic Development Authority in 2012. During the 2014 legislative session, tax credits issued for an equity investment in a qualifying business no longer has a three year wait before claim; however, awards for a qualifying equity investment made on or after January 1, 2014 could not be claimed prior to January 1, 2016. During the 2015 legislative session, community-based seed capital funds were eliminated as eligible investments under the program and the rate for investments made on or after July 1, 2015 was increased from 20 percent to 25 percent. In addition, the credit was made refundable if claimed against the individual income tax and the carryforward period for nonrefundable credits claimed against other tax types was reduced to three years. A $100,000 annual award cap was introduced for each taxpayer, and a $500,000 annual award cap was introduced for investments made in each qualifying business.

The Angel Investor Tax Credit has had an annual tax credit program cap of $2 million since fiscal year 2012 when the administrative responsibilities for the tax credit were transferred to EDA. When the tax credit was initially enacted, effective January 1, 2002, the tax credit was capped at $3 million annually for investments made in qualifying businesses or funds during 2002 and 2003 and capped at $4 million for investments made in 2004. The credit was initially administered by the Iowa Capital Investment Board (ICIB) with the assistance of the Iowa Department of Revenue (IDR). The aggregate $10 million award cap was not exhausted in the first three years of the tax credit's existence as anticipated. In 2005 the Legislature increased the maximum net worth for qualifying businesses from $3 million to $10 million. The tax credit continued to be awarded until fiscal year 2008 when the last of the $10 million of the program cap was finally awarded to investors. Those investments were made in qualifying businesses or community-based seed capital funds approved by the ICIB. Investors submitted applications to ICIB for tax credit awards based on their amount of investment, the tax credit certificates were then issued by the ICIB with the administrative help of IDR. Those responsibilities are now handled by EDA.

During the 2015 legislative session, community-based seed capital funds were eliminated as eligible investments under the program and the rate for investments made on or after July 1, 2015 was increased from 20 percent to 25 percent. In addition, the credit was made refundable if claimed against the individual income tax and the carryforward period for nonrefundable credits claimed against other tax types was reduced to three years. A $100,000 annual award cap was introduced for each taxpayer, and a $500,000 annual award cap was introduced for investments made in each qualifying business.

Since 2015, the Angel Investor Tax Credit is refundable if claimed against individual income tax. This means that tax credits are refunded, i.e., paid, to the taxpayer to the extent that the credit amount exceeds tax liability. Tax credits claimed against other tax types are not refundable but unused credits may be carried forward. Since 2015, this carryforward period is three years; prior to that year, it had been five years.

[1] Another name for the Angel Investor Tax Credit is the Venture Capital Tax Credit – Qualifying Business. The Iowa Code does not designate a name for the tax credit and the Iowa Department of Revenue has employed the latter label for various tax forms and other documents. For the sake of consistency with terminology employed by the Iowa Department of Economic Development, the term Angel Investor Tax Credit is used throughout this study.

When the Angel Investor Tax Credit was first enacted, taxpayers were required to wait three years after the investment was made and tax credit certificate was awarded before claiming the tax credit. For example, a taxpayer who made a qualified investment in January 2008 could not claim the tax credit until the 2011 tax year. The purpose of this requirement was to delay the initial fiscal impact of the tax credit which was enacted during a national economic recession. During the 2014 Legislative Session the credit was changed effective for investments in qualifying businesses made after January 1, 2015, eliminating the need for a taxpayer to wait three years after making an investment before claiming the tax credit; however, credits awarded for investments made since fiscal year 2012 can first be claimed on returns filed on or after January 1, 2016, or tax year 2015 returns.

C. Other Iowa Tax Credits Incentivizing Venture Capital

In 2002, three separate tax credits encouraging venture capital investments in Iowa became available. Besides the Angel Investor Tax Credit, these included the Venture Capital Funds tax credit and the Iowa Fund of Funds tax credit. Of the three, only the Angel Investor Tax Credit remains in effect as a program offering tax credits for new investments. In addition, Iowa currently offers one other tax credit incentivizing venture capital investments, the Innovation Fund Tax Credit. This tax credit became available effective January 1, 2011. It offers a nonrefundable 25 percent tax credit for investments in an innovation fund certified by the EDA and has an award cap of $8 million per fiscal year.

The other two of Iowa's other venture capital incentive tax credits have been discontinued. The Venture Capital Tax Credit – Iowa Fund of Funds initially had an aggregate contingent tax credits cap of $100 million. This was reduced to $60 million in 2010. This program offered a contingent tax credit for investments made into the Iowa Fund of Funds. The tax credit was allowed to the extent that the actual rate of return on these investments did not meet a rate of return guaranteed to investors. During the 2013 session, legislation was enacted to wind the program down. The Fund of Funds program will be repealed upon the expiration or termination of the Fund of Funds Agreement or December 31, 2027, whichever is later.

The Venture Capital Tax Credit – Venture Capital Funds was repealed in 2010. This tax credit was equal to six percent of equity investments made in venture capital funds that had been certified by the Iowa Capital Investment Board. It had an aggregate tax credit cap of $5 million; just over half of that cap was awarded before the program's end.

III. Angel Investor Tax Credits Around the United States

There are twenty-three states that have, at some point, encouraged the growth of venture capital through the use of tax credits (see Table 1). Of those twenty-three states, only the state of Arkansas has an equity investment tax credit program in place. Hawaii, Indiana, Michigan, North Carolina, Ohio, and Oklahoma all had equity investment tax credits that have either been allowed to sunset or that have been repealed.

Indiana, Massachusetts, New Jersey, New York, and Vermont have a tax credit rate of 20 percent. Vermont requires the tax credit to be spread over four years with four percent claimed in each of those four years, but can only reduce the taxpayer's tax liability up to 50 percent in any year. The state of New York which currently has a minimum tax rate of 10 percent has the lowest tax rate offered among the fifty states.

There are seven states that offer a tax credit rate of 25 percent of the qualified investment: Colorado, Connecticut, Delaware, Illinois, Louisiana, New Mexico, and Wisconsin. Out of these seven states, only Delaware's Angel Tax Credit is refundable but can only be claimed against individual income tax. The Connecticut Angel Investor Tax Credit Program is nonrefundable and can be claimed against individual income tax and corporate income tax. The Louisiana Angel Investor Tax Credit is also nonrefundable and can be claimed against individual income tax, corporate franchise tax, and fiduciary income tax. The New Mexico Angel Investor Tax Credit is nonrefundable but can only be claimed against personal income tax. Wisconsin has one nonrefundable tax credit with a credit rate equal to 25 percent of the qualified investment. The Wisconsin Angel Investor Tax Credit can also be claimed against individual income tax, corporation income tax, and fiduciary tax. The Illinois Angel Investment Credit is nonrefundable and can be claimed against individual income tax and corporation income tax. Colorado offers an additional 5 percent tax credit of 30 percent when the equity investment is made to a business that is in a rural or economically distressed area. Arizona is the only state that offers 30 percent of a qualified investment and an additional 5 percent to the base credit of 35 percent when the investment is made in a rural or bioscience company. No other state has a 30 percent credit, although Arkansas has a tax credit rate of 33 1/3 percent and Tennessee has a tax credit rate of 33 percent. Both Georgia and North Dakota have angel tax credits of 35 percent of the qualified investment.

North Dakota offers a seed capital investment tax credit rate of 45 percent of qualified investments. The four remaining states have tax credits rates of 50 percent of the qualified investment. Kansas is the only state in the plains region of the U.S. to have a tax credit rate that high. The three remaining states are on the east coast; Maine, Maryland, and Virginia all have tax credit programs with the highest rate offered, 50 percent.

Most states' equity investment tax credits are nontransferable. This means that the taxpayer who is awarded the tax credit is the only entity that can claim the tax credit. The exceptions include the Arkansas Equity Investment Tax Credit which can be sold to an alternate taxpayer, but the sale of the credit must occur within one year of the issuance of the tax credit. This credit expired on December 31st, 2019. The only other exceptions are the Wisconsin Early Stage Seed Investment Tax Credit, the Indiana Venture Capital Investment Tax Credit, the Kansas Angel Investor Tax Credit, the Louisiana Angel Investor Tax Credit, the Utah Capital Investment, and the Wisconsin Early Stage Seed Investment Tax Credit. All of these credits are active except the Utah Capital Investment which also expired on December 31st, 2019.

Five states have fully refundable tax credits. Those states are Delaware, Maine, Maryland, New Jersey, and Utah. When a tax credit is refundable, the amount of the tax credit that exceeds the taxpayer's tax liability is refunded back to the taxpayer. Because these states' credits are fully refundable, these states do not have any carryforward provision. In Maine, the Seed Capital Tax Credit Program is refundable for investments made by private venture capital funds. For all other investments, the tax credit in Maine is nonrefundable, but can be carried forward fifteen years. In New Jersey, the Angel Investor Tax Credit can be carried forward fifteen years if not refunded for credits claimed against corporation business tax.

In addition to Maine, Virginia and Wisconsin also have fifteen-year carryforward provisions. Only Kansas allows a longer carryforward period, as there is no restriction on the number of years a Kansas Angel Investor Tax Credit can be carried forward. Only Louisiana has a ten year carryforward period. The only other states that allow a longer carryforward period than Iowa are Arkansas and North Dakota which have carryforward periods of nine and seven years, respectively.

Iowa's Angel Investor Tax Credit allows for the credit to be carried forward five years. Eight states also have five year carryforward periods: Colorado, Connecticut, Georgia, Illinois, Indiana, New Mexico, North Dakota, and Tennessee. Vermont allows its seed capital tax credit to be carried forward for a period of four years. Only the state of Arizona has a carryforward period of three years.

The amount of funds each state sets aside to be issued for investment tax credits varies widely. There are two that have lifetime caps for their tax credits; Utah has the largest lifetime cap of $120 million while Vermont has a lifetime cap of $1.43 million.

All other states administer their caps on an annual basis. Some states, like Iowa, operate on a fiscal year basis and other states operate on a calendar or tax year basis. When the annual cap of the Angel Investor Tax Credit is combined with the Innovation Fund Tax Credit cap, Iowa allocates $2 million per fiscal year toward equity investment tax credits. Sixteen states' annual caps exceed Iowa's $2 million annual cap, New Mexico also has an annual cap of $2 million, and three states' caps fall below $2 million. Colorado currently has the smallest annual allocation to their Advanced Industry Investment tax credits at $750,000 per year. Wisconsin has the largest annual cap at $30 million. Massachusetts and New Jersey follow closely with a $25 million annual program cap for their Angel Investor Fund Tax Credit.

Only Colorado has an annual cap under $1 million. Maryland has an annual cap of $12 million $500,000 less than Indiana. The remaining states have annual caps that range from $3.6 million in Louisiana to $6.25 million in Arkansas to $10 million in Illinois.

Some states limit the amount of tax credit individual taxpayers can be awarded each year, as does Iowa. Some states do not impose any limit on the tax credits that can be received by the taxpayer making the investment, but impose limits on the amount of tax credits that can be awarded for investment in each business. For example, in Louisiana, only $720,000 million of investments in each business can qualify for credits in a given year. Over all years, each business is limited to a total of $1.44 million in investments for which tax credits can be received.

Another characteristic that varies from state to state is the taxes against which equity investment tax credits can be claimed. Eight states allow their tax credits to be claimed only against individual income tax.

IV. Literature Review

Lerner (2002) identifies two rationales for public intervention in the venture capital market, the first of these the "certification hypothesis," which supposes that venture capital markets operate in a haze of especially imperfect information. Under the hypothesis, the public certification of businesses for investment authenticates them as safe investments and offers a kind of seal of approval. Some kind of public certification thus helps businesses overcome problems of information asymmetry. The second rationale identified by Lerner is that public intervention engenders positive externalities; that is, value created by tax credit investments can have positive spillovers that benefit the broader community, including other firms. According to this rationale, which is applicable to a range of publicly supported endeavors, the optimum benefit available from investment is unlikely to be captured by private investors only and, for this reason, public subsidies are warranted. Lerner's observations provide a framework for considering venture capital tax credits from an evaluation perspective. Evaluation proceeds from the starting point that tax credits exist for some public purpose and from there to the question of program effectiveness.

Da Rin, Nicodano, and Sembenelli (2006) assessed the effectiveness of various policy approaches to fostering venture capital markets in Europe. Their approach focused on the impact of these various public policy approaches on the "high-tech ratio" and the "early-stage ratio," which the authors defined as the ratio of investments in high-technology industries and the ratio of early stage investments, respectively, to total venture investments. However, they reported finding no evidence of an impact of increased public R&D spending on these parameters of interest and no evidence of a shortage of supply of venture capital funds in Europe. While this research may not bear directly on the state of venture capital markets in Iowa, it at least addresses a fundamental and relevant question: Is the problem that programs meant to encourage venture capital investment are intended to solve even a problem?

White, Lockwood, and Miles (2009) address whether investment tax credits lead to investments that would not otherwise occur. Although, interestingly, these authors seem to acknowledge that this objective on its own may be inadequate as a policy goal, such as if a given program were to incentivize unwise or excessively risky investment, they do not deeply examine such concerns. Instead, the authors address the question of investment incentivization in abstract terms. Rather than evaluating these questions empirically, their research calculates the impact of a proposed federal investment tax credit known as Access to Capital for Entrepreneurs, or ACE, on angel investors'' potential rate of return. Specifically, "the internal rate of return on informal venture investments is evaluated in a scenario where the business angel can benefit from the financial effect of the ACE" (p. 26).

White, Lockwood, and Miles assert that for a $1 million investment with a ten percent probability of a maximum return of $20 million in five years, the internal rate of return would be 14.8 percent. They calculate that the same investment, subsidized by a 25 percent investment tax credit, would yield an internal rate of return of 21.7 percent and observe that the rate of return with the tax credit is 47 percent higher than the rate of return without it. In addition, they note that this increased return does not reflect an increase in the prospective project's risk.

Their analysis asserts that a tax credit structured along these lines, and in this way similar to the Iowa Angel Investor Tax Credit, would make a prospective investment more economically attractive and would thus, other things being equal, lead to increased investment and economic activity. As to whether this type of tax credit leads to investments in bad deals, they argue that it would create no disincentive for investor due diligence if, as with the Iowa Angel Investor Tax

Credit, it is capped at 25 percent and the amount of the investment that is eligible for a credit is limited. Their calculations that the ACE reduces downside risk is purely an accounting identity, rather than empirical observation. Their observation that this necessarily stimulates additional investment is simply an assertion of the price elasticity of demand for investment.
Similarly, Bell and Woodmansee (2016) acknowledge that whether investment tax credits encourage investment that would not otherwise have occurred remains an open question. They nevertheless concur with White, Lockwood, and Miles that venture capital tax credits encourage and reward investment by both reducing risk and increasing return.

Tucker, Chakma, Fedak, and Cimini (2011) provide a good analysis of the role of public policy in attracting and stimulating venture capital investment. They analyzed data from Thomson Reuters Venture Source to compare and contrast the experiences of three Canadian provinces whose substantially different approaches to the issue provide what these authors termed a natural experiment. The study is of interest for its methodology as much as for its findings. The approach considered outcomes—in terms of return on investment (ROI) and company exit—at the provincial level to evaluate the effectiveness of various public policies in attracting venture capital investment. Perhaps of most relevance to the present study, Tucker et al. compared the provinces with respect to whether they particularly facilitated private-independent investment, government-run funds endowed directly by public sources, and retail funds, which are funds established by governments to facilitate investments by public investors in return for tax rebates. The authors found that policy facilitating private-independent investment had the greatest ROI. They theorize that this at least partly due to private investors' greater sophistication and knowledge and partly due to a mismatched and inefficient incentive structure for retail and government fund approaches.

The study by Tucker et al is part of a wider literature that pertains to public intervention in support of venture capital markets. A subset of this literature, more specific to the topic at hand, concerns state tax credits for angel investments. While some of these studies pertain to state tax credits in more general terms, most concern particular tax credits in one or more states. Studies reviewed here concern tax credits in Florida, Hawaii, Kentucky, Louisiana, North Carolina, Minnesota, Oregon, Vermont, and Wisconsin.

A study by the Economic Development Research Group (2014) combined data from various sources to provide an overall program description of the Minnesota Angel Tax credit, a tax credit that is similar to Iowa's. To address the question of whether the Minnesota tax credit led to investments that would not have otherwise occurred, the authors used information obtained from surveys of investors who made qualifying investments in 2010 through 2012. They found that 48 percent, or nearly half, of respondents reported that they would not have made their qualifying investments if the tax credit had not existed; an additional 34 percent, or one third, of respondents said that, because of the tax credit, they made larger investments than they would have in its absence. The remaining 18 percent of respondents reported, however, that the tax credit had no effect on their decision to make a qualified investment. Also of note, the study found that qualifying investments by respondent investors represented just 1.7 percent of their total investments during the period. Finally, the study of the Minnesota Angel Tax Credit found that half of respondents were what its authors termed "inside investors." These include qualified business founders, executives, principals, board members, and their immediate family members.

As noted just above, this Minnesota Study evaluated data from a range of sources. In addition to surveys of investors, the study employed economic modeling tools "to estimate the full range of economic impacts in Minnesota attributable to the ATC program" (p. 37). Such tools are used

to estimate the economic impacts of program investments. In the case of the Minnesota study, the modeling methodology was developed by and the analysis was conducted by Regional Economic Models, Inc. (REMI). Factors assessed in the analysis included direct employment and non-payroll spending by qualified businesses themselves, business-to-business purchasing from Minnesota firms, and the induced spending by employees of those other Minnesota firms.

A number of other studies of other states' angel investor tax credits employ the same approach. A study of various economic development incentives in Florida by that state's Office of Economic and Demographic Research (OEDR) also employed economic modeling techniques to evaluate the program's economic benefit (2017). For that study, however, the economic benefit in question was very narrowly defined in terms of state revenues; more specifically, as the "the direct, indirect, and induced gains in state revenues as a percentage of the state's investment" (p. 3). The OEDR used this information to calculate a return on investment (ROI) for the various tax incentives it studied, none of which, however, is directly analogous to Iowa's angel investor tax credit. In the case of Florida's Capital Investment Tax Credit (CITC), the authors calculated the program's ROI to be 0.43; i.e., that the program yielded $0.43 in state revenue for each dollar of investment. The authors calculated an ROI of 0.1 for Florida's Innovation Incentive Program. It should be emphasized that these programs are structured very differently than Iowa's Angel Investor Tax Credit. For example, the Florida CITC incentivizes capital construction by firms in certain industrial sectors and tax credits must be claimed in equal parts over 20 years. Of the eight programs under review in the Florida study, the authors found all but one of them to have an ROI of .6 or less. However, the one incentive for which they calculated an ROI of greater than 1 (the Florida Qualified Target Industry Tax Refund) was estimated to yield $4.40 for each $1 of state investment.

While the Florida OEDR study is of note for its subject matter and its approach, its findings are not particularly pertinent to the Iowa Angel Investor Tax Credit. In any event, the study may best be seen as a counterexample because it applies such a dubious standard to evaluating state tax incentives. That is, the Florida study considers economic outcomes only in terms of the amount of state revenue generated. While there may be value in such an approach, it does not follow that state tax incentives ought to produce net positive state revenues in order to be successful. Indeed, using this criterion, a program that in some way generated public revenues but resulted in a net drain on the private sector economy would be calculated to have a highly positive ROI. Such a program, if it existed, could not be considered an effective means of promoting wealth and investment.

A study by the Maryland Department of Legislative Services provides a similarly dubious analysis of a state investment credit. The authors of that study, of the Biotechnology Investment Incentive Tax Credit (BIITC), conclude that there is "no evidence that [the] program has increased industry investment" because the "the State has not closed the financing gap with industry leaders California and Massachusetts" (p. 86). In addition, they argue, "While the program may have prevented the State from falling further behind, in its current form, it should not be viewed as a program that is capable of making a meaningful difference when compared to these states" (p. 86). The Maryland study does report on "a statistical test using North Carolina as a control state [to determine whether] the program led to a statistically significant increase in industry investment" (p. 84). However, the design of this statistical test rests on the doubtful supposition that the investment environments in Maryland and North Carolina are equivalent in every way except that Maryland has made an investment tax credit available and North Carolina has not. Maryland's BIITC is, by contrast to Florida's tax credits, structured somewhat similarly to Iowa's Angel Investor Tax Credit.

In short, as with the Florida OEDR study, the Maryland study holds its state tax credit to an impractical standard. Nevertheless both studies are relevant because they provide examples of different approaches to the question at hand. If nothing else, they point up the difficulties associated with evaluating state credits and addressing the key questions identified above.

Tuomi and Boxer (2015) approach the analysis of the Maryland's BIITC somewhat differently. These authors employ the same kind of modeling techniques employed by the Economic Development Research Group for Minnesota's tax credit to assess the economic impacts of the BIITC and Wisconsin's Qualified New Business Venture (QNBV) Program. Rather than employing the REMI model, however, Tuomi and Boxer employ RIMS II, a regional input–output modeling system developed and maintained by the US Bureau of Economic Analysis. The authors use this tool to evaluate and compare the net economic impacts of the two states' respective tax credit programs. Tuomi and Boxer found that the tax credits in both Maryland and Wisconsin "can result in a substantial boost in leveraged capital, local employment, and earnings [and that] generated revenue more than covers the credit outlay" (p. 6). These authors warn, too, that these positive results are largely attributable to the design and management of the two particular programs in question, suggesting that different program characteristics can lead to inferior outcomes.

Hendon, Bell, Blair, and Martin (2012) came to very similar conclusions in their study of tax credit programs in Hawaii, Louisiana, Wisconsin, Minnesota, Oregon, and Vermont. Noting the variability in tax program design among these six states, such as with respect to eligibility, refundability, and level of funding, the authors note it leads to significant variability in program effectiveness. Hendon, et al. argue that while the overall intent of angel investment tax credits is to encourage investment in local companies, there can be additional and sometimes competing goals; for example, a tax credit might include job creation among its explicit goals. These authors argue that it is unrealistic to measure tax credits against a single standard of success. Instead, they assert, "Carefully outlined goals and methods of periodic review, combined with valid measures of effectiveness established at the outset of the program, are essential to the […] success of any tax credit program" (p. 59). Despite these challenges, however, a later study by Bell, Wilbanks, and Hendon (2013) provides an excellent analysis comparing of the effects of angel tax credit programs across states. These authors used Kauffman Foundation data to evaluate whether entrepreneurial activity in a state is related to the presence of tax credits. They found that angel tax credit programs do increase entrepreneurial activity on a state level.

V. Angel Investor Tax Credit Awards, Claims, and Investments

For the period from FY 2002, when the program began, through FY 2019, the Angel Investor Tax Credit program has awarded tax credits totaling $18.2 million (see Table 2). As noted above, when the program was initially enacted it was subject to a cumulative program award cap of $10 million; it reached this cap in FY 2008.

Credits were capped at $3 million per year in 2002 and 2003 and at $4 million beginning in 2004. In fiscal year 2012 and subsequent years, tax credits are capped at $2 million per year. The program was substantially undersubscribed through FY 2015. Beginning in the next fiscal year, 2016, the credit was made refundable if claimed against the individual income tax. In that year, program awards began to approach annual caps.

Meanwhile, program claims have been far below awards through most of the program's history. In part this reflects the program's requirement that until 2015 taxpayers were required to wait three years before claiming an awarded tax credit. However, on its own, this requirement would be expected to only delay claims; instead, by the end of FY 2011 only 42 percent of the awards made through FY 2008 had been claimed. Since around FY 2017, however, total claims have more closely tracked with awards. This issue is discussed further below.

Since its beginning in 2002, the Angel Investor Tax Credit program has provided tax credits for investments to 65 different firms and ten different community-based seed capital funds (see Table 3). The number of different firms receiving qualifying investments in any one year has ranged from zero, in 2008, 2009, and 2010, to 17 in 2006. In 2017, thirteen different firms received investments and in 2018 twelve did. Since 2002, the program has provided tax credit awards for $105.9 million in qualified investments. Qualified investments reached $18.9 million in 2006 then fell sharply, reaching zero in years 2008 through 2010. Qualified investments resumed in 2011. They reached $14.7 million in 2018, the most recent complete calendar year.

Since 2002, 3,693 awards totaling $16.8 million have been made to Iowa resident taxpayers, where residency is based on the taxpayer address provided on the tax credit application and taxpayers include both natural persons and corporations, banks, credit unions, and other entities (see Table 4). There have been 578 awards for $3.3 million made to nonresidents.

Most awards have been issued to individual income taxpayers. These account for 89 percent of the number of awards and 87 percent of the amount of awards issued since the program's inception (see Table 5). Corporation income taxpayers account for the next largest share, but represent just 6 percent of awards. The average tax credit awarded to individual income taxpayers is $4,577. Insurance companies received 30 awards, or just less than 1 percent of the number of awards, but had an average award of $23,000.

The Angel Investor Tax Credit program's first qualifying investments were made in 2002 and, because of the three-year waiting period in effect until 2015, the first tax credits could be claimed in tax year 2005. Between tax years 2005 and 2018, 4,300 tax credit claims have been made totaling $11.5 million of the $20.2 million awarded (see Table 6). The average Angel Investor Tax Credit claim between 2005 and 2018 is $2,680. (Verification of tax year 2018 claims is incomplete.) As with awards, individual income taxpayers represent the great majority of claimants (see Table 7); claims against individual income tax represent 98 percent of the number of claims and 96 percent of claimed amounts. The average claim among individual

income taxpayers is $2,630. Only five claims have been made against insurance premium tax; the average claim against this tax type is $21,196, the highest average claim by tax type.

As noted above program claims have been well below awards through most of the program's history. As of the end of FY 2011 only 42 percent of awards eligible to be claimed had been claimed. This was likely in part due to the three-year waiting period and partly due to the tax credit's non-refundability. Beginning in FY 2016, the waiting period was eliminated and the tax credit became refundable when claimed against individual income tax; as noted above, claims against individual income tax represent 98 percent of claims.

Prior to when the Angel Investor Tax Credit was made refundable, taxpayers typically had insufficient tax liability to fully utilize an award in the first year they were eligible. In addition, the claiming rate for the tax credit was so low that the author of the Department of Revenue's 2014 evaluation study theorized that, because of the three year waiting period before awarded credits could be claimed, many awardees simply forgot to claim them (Gullickson, 2014). In support of this possibility, an analysis included in that study showed there were 700 tax credit recipients who did file an Iowa tax return in the first year their tax credit could be claimed but who did not claim it. There were an additional 360 tax credits issued to taxpayers who did not file a tax return in the first year that the tax credit could be claimed, suggesting that these investors made the qualifying investment despite either never intending to claim the tax credit or whose tax situation had changed in the interim such that they were no longer subject to Iowa income tax by the time they could claim the credit.

In more recent years, total claims have more closely tracked with awards (see Table 8). Less than half of program tax credits issued for investments made in 2005 and 2006 were claimed. For investments made in 2002 through 2013, the percentage of award amounts claimed is no higher than 70 percent in any year. In 2014, however, the percentage of award amounts claimed increased to 84 percent and in 2015 it rose to 95 percent.

VI. Economic Analysis of the Iowa Angel Investor Tax Credit

Introduction to Economic Analysis

In addition to descriptions of awards, claims, and investments, this evaluation study provides an economic analysis of the Angel Investor Tax Credit. As noted above, Iowa Code specifies the tax credit's purposes to include stimulating job growth, creating wealth, and accelerating the creation of new ventures by incentivizing investment during early-stage growth. Because the tax credit is awarded for investment, however, promoting investment is plainly the program's most essential purpose.

The present analysis is thus concerned with whether and to what extent the Angel Investor Tax Credit has incentivized investment. Because it is not possible to evaluate these questions using experimental or quasi-experimental methods, it is not possible to definitively establish that the tax credit leads to investment that, in the absence of the credit, would not occur. Nevertheless, using available data and analytical methods it is possible to shed light on these matters. The present analysis offers evidence on whether businesses that have received investment through the Angel Investor Tax Credit program experience different levels of overall investment and different outcomes with respect to longevity and exit.

Data Set Used for this Analysis

Data concerning investments in start-up companies and other pertinent information about those firms was obtained for this analysis from Crunchbase, a proprietary open-contribution database with a focus on capital investment in start-ups. Crunchbase is a highly regarded source of information for the venture capital industry.[2] Although numerous data resources are available concerning the activities of publicly-traded companies, Crunchbase is one of just a handful of resources that provide information about start-ups.

The data set used for this analysis was downloaded from Crunchbase in the summer of 2019. It includes all firms reported as based in Iowa and eleven other Midwest states founded in 2009 or after. There were 6,623 such firms (see Table 9). Of these, 2,629 were reported as having received funding during the ten-year period 2009 through 2018. There were 5,637 funding rounds reported for these firms, although the amount of funding obtained in a given round is not reported for all rounds. Funding amounts are reported for 4,517 of the 5,637 reported funding rounds.

As noted just above, the data set included firms founded in 2009 or after. There were 260 such firms based in Iowa, of which 107 were reported as receiving start-up funding during the period. Total funding reported for Iowa firms for the ten-year period 2009 through 2018 was $253.5 million; angel, seed, or venture funding reported for these firms amounted to $247.4 million, or nearly the entire total funding reported for Iowa firms. These represented just 3.9 percent of the start-ups in the eleven regional states in the data file and 2.0 percent of angel, seed, or venture funding. Iowa ranked ninth with respect to angel, seed, or venture funding reported for the eleven states which, it must be said, includes several more populous and more urbanized states.

Information about the number of start-ups, number of funding rounds, and amount of funding provides valuable context and a sense of the scope of the Angel Investor Tax Credit relative to the entire start up market in Iowa. As noted earlier in this report (see Table xx), during the

[2] Kauffman Foundation: https://www.kauffman.org/what-we-do/entrepreneurship/research-/data-resources

period covered in the analysis data file, 35 start ups received funding through the Angel Investor tax credit program. Investors in these firms received $9.9 million in tax credits for investments totaling $51.4 million in 2009 through 2018. Bearing in mind that, according to the Crunchbase data file, 107 Iowa-based firms received start-up funding during the same period, the 35 start ups receiving Angel Investor Tax Credit investment during the period thus represented about a third of all start ups in the state as reflected in Crunchbase. In addition, considering that these 107 Iowa start-ups received a reported $247.4 million in angel, seed, or venture funding, the $51.4 million of investment incentivized through the Angel Investor Tax Credit program represents something like 20 percent of the amount of reported investments in start-ups in Iowa over the period. It must be emphasized here, however, that these percentages are very approximate. As discussed in more detail below, the Crunchbase data analysis file does not include data for all start-ups. Nevertheless, these comparisons provide a useful approximation of the tax credit program's scope relative to the start-up market in the state more broadly.

As context, it must remembered that there were more than 4,000 business applications in Iowa each quarter over at least the last decade and more than 5,000 each quarter between the beginning of 2017 and the first quarter of 2020, according to U.S. Census Bureau data.[3] Thus, Crunchbase represents a very small fraction of all start-ups in Iowa, and the Angel Investor Tax Credit reaches an even smaller share of them.

Total Funding by Type of Round, Iowa and Eleven Midwest States, 2009-2018

The data analysis file includes information about various types of start-up funding (see Table 10). These include angel and seed funding and venture funding as well private equity, other debt and equity funding, and non-equity funding as defined in Crunchbase data source. Based on these definitions, funding that would qualify for the Angel Investor Tax Credit is assumed to include funding from angel, seed, and venture rounds. As used here, angel and pre-seed funding rounds are small early funding rounds focused on non-institutional sources. Seed rounds follow angel rounds and are similar but are typically for higher amounts. Venture funding rounds, by contrast, are investments by venture capital firms. Series A and B venture rounds are for earlier stage firms. Later series rounds are for more mature firms.

Over the decade between 2009 and 2018, start-ups in the twelve Midwest states in the data analysis file received $1.3 billion of angel and seed funding. Angel funding averaged $608,000 per round, pre-seed funding averaged $321,000 per round, and seed funding averaged $722,000 per round. Among start-ups in these twelve states, Series A venture funding averaged $5.6 million per round. Series B venture funding averaged $12.6 million per round.

Analysis of Angel Investment Tax Credit Firms and Comparison Firms.

The following section describes an analysis that compares start-up funding and firm longevity of firms receiving Angel Investor Tax Credit investments to comparison firms that did not receive such investment. Of the 35 qualified businesses that received Angel Investment Tax Credit investments during the decade, 20 were identified in the data file. Comparison companies for qualified businesses were identified on the basis of industry category group, approximate number of employees, and year of company founding (see Table 11 for a listing of industry category groups). Specifically, with respect to number of employees, comparison firms were matched to qualified businesses when the number of employees were matched within a range; e.g., qualified businesses with up to ten employees were matched to comparison firms with up to ten employees; qualified businesses with between ten and fifty employees were matched to

[3] U.S. Census Bureau Business Formation Statistics are available at https://www.census.gov/econ/bfs/index.html

comparison firms whose numbers of employees matched this range. Comparison firms were matched to qualified businesses when respective years of founding were within one year of each other. The analysis described here was limited to comparison firms based in Iowa. Twenty such firms were identified.

Thus, of the 107 Iowa firms in the analysis data file, 20 were qualified businesses that received Angel Investor Tax Credit investments, 20 were identified as comparison firms, and 67 were firms that were established during the same ten-year time period but were dissimilar to qualified businesses in terms of the particular year of founding, industry category group, approximate number of employees, or any combination of these factors.

During the ten years from 2009 through 2018, the 20 qualified businesses, which represented 18.7 percent of the Iowa firms in the data file, received $8.8 billion in angel and seed funding, or 23.0 percent of angel and seed funding, reported for all firms (see Table 12). This represented a disproportionately high share of all such funding and more than twice as much as comparison firms. Comparison firms, conversely, which likewise accounted for 18.7 percent of the Iowa firms, received $3.9 billion, or 10.3 percent, of angel and seed funding reported during the period. All other Iowa firms, which accounted for 62.6 percent of firms in the data file received two thirds of angel and seed funding, or an approximately proportionate share.

A similar pattern holds true with respect to venture funding. Qualified businesses received $55.3 billion in venture funding during the period whereas the twenty comparison firms received $25.8 billion. In other words, qualified businesses received more than twice as much venture funding during the decade 2009 through 2018 than did the same number of comparison firms. As with angel funding, all other firms accounted for a proportionate share of venture funding. Representing 62.6 percent of Iowa firms, these other firms received 62.3 percent of venture funding during the decade. Thus, overall, qualified businesses that received Angel Investor Tax Credit investments received $64.1 billion in angel, seed, and venture funding, as reported in Crunchbase. This represented 25 percent of such funding received by all Iowa firms during the period.

These cumulative totals pertain to funding over the period as a whole. That is, for all ten years combined, total angel, seed, and venture funding to qualified businesses that received Angel Investor Tax Credit investments was much greater than funding for comparison businesses. However, this not true for each year of the period. Qualified businesses received more funding than comparison firms in four years during the decade, but comparison firms received more funding in three other years (See Figure 1. Firms from neither group received funding in any of the other three years.) Nevertheless, qualified businesses that received Angel Investor Tax Credit Investments received more funding in more years than did comparison firms.

Finally, qualified businesses and comparison firms were assessed with respect to exit and closure (see Table 13). For this analysis, exit refers only to an initial public offering (IPO) or to acquisition and is separate from firm closure. According to the analysis data file, one qualified business exited during the period; i.e., was either acquired or became public. This compares to two comparison firms that exited in one of these ways. Meanwhile, none of the 20 qualified businesses in the analysis data file closed during the decade. This compares to five of the 20 comparison firms and to 15 of the 67 other Iowa firms during the same period.

VII. Conclusions

Tax credit-qualified firms received more overall investment than other firms in Iowa that were similar in terms of year of founding, industry group, and number of employees. This study does not speak to whether this is because firms that participated in the tax credit program during the period under analysis were simply better situated to raise capital or, conversely, because the tax credit program gave a boost to raising capital. These findings do suggest, however, that either or both of these propositions may be true. It is likely that the tax credit program helps those companies that are more prospectively profitable than weaker companies, motivating additional investment into firms that would be attractive investments even in the absence of the program.

References

Bell, J. R., Wilbanks, J. E., & Hendon, J. R. (2013). Examining the Effectiveness of State Funded Angel Investor Tax Credits: Initial Empirical Analysis. Small Business Institute Journal, 9(2), pp. 23-28.

Bell, J. R. and Woodmansee, J. B., (2016). Seeding Venture Capital: Insights into State-by-State Equity Tax Credit Legislation. The Journal of Private Equity, 9(2), pp. 34-42.

Bureau of Economic Analysis (2012). RIMSII (Regional Input-Output Modeling System II) An essential tool for regional developers and planners. Bureau of Economic Analysis U.S Department of Commerce. Retrieved July 1, 2019 from: https://www.bea.gov/sites/default/files/methodologies/RIMSII_User_Guide.pdf

Da Rin, M., Nicodano, G., & Sembenelli , A. (2006, January 25). Public policy and the creation of active venture capital markets. Journal of Public Economics, Vol. 90, pp. 1699-1723.

Economic Development Research Group. (2014). Evaluation of the Minnesota Angel Tax Credit Program 2010-2012. 1-71. Minnesota Department of Revenue. Retrieved July 1, 2019 from: https://www.revenue.state.mn.us/sites/default/files/2014-02/evaluation_of_the-_mn_angel_tax_credit_program.pdf

Hendon, J. R., Bell, J. R., Blair, B., & Martin, D. K. (2012). State-funded angel investor tax credits: Implementation and perceived effectiveness in a sample of states within the United States. Journal of Entrepreneurship and Public Policy, 1(1), pp. 50-62.

Lerner, J. (2002, February). When Bureaucrats Meet Entrepreneurs: The Design of Effective Public Venture Capital Programmes. The Economic Journal, Vol. 112, pp. 73-84.

Office of Economic and Demographic Research. (2017, January). Economic Evaluation for Select State Economic Development Incentive Programs. 1-67. Retrieved August 1, 2019 from: http://edr.state.fl.us/Content/returnoninvestment/ROISELECTPROGRAMS2017final.pdf

Tucker, J., Chakma, J., Fedak, P. W., & Cimini, M. (2011). Catalyzing capital for Canada's life sciences industry. Journal of Commercial Biotechnology, Vol. 17, pp. 330-348.

Tuomi, K. & Boxer, b. (2015) The costs and benefits of early-stage business tax credits: a case study of two US states. Venture Capital, 17(3), pp. 263-270 (DOI: 10.1080/13691066.2015.1051757)

White, J. B., Lockwood, J. M., & Miles, M. P. (2009). The Access to Capital For Entrepreneurs Act of 2007: An Extension of The Impact of Tax Policy on Informal Venture Investing. The Entrepreneurial Executive, Vol. 14, pp. 25-30.

Iowa Angel Investor Tax Credit

Tax Credits Program Evaluation Study

Tables and Figures

Table 1. Angel Investor Tax Credit by State

State	Tax Credit	Effective Date	Expiration or Repeal Date	Current Status	Minimum Credit Percentage of Qualifying Investmetn	Maximum Credit Percentage of Qualifying Investmetn	Annual Program Cap	Qualifying Tax Types I: Individual Income C: Corporation Income F: Franchise O: Other	Refund-able	Carry Forward	Transfer-able
Arizona	Angel Investment Tax Credit	July 1, 2006	None	Active	30%	35%	$2.5 million	I	No	3 Years	No
Arkansas	Equity Investment Tax Credit	January 1, 2007	December 31, 2019	Active	33%	33%	$6.25 million	I,C	No	9 Years	Yes, within one year of issuance
Colorado	Advanced Industry Investment Tax Credit	July 1, 2014	December 31, 2022	Active	25%	30%	$750,000	I	No	5 Years	No
Connecticut	Angel Investor Tax Credit Program	July 1, 2010	None	Active	25%	25%	$20 million	I, C	No	5 Years	No
Delaware	Angel Investor Tax Credit	January 1, 2018	December 31, 2021	Active	25%	25%	$5 million	I	Yes	No	No
Georgia	Angel Tax Credit	January 1, 2011	December 31, 2020	Active	30%	35%	$5 million	I	No	5 Years	No
Hawaii	High-Technology Business Investment Tax Credit	July 1, 1999	December 31, 2010	Expired	100%	100%	None	I, C	No	5 Years	No
Illinois	Angel Investment Credit Program	January 1, 2011	December 31, 2021	Active	25%	25%	$10 million	I,C	No	5 Years	No
Indiana	Venture Capital Investment Tax Credit	July 1, 1999	None	Active	20%	20%	$12.5 million	I,C	No	5 Years	Yes
Iowa	Venture Capital Qualifying Business (Angel Investor) Tax Credit	January 1, 2002	None	Active	20%	20%	$2 million	I,C, F	No	5 Years	No
Kansas	Angel Investor Tax Credit	January 1, 2005	January 1, 2022	Active	50%	50%	$6 million	I	No	Unlimited	Yes
Kentucky	Investment Fund Tax Credit	January 1, 1998	None	Inactive (Will resume in 2021)	40%	50%	$3 million ($40 million lifetime cap)	I,C, F	No	15 Years	Yes
Louisiana	Angel Investor Tax Credit Program Act of 2011	July 8, 2011	July 1, 2021	Active	25%	25%	$3.6 million	I,C	No	10 Years	Yes
Maine	Seed Capital Tax Credit Program	July 1, 1989	None	Active	50%	50%	$5 Million	I,C, F	Yes, for private venture capital funds.	15 Years	No
Maryland	Biotechnology Investment Incentive Tax Credit	July 1, 2006	None	Active	50%	50%	$12 million	I, C	Yes	No	No
Massachusetts	Angel Investor Tax Credit	August 1, 2017	None	Active	20%	20%	$25 million	I	Yes, up to 90%	No	No
Michigan	Small Business Tax Credit	January 1, 2010	December 31, 2011	Expired	25%	25%	$9 million	I, C	No	5 Years	No
Minnesota	Small Business Investment Credit	April 1, 2010	December 31, 2016	Expired	25%	25%	$12 million	I	Yes	No	No

Table 1 (Continued). Angel Investor Tax Credit by State

State	Tax Credit	Effective Date	Expiration or Repeal Date	Current Status	Minimum Credit Percentage of Qualifying Investmetn	Maximum Credit Percentage of Qualifying Investmetn	Annual Program Cap	Qualifying Tax Types I: Individual Income C: Corporation Income F: Franchise O: Other	Refund-able	Carry Forward	Transfer-able
Nebraska	Angel Investment Tax Credit	August 10, 2011	December 31, 2019	Expired	35%	40%	$3 million	I	Yes	No	No
New Jersey	Angel Investor Tax Credit	January 1, 2012	None	Active	20%	25%	$25 million	I, C	Yes	Yes	No
New Mexico	Angel Investment Tax Credit	January 1, 2007	December 31, 2024	Active	25%	25%	$2 million	I	No	5 Years	No
New York	Qualified Emerging Technology Company Tax Credit	January 1, 1999	None	Active	10%	20%	$1 million	I	No	Unlimited	No
North Carolina	Qualified Business Investment Tax Credit	January 1, 2008	January 1, 2014	Expired	25%	25%	$7.5 million	I	No	5 Years	No
North Dakota	Seed Capital Investment Tax Credit	January 1, 2002	None	Active	45%	45%	$3.5 million	I, C	No	7 Years	No
North Dakota	Angel Investor Investment Credit	January 1, 2017	None	Active	25%	35%	None	I	No	5 Years	No
Ohio	Technology Investment Tax Credit	November 18, 1996	September 29, 2013	Expired	25%	35%	($45 million lifetime cap)	I, C, O	No	15 Years	No
Oklahoma	Small Business Capital Formation Tax Credit	January 1, 2001	December 31, 2011	Expired	20%	20%	None	I, C, O	No	3 Years	No
Oklahoma	Rural Venture Capital Formation Tax Credit	January 1, 2001	December 31, 2011	Expired	30%	30%	None	I, C	No	3 Years	No
Rhode Island	Innovation Tax Credit	January 1, 2007	December 31, 2016	Expired	50%	50%	$1.0 million per two year period	C	No	3 Years	No
South Carolina	High Growth Small Business Job Creation Act	January 1, 2013	December 31, 2019	Expired	35%	35%	$5 million	I	No	10 Years	Yes
Tennessee	Angel Tax Credit	January 1, 2017	None	Active	33%	50%	$5 million	O	No	5 Years	No
Utah	Capital Investment (formerly Fund of Funds)	January 1, 2006	December 31, 2019	Active			($120 million lifetime cap)	I	Yes	No	Yes
Vermont	Seed Capital Fund Tax Credit	January 1, 2014	December 31, 2019	Active	20%	20%	($1.43 million lifetime cap)	I, C, F	No	4 Years	No
Virginia	Qualified Equity and Subordinated Debt Investments Credit	January 1, 2009	None	Active	50%	50%	$5 million	I	No	15 Years	No
West Virginia	High Growth Business Investment Tax Credit	July 1, 2005	June 30, 2008	Expired	50%	50%	$1 million	C, F	No	4 Years	No
Wisconsin	Qualified New Business Venture (QNBV)/Early Stage Seed Investment Tax Credit	January 1, 2005	None	Active	25%	25%	$30 million	I, C	No	15 Years	Yes

Table 2. Angel Investor Tax Credit Awards and Claims by Fiscal Year

Fiscal Year	Award Amount
2002	$366,127
2003	$704,326
2004	$817,869
2005	$2,099,268
2006	$1,638,306
2007	$1,504,997
2008	$2,872,722
2009	$0
2010	$0
2011	$96,000
2012	$575,860
2013	$858,486
2014	$377,352
2015	$452,332
2016	$1,526,947
2017	$1,338,672
2018	$984,326
2019	$2,020,000
2020	$1,950,000
Total	$20,183,590

Source: Iowa Department of Revenue

Table 3. Angel Investor Tax Credit Awards by Year

	Qualifying Business Investments			
Year in Which Investment Was Made	Number of Qualifying Businesses Receiving Investments	Number of New Firms Receiving Investments	Amount of Investments Received	Tax Credits Issued
2002	6	6	$1,248,150	$249,630
2003	9	3	$1,297,900	$259,580
2004	8	2	$2,596,243	$369,241
2005	14	7	$9,685,947	$1,916,022
2006	17	10	$18,984,334	$3,677,269
2007	6	2	$10,845,631	$1,880,188
2008	0	0	$0	$0
2009	0	0	$0	$0
2010	0	0	$0	$0
2011	8	8	$3,386,363	$502,378
2012	6	3	$3,417,366	$683,482
2013	5	2	$1,316,893	$263,378
2014	7	3	$4,058,970	$651,794
2015	4	3	$2,873,260	$699,315
2016	9	5	$11,966,110	$2,361,392
2017	13	6	$9,708,420	$2,309,382
2018	12	5	$14,678,585	$2,431,864
2019	2	0	$351,005	$87,752
Sub-Total	126	65	$96,415,177	$18,342,667
	Community-Based Seed Capital Fund Investments			
Year in Which Investment Was Made	Number of Community-Based Seed Capital Funds Receiving Investments	Number of New Funds Receiving Investments	Amount of Investments Received	Tax Credits Issued
2002	2	2	$582,450	$116,497
2003	5	3	$2,281,268	$456,246
2004	6	1	$2,338,060	$467,616
2005	6	2	$1,472,370	$241,292
2006	5	0	$581,668	$116,434
2007	2	1	$1,268,000	$253,600
2008	0	0	$0	$0
2009	0	0	$0	$0
2010	0	0	$0	$0
2011	0	0	$0	$0
2012	1	1	$376,167	$75,232
2013	1	0	$519,006	$103,806
2014	1	0	$51,000	$10,200
2015	0	0	$0	$0
2016	0	0	$0	$0
2017	0	0	$0	$0
2018	0	0	$0	$0
2019	0	0	$0	$0
Sub-Total	29	10	$9,469,989	$1,840,923
Total			$105,885,166	$20,183,590

Source: Iowa Department of Revenue

Table 4. Awards by Resident Status

Investment Year	Iowa Residents			Nonresidents		
	Number of Investors	Amount of Investments Received	Tax Credits Issued	Number of Investors	Amount of Investments Received	Tax Credits Issued
2002	116	$1,830,350	$366,077	*	*	*
2003	290	$3,550,491	$710,090	21	$28,927	$5,786
2004	399	$4,633,691	$776,738	124	$300,612	$60,119
2005	525	$10,003,849	$1,928,344	131	$1,154,468	$228,970
2006	699	$16,197,412	$3,119,986	76	$3,368,590	$673,717
2007	856	$11,586,164	$2,042,294	22	$527,467	$91,494
2008	0	$0	$0	0	$0	$0
2009	0	$0	$0	0	$0	$0
2010	0	$0	$0	0	$0	$0
2011	102	$2,990,987	$423,304	21	$395,376	$79,074
2012	134	$3,289,529	$657,912	14	$504,004	$100,802
2013	52	$1,321,648	$264,333	10	$514,251	$102,851
2014	64	$4,097,951	$659,590	1	$12,019	$2,404
2015	36	$1,041,100	$241,275	16	$1,832,160	$458,040
2016	128	$8,336,404	$1,748,642	43	$3,629,706	$612,750
2017	175	$7,299,394	$1,707,122	67	$2,409,026	$602,260
2018	117	$13,369,716	$2,104,644	32	$1,308,869	$327,220
Total	3,693	$89,548,686	$16,750,351	578	$15,985,475	$3,345,487

* Data for investments by nonresidents in 2002 and 2003 are combined.
Source: Iowa Department of Revenue

Table 5. Awards by Tax Type

Tax Type	Number of Awards	Percent of Awards	Amount of Awards	Percent of Award Amounts	Minimum Award	Maximum Award	Average Award
Individual Income Tax	3,811	89.2%	$17,473,717	86.6%	$1	$100,000	$4,577
Fiduciary Income Tax	126	3.0%	$658,660	3.3%	$2	$56,250	$5,227
Corporation Income Tax	233	5.5%	$1,012,100	5.0%	$6	$100,000	$4,344
Franchise Tax or Moneys and Credits Tax	71	1.7%	$351,300	1.7%	$47	$50,000	$4,948
Insurance Premium Tax	30	0.7%	$687,813	3.4%	$47	$100,000	$22,927
Total	4,271	100.0%	$20,183,590	100.0%	$1	$100,000	$4,726

Source: Iowa Department of Revenue

Table 6. Tax Credit Claims by Tax Year

Tax Year	Number of Claims	Amount of Claims	Average Claim
2005	69	$218,753	$3,170
2006	260	$456,233	$1,755
2007	356	$498,028	$1,399
2008	367	$749,824	$2,043
2009	557	$1,259,637	$2,261
2010	751	$1,137,343	$1,514
2011	380	$510,652	$1,344
2012	133	$268,202	$2,017
2013	80	$173,344	$2,167
2014	92	$271,254	$2,948
2015	357	$1,355,764	$3,798
2016	476	$2,121,160	$4,456
2017	294	$1,593,706	$5,421
2018	123	$895,328	$7,279
Total	4,295	$11,509,228	$2,680

Source: Iowa Department of Revenue

Table 7. Tax Credit Claims by Tax Type

Tax Type	Number of Claims	Percent of Claims	Amount of Claims	Percent of Claim Amounts	Minimum Claim	Maximum Claim	Average Claim
Individual Income	4,200	97.8%	$11,044,932	96.0%	$1	$100,000	$2,630
Corporate	56	1.3%	$151,651	1.3%	$4	$25,000	$2,708
Franchise or Moneys and Credits	28	0.7%	$206,559	1.8%	$353	$50,000	$7,377
Insurance Premium	5	0.1%	$105,982	0.9%	$12,377	$31,478	$21,196
Estate and Trusts	6	0.1%	$104	0.0%	$8	$23	$17
Total	4,295	100.0%	$11,509,228	100.0%	$1	$100,000	$2,680

Source: Iowa Department of Revenue

Table 8. Timing of Claims

Year of Investment	Total Tax Credits Issued	Percent Claimed in First Year	Percent Claimed in Second Year	Percent Claimed in Third Year	Percent Claimed in Fourth Year	Percent Claimed in Fifth Year	Percent Claimed in Final Year	Total Claimed
2002	$366,127	59.7%	0.9%	3.1%	0.7%	0.8%	0.9%	66.2%
2003	$715,826	57.5%	9.5%	1.3%	1.4%	0.4%	0.1%	70.2%
2004	$836,857	49.5%	2.0%	2.3%	1.1%	0.2%	0.2%	55.4%
2005	$2,157,314	32.6%	6.7%	5.8%	2.6%	1.4%	0.6%	49.6%
2006	$3,793,703	29.3%	8.6%	5.0%	3.0%	2.2%	1.5%	49.7%
2007	$2,133,788	32.1%	12.2%	5.7%	3.5%	3.2%	0.5%	57.2%
2008	$0							
2009	$0							
2010	$0							
2011	$502,378	24.9%	22.4%	7.4%	3.6%	0.0%	0.0%	58.3%
2012	$758,714	45.4%	9.8%	4.9%	1.7%	0.0%	0.0%	61.9%
2013	$367,184	52.4%	3.9%	0.4%	0.0%	0.0%	0.0%	56.6%
2014	$661,994	80.7%	3.4%	0.3%	0.0%	0.0%	0.0%	84.4%
2015	$699,315	66.8%	26.2%	2.1%	0.0%	0.0%	0.0%	95.1%
2016	$2,361,392	63.8%	7.4%	6.0%				77.2%
2017	$2,309,382	56.6%	13.9%					70.5%
2018	$2,431,864	16.7%						16.7%
Average	$20,095,838	47.7%	9.8%	3.7%	1.6%	0.7%	0.4%	62.1%

Source: Iowa Department of Revenue

Table 9. Data File Overview

State	Firms in Data File		Firms Receiving Funding		Funding Rounds		Funding Rounds for Which Dollar Amount is Reported		Total Funding 2009-2018		Total Angel/Seed or Venture Funding 2009-2018	
	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Amount ($ Millions)	Percent of Total	Amount ($ Millions)	Percent of Total
Illinois	2,566	38.7%	868	33.0%	1,797	31.9%	1,321	29.2%	$8,268.09	47.2%	$5,351.90	44.0%
Indiana	391	5.9%	172	6.5%	352	6.2%	293	6.5%	$909.40	5.2%	$605.32	5.0%
Iowa	**260**	**3.9%**	**107**	**4.1%**	**186**	**3.3%**	**156**	**3.5%**	**$253.54**	**1.4%**	**$247.38**	**2.0%**
Kansas	182	2.7%	56	2.1%	123	2.2%	103	2.3%	$279.74	1.6%	$265.68	2.2%
Michigan	713	10.8%	271	10.3%	558	9.9%	438	9.7%	$2,249.69	12.9%	$1,076.41	8.8%
Minnesota	523	7.9%	230	8.7%	538	9.5%	464	10.3%	$1,802.26	10.3%	$1,473.14	12.1%
Missouri	498	7.5%	224	8.5%	545	9.7%	450	10.0%	$811.52	4.6%	$767.72	6.3%
Nebraska	133	2.0%	68	2.6%	118	2.1%	97	2.1%	$97.80	0.6%	$93.31	0.8%
North Dakota	38	0.6%	11	0.4%	21	0.4%	16	0.4%	$24.48	0.1%	$24.11	0.2%
Ohio	886	13.4%	403	15.3%	831	14.7%	655	14.5%	$1,849.56	10.6%	$1,540.11	12.7%
South Dakota	35	0.5%	14	0.5%	29	0.5%	25	0.6%	$101.21	0.6%	$64.34	0.5%
Wisconsin	398	6.0%	205	7.8%	539	9.6%	499	11.0%	$855.70	4.9%	$661.04	5.4%
TOTAL	6,623	100.0%	2,629	100.0%	5,637	100.0%	4,517	100.0%	$17,502.98	100.0%	$12,170.45	100.0%

Source: Crunchbase, 2019

Table 10. Funding by Round, Iowa and Eleven Midwest States

Funding Round Type	Total Funding 2009-2018	Average Funding per Round 2009-2018
Angel/Seed		
Angel	$125,948,891	$608,449
Pre-Seed	$27,260,980	$320,717
Seed	$1,171,812,124	$721,559
Total Angel/Seed	$1,325,021,995	$691,556
Venture		
Series A	$2,661,306,908	$5,590,981
Series B	$2,299,440,601	$12,634,289
Series C	$1,454,264,993	$23,840,410
Series D	$929,600,000	$46,480,000
Series E	$490,899,119	$81,816,520
Series F	$15,200,000	$15,200,000
Venture - Series Unknown	$2,810,504,131	$3,887,281
Convertible Note	$184,212,307	$811,508
Total Venture	$10,845,428,059	$6,394,710
Private Equity	$1,770,860,779	$93,203,199
Other Debt or Equity		
Post-IPO Equity	$356,866,288	$32,442,390
Debt Financing	$2,403,307,290	$9,001,151
Equity Crowdfunding	$64,158,776	$929,837
Total Other Debt or Equity	$2,824,332,354	$8,139,286
Other Non-Equity		
Corporate Round	$60,000,000	$60,000,000
Grant	$138,638,597	$883,048
Other	$49,654,601	$9,268,869
Total Other Non-Equity	$248,293,198	$1,247,705
Not Specified	$489,046,625	$5,753,490
Overall	**$17,502,983,010**	**$4,106,753**

Source: Crunchbase, 2019

Table 11. Industry Category Groups

Crunchbase Industry Category Groups	
Administrative Services	Information Technology
Advertising	Internet Services
Agriculture and Farming	Lending and Investments
Apps	Manufacturing
Artificial Intelligence	Media and Entertainment
Biotechnology	Messaging and Telecommunications
Clothing and Apparel	Mobile
Commerce and Shopping	Music and Audio
Community and Lifestyle	Natural Resources
Consumer Electronics	Navigation and Mapping
Consumer Goods	Payments
Content and Publishing	Platforms
Data and Analytics	Privacy and Security
Design	Professional Services
Education	Real Estate
Energy	Sales and Marketing
Events	Science and Engineering
Financial Services	Software
Food and Beverage	Sports
Gaming	Sustainability
Government and Military	Transportation
Hardware	Travel and Tourism
Health Care	Video

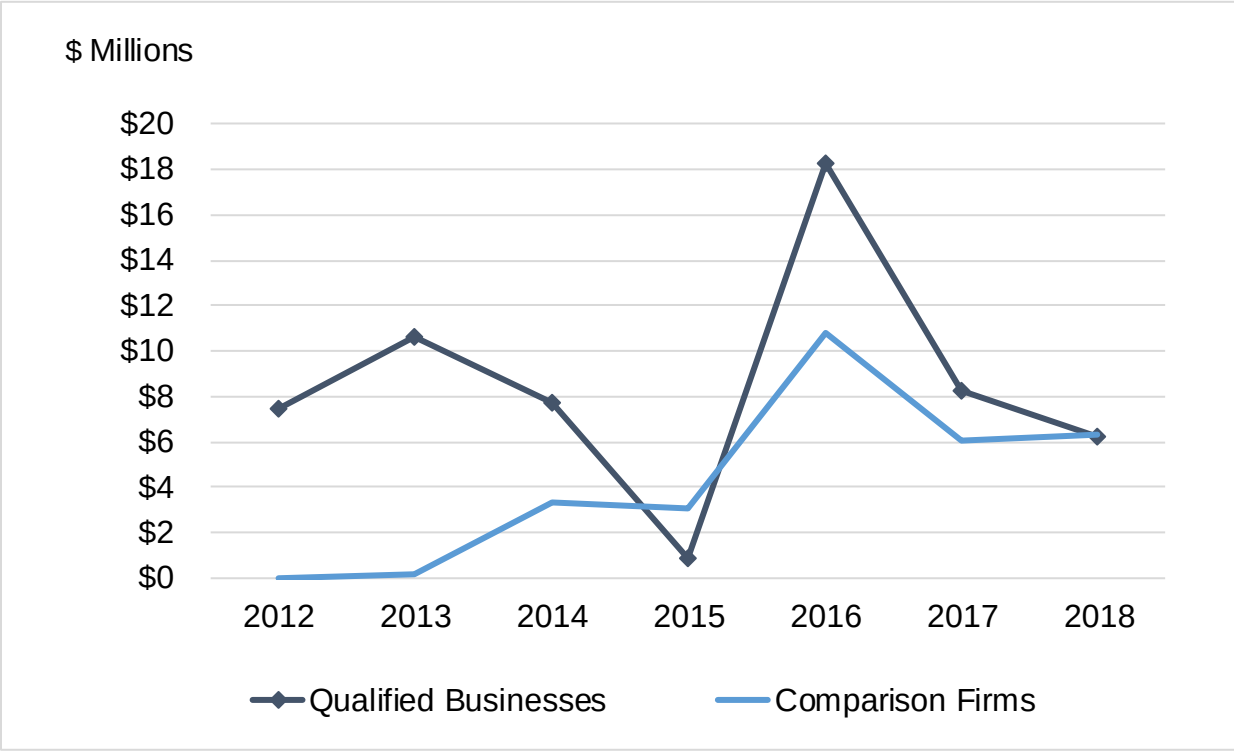
Source: Crunchbase, 2019

Table 12. Funding to Qualified Businesses and Comparison Businesses

	Firms in the Data File Receiving Funding		Angel/Seed Funding		Venture Funding		Total	
Firm Category	Number	Percent	Amount	Percent	Amount	Percent	Amount	Percent
Qualified Businesses	20	18.7%	$8,788,955	23.0%	$55,276,050	25.7%	$64,065,005	25.3%
Comparison Firms in Iowa	20	18.7%	$3,921,000	10.3%	$25,815,895	12.0%	$29,736,895	11.7%
All Other Iowa Firms in Data File	67	62.6%	$25,502,883	66.7%	$134,198,870	62.3%	$159,701,753	63.0%
TOTAL	107	100.0%	$38,212,838	100.0%	$215,290,815	100.0%	$253,503,653	100.0%

Source: Crunchbase, 2019

Figure 1. Angel, Seed, and Venture Funding By Year



Source: Crunchbase, 2019

Table 13. Firm Founding, Exit, Closure, and Funding by Year

	Founded Year	Number of Firms	Number of Active Firms	Number of Firms that Exited	Number of Firms that Closed	Sum of Angel/Seed Funding	Sum of Venture Funding	Percent of Total Angel/Seed Funding	Percent of Total Venture Funding
Qualified Businesses									
	2009	2	2			$0	$23,550,000	0%	50%
	2010	1	1			$0	$550,000	0%	1%
	2011		0			$0	$0	0%	0%
	2012	1	0	1		$0	$2,500,000	0%	10%
	2013	2	2			$800,000	$7,974,812	98%	41%
	2014	7	7			$2,083,955	$14,435,238	15%	93%
	2015	3	3			$505,000	$6,266,000	8%	45%
	2016	3	3			$5,400,000	$0	82%	0%
	2017		0			$0	$0	0%	0%
	2018	1	1			$0	$0	0%	0%
	2019		0			$0	$0	0%	0%
	Sub-Total	**20**	**19**	**1**	**0**	**$8,788,955**	**$55,276,050**	**23%**	**26%**
Comparison Firms									
	2009		0			$0	$0	0%	0%
	2010	1	1			$0	$3,966,000	0%	7%
	2011		0			$0	$0	0%	0%
	2012	3	1	1	1	$150,000	$5,000,000	8%	21%
	2013	3	1	1	1	$13,500	$3,499,984	2%	18%
	2014	5	4		1	$1,920,000	$1,100,000	14%	7%
	2015	3	3			$1,477,500	$0	23%	0%
	2016	4	2		2	$360,000	$12,249,911	5%	79%
	2017		0			$0	$0	0%	0%
	2018	1	1			$0	$0	0%	0%
	2019		0			$0	$0	0%	0%
	Sub-Total	**20**	**13**	**2**	**5**	**$3,921,000**	**$25,815,895**	**10%**	**12%**
Other Firms									
	2009	7	3	1	3	$2,223,000	$24,006,875	100%	50%
	2010	4	3	1		$0	$55,386,323	0%	92%
	2011	8	5		3	$250,000	$18,970,000	100%	100%
	2012	16	12		4	$1,839,883	$16,501,623	92%	69%
	2013	2	2			$0	$8,000,000	0%	41%
	2014	9	4	1	4	$10,130,000	$0	72%	0%
	2015	9	9			$4,485,000	$7,584,049	69%	55%
	2016	4	4			$800,000	$3,250,000	12%	21%
	2017	4	4			$3,380,000	$500,000	100%	100%
	2018	3	2		1	$2,085,000	$0	100%	0%
	2019	1	1			$310,000	$0	100%	0%
	Sub-Total	**67**	**49**	**3**	**15**	**$25,502,883**	**$134,198,870**	**67%**	**62%**
Total Firms									
	2009	7	3	1	3	$2,223,000	$47,556,875	100%	100%
	2010	4	3	1		$0	$59,902,323	100%	100%
	2011	8	5		3	$250,000	$18,970,000	100%	100%
	2012	16	12		4	$1,989,883	$24,001,623	100%	100%
	2013	2	2			$813,500	$19,474,796	100%	100%
	2014	9	4	1	4	$14,133,955	$15,535,238	100%	100%
	2015	9	9			$6,467,500	$13,850,049	100%	100%
	2016	4	4			$6,560,000	$15,499,911	100%	100%
	2017	4	4			$3,380,000	$500,000	100%	100%
	2018	3	2		1	$2,085,000	$0	100%	100%
	2019	1	1			$310,000	$0	100%	100%
	Total	**107**	**81**	**6**	**20**	**$38,212,838**	**$215,290,815**	**100%**	**100%**

Source: Crunchbase, 2019

Appendix 1. Time Line of Major Program Changes by Effective Date

2002	The Angel Investor Tax Credit is first available. It is awarded for equity investments in qualified businesses and community-based seed capital funds. The tax credit is equal to 20 percent of the equity investment. Credits are subject to an overall program cap of $10 million, allocated by year of investment as follows: $3 million in aggregate for investments made in 2002; $3 million for investments made in 2003; $4 million for investments made in 2004. Tax credit awards are subject to a three-year waiting period before they may be claimed. Awards to individual investors are limited to five different investments in five different businesses, with each award limited to $50,000.
2008	The overall program cap of $10 million is reached.
2012	Beginning in FY 2012, tax credits are capped in the aggregate at $2 million per fiscal year.
2015	The tax credit is no longer allowed for investments in community-based seed capital funds The maximum amount of tax credits for an investor is $100,000 per year, including awards to the investor's spouse or dependents. The maximum amount of tax credits awarded for investments in a qualifying business in a year are limited to $500,000. Repeal of the three-year waiting period before awards may be claimed.