Iowa Department of REVENUE

Iowa's Innovation Fund Tax Credit

Tax Credits Program Evaluation Study

December 2022

By
Karen Tigges

Research and Policy Division
Iowa Department of Revenue

Preface

Iowa Code Section 2.48 requires certain state agencies, including the Department of Revenue, to review a schedule of tax expenditures each year and file a report with the legislature. Each review is required to assess the tax expenditure's equity, simplicity, competitiveness, public purpose, adequacy, and extent of conformance with the original purpose of the enacting legislation. A review may also include recommendations for better aligning a tax expenditure with the original intent of the enacting legislation. The Innovation Fund Tax Credit is scheduled for review in 2022.

As part of the evaluation, an advisory panel was convened to provide input and advice on the study's scope and analysis. We wish to thank the members of the panel:

Member	Affiliation
Lisa Connell	Iowa Economic Development Authority
Michael Crum	Iowa State University
Chris Sackett	BrownWinick
Craig Ibsen	Next Level Ventures
Adrienne Greenwald	VentureNet Iowa
Frank Camp	ISA Ventures
Jill Lippincott	Formerly of Iowa Economic Development Authority

The assistance of an advisory panel implies no responsibility for the content and conclusions of the evaluation study.

This report was also reviewed Robin Anderson of the Iowa Department of Revenue. 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.

Table of Contents

Executive Summary

The Innovation Fund Tax Credit (IFTC) is allowed for equity investments made into a qualifying innovation fund certified by the Iowa Economic Development Authority (IEDA). A certified innovation fund makes investments in promising early-stage companies that have a principal place of business in the state of Iowa. The intent of the program is to increase the availability of venture capital to Iowa businesses, including but not limited to those businesses engaged in advanced manufacturing, biosciences, and information technology.

The amount of the IFTC is equal to 25 percent of the investment. The credit is nonrefundable which means a claim to the credit is limited to Iowa tax liability. The credit may be transferred to another taxpayer once, and unused credits can be carried forward up to five tax years. The credit can be claimed against corporation income, individual income, franchise, insurance premium, and moneys and credits taxes. No new funds can be certified after June 30, 2023.

This program was preceded by two similar programs intended to expand venture capital in Iowa: the Iowa Fund of Funds Tax Credit Program, which was instituted in 2002 but effectively repealed by 2017, and the Venture Capital Fund Tax Credit, which was instituted in 2002 but repealed in 2010. The IFTC authorizing legislation went into effect on January 1, 2011 (see Iowa Code 15E.52). Taxpayers were required to wait three years after receiving an award for a qualifying investment to claim the tax credit, and the initial value of the credit was 20 percent of the investment. During the 2013 Legislative session, the tax credit rate was increased from 20 to 25 percent and tax credits can now be claimed in the tax year in which the investment was made. The program has an award cap of $8 million per fiscal year, but only a fraction of that has been utilized in any given fiscal year since the program's inception.

Equity Investment Tax Credits across the United States

- Thirty-five states have had an equity investment tax credit at one time. Twenty states have either allowed their credit to sunset or the tax credit has been repealed. Fifteen states have currently active investment tax credits.

- The majority of active programs authorize credits for investments made in qualified companies (i.e. "angel" tax credits). The qualification may be based on company location within the state, or companies involved in certain innovation and technology industries, such as health care and information technology.

- Four of Iowa's neighboring states (Illinois, Minnesota, Nebraska, and Wisconsin) currently have or used to have an equity investment tax credit. In Illinois, the Angel Investment Tax Credit is 25% to 35% of investment, depending on location in the state, and is capped at $10 million per year. This credit program is active and has set-asides for certain locations and businesses in the state. In Minnesota, the Angel Tax Credit was in force from April 2010 to May 2022. In May 2022, the credit hit its limit of

$5 million for the year, and the window for further applications was closed. (There were higher award caps of $15 million and $10 million in prior years, and the lower cap of $5 million was not renewed past calendar year 2022.) In Nebraska, the tax credit was active from August 2011 to December 31, 2021. That credit was equal to 40 percent of the qualified investment, with a cap of $4 million per year. In Wisconsin, there are two active investment tax credits, Angel Tax Credit and Early Stage Seed Investment Tax Credit. In both cases, the tax credit is equal to 25 percent of the qualified investment.

- Among active tax credits, the Iowa Angel Investor Tax Credit, the New Markets Capital Investment and Seed Capital Tax Credit Programs in Maine, and the New Jersey Angel Investor Tax Credit are refundable.

- Among active tax credits, the credits in Indiana, Iowa, Kentucky, Maine, New Jersey, New York, and Wisconsin are transferrable. This list may be incomplete, as information on transferability was not found for all states.

- Tax credit program caps vary widely among the states. Most states have an annual cap. Colorado used to have the lowest cap at $750,000 per calendar year, but has increased that to $4 million per year as of January 1, 2023. Maryland and New Mexico currently have the lowest cap at $2 million per year, and Ohio has the highest annual cap at $100 million per biennium. The cap in Georgia is set on an aggregate basis and has the highest cap at $100 million. The Iowa tax credit program cap is $8 million per fiscal year for the IFTC, and $2 million per fiscal year for the Angel Investor Tax Credit.

- When comparing taxpayer caps, the differences are harder to quantify. Taxpayer credit caps can vary from a maximum per taxpayer per year to lifetime maximums per taxpayer or per business. For example, in Iowa there is no maximum a taxpayer may claim in IFTC credits, but the Angel Investor Tax Credit does have a cap of $100,000 per taxpayer, and $500,000 per business per calendar year.

Literature Review

- Early-stage investment can be further disaggregated into three types, seed, angel, and venture, with the size of typical investments increasing and risk decreasing respectively. Venture capital is often invested by venture firms, which are run by professional managers of others' investment dollars. The literature review section of this study will cover all three types of investment incentive programs.

- States have recognized that a vibrant startup and venture capital community is likely to lead to job growth; many states have implemented tax credits to promote the development of the entrepreneurial ecosystem in their respective states.

- In reviewing studies by other states and academic sources, the studies show that capital formation is positively associated with state investment tax incentives, although

causation cannot be established. Studies related to employment levels, however, are less conclusive in establishing significant levels of association between investment incentives in both business longevity and employment outcomes. And where significance can be attributed, the outcomes are uneven among states.

Analysis of Innovation Fund Tax Credit Awards, Claims, and Transfers

- Since inception, there have been 1,130 Innovation Fund Tax Credit awards totaling $20.5 million. Of this total, 76 awards have been to nonresident individuals or businesses totaling $360,174 (1.8% of the total amount). The latest recorded award date in this analysis is May, 2022. In future references, FY 2022 will be substituted for this date.

- For every year of the program's existence, total awards have been significantly lower than the statutory cap allowed for the program. FY 2022 had the most awards at $4.3 million, which is $3.7 million under the $8.0 million annual cap.

- To date, 251 Innovation Fund Tax Credit awards have been transferred, totaling $4.0 million. This represents 19.6 percent of the credits awarded.

- To date, 1,750 Innovation Fund Tax Credit claims have been made totaling nearly $12.8 million. Note that as a nonrefundable tax credit, taxpayers often make multiple partial claims on one award in multiple tax years. Thus, the date that claims are made will not coincide with the date of the award. Claims through September 23, 2022 are included in this analysis. These claims correspond to awards made through June 30, 2022, and can also be associated with employment totals through that date.

Analysis of Invested Businesses

- To date, there are two investment firms certified by IEDA for the IFTC, Next Level Venture (NLV) and ISA Ventures (ISAV). This makes their investors eligible for the tax credit whereby investments in the funds may be credited at 25 percent to the taxpayers' tax liability, may be carried forward for five years, and/or may be transferred to a third party. NLV has been certified since calendar year 2014, with a median investment age of 3.0 years from initial investment date to June 30, 2022. ISAV was certified for the credit in calendar year 2020. As a result, their investment portfolio is much younger, with a median age of investments of just 1.1 years.

- Through FY 2022, the Iowa Innovation Fund Tax Credit has incented investment in 56 different companies. NLV's two fund portfolios has consisted of 26 companies, and ISAV is invested in 35 companies. At least five companies have been invested in by both investment firms. In further discussion, the common companies and employee counts will be counted only once. The common companies' employee counts will be based on the earlier investment date of the two investment firms, which are those in the NLV portfolio. Where NLV has common companies in their two fund portfolios, the earlier investment date profile will also be used.

- One of the invested companies will also be excluded from analysis of employment data. This company was acquired by an out-of-state company while still maintaining a portion of assets under management of the local investment firms participating in the IFTC. As a result of their acquisition, however, the non-Iowa based employee count was skewed higher than would be representative of their initial investment status as an Iowa-headquartered company. Accordingly, the employee counts for this company are excluded from both Iowa-based and non-Iowa based counts. This exclusion brings the company count to 55.

- At the time of initial investment, the 55 companies had 482.5 full-time equivalent employees (FTEs) based in Iowa.[1] As of June 30, 2022 (or the exit date, if earlier), there were 685 employees based in Iowa, representing employment growth of 202.5 jobs, or 42 percent.[2] However, the increase in Iowa-based employment was not evenly spread among the 55 invested companies. Fifteen companies, or 27 percent of the total, showed a decline in Iowa-based employment, while 51 percent showed an increase. Twenty-two percent showed no change in employee count among Iowa-based employees. When comparing Iowa-based employment to non-Iowa-based employment, 24 companies, or 44 percent of the total, exhibited greater growth in the non-Iowa-based employee count than in Iowa-based employees. In those companies, net Iowa-based change was -51.5 and net non-Iowa based change was 173, for a total change of 121.5 employees, or 5.1 employees per company, compared to the net change for all Iowa-based employees of 3.7 per company.

Impact Analysis of Iowa Innovation Fund Tax Credits

- This study explores the relationship between dollars spent in tax credit claims and the employment growth in companies invested in by the venture funds participating in the Innovation Fund Tax Credit program. Both Iowa-based and non-Iowa based employment, as reported by the investment firms, were measured.[3]

- The distribution of employee gains between Iowa-based and non-Iowa based employment is uneven, with more than twice as many employees being added in non-Iowa based jobs. Moreover, there were greater gains in non-Iowa based employment than in Iowa-based employment by 44 percent of companies.

- The overall cost in credits claimed per job gained by Iowa-based employees is equal to $63,015.

---

[1] Employee count includes full-time equivalent w-2 employees, 1099 workers, plus founders and advisors who may only receive an ownership interest in the business for their services.

[2] Investments in two companies were exited prior to June 30, 2022. Their last employee count as of June 30, 2021, rather than June 30, 2022, was included as the final count to compare to employment as of the initial investment date.

[3] Due to their acquisition by an out-of-state company, one company was found to be an outlier in employee growth in out of state employees. The employee and company counts from that company were excluded from this analysis.

I. Introduction

At its simplest, venture capital is defined as money invested in a small, early-stage, or expanding firm that is thought to have high growth potential. This is in contrast to other sources of early-stage investment funding, namely angel and seed funding, in that venture capital funds are managed by professional fund firms and the other sources are typically made by individual investors. Given that having ready access to venture funding is often considered essential to business growth, many states have enacted tax credits to promote the growth of early-stage financing, and a few have specifically created programs to promote the development of venture capital firms. This study focuses on the Innovation Fund Tax Credit in Iowa, including how it compares to other early-stage financing programs in Iowa and other states.

Section II of the study describes the Iowa Innovation Fund Tax Credit and other venture capital credits in the state. Section III summarizes other early-stage business assistance programs in Iowa. Section IV provides information about equity investment tax credits in other states. Section V offers a review of literature on the topic of equity investment tax credits. Section VI presents data regarding Iowa Innovation Fund Tax Credit awards, claims, and transfers. Section VII examines employee growth in businesses invested in by venture capital funds eligible for the Innovation Fund Tax Credit. Section VIII concludes the study.

II. Iowa Innovation Fund Tax Credit and Other Venture Capital Credits

A. Iowa Innovation Fund Tax Credit

The Iowa Innovation Fund Tax Credit (IFTC) is the primary tax credit in Iowa used to promote venture capital investments in the state. This credit is allowed for equity investments made into qualifying innovation funds certified by the Iowa Economic Development Authority (IEDA). In turn, these innovation funds make investments into early-stage companies in Iowa. The intent of the program is to increase the availability of venture capital to Iowa businesses. The amount of the tax credit is equal to 25 percent of the investment.

The IFTC has had an annual award cap of $8 million since the program's inception in 2011, with the administration of the program handled by IEDA. The initial value of the tax credit was 20 percent of investment. Taxpayers were also required to wait three years after receiving an award for a qualifying investment to claim the tax credit. For example, a taxpayer who made an investment in January 2011 could not claim the tax credit until the 2014 tax year. The requirement was put into place to delay the initial fiscal impact of the tax credit that was enacted during an economic slowdown.

During the 2013 Legislative session, the tax credit rate was increased from 20 to 25 percent and the delay for claims was eliminated, allowing for tax credits to be claimed in the tax year in which the investment was made. However, the first tax credits could not

be issued until September 2014. In 2013, IEDA certified the first innovation fund that enabled the first tax credits to be awarded. In order to receive certification, innovation funds must propose to obtain at least $15 million in binding investment commitments and invest the entirety of this capital in companies with a principal place of business in Iowa. There is a requirement that at least 50 percent of employees be based in Iowa, as well.[4]

The IFTC is a nonrefundable, transferrable tax credit. Nonrefundable means a claim of the tax credit is limited to Iowa tax liability. Unused tax credits can be carried forward against future tax liability for up to five years. The credit can be claimed against corporation income tax, individual income tax, franchise tax (paid by financial institutions), insurance premium tax, and moneys and credits tax (paid by credit unions). In the case of pass-through entities, the tax credits can be awarded directly to shareholders or awarded to the entity itself and subsequently passed through to shareholders. Each tax credit certificate may be transferred once to any person or entity.

Although the IFTC has an annual award cap of $8 million, there is no taxpayer cap for tax credit awards, nor is there a limit on the tax credits awarded through investments in a single innovation fund. In addition, there is no limit on the amount of investment that a single early-stage company can receive through certified innovation funds. In no fiscal year since the inception of the program have awards totaled more than $4.2 million.

The businesses receiving investment from the innovation fund are at the discretion of the innovation fund. The types of businesses include but are not limited to those businesses engaged in advanced manufacturing, biosciences, and information technology.

B. Iowa Angel Investor Tax Credit

The State of Iowa also has one other active tax credit and two inactive credits incentivizing venture capital in Iowa. Besides the IFTC, the other active credit is the Venture Capital Tax Credit – Qualifying Businesses Tax Credit, also referred to as the Angel Investor Tax Credit (AITC). The credit is focused on "angel investors" who make investments directly in start-up companies, and prior to 2015, investments in community-based seed capital funds. This program went into effect on January 1, 2002. Effective January 2011, the program has an award cap of $2 million per fiscal year and the administration of the credit was moved from the Iowa Capital Investment Board (with assistance from IDR) to IEDA. Since 2002, $20.2 million in tax credits have been awarded through the AITC, incenting a total of $105.9 million in investments in Iowa businesses. Due to being oversubscribed, IEDA is no longer accepting applications for this fund, effective April 1, 2022.[5]

---

[4] Per Iowa Administrative Code, Section 261, Chapter 116, "principal place of business" means (1) that the business has at least 50 percent of all of its employees in the state, (2) that the business pays at least 50 percent of the business's total payroll to employees residing in the state, or (3) that the headquarters of the business (defined as the home office for a substantial amount of executive employees) is in the state."

[5] See "2021 Angel Investor Tax Credit Program Annual Report" https://www.legis.iowa.gov/docs/publications/DF/1287415.pdf

During the 2015 legislative session, community-based seed capital funds were eliminated as eligible investments under the program and the credit 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 from five 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 (Girardi, 2019).

C. Iowa Fund of Funds Tax Credit

The first inactive credit is the Iowa Venture Capital Tax Credit – Iowa Fund of Funds (FF). This tax credit went into effect on January 1, 2002 and is a contingent tax credit allowed for investments made into the Iowa Fund of Funds. Unlike the IFTC or AITC where the tax credits are awarded to an investor at the time of investment, a contingent tax credit means that the FF Tax Credits would only be awarded if the investor does not receive the expected return on their investment. This program was administered by the Iowa Capital Investment Board (ICIB) and IDR.

When the Iowa Fund of Funds Program was enacted, the aggregate tax credit cap was initially set at $100 million, with a restriction that no more than $20 million can be claimed in any year. Effective April 15, 2010, the aggregate tax credit cap was reduced to $60 million; the $20 million annual restriction remained in place. The credit was nonrefundable, with a 7-year carryforward. During the 2013 Legislative session, a bill was passed providing for the wind down of the credit by 2017, including a prohibition on additional fund organization, new investments, and the issuance of new credit certificates. This tax credit program was reviewed in 2012 and 2017 for the Legislative Tax Expenditure Committee.[6]

D. Iowa Venture Capital Funds Tax Credit

The second inactive credit is the Venture Capital Tax Credit – Venture Capital Funds (VC), which was available between January 1, 2002 and June 30, 2010. This tax credit was equal to six percent of equity investments made in venture capital funds that had been certified by the ICIB. The VC Tax Credit was nonrefundable with a five-year carryforward and could be claimed against corporation income tax, individual income tax, franchise tax, insurance premium tax, and moneys and credits tax. The tax credit had an aggregate tax credit cap of $5 million; just over half of that cap was awarded before its repeal in 2010. During the nine years the VC Tax Credit was in place, a total of 15 venture capital funds received investments totaling $45.4 million. Some of those funds receiving investments after 2007 were community-based seed capital funds certified under the Qualifying Business or Community-Based Seed Capital Fund (QBSC) Tax Credit which became eligible for the VC Tax Credit once the $10 million cap for the QBSC Tax Credit was exhausted.

[6] See, for example, Iowa's Innovation Fund Tax Credit Tax Credits Program Evaluation Study.

III. Other Assistance for Iowa Early-Stage or Innovative Companies

The Iowa Economic Development Authority (IEDA) also administers four other programs intended for promising early-stage or innovative companies. Each program is structured as a royalty or low interest loan awarded at the discretion of the IEDA Board. The four programs are:

- Proof of Commercial Relevance
- Demonstration Fund
- Innovation Acceleration Propel
- Innovation Acceleration Expansion

To be eligible for any of the four programs, businesses must be in advanced manufacturing, bioscience, or information technology. Companies must also be Iowa-based with fewer than 500 employees.

The Proof of Commercial Relevance (POCR) program is designed to define and articulate the opportunity for businesses that demonstrate a proof-of-concept for innovative technology. The maximum assistance available is $25,000 per award with a 1:2 private to public match required, and applicants must have two co-founders or principals actively engaged in the business. Funds can be used for validation of market potential through beta testing, analyzing market potential, performing competitive analysis, or furthering translational development of a scientific discovery.

The Demonstration Fund (Demo Fund) program is designed to provide assistance to companies with market-ready innovative technologies or products that have a clear potential for commercial viability. The maximum assistance available is $125,000 per award with a 1:2 private to public match required, and an essential management team including business development, financial operations, and technology must be in place. Among other uses, funds can be used for acquiring management or marketing expertise, purchasing equipment, developing and executing marketing strategies, creating marketing materials, validating a business model.

The Innovation Acceleration Fund offers two types of awards: the Propel program and the Innovation Expansion program. The Propel program is intended to accelerate market development for companies that have a management team in place, have a validated business model, and are already generating substantive revenue. The Innovation Expansion program is intended to encourage expansion of product lines in companies that have a complete management infrastructure, a history of profitability, and an established customer base. Propel awards can be up to $300,000 while the Innovation Expansion maximum is $500,000, and both require a 1:1 private to public match. Funds can be used for a variety of purposes, including advanced intellectual property development and evaluation, product focus group research, recruitment and hiring of key personnel, purchasing of equipment, or financing construction costs.

From FY 2008 through the end of FY 2022, these four programs have given 347 awards totaling $40.7 million. The funding total includes POCR (2015-2022), Demo Fund (2008-2022), Innovation Expansion (2013-2021), and Propel (2012-2022).

IV. Equity Investment Tax Credits across the United States

Thirty-three states have at some point implemented an investment incentive tax credit (see Table 1). Eleven states have either allowed their credit to sunset or the tax credit has been repealed. The 22 states that still have an investment credit operate a total of 28 distinct active tax credit programs (see Table 2).

Most states do not have a tax credit similar to the IFTC but instead have credits for investments made directly in qualified companies rather than to an investment fund. Only Kentucky and North Dakota were found to have a credit similar to the IFTC, where investments are made in a designated fund.

A. Variation among Investment Incentive Tax Credits

Investment incentive tax credits most frequently vary along the following lines:

- Credit amount
- Annual credit award/claim caps
- Multi-year credit caps
- Taxpayer caps
- Invested business caps
- Required delay in claims
- Transferability
- Refundability
- Carry forward
- Invested business qualifications

Most of these differences are addressed in Table 2. Generally, the comparisons discussed below are among only active programs, although notable exceptions may be mentioned.

The amount of the credit is the most straightforward difference among state programs. When a qualified investment is made in an eligible startup company (referred to as invested companies hereafter) or venture fund, states offer varying percentages of the investment as a credit. Hawaii had the most generous credit at 100 percent of the qualified investment. This program was in operation from 1999 to 2010. Among active programs, Tennessee (for investments in certain counties) and Virginia are tied for the highest rate at 50 percent. New York (for investments held four years) and Ohio have the least generous credits at 10 percent. Iowa's IFTC is more generous than the active credits of five states, is equal to that of programs in seven other states, and is less generous than programs in ten other states.

State programs also vary widely on credit program caps, meaning a restriction on the total amount of credits that can be awarded among all recipients over some time period. Most states do this on an annual or biannual basis. Currently, the lowest caps are in Iowa (AITC) and Maryland at $2 million per year. Ohio has the highest cap at $100 million per biennium, while Massachusetts and New Jersey have the next highest annual cap at $25 million each. New Mexico is unique in that it has no annual credit award cap but instead has a credit claim cap of $2 million per tax year on a first-come, first-served basis. Unredeemed credits in one tax year are given priority in the next. Other states with active programs, like North Dakota and Wisconsin, have no annual cap on awards or claims. Iowa's IFTC cap is currently $8 million per fiscal year. This limit is more generous than eleven of the states with current program limits, and less generous than seven states that have higher limits. (Other states either had no limits or limits were not specified.)

Some states have multi-year caps for the lifetime of the program, occasionally in conjunction with annual caps. The cap in Georgia is set on an aggregate basis at $100 million. Among other active credits, Kentucky has the next largest aggregate cap at $40 million, but the state limits awards to $3 million per fiscal year. Iowa's IFTC has no aggregate cap.

In order to ensure that the credit can be received by a reasonable number of taxpayers, many states have implemented a cap on tax credits that can be awarded to a single taxpayer or a taxpayer's eligible investments in a specific company. Illinois has the lowest taxpayer cap: $10,000 in credits per investor per qualified business, though investors can invest in multiple companies. North Dakota's Angel Investor Tax Credit is limited to $45,000 per taxpayer per year among all investments and is limited to lifetime credits of $500,000 and $5 million per fund. Among states with no cap per taxpayer, only Iowa's IFTC is active, while Arkansas's and Utah's tax credit have expired.

Some states impose limits on the amount of tax credits that can be awarded for investment in each business. Massachusetts is at the lower end of this restriction, where qualified investments in a single company are limited to $250,000 per year. Kentucky is much higher at $1 million per year, while many other states have no cap. Iowa's IFTC has no cap per business, but Iowa's Angel Investor Tax Credit (AITC) has a cap of $500,000 per business per fiscal year.

Some states impose limits on when and how much of the credit can be claimed in a given tax year. Among states with active credits, for example, Arizona has a three year period over which the credits must be claimed. Other states, such as Illinois, require a minimum investment holding period before credits may be claimed. Iowa used to require investors to wait three years after the investment to claim the AITC and IFTC, but this requirement was subsequently removed.

If a taxpayer is unable to claim a credit themselves because of lack of tax liability, some state credits are transferrable. This means the taxpayer who is awarded the tax credit can sell the credit to another taxpayer. The tax credits are typically sold at a discount. (A 10 percent discount is most often used.) Connecticut, Louisiana, Maine, South Carolina,

Utah, and Wisconsin have fully transferrable credits, while Arkansas, Georgia, Indiana, Iowa, Kentucky, New York, and North Dakota have some restrictions.

Relatively few state credits are refundable. 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. Maine, Maryland, Minnesota, Nebraska, and New Jersey have fully refundable credits. In Iowa, the AITC is refundable to individual taxpayers, but the IFTC is not refundable.

Generally, if a credit is not refundable, then any unused credit in a given tax year can be applied to tax liability in future years. The number of years that a tax credit can be carried forward varies among states. Arizona, Iowa (AITC), and Massachusetts, have the shortest window at three tax years after the first year in which the claim is made, while Georgia and New York allow credits to be carried forward indefinitely. Iowa's five-year carryforward for IFTC is near the median of years allowed.

While the specifics for eligible invested businesses vary from state to state, like Iowa, most states require that at least a portion of a business' operations be located in the state that is offering the tax credit. Many states also put restrictions on the size of the business (determined by revenues, net worth, assets, number of employees, etc.), the age of the business, and/or the type of business. These restrictions are not addressed specifically in this study.[7]

B. Tax Credits among Iowa's Neighboring States

Two of Iowa's neighboring states (Illinois and Wisconsin) have active equity investment tax credits. The Illinois tax credit was allowed to expire on July 1, 2016; however, it was reauthorized on August 24, 2017 and is currently set to expire on December 31, 2026. Minnesota's tax credit was allowed to expire in 2017 and has not been renewed. Nebraska's Angel Investment Tax Credit was repealed on December 31, 2019. Neither Missouri nor South Dakota has ever enacted an investment incentive tax credit.

Illinois's tax credit is nonrefundable and equal to 25 percent of the qualified investment, with a 35 percent credit available for investments in low population counties. The program has an aggregate cap of $10 million per year, with $500,000 set aside for minority-owned businesses and businesses in designated counties. Taxpayers are limited to $500,000 in credits per investor per business. The tax credit cannot be transferred.

The tax credit in Wisconsin is nonrefundable and equal to 25 percent of the qualified investment. The tax credit has no annual aggregate cap, but businesses are limited to $8 million of lifetime qualified investments. The tax credits are transferrable for venture funds but not for individuals.

As of October 2017, the Minnesota Angel Tax Credit has sunset. While it was active, the tax credit was fully refundable and equal to 25 percent of the qualified investment. There

[7] For details of state tax credit programs as of July 2020, see "Table A1. Tax Credit Program Details" in https://www.kellogg.northwestern.edu/faculty/mezzanotti/documents/tax_credit_hm.pdf.

was an aggregate program cap of $10 million in FY 2017 and individual taxpayers were limited to $125,000 per taxpayer per year.

The tax credit in Nebraska was fully refundable and equal to 40 percent of the qualified investment. An aggregate program cap of $4 million per year was applied, and there was an award limit of $350,000 per year for taxpayers filing jointly and $300,000 per year for single filers. Businesses receiving investments were limited to the investment equivalent of $1 million in maximum lifetime credits. The investment tax credit program in Nebraska was scheduled to expire on December 31, 2022, but was repealed on December 31, 2019.

C. Tax Credits Most Similar to Iowa's Innovation Fund Tax Credit

The foregoing analysis among states has addressed investment tax credit programs among all states, with no distinction made with regard to the funding vehicle eligible for tax credits. In this section, states with an active program that makes the tax credit available for investments made through managed funds will be examined.

Since 1998, Kentucky has operated the Investment Fund Tax Credit. The credit amount is equal to 40 percent of the qualified investment in an approved investment fund. The program cap, shared with the Angel Investment Tax Credit, which was enacted in 2014, is $40 million across all years, with no more than $3 million in each calendar year. Investment funds are limited to $8 million in total tax credits among all investors across all tax years. Taxpayers can only claim 50 percent of any tax credit award in any one tax year. The credit is nonrefundable with a 15 year carry forward and is transferrable for nonprofit taxpayers. The tax credit can be applied toward income, insurance, and financial institution taxes.

North Dakota enacted the Angel Investor Tax Credit on July 1, 2017. The program offers tax credits for investments in angel funds at two rates: for investments in angel funds that make investments in in-state companies, the credit is equal to 35 percent, and for angel funds that make investments in out-of-state companies, the credit is equal to 25 percent. There is no annual program cap, but taxpayers are limited to $45,000 in tax credits per year and a lifetime limit of $500,000. Each investment fund is limited to $5 million in credits among all investors across all tax years. The tax credit is neither transferrable nor refundable, and has a carryforward period of five years. The credit is applicable only to individual and corporate income tax.

The newest tax credit program applicable to managed fund investments is in Indiana. This feature was added to the current Venture Capital Investment Tax Credit program as of January 1, 2022. Investments may still be directed toward individual companies, but investments made through a fund are also eligible. The tax credit cap is $20 million per year overall, with a $7.5 million cap per investment fund per year.

Comparatively, the Iowa IFTC is more similar to Kentucky's program than that of North Dakota or Indiana. In both Kentucky and Iowa, investment funds can only make qualified investments in in-state companies, the programs have an annual credit cap, and credits

have some limited transferability. Unlike the other states, though, Iowa has no credit limitations per taxpayer or invested business.

V. Literature Review

As stated in the introduction, the overt purpose of the IFTC is to attract capital investment to Iowa. A further goal, though not explicit, is to create jobs in the state and to sustain that employment long-term.[8] This additional goal is particularly important as it applies to new, high growth businesses, because while new businesses outside high-growth sectors may experience net job losses, high-growth businesses "make up for nearly all the job losses associated with shrinking and exiting firms within their cohort" (Decker et al. 2014). A review of literature addressing the measurement of both the goal of attracting capital investment and that of creating and retaining new jobs follows. Overall, the studies show that capital formation is positively associated with state investment tax incentives, although causation cannot be established. Studies related to employment levels, however, are less conclusive in establishing significant levels of association between investment incentives in both business longevity and employment outcomes. And where significance can be attributed, the outcomes are uneven among states (Kousky and Tuomi, 2015).

For analytical purposes, angel investor tax credits (AITC) and venture capital tax credits (known as the Innovation Fund Tax Credit in Iowa, IFTC) are treated similarly throughout this paper; however, the companies' situation and expected outcomes are likely quite different. The AITC is incentivizing investment at a very early stage, often before a company has any revenue. It is often the intent of the investment to stabilize the company and/or cross some technical hurdle that helps to establish revenue. The IFTC, by contrast, mostly incentivizes investment in companies that are slightly more established and already generating some revenue, but require some assistance to scale-up operations or overcome a financial impediment.[9]

Beyond the timing of the investment, angel and venture capital investments differ by the other services offered to the invested company. While angel investments could be made by a relative, friend, or supporter directly in a business, venture capital investments are made by institutional investors with experience in startup development and business administration. These investors offer advice and guidance for the company to develop its product and refine its operations to achieve profitability. While it is impossible to differentiate the benefits accrued from this non-financial support as compared to the investment itself, this expertise should be expected to confer greater benefits than investments alone. It should be noted that investors in innovation funds, not the institutional investors directing the funds, are the recipients of the IFTC. The studies cited below are reviews of investment levels and employment, mainly in states with angel

[8] This goal was derived through personal communication with Iowa Department of Economic Development representatives.
[9] Excerpted from Barker, 2017.

investment incentives.[10] Studies regarding incentives for venture capital, such as Iowa's IFTC, have fewer studies, but findings will be reviewed where applicable.

A. Attracting Capital Investment

In terms of the goal of attracting equity investments, a comparison between states with investment tax incentives and states without tax incentives reveals a positive association between investment tax incentives and the supply of equity investment.

In Denes, et al. (2020), for example, the study found that in states with angel tax credits, the number of angel investments increased by approximately 18 percent, and the number of individual angel investors increased by about 27 percent, compared to states without tax incentives. They noted further, "This effect is amplified when programs impose fewer restrictions and when the supply of alternative startup capital is more limited." This latter point may be a factor in Iowa investment levels going forward, as the Angel Investor Tax Credit program is no longer issuing new awards due to having reached the cap in tax credits allowed. Since this is a new development (as of April 1, 2022), its effect cannot be measured at this time.

The positive association of state tax-based investment incentives with an increase in investment levels is reinforced in another study, while adding an inverse association. Chirinko and Wilson (2008) found that, in addition to capital formation increases in the state with the credit, capital formation in competing states decreased.

This association of investment level with a state's tax policy, however, may not be limited to tax-related incentives on investment alone. In a 2022 study by Peter Orazem, a stronger association was found between investment levels and the level of property taxes when new businesses are choosing which state to locate in when locating near state borders. Using Statistics of U.S. Businesses from the U.S. Census Bureau, the study found that among four types of state taxes (i.e., property, sales, personal income, corporate income), relatively lower property taxes were found to be a bigger factor in attracting new businesses than the other tax types studied (Orazem, 2022). That effect is not included in the current study, but may be of future interest for state policymakers. The study did not include the effect of tax credits such as angel investment or innovation fund tax credits.

When comparing the level of investment funding among companies within a state, a 2019 evaluation of the Iowa Angel Investor Tax Credit also found a positive relationship between the presence of the credit program and the level of investment, although it could not ascribe causation. Instead, the author cited two reasons that participating companies had higher levels of investment: participating companies were better situated to raise capital, or the tax credit program itself had the effect of boosting capital investment (Girardi, 2019). Neither association could be proven or disproven and both were deemed plausible.

[10] Ibid.

Other studies draw similar conclusions. For example, in a study of Arizona angel investment incentives, Olofsson's findings (2016) are similar to that of Iowa's in finding that, while there is increased investment activity, it cannot necessarily be attributed to state incentives. The study concludes that competition for investment among states may be more of a factor in establishing incentive programs than proven economic activity.

A stronger casual connection between investment activity and incentives, however, was found in a Minnesota study (Economic Development Research Group, Inc., 2014), where a survey of investors found that nearly half of investors would not have made qualifying investments if the state's angel tax credit had not existed, and that the program boosted angel investment for over three-quarters of investors. Although the authors concede there may be response bias where survey respondents answer questions in a way to support their own interests (e.g., continuation of the tax incentive), they made efforts to mitigate this effect by careful wording of the survey questions and by supplementing their findings with outside sources.

Another study found a positive correlation between the presence of tax credits and the density of high growth companies, but there was no significant correlation found between the credit rate offered by states and the growth of startups in the first five years (Barker, 2017). That is, high growth company creation was more prevalent in states with a tax credit than in states without a credit, although the level of the credit rate did not impact the level of growth.[11] The basis of this conclusion was a comparison of the Iowa IFTC with other states with similar tax credits.

B. Business Viability and Employment Levels

While many of the above studies found that angel tax credits are associated with increased angel investment activity, Denes, et al. (2020) finds that the availability of angel investor tax incentives does not necessarily result in robust growth of new firms in terms of employment growth and other measures of success. They especially point to new, inexperienced investors as the primary users of angel tax credits, ascribing this factor to less successful outcomes in terms of the above mentioned attributes. Note, however, that their conclusions are directed specifically at angel investors, and would not apply to investments eligible for the IFTC, as these funds are managed by professional investors and are subject to certification by the IEDA. The relationship between IFTC participation and employment outcomes will be explored later in the current analysis.

Evidence of the Denes finding may be found in an earlier study on Iowa investment tax credits, completed in 2014 (Dix, et al., 2014). That study looked at employment differences and the survival rate of businesses whose investors were eligible for the Iowa Venture Capital Tax Credit (an early version of the Angel Investor Tax Credit). It found that companies which had received investment from participants in the tax credit program

[11] High growth company density is a measure of the concentration of companies (number per 100,000 firms) with at least $2 million in revenue that also average over 20 percent annual revenue growth for three years (Barker, 2017).

had 1.3 more employees than similar Iowa early-stage companies that had not received investment. However, the small sample size prohibited making the conclusion that the impact of the program on employment was greater than zero. The study also compared the survival rate (after 6 years) of firms receiving investment to firms that were eligible for the program but didn't receive investment. No significant difference was found in survival rate between the two groups.

Other state studies find similar results. The Kansas Angel Investor Tax Credit study (Kansas, 2020) found that early survival rate of participating businesses in the first 3-5 years was about the same as non-participants. In addition, participating businesses created fewer jobs than non-participants. The study was inconclusive as to whether the tax credit program attracted businesses of lower quality and helped them perform better than they otherwise would have, and was thus effective, or if the program attracted businesses that inherently performed worse than non-participating businesses, and was thus ineffective. Denes et al. (2020) also found consistently insignificant effects of angel tax credits on employment, both on firms from start-up to five years old and on high-tech firms in general. In that same study, moreover, they point out that alternative incentive programs (e.g., R&D tax credits and small business grants) have greater (and less costly) effects on increasing measures such as employment and patent activity.[12]

Still other studies present positive effects of angel investment tax credit programs, and are summarized below (Hackler and Harpel, 2020).[13]

- Entrepreneurship activity (i.e., new business development) increases within two years of the tax credit (Bell, Wilbanks, and Hendon 2013).
- Job creation and retention increases (see Kousky and Tuomi 2015 table, below).

New Jobs Created by Firms in State Tax Credit Program

State	New Jobs Per Company	Retained Jobs Per Company
Louisiana	2.8	4.6
Maine	11.3	28
Maryland	6.9	4.9
Minnesota	2.8	(not reported)
South Carolina	3.8 (new and retained)	(not differentiated; included in all new jobs)

Source: Kousky and Tuomi 2015.

- Positive impacts to states include "a boost in leveraged capital, local employment, earnings, and value added" (Tuomi and Boxer 2015).

[12] A study of Iowa's Research Activities Credit, for example, found a positive association between the credit rate and patent activity, but did not study employment outcomes (Schmidt, 2021). Effects of other programs are outside the scope of the present study.

[13] Excerpted from Incentives for Entrepreneurial Firms Technical and Policy Appendices (Hackler and Harpel, 2020).

It is difficult to delineate the reasons for the different findings, and many factors may play into one state's successful application of tax credits, and another state's comparatively indifferent results. For example, the investment climate may differ among states, and state tax credit programs may differ in complexity, credit rate, and refundability (Schmidt, 2021). Kousky and Tuomi (2015) cite several factors as contributing to outcome differences among states, such as program length, the size of the tax credit, and the type of industry. They also cite "reporting inconsistency" among states as a factor leading to different conclusions for program efficacy. Schmidt (2021) lists these additional factors that influence the level of research and innovation activity in a state and that are important contributors to successful outcomes of state incentive programs: manufacturing, population, corporate income tax, and funding for schools and universities that support research and innovation activities. Controlling for each of these inputs would be necessary for an analysis of outcome differences among states, which is beyond the scope of this study.

VI. Analysis of Innovation Fund Tax Credit Awards, Claims, and Transfers

A. Innovation Fund Tax Credit Awards

Since the inception of the program, there have been 1,130 awards totaling $20.5 million in tax credits (see Table 3). The award data table reports the fiscal year in which the investment was actually made. The plurality of awards was made in FY 2021 (18.1%), but FY 2022 is close behind, with 200 awards (17.7%). The plurality of award dollars was issued for FY 2022 investments, totaling $4.3 million (20.7%) through the third quarter. It should be noted that in each year of the program's existence, total awards have been significantly lower than the statutory cap. FY 2022 had the most awards at $4.3 million, which is just over half of the $8.0 million annual cap for the program. The rise in awards in FY 2021 and 2022 is largely due to the certification of a second innovation fund, ISA Ventures, in calendar year 2020.

Taxpayers eligible to make claims against the individual income tax comprise the majority of total awards at 614 (54.3%), but the largest share of the total award amount can be attributed to claims against corporation income tax, at $7.3 million (35.8%) (see Table 4). Notably, no entity has been awarded the credit against the franchise tax levied on banks. The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 prevents most banks from making venture capital investments, and those that have an exemption from these regulations have not yet made an investment. The total of 1,130 awards was made to 210 unique taxpayers, reflecting that the same investors repeatedly make investments in the venture capital fund.

The award size varies widely by tax type. Fiduciaries (estates and trusts) have the smallest average award at $6,396, followed by non-fiduciary individual income tax filers with an average of $10,829. Both of these awards are often smaller than awards for other tax types because their award may be part of a larger investment made by a pass-through entity. Credit unions claiming against the moneys and credits tax, combined with insurance premium taxpayers, have the largest average at $54,938 but there have been

only 93 awards made to credit unions and insurance companies to-date, with 9 unique awardees in the two groups.[14]

The vast majority of credit awards are given to resident individuals and companies (see Table 5). Of the 1,130 awards to-date, 1,054 awards have been to individuals residing or businesses listing an address in Iowa on the tax credit application. These awards total $20.1 million (98.2% of the total amount). This result is unsurprising given that nonresident taxpayers would likely need to transfer the credit to receive any benefit from the nonrefundable tax credit.

B. Innovation Fund Tax Credit Claims

Since the program's inception to date (September, 2022), 1,750 Innovation Fund Tax Credit claims have been made totaling $12.8 million (see Table 6). Note, claims reported in Tables 6-8 have been summed through September, 2022, but include only those claims that are tied to awards through June 30, 2022. The number of claims (but not the amount) can exceed the number of awards because one recipient can claim a share of the credit in a given tax year and carry the remainder of the credit award to future tax years if the amount of the award exceeds the taxpayer's tax liability, or multiple shareholders can make claims to one award issued to a pass-through entity. Taxpayers with no Iowa tax liability in a given tax year still report the credit with a claim of $0 and the full amount is carried forward to the next tax year. These claims are included in the counts reported.

The highest number of claims was made in FY 2021, at 361 (20.6%), while FY 2022 constitutes the plurality of all credits claimed to date at $3.0 million (23.8%). However, the highest average claim amount is in FY 2022 at $12,072, which is more than twice the average in FY 2021 (see Table 6). While the reason for this is not clear, it may be that taxpayers with claims had higher average tax liability, and thus were able to claim more credits. In terms of tax years (TY), TY 2020 has the highest amount of tax credits both available and claimed, at $3.7 million and $3.6 million, respectively (see Table 7). (Note, total tax credits claimed in Table 6 differs from Table 7 due to fiscal year versus tax year timing.)

The first tax year in which an IFTC can be claimed is the calendar year in which the investment occurred, thus the first claim could be made for tax year 2013 (see Table 7). Because the tax credit is nonrefundable, taxpayers with tax liability less than the tax credit award can carryforward unused credits to future tax years, up to five years following the first eligible year. Taxpayers have done this every year. However, not all claims carried forward are used, and some may expire due to the time limit.

The majority of claims through September, 2022, has been made by individual income taxpayers, both in count, at 1,188 claims (67.9%), and total amount, at $7.2 million (56.3%) (see Table 8). Fiduciaries have the next highest by count (22.1%), followed by corporations claiming against the corporate income tax (5.0%). The second largest total

[14] Tax types were combined to protect taxpayer confidentiality due to a low number of unique awardees.

amount of claims was made by insurance companies at $2.4 million (18.7%) in claims against the insurance premium tax.

The rate at which the credit is claimed varies among tax years. Normally, the credit may be claimed in the first year following the tax year in which the credit was awarded. The exception is for investments made in 2013, which could first be claimed after issuance in September 2014, pushing those claims into fiscal year 2015. For 2013, this delay resulted in 83 percent of claims being made in FY 2015. For other investment years, on average, taxpayers claimed about 22 percent of credits in the first fiscal year after the year of investment (see Table 9). Taxpayers who claimed tax credits for investments in 2014 have made 94.6 percent of claims within the five years of carry-forward eligibility (with some allowance for adjusted and amended returns reported in subsequent years). The percentage temporarily fell to less than 80 percent for investments made in 2015, but rebounded to 86 percent in the five years following tax year 2016 (see Table 9). Because the tax credit is nonrefundable, taxpayers with tax liability less than the tax credit award can carry forward unused credits to future tax years. Since tax liability varies by tax year, the percentage of claims made to claims awarded in the five years following the tax year will likewise be variable.

C. Transfers of Innovation Fund Tax Credit Awards

Recall that awardees are able to transfer their nonrefundable IFTC one time. As of September 2022, 251 transfers had occurred totaling $4.0 million, with an average transfer of $16,029 (see Table 10). This constitutes a transfer rate of 19.6 percent of the 1,130 awards made to-date.

The vast majority of transfers by count have been from individual income taxpayers to individual income taxpayers (68.5 percent), followed by corporations to individual income taxpayers and insurance premium tax payers (20.3 percent) (see Table 11). By dollar amount of the tax credit transfers, corporate and individual taxpayers each account for about one-third of the total amount transferred, followed closely by credit unions that pay the moneys and credits tax. All but 5.6% of the entire transferred amount is attributable to transfers that have been purchased (in large part) by individual taxpayers.

Another analysis shows how many awardees have transferred their credits (transferors) and whether repeated sales are made to the same taxpayers (transferees) (see Table 12). While there have been 251 transfers, these were sold by only 61 transferors and purchased by only 90 transferees. The average number of transfers per transferor was just over four, while the average number of transfers per transferee was nearly three.

The Department began to capture information on the consideration received by the transferor in FY 2017. For the period from FY 2017 to FY 2022, the average monetary consideration given by transferees is 90.9 percent (where captured) (see Table 13). In other words, the tax credits are sold at roughly a 9 percent discount. It is assumed that the transferors lack sufficient tax liability to make use of the credit.

VII. Analysis of Invested Businesses

A. Profile of Investment Firm Portfolios

As of June 30, 2022, there are two investment firms certified by IEDA for the IFTC, Next Level Venture (NLV) and ISA Ventures (ISAV). This makes their investors eligible for the tax credit whereby investments in the funds may be credited at 25 percent to the taxpayers' tax liability, may be carried forward for five years, and/or may be transferred to a third party. Both firms have a similar distribution of companies by industry, with the majority of companies of each in the information technology and biosciences sectors (see Table 14).

NLV, which has two funds and a combined company count of 25, has been certified since calendar year 2014, and investments have a median age of 3.0 years from the earliest initial investment date to June 30, 2022. Note, due to their acquisition by an out-of-state company, one company was found to be an outlier in employee growth in non-Iowa based employees. Investments in the company are still eligible for the IFTC, however, because a portion of the company assets are still under management by the eligible innovation fund. The company and employee counts from that company, however, were excluded from this analysis so employee counts would not be overly skewed toward non-Iowa based. ISAV was certified for the credit in calendar year 2020. As a result, their investment portfolio is much younger, with a median age of just 1.1 years among the 35 companies. The median age of investment for the two companies combined is 1.5 years (see Table 14). Five companies are common to the portfolios of both NLV and ISAV investment funds and are included in the company count and investment age in each investment firm for Table 14 only. Subsequent tables include the company and employee counts of the common companies only from the fund with the earlier initial investment dates. (NLV's two funds also have common companies. Of those companies, the initial investment date from only the first fund was used to calculate the median investment age in Table 14 and the company and employee counts in subsequent tables.)

B. Employment Change in Invested Companies

Overall, companies in both investment firms' portfolios increased employment by about 434.5 employees, or 68 percent, over the median 1.5 year span from the initial investment date to June 30, 2022.[15] However, according to job numbers reported by the investment firms, the net percentage change was much greater in the non-Iowa based employee count at 232 jobs, or 150 percent, than in Iowa-based employee count at 202.5 jobs, or 42 percent net change (see Table 15). However, the base non-Iowa based employee count was much smaller at the time of initial investment (154.5) versus Iowa employee count (482.5).

[15] Investments in two companies were exited prior to June 30, 2022. Their last employee count as of June 30, 2021, rather than June 30, 2022, was included as the final count to compare to employment as of the initial investment date.

Excluding the outlying company with a large non-Iowa based employee count (see footnote 14), in Iowa-based employment 51 percent showed an increase, while 15 companies, or 27 percent, showed a decline, and 22 percent showed no change. When looking at the per-company distribution of employees, the net change is greater among all non-Iowa based employees, at 4.2 employees per company, compared to a net change of 3.7 Iowa-based employees per company, a difference of one-half employee in the FTE average, or 15 percent. Moreover, 24 companies, or 44 percent of the total, exhibited a *greater* growth in non-Iowa-based employee count than in Iowa-based employees. Of the 24 companies that exhibited a greater growth in non-Iowa-based employee count than in Iowa-based employees, the net change was about 5 employees per company, compared to an overall change of about 8 employees per company (see Table 16).

C. Tax Credits Awarded and Claimed per Employment Change in Invested Companies

Combining the above data, it is possible to derive the cost to the State in terms of tax credits for each job created at the invested companies. Since program inception through June 30, 2022, $12.8 million in credits have been claimed for investments in the portfolios of the two investment firms. With Iowa-based net employee growth at 202.5, the cost per Iowa-based job that was created is $63,015 in tax credits claimed (see Table 17). (The net employee growth was calculated excluding the company that was acquired by an out of state firm.) Note that credits awarded were not used in this calculation, as they may be paid out in future years, which will spread the cost per employee count over the future. Instead, credits claimed per employee count represent a truer picture of the costs of the program currently.

D. Average Wages of Employees in Invested Companies

Wage information from Iowa Workforce Development (2022) puts the average annual wage in Iowa at $51,096 in 2021. While the current average wage of employees in all the invested companies is not known, a recent inquiry of one of the larger companies put it at over $100,000.[16] This is in line with average wages cited by Iowa Workforce Development for occupations in the life sciences and computer and mathematical sectors that likely constitute the main workforce of companies in the investment portfolios (Iowa Workforce Development, 2022).[17] The average income tax liability for Iowa residents at that level of income would be roughly $6,000, based on an average tax rate of 5.9 percent.[18] Based on this, the gain in income tax revenue in added jobs offsets less than 10 percent of the cost in tax credits claimed at more than $63,000 per Iowa-based job.

[16] Based on proprietary information gathered by NLV in 2022.

[17] Average wages for occupations such as software developers, computer and information research scientists, chemists, biochemists and biophysicists were used as the basis for this conclusion.

[18] The average tax rate was calculated based on Iowa residents' tax liability after personal and individual credits were taken, and who earned wages in the top tax bracket in 2020 (the latest tax

VIII. Conclusion

This evaluation study provides an analysis of the Iowa Innovation Fund Tax Credit. The credit first became effective in 2011 and offers a tax credit equal to 25 percent of qualified investment in certified Iowa innovation funds that make investments exclusively in Iowa early-stage companies. Tax credit awards issued to all investors are capped at $8 million each fiscal year, although annual awards have fallen considerably below that cap. This program exists simultaneously with the Angel Investor Tax Credit program that offers tax credits for direct investments in Iowa startups, as well as numerous other grant and loan programs operated by the Iowa Economic Development Authority.

From September 2014 through FY 2022, $20.5 million in credits have been awarded, and, through September 2022, $12.8 million have been claimed as a result of investment in 56 different companies. Due to its acquisition by an out-of-state company, however, one company was found to be an outlier in employee growth in non-Iowa based employees and was excluded from analysis. Of the remaining 55 companies, as of the date of initial investment, there was a total of 637 full-time equivalent employees (FTEs) in the invested companies. As of the end of fiscal year 2022, the companies in the two investment firms' portfolios had nearly 1,100 employees. This represents an increase of 68 percent from the time of the initial investment to June 30, 2022 (or exit date, if earlier).

While the overall gain in employees is high at 68 percent, the distribution of employee gains between Iowa-based and non-Iowa based employment is uneven, with the rate of growth in non-Iowa based employment being four times that of Iowa based jobs.[19] Note, however, that the difference in growth in number of jobs *per company*, while still higher for non-Iowa based employees, was not as pronounced, with just a 15 percent difference in the net gain between Iowa-based and non-Iowa based jobs.

There are several factors that may have caused the growth rate of jobs to be greater outside the state than within it. First, the base employee count outside of Iowa was much smaller than the Iowa employee count. In addition, many of the jobs created are in the information technology field, which lends itself to greater participation by remote workers who may live outside the state. Also, the Covid-19 pandemic increased the incidence of remote work, and may have led to employment of more non-Iowa based employees (or, conversely, more Iowa-based employees chose to relocate out of state). Another factor may be that the pool of available and qualified workers may be greater outside the state than within it. Lastly, companies may have expanded outside of the state while still maintaining headquarters in and investor ties to Iowa, making their investors still eligible for the credit under the terms of the program, but increasing their non-Iowa employee count.

year for which aggregate information is available). See 2020 Iowa Individual Income Tax Annual Statistical Report, Table 15B.

[19] See Table 15, where the growth in Iowa-based jobs is 42 percent of the starting employment, and non-Iowa based growth is 150 percent of the base employee count.

The total cost in Iowa-based jobs gained in terms of credits claimed is $63,015 per job. This measure excludes jobs in the company acquired by an out-of-state firm that caused the employee count to be skewed toward non-Iowa based employees. The cost per job does not include the cost of additional Iowa incentive programs that the same companies may be beneficiaries of.[20]

Factors that may offset the cost of the IFTC and that have not been discussed in this study are:

- What is the multiplier effect of goods and services purchased due to jobs created in the participating companies, including additional sales and income taxes?

- Is there an effect of "serial entrepreneurship"; that is, do the entrepreneurs that experience growth in the participating companies go on to develop other ventures that create jobs and subsequent follow-on effects in Iowa? Also, do investors participating in the current program go on to invest in other Iowa companies where there is no tax incentive?

- Is there a "but-for" causation effect; that is, would companies that are included in the IFTC portfolios have a presence in Iowa but for the benefit of this tax credit to investors?[21] Similarly, would investors have put their money into these innovation funds without the benefit of the tax credit? Are there other factors that are more important to entrepreneurs and investors alike in deciding where to locate a business and where to invest capital?

The above factors would require further investigation, and some may not be quantifiable. As stated in the literature review, while researchers have found a positive *association* between state tax-based investment incentives and an increase in investment levels (and, in some cases, job growth), *causation* is difficult to establish. Moreover, as shown in the current study, job growth, while positive, is variable among companies and was measured over a fairly short time period, so long-term benefits and costs are not yet evident. Also, it hasn't been established whether the growth in jobs was due to the presence of the investment tax credit or whether other factors, such as those cited below, had more of an influence.

As discussed earlier in this study, several factors may contribute to outcome differences among states, such as program length, the size of the tax credit, and the type of industry, but no one factor was found to be associated with program success on its own. Other factors not explored in this study may also be important contributors to successful outcomes of state incentive programs, such as manufacturing presence, state population size and skill set, corporate income and property tax levels, and funding for schools and universities that support research and innovation activities. These "infrastructure-related"

[20] IEDA cites at least 13 companies that have received funds (in the form of loans and royalties) during FY 2021 and FY 2022 from other innovation funding programs that also had investments from participants in the IFTC.

[21] Anecdotal evidence from NLV suggests the IFTC was the main factor in at least one company's decision to locate in Iowa from another state. Other companies' motives were not explored.

elements may serve to enhance the effect of the IFTC and other programs, while possible follow-on effects of investments initially tied to tax incentives can also be analyzed. The employment effects of this tax credit seem to vary depending on location (in and out of Iowa).

References

Barker, Aaron. “Iowa’s Innovation Fund Tax Credit Tax Credits Program Evaluation Study.” Dec. 2017. https://tax.iowa.gov/sites/default/files/2019-08/Innovation%20Fund%20Tax%20Credit%20Evaluation%20Study.pdf. Accessed 09 May 2022.

Bell, Joseph R., James E. Wilbanks, and John R. Hendon. 2013. “Examining the Effectiveness of State Funded Angel Investor Tax Credits: Initial Empirical Analysis.” Small Business Institute Journal; Greenville 9 (2): 23–28.

Chirinko, Robert S. and Daniel J. Wilson. 2008. “State investment tax incentives: A zero-sum game?” Journal of Public Economics, Volume 92, Issue 12, 2008, Pages 2362-2384, ISSN 0047-2727. https://doi.org/10.1016/j.jpubeco.2008.07.005. Accessed 09 May 2022.

Decker, Ryan, John Haltiwanger, Ron Jarmin, and Javier Miranda. 2014. “The Role of Entrepreneurship in US Job Creation and Economic Dynamism.” Journal of Economic Perspectives; Volume 28, Number 3; Summer 2014; Pages 3–24. https://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.28.3.3. Accessed 14 July 2022.

Denes, M. R., Howell, S. T., Mezzanotti, F., Wang, X., & Xu, T. (2020). “Investor Tax Credits and Entrepreneurship: Evidence from US States (No. w27751).” National Bureau of Economic Research. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3596342. Accessed 20 May 2022.

Dix, Tyler and Peter F. Orazem, 2014. “Analysis of Start-ups Receiving Funding Through the Iowa Venture Capital Tax Credit Program,” Iowa State University, mimeo. 2014. (Cited in Gullickson, 2014.)

Economic Development Research Group, Inc. with Karl F. Seidman Consulting Services. “Evaluation of the Minnesota Angel Tax Credit Program: 2010-2012.” 31 Jan. 2014. http://www.revenue.state.mn.us/research_stats/research_reports/2014/evaluation_of_the_mn_angel_tax_credit_program.pdf. Accessed 22 Aug. 2017.

Girardi, Anthony. “Iowa Angel Investor Tax Credit Tax Credits Program Evaluation Study.” 2019. Iowa Department of Revenue, December 2019. https://tax.iowa.gov/sites/default/files/2020-06/Angel%20Investor%20Evaluation%20Study%202019.pdf. Accessed 6 Oct. 2022.

Gullickson, Angela. “Iowa’s Venture Capital Tax Credits.” Iowa Department of Revenue, Dec. 2014. https://www.legis.iowa.gov/docs/publications/DF/662046.pdf. Accessed 24 Aug. 2017.

Hackler, Darrene, PhD. and Ellen Harpel, PhD. “Incentives For Entrepreneurial Firms: Technical And Policy Appendices.” August 2021. https://www.kauffman.org/wp-content/uploads/2021/08/Incentives-for-Entrepreneurial-Firms-Appendix-August-2021.pdf. Accessed 9 May 2022.

Iowa Workforce Development, 2022 Iowa Wage Report. 2022. https://www.iowaworkforcedevelopment.gov/iowa-wage-report. Accessed 09 November 2022.

Kansas Angel Investor Tax Credit study. 2020. https://www.kslpa.org/wp-content/uploads/2020/11/Final-Report-pdf.a.pdf. Accessed 27 June 2022.

Kousky, Ken, and Krista Tuomi. 2015. “Angel Tax Credits: What Do the Reports Say about Job Creation?” Angel Insights Blog. April 3, 2015. https://www.angelcapitalassociation.org/blog/angel-tax-credits-what-do-the-reportssay-about-job-creation/. Accessed 9 May 2022.

Olofsson, Hans. 2016. “2016 Income Tax Credit Review.” Joint Legislative Budget Committee Staff Memorandum. https://www.azjlbc.gov/revenues/jlitcrcrpt121516.pdf. Accessed 9 May 2022.

Orazem, Peter. 2022. “Startups near State Lines Gravitate toward Side with Lower Property Tax.” May 2022. Iowa State University News Service. https://www.card.iastate.edu/news/release/?n=135. Accessed 12 July 2022.

Schmidt, Cody. “Research Activities Tax Credit Tax Credits Program Evaluation Study.” 2021. Iowa Department of Revenue, December 2021. https://tax.iowa.gov/sites/default/files/2022-01/Research%20Activities%20Tax%20Credit%20Evaluation%20Study%202021.pdf. Accessed 12 July 2022.

Tuomi, Krista & Barbara Boxer. 2015. “The costs and benefits of early-stage business tax credits: a case study of two US states.” (Cited in Hackler and Harpel, 2022) Pages 263-270 | Received 14 Apr 2015, Accepted 24 Apr 2015, Published online: 16 Jun 2015.

Iowa's Innovation Fund Tax Credit

Program Evaluation Study

Tables and Figures

Table 1. States with and without Active Investment Incentive Credit

Active Credit	Expired Credit	No Credit
Arizona	Arkansas	Alabama
Colorado	Delaware	Alaska
Connecticut	Hawaii	California
Georgia	Kansas	District of Columbia
Illinois	Michigan	Florida
Indiana	Minnesota	Idaho
Iowa	Nebraska	Mississippi
Kentucky	North Carolina	Missouri
Louisiana	Oklahoma	Montana
Maine	Rhode Island	Nevada
Maryland	West Virginia	New Hampshire
Massachusetts		Oregon
New Jersey		Pennsylvania
New Mexico		South Dakota
New York		Texas
North Dakota		Vermont
Ohio		Washington
South Carolina		Wyoming
Tennessee		
Utah		
Virginia		
Wisconsin		

Source: Denes, et al. 2020, updated with data from state websites

Table 2. Investment Incentive Tax Credits by State

State	Tax Credit	Enactment/ Expiration	Amount of Tax Credit	Program Cap	Taxpayer/ Business Cap	Qualifying Tax Types	Refundable	Carry Forward	Transferable
Alabama	None								
Alaska	None								
Arizona	Angel Investment Tax Credit	**Enacted:** July 1, 2006 **Expiration:** June 30, 2031	30% of the qualified investment claimed in increments over 3 years. If the investment is made in a rural or bioscience company, the credit is equal to 35% of the qualified investment, claimed in increments over 3 years..	$20 million between July 1, 2006 and June 30, 2017 $2.5 million per fiscal year between July 1, 2017 and June 30, 2031	Tax credits for an investor are limited to qualified investments equal to or less than $500,000 per calendar year. Businesses are limited to lifetime aggregate qualified investments up to $2 million.	Individual	No	3 Years	No
Arkansas	Equity Investment Tax Credit	**Enacted:** January 1, 2007 **Expiration:** December 31, 2019	33 1/3% of the qualified investment up to 50% of the state income tax or premium tax liability	$6.25 million per calendar year	None	Any state tax that may be imposed on the investor.	No	9 Years	Yes, but must be sold within one year of the issuance of the tax credit.
California	None								
Colorado	Innovation Investment Tax Credit	**Enacted:** January 1, 2010 **Expiration:** December 31, 2010	15% of the qualified investment.	$750,000	$20,000 per investor per qualified business.	Individual	No	5 Years	No
Colorado	Advanced Industry Investment Tax Credit	**Enacted:** July 1, 2014 **Revised as of** January 1, 2023	25% of the qualified investment. If the qualified business is located in a rural area or economically distressed area, the credit is equal to 30% of the qualified investment.	$375,000 for calendar year 2014 $750,000 in 2015-2022 $4 million from 2023-2026	$50,000 in credits per investment before 2023 $100,000 in credits per investment after 2023	Individual	No	5 Years	No
Connecticut	Angel Investor Tax Credit Program	**Enacted:** July 1, 2010 **Expiration:** June 30, 2024	25% of the qualified investment	FY 2011 and 2012: $6 million current cap: $5 million	minimum $25,000 maximum $500,000 per taxpayer maximum $2 million in cash investments per business	Individual Corporate	No	5 Years	Yes
Delaware	Angel Investor Job Creation and Innovation Act	**Enacted:** December 31, 2018 **Expiration:** January 1, 2022	25% of the qualified investment	$5 million per year	$250,000 credit for spouses filing jointly; $125,000 credit for individuals per year $500,000 maximum investment per business per year	Individual	Yes		

Table 2 cont. Investment Incentive Tax Credits by State

State	Tax Credit	Enactment/ Expiration	Amount of Tax Credit	Program Cap	Taxpayer/ Business Cap	Qualifying Tax Types	Refundable	Carry Forward	Transferable
District of Columbia	None								
Florida	None								
Georgia	Angel Tax Credit	**Enacted:** January 1, 2011 **Expiration:** December 31, 2018	35% of the qualified investment.	$5 million per year	$50,000 credit per taxpayer per taxable year	Individual	No	5 Years	Only to heirs and legatees upon qualified investor's death
Georgia	Georgia Agribusiness and Rural Jobs Tax Credit	**Enacted:** July 1, 2017	15% per year up to 4 years, starting in year 3	$100 million investment cap	$60 million aggregate tax credit cap; at least 10% must be equity investments	Individual	No	Unlimited	No
Hawaii	High-Technology Business Investment Tax Credit	**Enacted:** July 1, 1999 **Expiration:** December 31, 2010	10% of the qualified investment for 1999 and 2000. 100% of the qualified investment between 2001 and May 2009.	None	$500,000 per tax year per taxpayer in 1999 and 2000. $2 million per business	Individual Corporate Franchise (Banks and Other Financial Corps) Fiduciary	No	5 Years (Initially there was no limit on the carry forward period.)	Between 2000 and 2009 the tax credits were transferrable between shareholders in the company. A taxpayer was not limited to their pro-rata share of tax credits.
Idaho	None								
Illinois	Angel Investment Credit Program	**Enacted:** January 1, 2011 **Inactive:** July 2016 - August 2017 **Expiration:** December 31, 2026	25% of the qualified investment 35% in low population counties	$10 million per year $500,000 set aside for minority business $500,000 set aside for certain counties	$10,000 minimum per investment per person $2 million maximum per business per person $4 million maximum per business	Individual Corporation Fiduciary	No	5 Years	No
Indiana	Venture Capital Investment Tax Credit	**Enacted:** July 1, 2004	2011-2021:lesser of 20% or $1 million 2022 and after: 25% or $1 million lifetime limit; 30% or $1.5 million lifetime limit for special target businesses	$12.5 million per year, effec 2022 $20 million per year, $7.5 million per fund	Investment and tax credit caps vary by business or investor fund	Any individual or entity that has any state tax liability.	No	5 Years	Yes, $10,000 minimum, effective FY 2021 - FY 2029

Table 2 cont. Investment Incentive Tax Credits by State

State	Tax Credit	Enactment/ Expiration	Amount of Tax Credit	Annual Program Cap	Taxpayer/ Business Cap	Qualifying Tax Types	Refundable	Carry Forward	Transferable
Iowa	Venture Capital Tax Credit - Qualifying Business (Angel Investor Tax Credit)	**Enacted:** January 1, 2002	25% of the qualified investment	Initial lifetime program cap was $10 million. Current program cap is $2 million per fiscal year.	$500,000 per qualifying business per fiscal year $100,000 per taxpayer per fiscal year	Individual Income Tax Corporation Income Tax Franchise Tax Insurance Premium Tax Moneys and Credits Tax	Yes - to investors who file individual income tax	3 Years	No
Iowa	Venture Capital Tax Credit – Fund of Funds	**Enacted:** January 1, 2002 **Repealed** by 2017	The tax credit is only allowed to the extent that the actual rate of return on these investments does not meet the rate of return guaranteed to investors.	$20 million per year	$60 million aggregate tax credit cap	Individual Income Tax Corporation Income Tax Franchise Tax Insurance Premium Tax Moneys and Credits Tax	No	7 Years	
Kansas	Angel Investor Tax Credit	**Enacted:** January 1, 2005 **Expiration:** December 31, 2021	50% of the qualified investment	TY 2007 - $4 million TY 2008, 2009, 2010 - $6 million TY 2011 - $5 million TY 2012 and thereafter- $6 million	$50,000 in credits per qualified business per year $250,000 in credits per taxpayer per year	Individual Income Tax	No	Unlimited	Yes - after three years of no liability - must be claimed in year of transfer
Kentucky	Investment Fund Tax Credit	**Enacted:** 1998 **Amended:** 2019	40% of the qualified investment in an approved investment fund	$40 million total program cap over all years - shared with Kentucky Angel Investment Act $3 million per calendar year	Credits available to any single investment fund shall not exceed, in aggregate, $8,000,000 for all investors in all taxable years prior to January 1, 2022, and $1,000,000 for any calendar year beginning on or after January 1, 2022.	Individual Income Tax Corporate Income Tax Insurance Tax Financial Institution Tax	No	15 Years	Yes - for nonprofits

Table 2 cont. Investment Incentive Tax Credits by State

State	Tax Credit	Enactment/ Expiration	Amount of Tax Credit	Annual Program Cap	Taxpayer/ Business Cap	Qualifying Tax Types	Refundable	Carry Forward	Transferable
Kentucky	Angel Investment Tax Credit	**Enacted:** 2014 **Paused:** 2019-2020 **Restarted:** 2021	40% of qualified investment in companies located in low-income counties 25% of qualified investment in all other counties	$40 million total program cap over all years - shared with Kentucky Investment Fund Tax Credit $3 million per calendar year	$200,000 of credits per investor per year $1,000,000 of credits for all investors in a single company	Individual Income Tax	No	15 Years	Yes
Louisiana	Angel Investor Tax Credit	**Enacted:** 2005 **Expiration:** July 1, 2025	25% of the qualified investment, divided equally over 2 years 35% in opportunity zones, divided equally over 2 years, effective FY 2021	$3.6 million per year @25% credit rate $3.6 million per year @35% credit rate	$720,000 in investments per business per year and $1.44 million in investments per business over the life of the program.	Income Tax Corporate Income Tax Fiduciary Income Tax Franchise Tax	No	10 Years	Yes
Maine	Seed Capital Tax Credit Program	**Enacted:** January 1, 1988	Jan. 2014-March 2020: 50% effective April 1, 2020: 40% of the qualified investment	Effective 2016: $5 million in credits per year Effective 2020: $15 million per year	$500,000 in investment per investor per business over three consecutive calendar years - investor group amount is divided by number of investors prior to April 1, 2020: $5 million lifetime total investment per business Effective April 1, 2020: $3.5 million lifetime cap	Individual Income Tax Corporate Income Tax Franchise Tax	Yes, for private venture capital funds.	15 Years	No
Maine	New Markets Capital Investment Program	**Enacted: 2011**	39% of qualified investment over 7 years (0%, 0%, 7%, 8%, 8%, 8%, 8%)	$20 million per year	before 2012: $10 million per business after 2012: $40 million for certain types of businesses 2013: $40 million per project (not per business)	Equity investors	Yes	20 years	Yes

Table 2 cont. Investment Incentive Tax Credits by State

State	Tax Credit	Enactment/ Expiration	Amount of Tax Credit	Annual Program Cap	Taxpayer/ Business Cap	Qualifying Tax Types	Refundable	Carry Forward	Transferable
Maryland	Innovation Investment Incentive Tax Credit f/k/a Cybersecurity Investment Tax Credit	**Enacted:** January 1, 2014 **Expiration:** June 30, 2025	33% of the qualified investment 50% in certain counties	$2 million per year	Investments from $25,000 to $500,000 per individual investor. There is a limit of 25% of the annual appropriation per technology sector.	Individual Income Tax Corporate Income Tax	Yes	No	No
Maryland	Biotechnology Investment Incentive Tax Credit	**Enacted:** July 1, 2006 **Expiration:** June 30, 2028	33% of the qualified investment 50% in certain counties	$12 million per year	Tax credit limited to $250,000 ($500,000 in certain counties) per year and $7 million over all fiscal years per individual investor. There is a limit of 10% of the annual appropriations per business.	Individual Income Tax Corporate Income Tax	Yes	No	No
Massachusetts	Angel Investor Tax Credit	**Implemented:** January 1, 2017	20% in e-health, information technology, and healthcare businesses 30% in qualifying businesses in certain communitities	$25,000,000 per year	$125,000 in investments per year per investor $250,000 in investments per year for each qualifying business.	Individual Income Tax	No	3 Years	
Michigan	Small Business Investment Tax Credit	**Enacted:** January 1,2011 **Expiration:** December 31, 2011	25% of the qualified investment	$9 million per calendar year	Maximum tax credit of $250,000 in any one year for investors and for businesses and may not invest more than $1 million in any one business. Qualified investment groups are limited to $4 million in credits	Individual Income Tax Corporate Income Tax	No	5 Years	No
Minnesota	Angel Tax Credit	**Enacted:** April 1, 2010 **Expiration:** December 31, 2022 Applications closed May 27, 2022	25% of the qualified investment	$15 million per year for 2014 to 2016 $10 million per year for 2017-2021 $5 million per year for 2022	Maximum tax credit is $125,000 per taxpayer per year ($250,000, if filing jointly).	Individual Income Tax	Yes	No	No
Mississippi	None								
Missouri	None								
Montana	None								

Table 2 cont. Investment Incentive Tax Credits by State

State	Tax Credit	Enactment/ Expiration	Amount of Tax Credit	Program Cap	Taxpayer/ Business Cap	Qualifying Tax Type	Refundable	Carry Forward	Transferable
Nebraska	Angel Investment Tax Credit	**Enacted:** August 10, 2011 **Repealed:** December 31, 2019	40% of the qualified investment	$4 million per year	Maximum tax credits of $350,000 for couples filing joint return and $300,000 for single filers. Lifetime tax credit max per business of $1 million	Individual	Yes	No	No
Nevada	None								
New Hampshire	None								
New Jersey	Angel Investor Tax Credit	**Enacted:** January 1, 2012	20% of the qualified investment 25% to target businesses or investment zones	$25 million per calendar year	Max credit of $500,000 per investment per year	Corporate Gross Income Tax (Individuals, Estates, Trusts)	Yes	15 Years for Corporations Only	No
New Mexico	Angel Investment Tax Credit	**Enacted:** January 1, 2007 **Expiration:** December 31, 2024	25% of the qualified investment up to $62,500	$2 million in credit claims per calendar year	Can claim credit for qualified businesses in no more than five qualified businesses per taxable year	Individual Corporate	No	5 Years	No
New York	Qualified Emerging Technology Company (QETC) Capital Tax Credit Qualified investments	**Enacted:** January 1, 1999	10% of the qualified investment in a certified business if held 4 years; 20% of the qualified investment in a certified business if held 9 years		50% of income tax liability, limited to: $150,000 for investments held 4 years $300,000 for investments held 9 years	Individual Corporate	no	Unlimited	yes, after minimum length of time that investment is held
North Carolina	Qualified Business Investment Tax Credit	**Enacted:** January 1, 2008 **Expiration:** December 31, 2013	25% of the qualified investment	$7.5 million	$50,000 per taxpayer in a calendar year.	Individual	No	5 Years	No
North Dakota	Seed Capital Investment Credit	**Enacted:** January 1, 1993	45% of the qualified investment in a certified business	$3.5 million per calendar year	For investments made after January 1, 2013 a taxpayer is limited to lifetime claims of $500,000, a married couple is considered one taxpayer.	Individual Corporate	No	4 Years	No

Table 2 cont. Investment Incentive Tax Credits by State

State	Tax Credit	Enactment/ Expiration	Amount of Tax Credit	Annual Program Cap	Taxpayer/ Business Cap	Qualifying Tax Types	Refundable	Carry Forward	Transferable
North Dakota	Angel Investor Tax Credit	**Enacted:** July 1, 2017	35% of the qualified investment in an angel fund that is invested in in-state companies 25% of the qualified investment in an angel fund that is invested in out-of-state companies	None	$45,000 of credit per year. A taxpayer is limited to lifetime claims of $500,000, a married couple is considered one taxpayer. Investors in one fund cannot receive more than $5 million in credits	Individual Income Tax Corporate Income Tax	No	5 years	No
North Dakota	Angel Fund Investment Tax Credit replaced by Angel Investor Tax Credit	**Enacted:** 2007 **Expiration** June 30, 2017	45% of the qualified investment in an angel fund	None	$45,000 of credit per year.	Individual Income Tax Corporate Income Tax	No	7 Years	Only for investments made in 2011 and 2012.
Ohio	InvestOhio	**Enacted:** 2011	10% of the qualified investment	$100 million per biennium	$500,000 per investor	Individual Income Tax	No	7 Years	No
Ohio	Technology Investment Tax Credit	**Enacted:** November 18, 1996 **Expiration:** September 29, 2013	25% of the qualified investment. 30% of the qualified investment if the investment is being made in an "Encouraging Diversity Growth and Equity (EDGE)"-qualified entity, or an entity in a distressed county.	$45 million lifetime cap	$62,500 per investor	Personal Income Tax Corporation Franchise Tax Public Utility Excise Tax Dealers In Intangibles Tax	No	15 Years	No
Oklahoma	Small Business Capital Formation Tax Credit	**Enacted:** January 1, 1998 **Moratorium:** June 1, 2010 - December 31, 2011 **Expiration:** December 31, 2011	20% of the qualified investment.	None	capital investment fund limited to 50% ownership per company	Corporate Income Tax Individual Income Tax Privilege Tax Insurance Premium Tax	No	3 Years	No
Oklahoma	Rural Venture Capital Formation Tax Credit	**Enacted:** January 1, 2001 **Moratorium:** June 1, 2010 - December 31, 2011 **Expiration:** December 31, 2011	30% of the qualified investment.	None	capital investment fund limited to 50% ownership per company	Corporate Income Tax Individual Income Tax Privilege Tax Insurance Premium Tax	No	3 Years	No

Table 2 cont. Investment Incentive Tax Credits by State

State	Tax Credit	Enactment/ Expiration	Amount of Tax Credit	Annual Program Cap	Taxpayer/ Business Cap	Qualifying Tax Types	Refundable	Carry Forward	Transferable
Oregon	None								
Pennsylvania	None								
Rhode Island	Innovation Tax Credit	**Enacted:** January 1, 2007 **Expiration:** December 31, 2016	50% of the qualified investment.	No more than $1.0 million in any 2 year calendar period.	Maximum tax credit of $100,000.	Corporate Income Tax Franchise Tax	No	3 Years	No
South Carolina	Angel Investment Act	**Implemented:** January 1, 2013 **Expiration:** December 31, 2025	35% of the qualified investment.	$5 million per year	Aggregate tax credits allocated to a investor cannot exceed $100,000 per year.	Individual Income Tax	No	10 Years	Yes
South Dakota	None								
Tennessee	Angel Tax Credit	**Implemented:** January 1, 2017	50% of the qualified investment in low-income counties 33% of the qualified investment in other counties	$3 million in calendar year 2017 $4 million in calendar year 2018 $5 million in calendar year 2019 and each calendar year thereafter	Can only claim $50,000 in credits per year	Hall Income Tax	No	5 Years	
Texas	None								
Utah	Life Science and Technology Tax Credits	**Enacted:** 2011	35% of the qualified investment	Not specified	$350,000 per credit per year		No	No	
Utah	Capital Investment (formerly Fund of Funds)	**Enacted:** January 2006 **Expiration:** December 31, 2019	Contingent on the rate of return.	Program cap of $300 million	None	Unavailable	Yes	No	Yes
Vermont	None								
Virginia	Qualified Equity and Subordinated Debt Investments Tax Credit	**Enacted:** January 1, 1999	50% of the qualified investment.	$5 million per calendar year - one half reserved for commercialization investments	Maximum tax credit of $50,000 per taxpayer per year.	Individual Income Tax Fiduciary Tax	No	15 Years	No

Table 2 cont. Investment Incentive Tax Credits by State

State	Tax Credit	Enactment/ Expiration	Amount of Tax Credit	Annual Program Cap	Taxpayer/ Business Cap	Qualifying Tax Types	Refundable	Carry Forward	Transferable
Washington	None								
West Virginia	High-Growth Business Investment Tax Credit	**Enacted:** July 1, 2005 **Expiration:** June 30, 2008	50% of the qualified investment	$1 million aggregate cap	$50,000 per investor $500,000 per company	Individual Income Tax (individual investor or group of investors)	No	4 Years	No
Wisconsin	Angel Tax Credit	**Enacted:** July 1, 2004	25% of the qualified investment.	None	Businesses can receive up to a total of $8 million in tax credit-eligible cash equity investment. It does not matter which tax credit program the investor uses as long as the total qualifying investments do not exceed $8 million.	Individual Income Tax (individual investor or group of investors)	No	15 Years	No
Wisconsin	Early Stage Seed Investment Tax Credit	**Enacted:** July 1, 2004	25% of the qualified investment.	None	Businesses can receive up to a total of $8 million in tax credit-eligible cash equity investment. It does not matter which tax credit program the investor uses as long as the total qualifying investments do not exceed $8 million.	Individual Income Tax Corporate Income Tax Fiduciary Tax (Must be venture fund)	No	15 Years	Yes
Wyoming	None								

Source: Denes, et al. 2020, updated with data from current state websites

Table 3. Innovation Fund Tax Credit Awards by Fiscal Year of Award, FY 2014 to FY 2022

Fiscal Year of Award	Number of Awards	Share of Award Count	Sum of Awards	Share of Award Amount	Average Award	Sum of Associated Investment
2014	47	4.2%	$890,590	4.3%	$18,949	$3,562,360
2015	66	5.8%	$2,767,519	13.5%	$41,932	$11,070,076
2016	92	8.1%	$1,652,922	8.1%	$17,967	$6,611,688
2017	77	6.8%	$1,066,888	5.2%	$13,856	$4,267,552
2018	181	16.0%	$1,849,865	9.0%	$10,220	$7,399,460
2019	153	13.5%	$2,410,399	11.8%	$15,754	$9,641,596
2020	109	9.6%	$1,709,045	8.3%	$15,679	$6,836,180
2021	205	18.1%	$3,906,274	19.1%	$19,055	$15,625,096
2022	200	17.7%	$4,248,267	20.7%	$21,241	$16,993,068
Total	1,130	100.0%	$20,501,769	100.0%	$18,143	$82,007,076

Source: Iowa Department of Revenue, Tax Credit Award, Claim, and Transfer Administration System (CACTAS)

Table 4. Innovation Fund Tax Credit Awards by Tax Type, FY 2014 to FY 2022

Tax Type of Original Award	Number of Awards	Number of Unique Awardees	Share of Award Count	Sum of Awards	Share of Award Amount	Average Award	Sum of Associated Investment
Corporation Income Tax	203	25	18.0%	$7,336,614	35.8%	$36,141	$29,346,456
Fiduciary Income Tax	220	38	19.5%	$1,407,179	6.9%	$6,396	$5,628,716
Individual Income Tax	614	138	54.3%	$6,648,749	32.4%	$10,829	$26,594,996
Insurance Premium Tax & Moneys and Credits Tax*	93	9	8.2%	$5,109,227	24.9%	$54,938	$20,436,908
Total	1,130	210	100.0%	$20,501,769	100.0%	$18,143	$82,007,076

Source: Iowa Department of Revenue, Tax Credit Award, Claim, and Transfer Administration System (CACTAS)

Table 5. Innovation Fund Tax Credit Awards by Residency Status, FY 2014 to FY 2022

Resident Status	Number of Awards	Share of Award Count	Sum of Awards	Share of Award Amount	Average Award	Sum of Associated Investment
Resident	1,054	93.3%	$20,141,595	98.2%	$19,110	$80,566,380
Non-Resident	76	6.7%	$360,174	1.8%	$4,739	$1,440,696
	1,130	100.0%	$20,501,769	100.0%	$18,143	$82,007,076

Source: Iowa Department of Revenue, Tax Credit Award, Claim, and Transfer Administration System (CACTAS)

Table 6. Innovation Fund Tax Credit Claims by Fiscal Year of Claim, FY 2015 to YTD September, 2022

Fiscal Year of Claim	Number of Claims	Share of Claims Count	Sum of Claims	Share of Claims Amount	Average Claim
2015	73	4.2%	$1,059,306	8.3%	$14,511
2016	156	8.9%	$2,052,707	16.1%	$13,158
2017	173	9.9%	$1,181,673	9.3%	$6,830
2018	126	7.2%	$861,527	6.8%	$6,838
2019	164	9.4%	$1,125,423	8.8%	$6,862
2020	333	19.0%	$1,351,878	10.6%	$4,060
2021	361	20.6%	$1,835,400	14.4%	$5,084
2022	252	14.4%	$3,042,225	23.8%	$12,072
2023*	112	6.4%	$250,408	2.0%	$2,236
Total	1,750	100.0%	$12,760,547	100.0%	$7,292

*Included YTD claims as of 9/23/2023 that correspond to credits awarded through June 30, 2022.

Source: Iowa Department of Revenue, Tax Credit Award, Claim, and Transfer Administration System (CACTAS)

Table 7. Innovation Fund Tax Credit Claims and Carryforwards by Tax Year, TY 2013 to TY 2021

Tax Year	Amount of Claims Carried Forward from Prior Year	Amount of New Tax Credits	Total Amount of Tax Credits Available	Amount of Tax Credits Claimed	Amount of Tax Credits Carried Forward to Next Tax Year*
2013	$0	$30,000	$30,000	$23,998	$6,002
2014	$6,002	$2,751,170	$2,757,172	$2,265,824	$491,348
2015	$416,548	$1,716,294	$2,132,842	$1,393,500	$739,342
2016	$748,515	$1,206,937	$1,955,451	$1,179,679	$792,884
2017	$577,602	$504,461	$1,082,063	$795,341	$286,722
2018	$273,970	$1,239,272	$1,513,242	$1,261,385	$252,057
2019	$354,543	$1,481,246	$1,835,789	$1,502,879	$336,320
2020	$315,030	$3,362,670	$3,677,700	$3,593,268	$336,012
2021	$128,869	$720,055	$848,924	$742,924	$128,846
Total	$2,821,079	$13,012,105	$15,833,183	$12,758,798	

*Amount of tax credits carried forward to next tax year are not equal to total tax credits available less tax credits claimed due to expired credits.

Source: Iowa Department of Revenue, Tax Credit Award, Claim, and Transfer Administration System (CACTAS)

Table 8. Innovation Fund Tax Credit Claims by Tax Type of Claim, FY 2015 to YTD September, 2022

Tax Type of Claim	Number of Claims	Share of Claims Count	Sum of Claims	Share of Claims Amount	Average Claim
Corporation Income Tax	88	5.0%	$1,852,506	14.5%	$21,051
Fiduciary Income Tax	386	22.1%	$145,741	1.1%	$378
Individual Income Tax	1,188	67.9%	$7,186,015	56.3%	$6,049
Insurance Premium Tax	48	2.7%	$2,380,664	18.7%	$49,597
Moneys and Credits Tax	40	2.3%	$1,195,621	9.4%	$29,891
Total	1,750	100.0%	$12,760,547	100.0%	$7,292

Source: Iowa Department of Revenue, Tax Credit Award, Claim, and Transfer Administration System (CACTAS)

Table 9. Percent of Innovation Fund Tax Credit Awards Claimed by Year of Investment*

Year of Investment	Tax Credit Awarded	Percent Claimed in FY 2015	Percent Claimed in FY 2016	Percent Claimed in FY 2017	Percent Claimed in FY 2018
2013	$73,190	82.9%	14.9%	0.0%	0.0%
2014	$3,202,001	31.2%	47.5%	4.6%	3.7%
2015	$2,032,591	0.0%	25.6%	29.2%	17.5%
2016	$1,104,002	0.0%	0.0%	35.8%	22.2%
2017	$913,242	0.0%	0.0%	5.2%	15.7%
2018	$2,031,474	0.0%	0.0%	0.0%	0.0%
2019	$1,947,821	0.0%	0.0%	0.0%	0.0%
2020	$3,951,979	0.0%	0.0%	0.0%	0.0%
2021	$5,186,307	0.0%	0.0%	0.0%	0.0%
Total	$20,442,607				

Year of Investment	Tax Credit Awarded	Percent Claimed in FY 2019	Percent Claimed in FY 2020	Percent Claimed in FY 2021	Percent Claimed in FY 2022	Total Claimed to Date
2013	$73,190	0.0%	0.0%	0.0%	0.0%	97.8%
2014	$3,202,001	4.6%	0.4%	2.7%	0.0%	94.6%
2015	$2,032,591	1.3%	3.0%	3.0%	0.0%	79.7%
2016	$1,104,002	18.7%	3.1%	3.6%	2.5%	86.0%
2017	$913,242	23.2%	17.5%	16.8%	4.3%	82.8%
2018	$2,031,474	26.2%	30.5%	12.8%	12.8%	82.3%
2019	$1,947,821	0.0%	21.3%	20.1%	24.1%	65.5%
2020	$3,951,979	0.0%	1.2%	21.3%	38.9%	61.4%
2021	$5,186,307	0.0%	0.0%	0.0%	13.1%	13.1%
Total	$20,442,607	Pct claimed in first year following investment year				22.1%

*Year of investment is the first tax year of the award.
Note: outlined cells indicate percentage of awards claimed in year following year of investment.

Source: Iowa Department of Revenue, Tax Credit Award, Claim, and Transfer Administration System (CACTAS)

Table 10. Innovation Fund Tax Credit Transfers by Year of Award, FY 2014 to FY 2022

Fiscal Year of Award	Number of Awards	Number of Awards Transferred	Sum of Awards	Sum of Awards Transferred	Share of Awards Transferred	Average Award Transferred
2014	47	7	$890,590	$75,021	8.4%	$10,717
2015	66	13	$2,767,519	$573,166	20.7%	$44,090
2016	92	39	$1,652,922	$532,548	32.2%	$13,655
2017	77	24	$1,066,888	$298,062	27.9%	$12,419
2018	181	45	$1,849,865	$327,077	17.7%	$7,268
2019	153	52	$2,410,399	$798,867	33.1%	$15,363
2020	109	29	$1,709,045	$315,570	18.5%	$10,882
2021	205	30	$3,906,274	$1,022,953	26.2%	$34,098
2022	200	12	$4,248,267	$80,001	1.9%	$6,667
Total	1,130	251	$20,501,769	$4,023,265	19.6%	$16,029

Source: Iowa Department of Revenue, Tax Credit Award, Claim, and Transfer Administration System (CACTAS)

Table 11. Innovation Fund Tax Credit Transfers by Tax Type of Transferor, FY 2014 to FY 2022

Tax Type of Award to Transferor	Tax Type of Transferee	Number of Transfers	Share of Transfer Count	Amount of Transfers	Share of Transfer Amount	Average Transfer
Corporation Income Tax	Individual Income & Insurance Premium Tax*	51	20.3%	$1,339,121	33.3%	$26,257
Individual Income Tax	Franchise Tax, Corporation Income Tax, Franchise Tax*	8	3.2%	$223,158	5.6%	$27,895
Individual Income Tax	Individual Income Tax	172	68.5%	$1,293,122	32.1%	$7,518
Moneys and Credits Tax	Individual Income Tax, Moneys and Credits Tax*	20	8.0%	$1,167,864	29.0%	$58,393
		251	100.0%	$4,023,265	100.0%	$16,029

* Tax types were combined to protect taxpayer confidentiality.

Source: Iowa Department of Revenue, Tax Credit Award, Claim, and Transfer Administration System (CACTAS)

Table 12. Innovation Fund Tax Credit Transfers Detail, FY 2014 to FY 2022

Total Number of Awards Transferred	251
Total Dollar Value of Awards Transferred	$4,023,265
Total Number of Unique Transferors	61
Average Number of Awards Transferred per Transferor	4.1
Average Value of Awards Transferred per Transferor	$65,955
Total Number of Unique Transferees	90
Average Count of Transfers per Transferee	2.8
Average Value of Transfers per Transferee	$733

Source: Iowa Department of Revenue, Tax Credit Award, Claim, and Transfer Administration System (CACTAS)

Table 13. Innovation Fund Tax Credit Transfers Consideration, FY 2017 to FY 2022*

Fiscal Year of Award	Award Amount	Transfer Amount	Monetary Consideration
2017	$63,438	$45,796	72.2%
2018	$285,919	$264,148	92.4%
2019	$773,015	$709,457	91.8%
2020	$257,379	$235,229	91.4%
2021	$920,429	$831,199	90.3%
2022	$50,000	$49,750	99.5%
	$2,350,180	$2,135,579	90.9%

*This is an incomplete list of transfers and considerations; only those transfers listing a monetary consideration are included.

Source: Iowa Department of Revenue, Tax Credit Award, Claim, and Transfer Administration System (CACTAS)

Table 14. Innovation Fund Tax Credit Investment Firm Portfolio Characteristics

Investment Firm and Industry of Invested Companies*	Company Count**	Total Change in Employee Count**	Median # of years from Initial Investment date to 6/30/2022
ISA Ventures (ISAV)			
Biosciences & Information Technology	27	170.5	
Innovative Consumer Products & Manufacturing	8	5	
	35	175.5	1.1
Next Level Ventures (NLV)			
Biosciences & Information Technology and other***	25	379	3.0
Totals	60	554.5	1.5

*Due to their acquisition by an out-of-state company, one company in the IT sector was found to be an outlier in employee growth in out of state employees. The employee count from that company was excluded from this analysis. This impacts the NLV total company and employee counts.

**Five companies are included in the portfolios of both NLV and ISAV investment funds and are included separately in the company count and median year calculation in each for this table only. Subsequent tables include the counts of the common companies only from the fund with the earlier initial investment dates. Common companies in NLV Fund I and Fund II are also counted only from the earlier date of initial investment in this and subsequent tables.

***Industry classification was combined in the NLV counts due to low company count in "other."

Source: ISAV and NLV reports as of 6/30/2022, provided to the Iowa Department of Revenue

Table 15. Change in Number of Employees by Iowa and non-Iowa Based Employees (FTEs)

Employee Count at Initial Investment Date and as of 6/30/2022*	Total **	% Change
Iowa-based employee count		
Initial Investment Date count	482.5	
6/30/2022 employee count	685.0	
Net change	202.5	42%
Non-Iowa-based employee count change		
Initial Investment Date count	154.5	
6/30/2022 employee count	386.5	
Net change	232	150%
Total employee count		
Initial Investment Date count	637.0	
6/30/2022 employee count	1,071.5	
Net change	434.5	68%

*Five companies are included in the portfolios of both NLV and ISAV investment funds but are included only once in the employee count. End date of employee count is the earlier of June 30, 2022, or investment exit date.
**Due to their acquisition by an out-of-state company, one company was found to be an outlier in employee growth in non-Iowa based employees. The employee count from that company was excluded from this analysis.

Source: ISAV and NLV reports as of 6/30/2022, provided to the Iowa Department of Revenue

Table 16. Number of Employees and Companies by Change in Employee Count

Type of Change in Employee Count from Initial Investment Date to 6/30/2022*	Number and Percent of Companies with IFTC Investments		Change in Employee Count	
	Total**	% of Total	Total**	Change per Company
Iowa-based employee count change				
Increase	28	51%	340.0	12.1
Decrease	15	27%	(137.5)	(9.2)
No change	12	22%	0	-
Company Count/Net change employee count	55		202.5	3.7
Non-Iowa-based employee count change				
Increase	27	49%	289.5	10.7
Decrease	8	15%	(57.5)	(7.2)
No change	20	36%	0	-
Company Count/Net change employee count	55		232.0	4.2
Greater growth in non-Iowa-based employee count than in Iowa-based				
Iowa-based employee count change			(51.5)	(2.1)
Non-Iowa-based employee count change			173	7.2
Company Count/Net change employee count	24	44%	121.5	5.1
Total number of companies and total change in employee count	55		434.5	7.9

*Five companies are included in the portfolios of both NLV and ISAV investment funds but are included only once in the company and employee counts. End date of employee count is the earlier of June 30, 2022, or investment exit date.
**Due to their acquisition by an out-of-state company, one company was found to be an outlier in employee growth in non-Iowa based employees. The company and employee counts from that company were excluded from this analysis.

Source: ISAV and NLV reports as of 6/30/2022, provided to the Iowa Department of Revenue

Table 17. IFTC Credits per Net Change in Iowa-Based Employee Count

Employee Count at Initial Investment Date and as of 6/30/2022	Total*	IFTC Claims per Net Change in Employee Count
Initial Investment Date count	482.5	
6/30/2022 employee count	685.0	
Net change	202.5	
IFTC Credits Claimed**	$12,760,547	$63,015

*Due to their acquisition by an out-of-state company, one company was found to be an outlier in employee growth in non-Iowa based employees. The employee counts from that company were excluded from this analysis.
**Credits claimed are through September 23, 2022, which correspond to claims made on investments in companies with net change in employee count as of June 30, 2022. End date of employee count is the earlier of June 30, 2022, or investment exit date.

Source: ISAV and NLV reports as of 6/30/2022 provided to the Iowa Department of Revenue, and Iowa Department of Revenue, Tax Credit Award, Claim, and Transfer Administration System (CACTAS)