Across the Capital Valley of Death:

Building Entrepreneurial Ecosystems in Appalachia's Broken Markets

Picture of Thomas, WV, 2017

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Abbreviations and Glossary

Abbreviations:

ACC: Appalachian Community Capital

ARC: Appalachian Regional Commission

C3: Catalytic Capital Consortium

CCI: Center for Community Investment

CDFI: Community development financial institutions

IA: Invest Appalachia

MIE: Mission Investors Exchange

NMTC: New Markets Tax Credit

PRIs: Program Related Investments

Glossary:

Blended finance: The strategic use of public and philanthropic funds to mobilize private capital flows to emerging and frontier markets, by underwriting and absorbing risk for private investors, resulting in positive results for both investors and communities.

Capital absorption: The ability of ventures and communities to effectively attract and utilize different forms of investment capital to achieve their goals.

Capital demand: Organizational need or requirement for funds or resources that are necessary for investment in projects, businesses, or other economic activities.

Capital stack: The structure of all the capital used to finance a business, project, or investment fund, including different layers such as grants, equity, and types of debt.

Capital supply: Capital supply refers to the availability and provision of capital for financing and funding from various sources, such as investors, lenders, and philanthropic organizations, each with their own investment goals and risk tolerance, to support businesses, projects, and economic activities.

Catalytic capital: Investment capital, usually philanthropic, that accepts reduced financial expectations and/or absorbs risk to unlock private capital in order to bring about a greater social or environmental impact. It can work to fill critical gaps for entrepreneurs,

particularly in early stages of development to until a venture generates its own revenue generation model.

CDFIs: A US Treasury designation for financial institutions, such as loan funds or credit unions, that provide financing and other support to underserved communities and populations.

Concessionary capital: Loans, grants and equity investments that are subordinate to those traditionally available in the market and are more favorable to the borrower.

Conventional financing: Refers to traditional financing AND underwriting methods offered by financial institutions including banks that are not guaranteed by government agencies.

Credit enhancement: Tools/mechanisms, such as loan guarantees or loan loss reserves, that reduce the risk for private lenders making it easier for borrowers to access financing.

Due diligence: The process of thoroughly investigating and assessing the risks and potential of an investment or business deal before committing capital.

Entrepreneurial: Qualities, characteristics, or behaviors that are enterprising, innovative, and willing to take on new ventures or ideas.

Entrepreneurship: The actual act or process of designing, launching, and running a new business or enterprise, especially one that involves some form of risk, often requiring initial land and/or capital to launch

Equity investment: A form of financing where an investor provides capital in exchange for ownership stake in a company or project, with the goal of sharing in profits or appreciation.

Extractive industries: Industries that involve the removal of natural resources from the earth, such as mining, oil and gas extraction, and logging. These industries can have significant environmental and social impacts, including habitat destruction, pollution, and displacement of communities.

Financing: Providing capital through debt, equity, or other financial instruments *with* the expectation of repayment or financial return on investment

Funding: Providing capital, including grant or donation dollars, to support a particular project, initiative, or organization *without* the expectation of being paid back.

Guarantee: A contractual, binding agreement, often by a third party, to cover loan payments if the borrower defaults, which reduces the risk for the lender.

Impact investing: Investing in companies, organizations, and funds with the intention of generating measurable social and environmental impact alongside a financial return.

Loan loss reserve: A pool of funds set aside to cover potential losses from loans that are not repaid, which makes lending less risky. A credit enhancement in the form of a cash reserve used to improve the risk profile of a lender or its investor in order to obtain better terms of debt repayment.

NMTCs: A federal tax credit program that incentivizes investment in low-income communities by providing tax credits to investors who make qualified investments in designated Community Development Entities.

Non-extractive: Refers to economic activities that do not involve the removal of or harm to natural or human capital.

PRIs): Investments made by private foundations that advance the charitable mission of the foundation and involve the potential return of capital within an established time frame, which count toward the foundation's annual distribution requirement.

Subordinated debt: A loan that has a lower priority for repayment than "senior" debt in the event of a default, making it riskier for the lender but potentially less expensive for the borrower.

Sustainable entrepreneur: Venture which is able to be financially maintained and viable without heavy external subsidy through existing revenue generation.

Syndicate: A group of lenders or investors who pool their capital to jointly fund a loan or investment that would be too large or risky for any one of them to do alone.

Technical assistance: Professional support, advice, or training that helps organizations or entrepreneurs improve their operations, management, or finances.

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Executive Summary

In Central Appalachia, local economic growth is central to improving the lives and well-being of the region's residents. Insufficient funding and financing, however, limits the growth of sustainable local businesses and jobs in the region. The long history of extractive industries and chronic disinvestment in the region has created a degradation that is deemed a financial risk for return on investment, hindering the ability of Appalachian small business to seek capital from traditional banks, online lenders, or government agencies. In addition, low levels of technical assistance for small business planning in the region further limits entrepreneurship across the region. Conventional funding, therefore, is not well suited to bringing new industries to the Appalachian market.

This report explores strategies for promoting economic progress and growth in Appalachia for Invest Appalachia (IA), a non-profit organization seeking to catalyze sustainable long-term development in Central Appalachia. IA is a critical stakeholder in addressing the issue, but its presence is rather new and its work still at an early level of development with a relatively small scale and scope.

This report begins by exploring the background, explicitly identifying the factors that compromise the ability of regional businesses and entrepreneurs to obtain capital for regional ventures. Then, by reviewing the evidence on promising alternative financing mechanisms for both capital supply and capital demand interventions, options are identified that are flexible for the entrepreneur and prepare their venture to be investment ready for traditional capital are identified.

Four policy alternatives (drawing on supply side, demand side, and hybrid options) are then presented and analyzed using criteria derived from IA's work, principles, and values, with a priority placed on building on IA's current efforts and existing resources.

Ultimately, the recommendation for Invest Appalachia is presented for improvements in their Catalytic Capital Pool with an outline of its implementation for the best growth of the pool.

Disclaimer

The author conducted this study as part of the program of professional education at the Frank Batten School of Leadership and Public Policy, University of Virginia. This paper is submitted in fulfillment of the course requirements for the Master of Public Policy degree. The judgments and conclusions are solely those of the author, and are not necessarily endorsed by the Batten School, by the University of Virginia, or by any other agency.

Honor Statement

On my Honor, I have neither given nor received unauthorized aid on this assignment.

Garreth Bartholomew

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This project was a lift and only possible due to many amazing and spectacular people in my life. Thank you to Stephanie Randolph for her time, support, and sharing her perpetual wisdom and rolodex to be able to glean insights from. Stephanie's acumen for understanding how capital can transform communities, especially in areas where capital, as she describes flows uphill, is par none. This project would not have been possible without her knowledge of this as a potential policy problem, nor without her exceptional expertise in it.

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I. Introduction

Economic growth is essential to improving the lives and well-being of Appalachian residents. Small businesses represent a key pathway for promoting this economic growth across the Appalachian region by increasing local employment and per capita income (Stephens and Partridge, 2010). The economic and industrial history of Appalachia, however, has largely been one of extraction - coal, timber, and tobacco - which has left the region with spent resources, waste deposits, and scarred landscapes, and has predisposed it to harms such as flooding and environmental hazards. This degradation is deemed a financial risk for return on investment when Appalachian small businesses pursue capital from traditional banks, online lenders, or government agencies. Due to these structural barriers, regionally rooted businesses and non-extractive entrepreneurs face challenges in obtaining capital for their ventures because conventional funders lend to extractive systems with established financial returns so are not well suited to bringing new industries to the Appalachian market. Compounding the critical lack of capital available to non-extractive businesses and entrepreneurs in Appalachia is the low level of technical assistance (TA) that exists related to small business planning, regulation, taxation, and financing (ARC, 2007).

This document will explore strategies for promoting economic progress and growth in Appalachia by identifying the factors that compromise the ability of regional businesses and entrepreneurs to obtain capital for building regional ventures. The document will also provide an overview of evidence on promising interventions for both capital supply and capital demand interventions for the region, notably alternative financing mechanisms that are flexible for the entrepreneur and prepare their venture to be investment ready for traditional capital. This evidence will be evaluated in the context of actions that Invest Appalachia can take and presented as policy alternatives. This document will end with a recommendation for Invest Appalachia about improving their Catalytic Capital Pool and how to implement said recommendation for the best growth of the pool.

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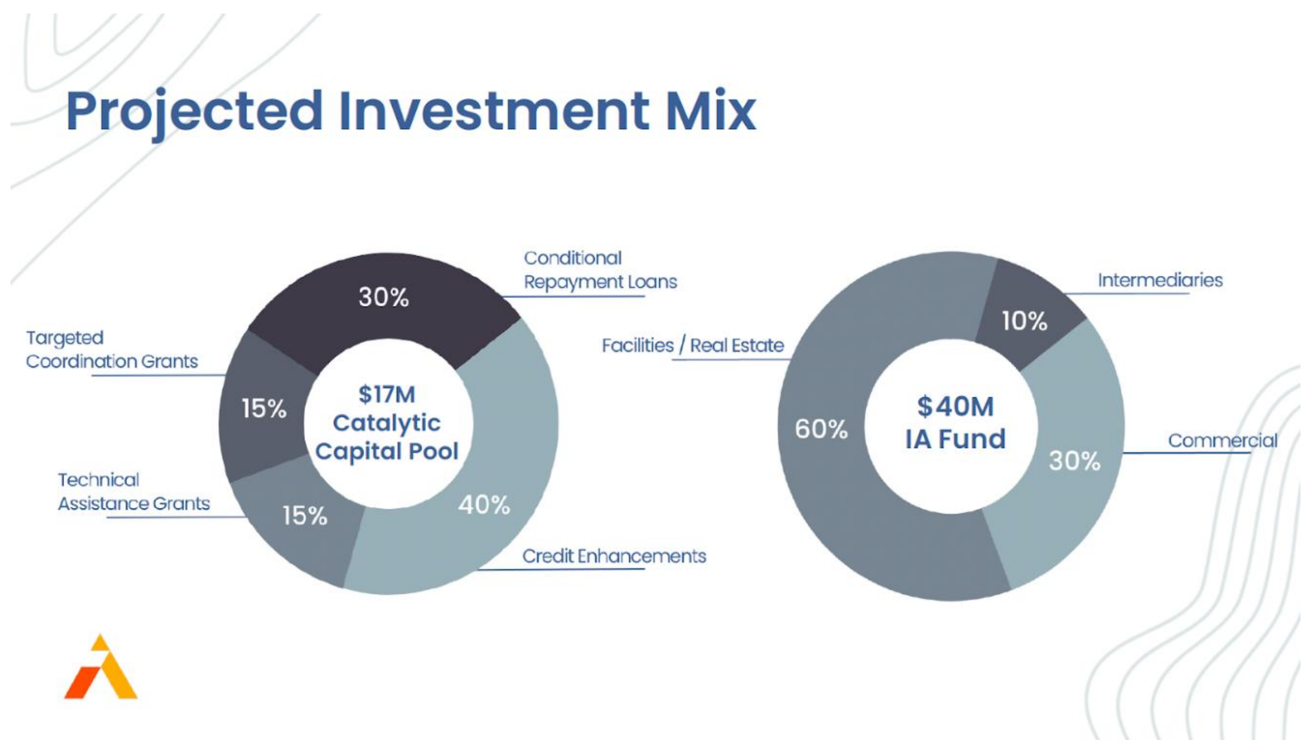
II. Problem Statement

In Central Appalachia, local economic growth is central to improving the lives and well-being of the region's residents. However, insufficient funding and financing in Central Appalachia limits the growth of sustainable local businesses and jobs in the region. Chronic disinvestment in the region has resulted in a self-perpetuating cycle as the lack of investment leads to higher poverty levels and fewer locally viable businesses, which then diminishes the region's attractiveness to investors. This cycle has resulted in at least a $350 million gap in private and public investment needed for the region (Next Street, 2017). **Conventional financing sources in Central Appalachia are inaccessible and incompatible with regional needs, limiting entrepreneurs' access to financing thereby limiting the number of sustainable, regional businesses and jobs.**

III. Client Overview

Invest Appalachia (IA) is a non-profit organization seeking to catalyze sustainable development in Central Appalachia through a blended capital platform. IA has two funding mechanisms (*Figure 1*). The first is its $40M IA Fund which is more heavily weighted toward Facilities/Real Estate indicating a strategic investment in physical infrastructure that can have a long-term impact on economic development. The considerable allocation to commercial investments focuses the fund on generating sustainable revenue through market-driven operations, while the smaller allocation to intermediaries indicates who can facilitate direct lending to support smaller- but essential - investment into businesses.

Figure 1: Projected Investment Mix for Invest Appalachia/Next Street (2017)



Second is its Catalytic Capital Pool which serves two purposes: to increase the investment readiness of small businesses and address systemic barriers that limit the flow of capital into the region. This pool establishes and deploys alternative financing mechanisms to support non-extractive entrepreneurs and promote economic development across Appalachia by providing unique gap filling capital. This approach is crucial to fostering financially viable ventures contributing to the region's prosperity through "impact investing," an approach to investing that prioritizes the intent to generate measurable

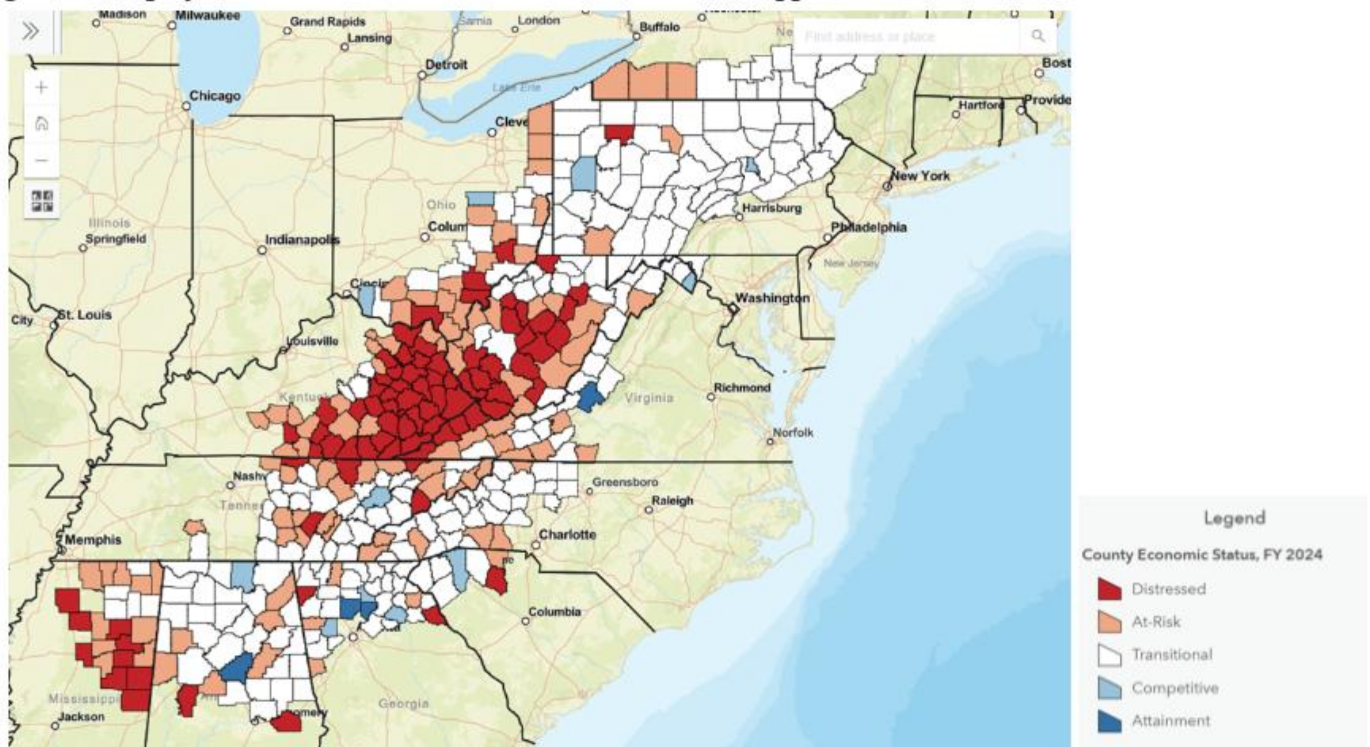
social and environmental benefits in addition to a financial return rather than just financial returns.

IA's work is based on a broad regional consensus on strategies and sectors driving inclusive prosperity as established by two leading regional networks: Appalachia Funders Network (AFN) and Central Appalachia Network (CAN). IA has aligned its principles with this consensus - to advance economic equity, local ownership, and community wealth creation. IA's mission to foster a more inclusive and sustainable regional economy fits into the organization's broader goals and reporting structures, as they are accountable to a board of directors and a Community Advisory Council, both of which prioritize projects with societal and environmental impact and the societal valued outcome as developing strong community markets.

IV. Background of the Problem

Central Appalachia, comprising 234 rural counties across six states, is a study in contrasts: resource-rich yet economically impoverished with a poverty rate double the national average (U.S. Census Bureau, n.d.). The long history of extractive industries and their legacies have led to a cycle of underdevelopment, political inefficacy, and economic stagnation (Labor for Sustainability, n.d.) with a significant number of counties deemed as economically distressed or at risk concentrated in Central Appalachia (*Figure 2*). Moreover, the decline of coal and other extractive industries has exacerbated environmental, health, and social issues, including an opioid crisis that has disproportionately affected the region (Broady et al, 2021; S&P Global, 2021; Cumberland Heights, 2020). As a result of the legacy of human, social, and economic extraction, Appalachia has been a blind spot for investors despite its abundant human and natural capital, attracting less than 1% of all venture capital and 1% of the per capita philanthropic capital of San Francisco since 1990 (National Committee on Responsive Philanthropy, 2018).

Figure 2. Map of Economic Status and Distressed Areas in Appalachia, FY2024



Appalachian Regional Commission, https://www.arc.gov/classifying-economic-distress-in-appalachian-counties/

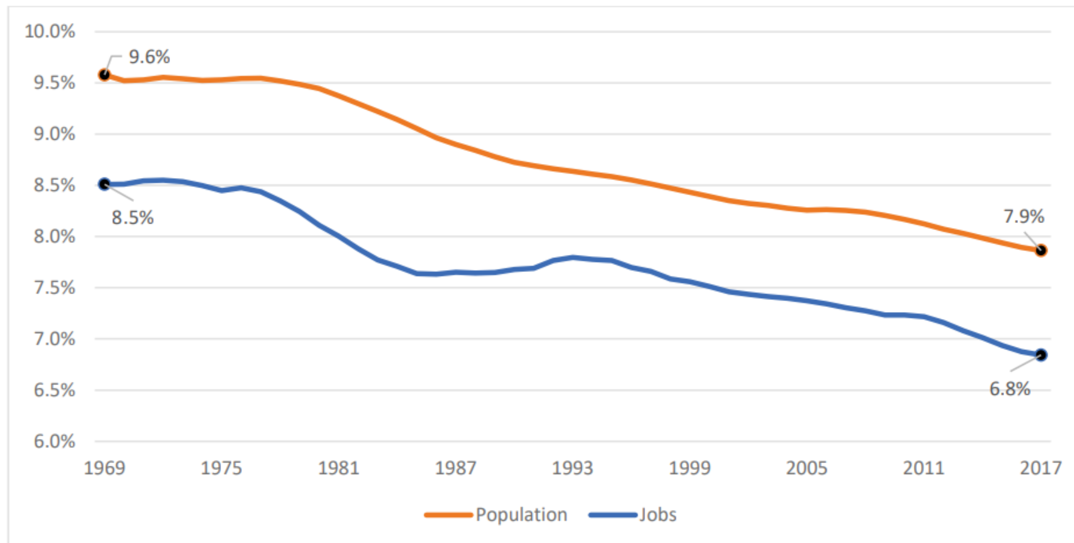
Understanding the Need:

In 2017, Next Street Consulting conducted a comprehensive analysis of the capital ecosystem in Appalachia to establish a baseline as IA began its development process. They conducted 24 stakeholder interviews with capital providers and ecosystem leaders in Appalachia, gathering insights on existing programs as well as the needs of small businesses and institutions in the region (IA, 2017). By integrating that with existing literature and documents on national best practices and approaches to impact investing, Next Street was able to analyze the overarching investment landscape and develop a solutions roadmap, tailored to the region's requirements through input from an 8-member steering committee (IA, 2017).

Among other key Next Street findings was a funding gap in private and public investment across Appalachia of at least $350 million. This gap, together with the severe limitations in conventional funding that plague the non-extractive entrepreneurial landscape, has its roots in the region's complex socio-economic fabric. This complex set of factors has been exacerbated by Appalachia's dominant focus on resource extractive industries, notably coal mining, timber, and tobacco. The funding gap and scarcity of conventional funding ultimately create barriers for entrepreneurs to establish non-extractive businesses, both for resources and capital generation, and create local jobs. But the issue is not just the lack of conventional funding; it's that traditional financial institutions and venture capitalists are ill-suited to support businesses aiming to introduce something new in the Appalachian market. This lack of support stifles not only financial returns but also the social and environmental benefits these ventures could bring, with job loss and economic stagnation ensuing.

For decades, the Appalachian region has experienced a significant loss of both jobs and population (Woods & Poole, 2019). *Figure 3* represents the percentage of the U.S. population and employment that Appalachia comprises, demonstrating a chronic decline in both population and employment in Appalachia over nearly five decades. Importantly, while both population and employment have declined, there remains a persistent gap between population and employment over time indicating that there have remained fewer jobs available per person in Appalachia than elsewhere in the U.S. between 1969 to 2017 (ARC, 2019).

Figure 3. Percentage of U.S. Totals in Appalachia: Population and Jobs, 1969–2017



Data source: Woods & Poole, 2019 Complete Economic and Demographics Data Source

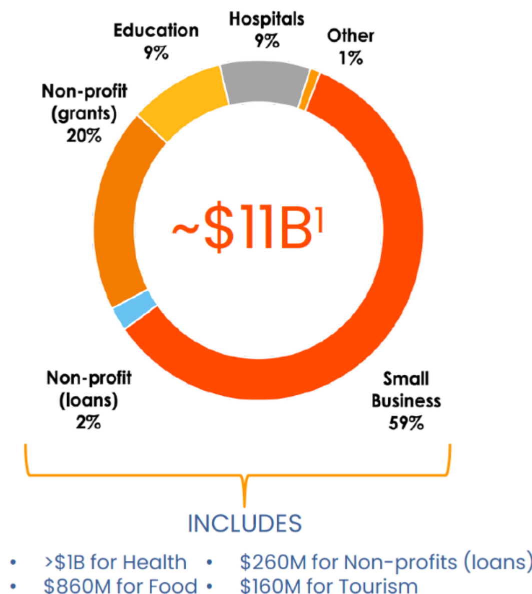
Compounding this economic stagnation are equity issues. Across Appalachia, mainstream investors have historically neglected vulnerable populations such as low-income families and minority communities (Smith, 2021). This oversight has perpetuated a cycle in which these groups are deemed "uninvestable," limiting their access to capital, stifling economic growth, and making color blind banking a perpetuation of harmful capital deployment (Broady et al, 2021). This is particularly acute for Black and Brown Appalachians, for whom limited access to capital is the most important factor that constrains the establishment, expansion, and growth of Black-owned businesses (Fairlie et al, 2020). This is reflective of a national crisis of minority entrepreneurship with Black people representing 12.7% of the U.S. population but only 4.3% of all U.S. business owners (Perry et al, 2020). Likewise, a significant number of disproportionately BIPOC Appalachian households - over half a million - remain unbanked, complicating the underwriting process for potential entrepreneurs and further marginalizing these communities (FDIC, 2021). Coupled with a lack of accessible funding options and a gap in financial literacy, these systemic issues contribute to a widening economic and racial divide, hindering the region's overall development.

Appalachia's capital market structure is complex and multifaceted with local entrepreneurs and small businesses often starved for capital, while larger corporations, often in extractive industries, maintain access to capital from traditional lenders. While

non-profits can aim to fill the service gaps left by market and governmental shortcomings, their efforts are often fragmented and lack cohesion or sustained impact. Government involvement is generally restricted to essential public services - healthcare and education, offering limited direct market intervention and development. There's no monopoly per se, but there is a scarcity—of opportunity, of capital, and of services (Crosson, 2021). This scarcity often leads to a form of monopoly by default, where one or two businesses in the region (commonly Walmart or coal) dominate simply because there are no alternatives.

In this economic ecosystem, small business survival and maintaining physical infrastructure are critical for Appalachia economic development. IA has identified there is ample capital demand within Central Appalachia (*Figure 4)* at $11 billion, with nearly 60% of the demand stemming from small businesses yet a significant capital gap exists. The historic and substantial billions of dollars in a capital gap and scarcity of flexible funding in Appalachia ultimately create barriers, both for resources and capital generation, for entrepreneurs to establish non-extractive businesses and create local jobs (Silver et al., 2013). Without sufficient conventional funding, Appalachia's economic growth will require available alternative funding mechanisms, such as impact investing. What follows is a review of the literature on existing initiatives that hold promise for stimulating economic growth in the region, providing a synthesis of the evidence of supply-demand-hybrid interventions for startups as well as potential uses and limitations.

Figure 4. Capital Demand is Ample in Central Appalachia



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Causes of the Problem – "A Region Apart"

"Appalachia is a region apart—geographically and statistically. It is a mountain land boldly upthrust between the prosperous Eastern seaboard and the industrial Middle West—a highland region which sweeps diagonally across 10 States from northern Pennsylvania to northern Alabama." – First Appalachia Regional Commission Report, 1964

Economic Extraction and Entrepreneurial Erasure

Since the end of the Civil War, workers in Central Appalachia, steeped in coal mining, timber, and tobacco extraction as well as the industries for their transport and manufacturing, were typically were constrained within a narrow set of vocational skills, limiting their job prospects beyond these industries (Bell & York, 2010; Harley & Wexner, 2022). Additionally, these communities were often strapped for financial capital and land, hampering their ability to embark on entrepreneurial ventures (Stoll, 2017). In the coal-dominated enclaves in the region, companies wielded considerable control over daily life, discouraging independent business initiatives (Bell & York, 2010). Despite suggestions from outside consultants and economic development experts to spawn local enterprises, Central Appalachia's lack of entrepreneurship was a barrier coal perpetuated to stave off decline (ARC, 1964; McKinsey, 2023). Company-provided general stores, housing, religious institutions, recreational facilities, and even sports teams fostered a dependency that precluded self-started businesses (Hampson, 2013). Furthermore, the payment system utilizing company "script," a form of currency valid only within the company's ecosystem, further tethered workers to the coal company's orbit, limiting their financial autonomy (NPS, n.d.).

Appalachians, however, were not "passive recipients of exploitation and greed from outside interests" (Harley & Wexner, 2022). While Appalachians were obstructed from achieving business **entrepreneurship**, that did not mean they were not **entrepreneurial.** Appalachians have a long history of social entrepreneurship, creating grassroots community organizing ventures to combat injustice and exploitation by outside interests. Gaventa's study of power in rural Appalachia highlights how, even in the face of suppression by powerful actors, Appalachians created organizations engaged in rebellions against inequality (Gaventa, 1980). The chapter "Fighting Back in Appalachia" chronicles a wide range of grassroots efforts by Appalachians since the 1960s to resist corporate greed and pursue a more sustainable and just future for the region (Fisher, 1993). Stoll's history of Appalachia also showcases the resilience and agency of Appalachian communities in the face of repeated waves of resource extraction and dispossession (Stoll, 2017). Even as the coal industry sought to shape ideology and perceptions throughout the 20th century, especially as coal jobs declined due to mechanization, Appalachian citizens mobilized to

counter the industry's power (Bell & York, 2010). Appalachian entrepreneurial spirit is as strong as any corner of the United States. Appalachians created social movements and organizations to advance their collective well-being in the face of historical and ongoing capital challenges that limited their ability to convert that entrepreneurial acumen to a sustained ventures.

Entrepreneurial Ecosystems in Appalachia At Present

The concept of the entrepreneurial ecosystem has gained significant traction since its emergence as a concept around 2010 (Feld, 2012; Isenberg, 2010; Hwang & Horowitt, 2012; Pages et al., 2003). It arose as a critique of traditional economic and small business development strategies that focused primarily on increasing the number of start-ups, neglecting the importance of supporting high-growth ventures (Stam, 2015; Borisenko & Boschma, 2016). Drawing from biology, the entrepreneurial "ecosystem" concept emphasizes the role of the environment in fostering new and growing companies (Auerswald, 2015; Mason & Brown, 2014). This shift in focus from individual entrepreneurs to the broader ecosystem has led to new insights and a better understanding of the factors that contribute to the success of entrepreneurial hotbeds like Silicon Valley, Seattle, and Boulder (Saxenian, 1994).

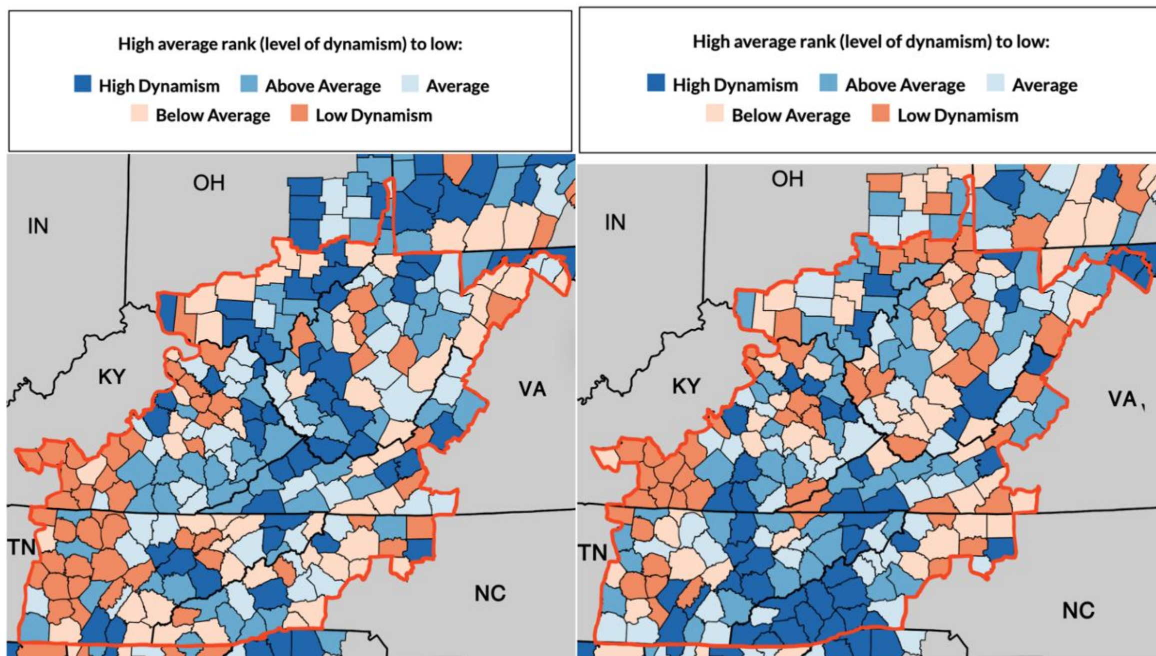
Today, Appalachia's rooted entrepreneurial spirit for economic justice, worker ownership, and asset-based development has led to the development of anchor institutions focusing on bridging entrepreneurialism with entrepreneurship. In Athens, Ohio has served as a key test tube for building strong collaborative networks of entrepreneurs thinking differently about building collaborative ventures, with strong support from The Ohio State University's Center for Cooperatives (Pages, 2018). The ecosystem has evolved to serve a wide range of entrepreneurial talent in the region, with a particular focus on the local food system (Pages, 2018). A great example is the Appalachian Center for Economic Networks (ACEnet), based in Athens, Ohio, which has played a significant role in developing the entrepreneurial ecosystem in the Appalachian region and "has spun off a number of entrepreneurial start-ups including Shagbark Seed & Mill" (Phillips & Parker, 2015; Pages, 2018). One of the most important ecosystem functions is that ACENet has provided technical assistance to other kitchen incubators in the region, including one in Nelsonville, OH and across state lines to Blue Ridge Food Ventures, a shared use kitchen and natural products manufacturing facility in western North Carolina. The case study of Athens demonstrates the power of strong grassroots leadership and collaboration in building an effective entrepreneurial ecosystem (Pages, 2018). Through its various initiatives and support services, ACEnet has been instrumental in fostering a collaborative environment that encourages entrepreneurship and local business growth in the Appalachian region

beyond traditional incubation but also through focusing hard on sector specific support in food and agriculture, workforce development, and convening networking and collaboration opportunities for ventures in the region (Morris & Nogrady, 1999; Edgecomb & Thetford, 2011; Phillips & Parker, 2015)

Entrepreneurial ecosystems in Appalachia have been evolving and growing in recent years, thanks in part to the support and investments from the Appalachian Regional Commission (ARC) and its partners. The ARC has been investing in entrepreneurship initiatives since the 1990s, with its first Entrepreneurship Initiative operating from 1997 to 2005 (Pages, 2018). These early investments helped to put entrepreneurship "on the map" in Appalachia, spurring the creation of 12,000 jobs and 1,700 new businesses in that 8-year period alone (Markley et al., 2008, as cited in Pages, 2018). The Appalachian Region's performance on key measures of innovation and entrepreneurship has improved in recent years. In the 2017 edition of the State New Economy Index, several ARC states, including Tennessee, Georgia, Kentucky, Ohio, and Virginia, saw significant improvements in their rankings (Atkinson & Wu, 2017). Data from the Entrepreneurial Ecosystems in Appalachia project also suggest an optimistic outlook for Appalachia's economic prospects, with few sizable differences between the overall performance of the Appalachian Region and national averages (Pages, 2018; *Figure 5* and *Figure 6*).

Figure 5 – Entrepreneurial Dynamism in Appalachia: County Performance, 2013-2017

Figure 6 – New Establishment Growth in Appalachia: County Growth Rate, 2011-2015



* Central Appalachia is outlined in Red
Source: Appalachian Regional Commission. (2017). Appalachian Entrepreneurial Dynamism Dashboard. http://arceco.creconline.org/dash/

Figure 5 illustrates the county-level performance on measures of entrepreneurial dynamism as measured by # of startups, # of ventures with 10-99 employees, and # of high growth businesses that grew >75% between 2013-2017, as compared to national, state, and regional averages. While there is significant variation in performance across and within states, there are few sizable differences between the overall performance of the Appalachian Region and national averages. Entrepreneurial dynamism levels appear to be low and/or below average in parts of Central and Southern Appalachia (Pages, 2018). The Central Appalachian, especially eastern Kentucky and Tennessee, have some of the lowest rates of entrepreneurial dynamism which correlates with some of the highest levels of economic distress in the Appalachian Region (ARC, 2021). Importantly, as Pages notes in his review of ARC and Entrepreneurial ecosystems, counties within the Appalachian Regional Commission (ARC) service area do still underperform compared to non-Appalachian counties in the same state, after controlling for the location of metro areas and university centers (Pages, 2018).

Figure 6 focuses on the growth of new establishments in Appalachia between 2013 and 2017. Contrary to popular belief, the Appalachian Region actually outperformed the U.S. average in terms of new establishment growth, with a 6.1 percent increase compared to the national average of 5.8 percent. However, Pages also notes that startup establishment concentrations and new establishment growth rates vary greatly by county, with lower rates still concentrated in Central Appalachia (Pages, 2018). *Figure 6* suggests that stronger performances in startup establishments can be found in the Appalachian portions of Ohio and North Carolina (Pages, 2018).

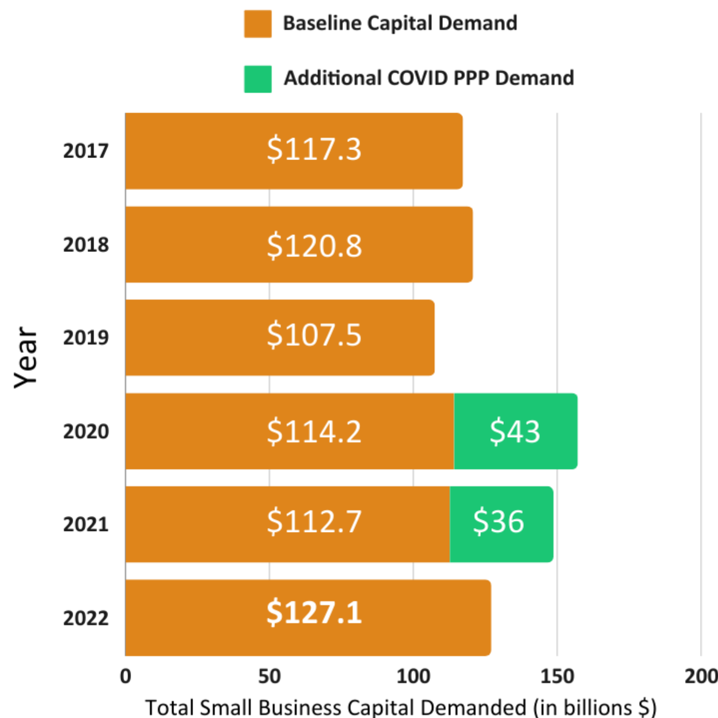
While there are promising examples of entrepreneurial ecosystems growing in Central Appalachia, there are still challenges and gaps in the entrepreneurial ecosystems the region. Many regions lack dedicated programming and resources to promote youth entrepreneurship, which is crucial for building an "entrepreneur-friendly culture" (Pages, 2018). Additionally, most states and subregions need to focus on developing programs that help companies scale-up and move from the startup phase to the high-growth phase (Pages, 2018). Access to capital, particularly equity capital, remains the primary challenge in much of Appalachia, despite some promising initiatives supported by the ARC (Pages, 2018; ARC 2021).

<u>The current status of capital supply for new entrepreneurs</u>

Access to capital remains a significant challenge for new entrepreneurs in Appalachia, hindering the growth and sustainability of small businesses in the region. Demand for small

business capital in Appalachia grew from $117.1 billion to $127.1 billion annually between 2017 and 2022, which as *Figure 7* demonstrates, had a wide range due to PPP lending and increased capital demand (United States Census Bureau. (2015-2020); Washington, D.C. Federal Reserve Bank of Cleveland; 2015-2021) However, Appalachian small businesses faced a financial shortfall of unmet demand of approximately **$70 billion** during the same period, with the gap ranging from $56 billion in 2019 to a spike of $79 billion in 2021 (United States Census Bureau. (2015-2020); Washington, D.C. Federal Reserve Bank of Cleveland; 2015-2021)

Figure 7 – Total Demand for Capital among Small Businesses (2017-2022)



Source: United States Census Bureau. (2015-2020); Washington, D.C. Federal Reserve Bank of Cleveland; 2015-2021

The COVID-19 pandemic has further exacerbated the gap in demand challenges faced by new entrepreneurs in accessing capital. The pandemic disrupted conventional methods of securing small business funding, with businesses and financial entities in Appalachia adjusting to an unexpected surge in the need for urgent financial aid. (Simon, 2023). As a result, by 2022, commercial bank loan approval rates were down by over 50% from pre-pandemic levels nationwide, while nearly half of banks reported stricter loan standards for small businesses (Board of Governors of the Federal Reserve System, 2022). The lack of access to capital is particularly acute for new entrepreneurs in rural areas of Appalachia. In general mall business capital supply and concentration are generally concentrated

following population concentration and metro and metro-adjacent areas (following historic investment and underinvestment patterns in rural areas)" (Next Street Financial, LLC, 2023, p. 5).

Geographic barriers are also exacerbated by significant disparities in broadband subscription rates and device access between rural and urban areas within the region (ARC, 2021). The lack of broadband access in rural Appalachia is well-documented, with significant disparities in broadband subscription rates and device access between rural and urban areas within the region. For instance, during the 2017-2021 period, 82.8% of Appalachian households had a broadband Internet subscription, compared to 87% nationwide (ARC, 2021). Likewise, in 42 Appalachian counties, less than 70% of households had a broadband subscription, highlighting the digital divide within the region (ARC, 2021). This digital divide is particularly concerning given the increased reliance on internet access for economic activities, including starting and growing businesses (ARC, 2021). Furthermore, the Richmond Federal Reserve (2022) highlights that rural entrepreneurs face significant hurdles beyond just broadband access, including lower population density and a thinner entrepreneurial ecosystem.

To address the challenges faced by new entrepreneurs in accessing capital, key financial and philanthropic entities must re-evaluate. These include providing large pools of institutional capital that is flexible, nimble, and can support the balance sheets of smaller Appalachian financial institutions. Capital also needs to be more creative and “right-sized” as many of the current offerings for small businesses are tailored to the tens of millions, not the needed tens of thousands. Finally, and very key to IA, Central Appalachia needs institutions that can support ecosystem information-sharing and assist partners like ARC with both quantitative and qualitative data collection on entrepreneur capital needs, access, and supply. The gaps faced by entrepreneurs in access to capital require new innovations among stakeholders in the entrepreneurial capital ecosystem to help expand access to capital and credit for new entrepreneurs in Appalachia and to supporting the growth and sustainability of small businesses in the region.

V. Evidence on Potential Solutions to the Problem

The problem of insufficient, inaccessible, and incompatible funding sources in Appalachia requires a review of the evidence of “alternative” interventions that impact investing could use, These interventions would draw from both the supply and demand perspectives, and would focus on how to leverage and make flexible external supply capital and make capital-demanding entrepreneurs investment-ready. These capital supply entities include venture capitalists, angel investors, and banks. On the other hand, the demand-side of capital refers to entrepreneurs who require funding for their ventures. Given the landscape of alternative funding mechanisms, some initiatives do not fall clearly into either supply versus demand, requiring a hybrid intervention category.

Vehicles for Improving the Supply of Capital:

Expanding the supply-side of capital for entrepreneurs can take a variety of forms. Two supply-side vehicles are discussed here: *Community Development Financial Institutions (CDFIs)*, an accreditation given by the US Department of Treasury to financial institutions that provide credit and financial services to underserved markets and populations in the US, and *Crowdfunding & Peer-to-Peer (P2P) Lending*, platforms that allow individuals or businesses to raise small amounts of capital from a large number of individual to finance the business venture.

CDFIs: The literature suggests that CDFI-like financial institutions across the world - microfinance institutions, social banks, or social investment funds - have been a successful vehicle for promoting small business development (Sevid, 2007). They have been particularly innovative in offering financial services to underserved communities, including small and microbusinesses, in part due to their flexible lending criteria (Porter, 2013; Patraporn, 2015). This flexibility in lending criteria addresses a specific need for non-extractive entrepreneurs in Appalachia who typically do not fit well within the lending criteria of more conventional supply-side mechanisms given both the financial risk associated with the residual extractive degradation in the region and their reluctance to finance diversifying industries.

In Appalachia, there are ~70 regional CDFIs providing lending capacity for those who struggle to access traditional capital, however, CDFIs are undercapitalized relative to community demands and require additional risk mitigation/collateral/guarantees to ensure deals are sustainable (Invest Appalachia, 2023). Likewise, there is a need for capacity-building and technical assistance dollars given that the 25 CDFIs have assets of less than $1B.

In addition to expanding access to capital, CDFIs also provide extensive technical assistance and advice (Patraporn, 2015; Sevid, 2007). This capacity building aspect of CDFIs is particularly relevant to Appalachia where technical expertise in funding mechanisms is often limited. CDFIs can provide hands-on support to businesses to facilitate entrepreneurs turning investment-worthy opportunities into investment-ready businesses. While CDFIs provide a range of TA services, they typically include support for business plan development, building and assessing cash flow analysis, as well as marketing support, including grants and training to build websites. As for sustainability, CDFIs' first source of capital is the US Treasury, but they also raise funds from impact investors and banks seeking Community Reinvestment Act (CRA) credit. Since its 1994 inception, the CDFI Fund has provided more than $5.5 billion across a range of monetary award programs (US Dept of Treasury, 2022), suggesting the capacity to make more loans. There is also precedent for CDFIs to building ties to support BIPOC entrepreneurs, particularly in urban underserved communities, which would be critically important in Appalachia to promote sustainability (Rolland, 2015; Patraporn, 2015).

While research has typically found CDFIs to be a successful vehicle for promoting small business development, it has generally relied on correlational findings and struggled to find direct causality by CDFIs. The ARC Report notes that 98% of the capital deployed is still bank, suggesting that it is still only serving a very small segment of the population. Also, a challenge for CDFIs uniquely is the time that the process takes, as clients/borrowers often need significant support before they can even apply for a loan, creating significantly higher operation cost than conventional financing counterparts (Randolph interview, March 2024). However, a noteworthy stat: for business loans, 77 percent of CDFI credit unions have 60-day delinquencies of less than one percent (Swack et al., 2012).

Crowdfunding & P2P Lending: Crowdfunding platforms (Kickstarter, Indiegogo, Honeycomb Credit) allow businesses to raise small amounts of money from a large number of people, thereby proving market demand and making them more attractive to larger investors. Also, because these platforms have a low barrier to entry given the low contributions required, they can provide funding opportunities to groups and areas that have historically faced barriers to conventional funding mechanisms. Limited evidence indicates that the entry of peer-to-peer lending platforms (LendingClub) led to a statistically significant decrease in small business loans originated by traditional banks, particularly in low-income and distressed areas (Kim, 2020). This suggests that P2P lending could potentially create a switching effect with businesses pursuing them as an alternative to conventional funding mechanisms such as traditional banks. However, lower barriers to accessing funds does not necessarily reduce investor expectations for a return on investment (Pierrakis, 2013). Crowdfunding and internet-led social capital disparities also exist on gender and educational lines, with female and entrepreneurs with lower

educational attainment receiving less successful crowdfunding initiatives than male and well-educated ones (Berk, 2021). While outcome metrics are focused on businesses created or initiatives funded, research does not directly address the sustainability of businesses financed through crowdfunding, much like the research on CDFIs.

Intervention Vehicles for Improving the Demand for Capital:

Improving the demand for capital focuses on entrepreneurs who require funding for their venture, specifically addressing providing organizational resources and incentivizing their business plan development.

Provide Organizational Resources: Entrepreneurs and startups typically require a wide range of resources in the startup process.

Innovation & Entrepreneurship Hubs can provide resources such as office space, mentorship, and education to new startups, as well as connect them with financial services and venture capitalists or angel investors (de la Chaux, 2021). These I&E Hubs have been used in the international context, such as Tanzania, Kenya, and Hungary, demonstrating success with knowledge creation, innovation promotion, and the development of entrepreneurial ecosystems such as collaborations between investors, academia, and the private sector (Mwantimwa, 2021; Chirchietti, 2017; Kovacs, 2017). This model is beginning in Central Appalachia: the New River Gorge Regional Development Authority (NRGRDA) is dedicated to "connecting businesses and communities with the resources they need to thrive" in Central Appalachia (NRGRDA.org, n.d.). Included in their programing is the HIVE in Southern West Virginia which provides business advising and technical assistance, such as identifying location, assisting with access to credit, and other business development support. This model includes a central office as well as satellite offices with staff that travel across the mult-county region, and functionally serves as a one-stop shop for entrepreneurs while streamlining operational costs (Randolph Interview, March 2024). While NRGRDA has some notable success stories, such as developments at the regional airport, the model is still new. International experiences have highlighted challenges with this model, such as limited translation of innovation into sustainable, entrepreneurial opportunities or business creation, and unrealistic expectations and impact chains that are linear (Mwantimwa, 2021; Chirchietti, 2017; Friederici, 2017). *Centers of Excellence* function much like I&E hubs, but provide specialized expertise and resources to startups in a specific industry or field (de la Chaux, 2021).

Business Incubators provide startups with resources and connections to potential funders much like I&E Hubs, but often provide services tailored to businesses such as legal advice,

marketing assistance, and business mentorship (de la Chaux, 2021). These incubators can be public or private and can be academic institutions or industry-specific (de la Chaux, 2021). Also focused on business development are *Small Business Development Centers* which provide many of the same business skill-building and training, but often work with funders (de la Chaux, 2021).

Anchor Institutions provide services and opportunities similar to I&E Hubs, but are typically organizations that are rooted in their local communities and have a vested interest in promoting economic development, such as Universities, Hospitals, or Government Agencies (de la Chaux, 2021). Research has generally found that anchor institutions have positive impacts on small businesses, such as improved turnover and value, and in promoting community economic development and local initiatives.

Collectively, these approaches to providing organizational resources could help address gaps for startups in Appalachia, however, studies have raised questions about the overall impact of I&E Hubs in translating improved knowledge and innovation into business implementation. Additionally, the success of Anchor Institutions appears to rely on the connection of institutions with the local communities and types of institutions, specifically Universities, which are not plentiful in local Appalachian communities (McCauley-Smith, 2020; Partnerships, 2013; Dela, 2012; Agger, 2016).

Incentivize Business Plan Development: Public or private entities can incentivize business plan development by hosting business plan competitions or innovation challenges with accompanying cash prizes. These events not only provide the startups with seed money, but also attract attention from further investors. Winning start-up competitions and receiving competitive grant funding significantly increase the chances of business survival and improve various metrics of success (Barrows 2018; Barrows, 2016). These positive impacts are particularly strong for firms in the clean technology sector, firms from countries with high costs of business formation, and firms competing for mid-size prizes. However, some researchers have also found conflicting results, finding that an entrepreneurship policy implemented in Kansas had no conclusive effects on local economic and entrepreneurial activity (Figueroa-Armijos, 2016).

Hybrid Supply-Demand Interventions:

Public-Private Blended Finance Pools & Regional Investment Funds: These funds pool capital from multiple sources, including local governments, foundations, and private investors, to invest in local businesses. These businesses can access funds through a variety of ways, including through a competitive process offered by various units of government. Examples of Public-Private partnerships in Central Appalachia include ACT

Now Coalition (Appalachian Climate Technology) in West Virginia, comprising "economic revitalization organizations, leading academic institutions, and private sector innovators" dedicated to building a new economy for Southern West Virginia through development of infrastructure, human capital, and businesses (actnowwv.org, n.d.). In addition to private investors, there was a significant match met by philanthropy and local governments; such matches are common as federal funds often require a match, so local units of government, philanthropy, or businesses step in for the match (Randolph interview, March 2024).

An example of the creation of a local loan fund, through taxation and government oversight, is in North Dakota, where businesses supported by sales-tax financed debt funds with investment length from 4-8 years, have resulted in the creation of 4,500 jobs, with 89% businesses still operating at the end of the term (Leistritz, 1998). This suggests that Regional Investment Funds can be an effective tool for economic development and job creation. Internationally, the IFC has been one of the key institutions blending public and private finance in creating and sustaining private markets with strong development impact, highlighting the value of using blended finance to kick-start markets and achieve long-term financing (Sierra-Escalante, 2018). A qualitative evaluation of the impact of blended finance funds and facilities across OECD countries, found that effective blended finance funds laid out a development strategy, performance tracking, and evaluation approach (Basile, 2020) While studies suggest that Public-Private Blended Finance Pools and Regional Investment Funds can effectively spur economic development and job creation (Leistritz, 1998; Sierra-Escalante, 2018; Basile, 2020), their findings are limited by context-specific success rates, a lack of quantitative analysis, and an absence of comparative evaluations against other investment strategies.

Seed Accelerators*:* These are months-long programs that provide mentorship, education, and funding to startups in exchange for equity. Researchers assessing the efficacy of startup accelerators have found that presence of an accelerator is associated with a statistically significant 103% regional increase in the volume of seed-early stage deals, driven by the emergence of new local investors which grow by 88% (Fehder, 2019; Fehder, 2018). Startups that participate in mentorship events and develop investor ties during the accelerator have a higher likelihood of achieving short-term outcomes and long-term success, such as releasing a prototype, generating revenue, business surviving, and raising capital (Mejia, 2015; Smith, 2015). These findings support the effectiveness of seed accelerators and mentorship programs in fostering high-growth entrepreneurship and creating sustained businesses (Fehder 2019; Fehder 2018; Mejia 2015; Smith 2015); however, the equity stake required can be substantial for startups that carry greater risk and there is significant competition for these accelerators, both of which could disadvantage startups in Appalachia.

Tailoring Efforts to Appalachia:

Appalachian entrepreneurs would benefit from available alternative funding mechanisms, such as impact investing. But, even though turning a profit is not the entire focus of impact-focused blended finance operations, a return on investment is still necessary. Therefore, it is important to demonstrate that the region offers economic potential through non-extractive entrepreneurship despite its long history of extractive industries. Several grassroot economic ventures in Appalachia are, in the absence of traditional assets, converting the residual waste left from the extractive industries into economic opportunities. Example of ventures that are moving from extractive waste to economic asset include businesses like Appalachian Botanical Company leasing spent coalfields to grow lavender, True Pigments which cleans water ways and turns pollution into vibrant pigments, and Housing Development Alliance which is a non-profit housing developer hiring men and women recovering from opioid addiction. These innovative models can only exist in Appalachia's unique context due to local entrepreneurs with sticky, local ideas receiving the funding to sustain their economic development aspirations.

VI. Alternatives and Criteria

Alternatives

Addressing the problem of insufficient, inaccessible, and incompatible funding sources in Appalachia can be viewed from supply and demand perspectives, focusing on how to leverage and make flexible supply capital and/or to ensure capital-demanding entrepreneurs are investment-ready. Given IA's current - relatively small - scale and scope as well as its early level of development, one requirement for any alternative is that it build on IA's current efforts and existing resources (specifically its supply-side capital investments and/or its demand-side TA programs) rather than creating a whole new business model or approach (e.g., building a new bank to make loans).

Alternative 1: Status Quo Allocation and Evaluation

Although framed as "status quo," given the short time that IA has been in operation with major investments made only in 2022 and 2023, this option is more akin to "let your work play out longer, then evaluate." This option would let the present trends and growth of IA's investments and TA capacity-building mature, then evaluate in 2028.

IA deployed $900,000 in investments from its Catalytic Capital Fund (CCF) to nine projects across Central Appalachia in 2022, and >$1million in 2023 for 15 projects (IA, 2022; IA 2023). Current allocations of the Pool are as follows: Technical Assistance Grants 21%, Targeted Coordination Grants 21%, Conditional Repayment Loans 14%, and Credit Enhancements 44% (Appendix D). At least 58% of IA's funded projects involve repayment to the Fund (such as recoverable grants and no-interest loans); some investments target infrastructure development and/or capacity building (such as TA for business plan development) (IA, 2022; IA 2023). The 24 projects funded in 2022-23 span a wide range of business/project types - from housing and downtown revitalization to farm expansion and business creation - and a broad set of stakeholders (Appendix E). These projects, however, are very early in their operating timelines, so the outcomes, impact, and return on investment of IA's major funding initiative - the CCF - are not yet known.

In addition to IA's investments, it offers TA to help small businesses and projects move from being *investment-worthy* projects to becoming *investment-ready* through its TA program (IA, 2021). But IA's TA program does not have sufficient resources - specifically not enough trained staff - to meet current needs in the region. However, some of IA's 2023 funded projects incorporate a "training the trainer" model in which a business is provided with funded TA that they use to build their internal capacity then subsequently provide TA to other local businesses. So, there is potential to grow regional TA capacity, but it will be

some time before the outcomes or return on investment of IA's 2022 and 2023 funded TA projects can be assessed.

Under this alternative, IA would continue its current plans and trajectory, allowing its recent efforts (invested projects, TA building) to mature, then conduct a full evaluation in 2028 after the fund's projected drawdown date. One model for such evaluation was highlighted in the *Harvard Business Review* as an "evidence-based way to estimate social and environmental returns" of impact investing (Addy et al., 2019).

Alternative 2: Grow Credit Enhancements and Conditional Repayment Loans

This alternative would expand IA's Credit Enhancement to 50% and standalone Conditional Repayment Loan (CRL) deals to the other 50% of the fund, replacing all forms of non-returnable grant funding (Appendix C; Appendix F). Credit Enhancements seek to address investor perceptions of a "high financial risk" associated with investment opportunities that have "strong potential for social or environmental impact" due to investor assumptions of insufficient financial rewards and/or the lack of evidence about novel markets (GIIN, 2013, p. 3). Specifically, Credit Enhancement employs a range of tools, such as first loss loans, loan guarantees, and non-extractive finance including CRL, to reduce potential financial risk among investors (Appendix F).

Although CRL is a form of Credit Enhancement, IA is implementing and labeling CRLs as a distinct tool to support smaller, early-stage projects that may not be eligible for credit enhancements from the fund for traditional larger, investment-ready projects. Due to IA's fiduciary responsibility to its investors, IA has separated CRLs from other Credit Enhancement tools, with the aim to create a more targeted approach to supporting these underserved projects. As a result, IA's current credit enhancement offerings are still limited by the size of its IA Fund and hinders IA's ability to effectively support smaller, early-stage projects, leading to equity concerns and potential adverse impacts on entrepreneurs of color.

To address these limitations, IA has created a mechanism for using CRLs for these smaller, early-stage projects as impact investments by individual philanthropists. This alternative would expand IA's Credit Enhancements for the fund and standalone, non-fund-tied CRLs, allowing IA to better support a wider range of projects and promote equity in Central Appalachia's entrepreneurial ecosystem. The expansion of these tools would align with IA's stated goals for both internal alignment with the fund and unlocking private capital from the region.

Alternative 3: Expand Grant Based Capacity Building

IA has thus far concentrated its efforts on deploying investments from its CCF to a select number of projects across Central Appalachia and providing only targeted technical assistance (TA) to make projects investment-ready, so the TA focus of this option would represent a marked shift from IA's current operations. IA's current focus on deploying investments from its CCF and providing targeted technical assistance to make projects investment-ready represents a more market-oriented approach, with an emphasis on repayable investments. In contrast, this option would shift IA's focus to non-repayable capacity-building capital, allocating 50% of the fund to grants for entrepreneurial coordination and 50% to grant-based capacity-building initiatives. Likewise, in so doing this alternative would redouble - and expand - IA’s TA efforts, specifically assisting partners on the ground, such as place-based CDFIs.

This option will use “traditional” non-repayable grants for its 50% capacity-building but “recoverable” grants for the 50% entrepreneurial coordination. Recoverable grants are handled like grants, with the agreement that some or all of the grant will be repaid unless there is a market decline or unexpected business losses (LROC, 2021). While the potential for repayment of “recoverable” grants functions similarly to loans, investments that are explicitly identified as loans require IA to actively seek repayment as part of its fiduciary responsibility and as required for its 501c3 status (Appendix D). No such requirement exists for investments identified as grants; if some - or all - of the grant is not repaid, it does not trigger a requirement to seek repayment.

This option would focus grants for entrepreneurial coordination on the complex and often wicked problems in entrepreneurial ecosystems - sector coordination and deal pipeline development, helping fund the resources and platforms for burgeoning entities to collaborate, share knowledge, and align their efforts to find and cluster interested sector-based ventures to form a more investable whole. As successful examples of capacity-building initiatives and recoverable grant programs, such as the Appalachian Regional Commission's POWER Initiative and the Kauffman Foundation's Entrepreneurial Ecosystem Building Playbook, demonstrate, grants for capacity building can fostering entrepreneurship and economic growth in underserved regions (ARC, 2021; Kauffman Foundation, 2019). IA’s grants, in particular, would be for capacity building would focus on providing entrepreneurial support and TA for small business planning, regulation, taxation, and financing to expand capacity and reduce barriers for entrepreneurs, incubators/accelerator institutions or anchor institutions (Guerrero, 2021; ARC, 2007).

Alternative 4: Replace Grants with Equity/Quasi Equity Investments

This strategy proposes using ~42% of IA's capital that is traditionally earmarked for pre-development Targeted Coordination Grants and Technical Assistance Grants to fund equity and quasi-equity investments, offering a more fluid capital infusion that doesn't necessitate collateral or impose stringent repayment obligations (Appendix A). In contrast to tailoring IA's current catalytic capital debt + grant model, this would be a strategic redirection in which IA could build on Alternative 2, inspired by lessons from CRL and the challenges associated with debt financing, particularly its limitations for businesses that lack collateral or a definitive repayment plan.

Under this alternative, instead of just debt investments, entrepreneurs could secure an investment in their venture without collateral through an equity deal or quasi-equity arrangement. Quasi-equity is a hybrid investment vehicle that combines elements of unsecured debt and equity. It allows investors to provide capital without diluting the owner's share in the company. In quasi-equity deals, profits are repaid based on the company's performance. (Circular City, n.d.). These deals are good for cutting-edge, novel, early stage, and/or innovative small and medium businesses as well as nonprofits that want to invest in proof of concepts. Likewise, this would align with innovative investment deals like Foundation for Appalachian Kentucky's Appalachian Impact Fund (Stone, 2023; Foundation for Appalachian Kentucky, n.d.), showcase how equity investments can work to drive economic growth and allow entrepreneurs access capital even in broken markets.

This alternative would allow for a breakthrough in equity- and early-stage non-collateral based investment deals that typically don't occur in Appalachia due to the dense clustering of investors within major financial centers such as New York, Massachusetts, and San Francisco (SCOPVC, 2022). Allowing direct buy-in would disperse investment activities more broadly, addressing the challenges associated with over-concentration in specific areas - such as 2/3rds of all venture capital deal funding going to the major financial centers compared to 1% going to Appalachia. This option would enhance market efficiency and potentially lead to more equitable investment opportunities across different regions.

This option not only aims to diversify the investment portfolio but also to address the geographic concentration of venture capital by fostering a more inclusive and regionally distributed investment model. By facilitating direct investment opportunities for local and external stakeholders and leveraging the community advisory council for investment thesis development, IA is positioned to create a more equitable and impactful investment landscape that benefits a broader spectrum of enterprises and projects across diverse regions (National Committee for Responsive Philanthropy, 2018; Milam, 2018).

Criteria

Cost
Cost as a criteria will assess the financial burdens, in terms of added bureaucratic, admin-related, and implementation costs that each alternative will have on IA to administer, monitor and enforce. These costs will be considered through the 5 year timescale through the end of Fiscal Year 2028, the year prior to the maturation date for Traditional Fund. Cost allows IA to compare what financial needs each potential alternative requires.

Operationalizing Cost
Using IA's public tax form 990 from years 2020 – 2022, I will analyze Invest Appalachia's actual expenditures associated with each alternative, focusing on payroll, administrative, IT costs, and all relevant operational costs. This analysis will specifically include costs associated with supporting debt vs. equity programs in Appalachia. The cost criteria will evaluate the actual expenditures associated with each alternative over the five-year period using net present value. Inflation will be accounted for using CBO values ranging from 2.1-2.3% between 2024-2028 (Swagel, 2023). A 5% discount rate will be used, reflecting the average rate used by federal agencies (Zerbe et al., 2002). Actual expenditures will be translated from dollar amounts to a compare between alternatives, with 1 indicating the lowest minimal change in expenditures compared to all other alternatives and 4 representing the most significant increase in expenditures. The specific calculations for cost are in Appendix C.

Equity:
Equity assesses the extent to which the intervention ensures access to diverse stakeholders in the Appalachian entrepreneurial ecosystem, with a focus on addressing historical injustices that have led to access to capital gaps among female and BIPOC entrepreneurs. It evaluates the intervention's ability to provide low-cost, low-barrier access to capital and redress prior inaccessibility by affected stakeholders.

Operationalizing Equity
This criterion will be measured using a combination of qualitative and quantitative metrics. Qualitative metrics will include interviews with regional stakeholders to assess their perceptions of accessibility, affordability, and inclusivity of the intervention. Quantitative metrics will include the percentage of female and BIPOC entrepreneurs served under current trajectory, the accessibility constraints of accessing capital through the intervention, and the number of previously underserved stakeholders reached. These metrics will be used to then compare the total weight of evidence on the support for BIPOC entrepreneur each alternative presents compared to each other, with 1 indicating the

alternative most equitable compared to all other alternatives and 4 representing the least equitable alternative.

Effectiveness:
This criterion measures the extent to which the intervention increases access to capital, unlocks traditional capital sources, and fosters the flourishing of the entrepreneurial ecosystem. It assesses how well the intervention outcomes address the problem of capital gaps, the likelihood of impacting the entrepreneurial ecosystem, the ability to pave the groundwork for investment-ready deals to become investment-worthy, and the potential for the intervention to allow the entity to become self-sustaining.

Operationalizing Effectiveness
This criterion will be measured using a mix of qualitative and quantitative metrics. Qualitative metrics will include interviews with entrepreneurs and ecosystem stakeholders to assess the perceived impact of the intervention on access to capital and the overall health of the entrepreneurial ecosystem. Other metrics will include assessing types of capital unlocked, the total capital unlocked, the number of investment-ready deals created, and the percentage of the entity's budget derived from self-sustaining sources. These metrics will be combined to create a comparative effectiveness scale to assess differences between each alternative on unlocking private capital. Then each of the 4 alternatives will be compared with one another, with 1 indicating the alternative most effective at unlocking private capital and placing the venture on a financially sustainable basis longitudinally and 4 representing the least effective alternative.

Alignment
Alignment evaluates the extent to which the intervention aligns with IA's priorities, particularly its synergy with the mission of deploying the 'Traditional' IA Fund. It also assesses the intervention's synergy, coordination, and value addition in relation to other actors' efforts in the same context, such as ARC and Appalachian Community Capital. Alignment considers how well the intervention fits with IA's values, capitalizes on IA's current strengths, achieves complementarity, harmonization, and coordination with others, and adds value while avoiding duplication of effort. This criterion will be judged with a heavier weight on IA's "vision" and how well it fits into the Appalachian funders ecosystem, as emphasized by board members (Personal Interview; Sara Morgan).

Operationalizing Alignment
Alignment will be primarily measured using qualitative metrics, including interviews with IA staff, board members, and key stakeholders from other organizations in the Appalachian funders ecosystem. These interviews will assess perceptions of the intervention's

alignment with IA's mission, values, and strengths, as well as its complementarity and coordination with other actors' efforts across the region. Other metrics include assessing how much the intervention deviates from activities that directly support IA's mission and the number and quality of partnerships or collaborations with other organizations in the ecosystem the alternative will involve. These metrics will be combined to compare each alternative to one another and ranked with 1 indicating the alternative most aligned with IA's internal mission for supporting its traditional fund and IA's external vision for uniquely supporting regional initiatives and 4 representing the least aligned alternative.

VII. Findings and Evaluation

Alternative 1: Status Quo Allocation and Evaluation

Cost

Under the Status Quo, IA is projected to spend $2,666,834 through FY 2028 on operations of the current allocation of their Catalytic Capital Pool. This value is in net present value, as all total costs will be moving forward. I assume that in addition to the 2 Full Time Employees, there will be a gradual increase in the cost over inflation for Full-Time Employee/Equivalent (FTEs) cost from $200,000 in FY 2024 to $284,591 by FY 2028 reflects natural salary increases at IA's standard 4% above Cost of Living rate. Given the planned growth of this pool to $3 million over the next two years and the complexity it requires, I assume that there will be a need for an additional hire who will spend 20 hours weekly on the operations. Changes related to Legal, Insurance, and Accounting, Office & Occupancy Expenses, and Conferences and Community-oriented travel reimbursement are all included given their relation to the specific goals of the Catalytic Capital Pool. Given Alternative 1 is the second lowest total cost to operate and therefore it receives a 2 for this criterion.

Equity

IA's current efforts and allocation of the Catalytic Capital Pool are explicitly designed to foster equity, both in terms of focusing on historically marginalized groups (Black and Brown/BIPOC, Women, and Immigrants) in funding opportunities and in terms of meeting potential entrepreneurs "where they are" - from early stage entrepreneurs to more seasoned or established entrepreneurs. However, IA has been disappointed with the equitable lending outcomes to BIPOC and female entrepreneurs because their credit enhancements, which are attached to the main fund's model and size of deployment, are by their nature focused on large and well-established ventures. "We're [IA Board] very disappointed with the credit enhancement outcomes from the catalytic pool [for diverse entrepreneurs]]" (Personal Interview, Stephanie Randolph). On the other hand, 56% of the fund the conditional repayment loans and targeted assistance and recoverable grants have been successful at supporting a diverse set of entrepreneurs, with ¼ of the deals for BIPOC entrepreneurs and almost ½ for Female Entrepreneurs (Appendix E). Likewise, the Catalytic Capital pool has better demographics when working with intermediaries who have "boots on the ground", for example IA's recoverable grant to Housing Development Alliance in the form of $200k was distributed through $5k loans, demonstrating the ability to lend smaller amounts when working with local partners (Personal Interview; Stephanie Randolph). These are heartening strides taking place in the growth of entrepreneurship

among these historically marginalized groups, but given the recency of such strides, these groups disproportionately fall into the early-stage entrepreneur category. However, with the nature of the fund and its struggles on explicitly incorporating early-stage entrepreneurs and the continued inequitable lending from IA-fund-attached credit enhancements, this option will continue to indirectly create barriers for these historically marginalized groups. Overall, given this alternative's continued potential and mission to include direct support for historically marginalized groups with the other 56% of the pool, it remains the 2nd most equitable option among all 4 alternatives.

Effectiveness

This option explicitly leverages IA's existing resources, and does so in a way intended to generate impact and fill gaps to support the ecosystem, instead of closing a target number of deals on an annual basis. In terms of how well this option unlocks private capital and turns investment-worthy projects into investment-ready ones, the very recent implementation of IA's investments means we do not yet know the impact or ultimate effectiveness. We do, however, know the array of projects funded and the models employed (e.g., training the trainer) and that the criteria and processes IA and its Board use in selecting projects for funding rely on existing evidence and/or proof of concept for similar projects, so can assume that these approaches will do at least as well as the average funding approaches in use. Based on the strong leveraging of existing resources, yet with an allocation that is so widespread across multiple different tools grants, loans, and credit enhancements, this option is the third best alternative at unlocking private capital and building a pipeline for entrepreneurs to become investment ready.

Alignment

The Status Quo allocation of the Catalytic Capital Pool is specifically designed to further IA's mission and is completely consistent with its funding and allocation principle; therefore, it ranks extremely high on internal Alignment. This option also continues IA's dedication to aligning with other funders in the ecosystem by addressing unmet needs and avoiding duplication of effort; therefore, it also ranks extremely high on Alignment. Given this alternative's very high Alignment both internally and externally, it has the highest alignment amongst all alternatives.

Alternative 2: Grow Credit Enhancements and Conditional Repayment Loans

Cost

Under Alternative 2, IA would be projected to spend $3,721,214 through FY 2028 on the costs associated with exclusively focusing the Catalytic Capital Pool on Credit Enhancements & Conditional Repayment Loans. Costs increase primarily due to the

strategic shift towards a more risk-mitigated and supportive financing approach, specifically with the addition of a new FTE dedicated entirely to assisting the Director of Community Impact with assessing, exploring, and implementing these catalytic repayment deals. Additionally, managing these loans demands a robust administrative setup capable of handling regular assessments, communications with borrowers, and adjustments to repayment schedules based on performance. Therefore, I assume the development of an extra "due diligence" pool at 10% above the current Catalytic Pool allocation for CE and CRLs. This pool will be specifically directed to operational funds to support the complex administrative machinery needed to ensure doubling the allocation of the Pool for CEs and CRLs. Alternative 2, while not the most expensive alternative, will result in a 40% increase over the status quo and therefore, as the third highest cost alternative receives a 3 for this criterion.

Equity

While this option *can* be available to historically marginalized groups, it is not intentionally focused on these groups. As noted above, the structure of the fund is going to LIMIT the targeted impact of credit enhancements on diverse entrepreneurs, given the nature of IA's main fund capital deals to which are with larger, and whiter and more male-owned ventures It is also not inherently focused on the spectrum from early stage to established entrepreneurs, which as noted above, can indirectly reduce opportunities for historically marginalized groups which are disproportionately new, early stage entrepreneurs. By not intentionally focusing on the spectrum from early-stage to established entrepreneurs, this option indirectly reduces opportunities for BIPOC and female entrepreneurs, who often face additional barriers in accessing capital due to systemic inequities and lack of established business networks. Therefore, this alternative is the lowest ranking in the equity criterion.

Effectiveness

Conditional repayment loans have demonstrated success among IA's initial loans with a 98% repayment rate showing highly effective use in unlocking private capital to turn investment-worthy projects into investment-ready ones - bringing far more research and history than any of the other alternatives (Personal Interview; Stephanie Randolph). Although credit enhancements being tied to the traditional fund and the structure of CRL provide less flexibility than some of the other alternatives, this 50-50 allocation of CRLs and CEs provides a sufficient level of flexibility and a strong history of high impact and success. This option, therefore, represents the best way to unlock private capital and thus receives a 1.

Alignment

This option closely aligns with IA's mission to deploy capital form the IA Fund, so brings

high internal Alignment. It does, however, by nature of impact investing, overlap with similar work in the ecosystem, not significantly broadening the mechanisms available to entrepreneurs, so brings low external Alignment. Additionally, much of this deviates from the vision of IA to create creative, nimble forms of capital that improve the flourishing from the region (Personal Interview; Stephanie Tyree). This option, therefore, represents the 3rd best alternative as while it is aligned with internal mission in many ways, it quite clearly neglects the capital needs of the region and IA's external vision, and so it receives a 3 for this criterion.

Alternative 3: Expand Grant Based Capacity Building

Cost

Under Alternative 3, IA is projected to spend $2,662,911 through FY 2028 on changing their Catalytic Capital Pool to being exclusively recoverable, and non-recoverable grants for technical assistance. This alternative assumes no change from their current lean staff structure, given that the operation of a Grant pool for technical assistance will likely involve less due diligence, exploration of risk, along with a more streamlined, legal and regulatory compliance regulation. therefore all operation costs will be lower than the status quo. This alternative does assume a $50,000 operations budget annually for sector, specific support and collaboration infrastructure. These would be small dollar grants to external entities or costs in-house tailored to specific sectors, and the infrastructure needed for collaboration, such as digital platform subscriptions, networking events, and other miscellaneous costs associated with filling the gap of technical assistance that on the current entities, such as CDFIs do not currently cover. The costs of Alternative 3 are almost identical to the Status Quo, but is a bit less costly and therefore it will receive a 1 as the least costly alternative.

Equity

Historically marginalized groups disproportionately comprise new, early-stage entrepreneurs compared to their whiter, more established counterparts. As a result, capacity building is a critical need for these groups. Grants could build a pipeline of diverse entrepreneurs. In addition, IA's targeted assistance and recoverable grants have already been shown to be flexibly targeted to historically marginalized groups (Appendix B). Grants can play a pivotal role in bridging the vast funding gap faced by BIPOC entrepreneurs due to systemic inequities within the startup ecosystem (McKinsey & Company, 2023). By providing essential seed funding and development resources, targeted grants help to level the playing field, allowing BIPOC entrepreneurs to bypass some systemic barriers to accessing traditional capital and build a pipeline for investment in BIPOC-led businesses (McKinsey & Company, 2023; Welbon, 2021). Such targeted financial support would foster this more inclusive environment for innovation and entrepreneurship, potentially unlocking

significant economic benefits and driving societal progress through the creation of diverse and resilient businesses. Given IA's mission this alternative would allow for explicit targeting of BIPOC entrepreneurs and improve the capital and investment readiness of these groups. Taken together, this option, therefore, represents the highest potential for equity.

Effectiveness
While grants for capacity building can be an important step in facilitating entrepreneurs' work to take a project from investment-worthy to investment-ready, it does not effectively unlock private capital, a key component of this criterion and of IA's work. Additionally, this option is not necessarily focused on the need for longitudinal capital outside of the grant timeframe for the entrepreneurs. Capacity building grants alone may not be sufficient to attract significant private equity investment, as they do not directly address the perceived financial risks or provide the type of capital that private equity investors typically seek. Furthermore, the effectiveness of capacity building in unlocking private equity may be limited by the short-term nature of grants, which may not provide the sustained support needed for entrepreneurs to secure long-term private equity investments. Considering these limitations, this option provides the lowest potential for unlocking private capital and so it receives a 4 for this criterion.

Alignment
While capacity building is a legitimate approach to addressing unmet funding needs by centering on entrepreneurs' ability to transition from investment-worthy to investment-ready, this is not a primary focus or area of strength for IA. This option, therefore, brings limited internal Alignment. It also very strongly overlaps with the approach of other funders in the ecosystem, many of whom - like WV Development Hub, have been doing this work for decades. Such a grant-giving capacity would likely crowd out and duplicate efforts of partners who could do this work better (Personal Interview; Stephanie Tyree). This alternative would not achieve IA's vision of significantly broadening the mechanisms available to entrepreneurs. Moreover, focusing primarily on capacity building grants may not align well with IA's mission to unlock private capital and provide innovative financing solutions. By dedicating resources to an area that is already being addressed by other organizations in the ecosystem, IA may miss opportunities to develop its unique value proposition and expertise in catalyzing private investments. Considering these factors, this option ranks the lowest for both neglecting the internal mission of IA to deploy the traditional fund and of the regional needs and IA's external vision and receives a 4 for this criterion.

Alternative 4: Replace Grants with Equity/Quasi Equity Investments

Cost

Alternative 4 projects that IA will spend $4,377,401 through FY 2028 on splitting the Catalytic Capital Fund 50% between Equity and Quasi-Equity Deals and 50% to other innovative financing deals such as credit enhancements, revenue based repayments, along with a variety of other conditional repayment loans. Managing equity and quasi-equity investments requires a team with specialized skills in investment analysis, legal compliance, and portfolio management. Therefore, this Alternative assumes increased staffing costs to 3.5 FTE to reflect the need for additional staff to handle the intricacies of equity transactions, perform due diligence with specific tools, and manage and monitor investee relations. This specialization and workload increase necessitate higher compensation and potentially more staff members. This alternative also assumes early reliance on professional consultants, particularly helpful in areas like Central Appalachia where there is no easy market analysis, investment structuring, and due diligence online, and as the need for this knowledge is much higher in equity and quasi-equity models. These investments often require sector-specific expertise, financial modeling, and valuation services that go beyond the capabilities of in-house staff. Alternative 4 is the most costly of all the alternatives compared to the Status Quo and therefore will rank as a 4 as the highest cost alternative for this criterion.

Equity

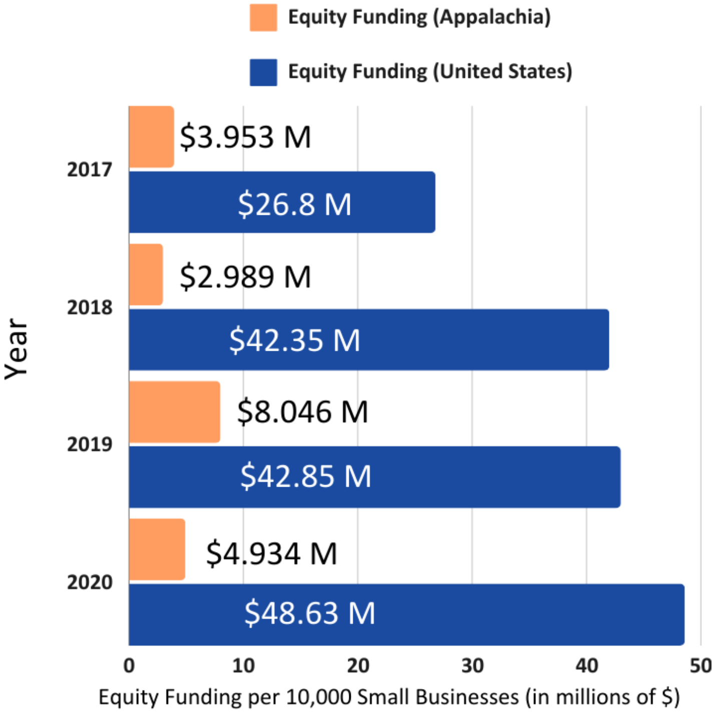
While this option *can* be available to historically marginalized groups, it is not intentionally focused on these groups. While the only alternative which has the potential to benefit early stage entrepreneurs in new ways, it is not a certainty it will lend to such groups. Traditional equity deals can disproportionately harm Black and brown entrepreneurs due to systemic biases, limited access to networks, and the mismatch between the founders' backgrounds and those of the predominantly White, male venture capital investors (McKinsey & Company, 2023). This systemic inequity could, potentially, only be exacerbated by IA attempting to focus in this space, further widening the gap. Likewise, These proposed equity deals can assist primarily established entrepreneurs, which can indirectly reduce opportunities for historically marginalized groups which are disproportionately new, early stage entrepreneurs (SBA, 2023). Therefore, while opening an avenue for non-collateral based investments, but without ensuring access for early-stage entrepreneurs, this option receives a score of 3.5 for this criterion.

Effectiveness

This option may involve including other lending partners and investors well beyond the ecosystem, for deals that needs immediate working capital so they can operate. This may help lead them to unlocking the limited, but existent equity-focused private capital with an

estimated $5,000,000 in venture equity dollars deployed annually for every 10,000 small businesses in the region (Figure 8). This would also improve the ecosystem of investment as it would create quasi equity-related mechanisms for other private impact-focused lenders to invest in entrepreneurs. Equity-based financing options reduce potential collateral limitations for entrepreneurs seeking capital and allows others to replicate both the work and the availability of funds. Given its new structure, the option does, however, bring a relatively significant start-up staffing need and expertise, of which there would be an opportunity cost in unlocking private capital, especially given it is so new and untested. This option, like Alternative 2, would be highly effective at unlocking private capital, however is so new and untested in Appalachia it is not a certainty the quasi-equity pieces would achieve such a goal therefore making it the second-most effective alternative.

Figure 8 – Equity Funding in Appalachia versus United States, 2017-2020



Sources: Pitchbook, Venture Capital and Private Equity Deals, 2017 – 2022

Alignment

Alternative 4 aligns with IA's long-term strategic goal of fostering innovative, sustainable, and inclusive economic growth; however, given how different this is from IA's goal of being a *debt-based* blended financial institution, there could be a strategic departure from IA's historically debt and grant-focused model. Additionally, it is not internally aligning with the

fund's mission to assist in the deployment of the IA fund's capital. However, alternative 4 could also be especially important for regional capital alignment, especially as equity capital grows steadily in the region (Figure 3). By facilitating equity and quasi-equity investments, IA is directly responding to the regional need for more accessible and flexible financing options, thereby enhancing the alignment of its interventions with the broader economic priorities of the region. This makes it closely aligned with both IA's internal mission and external vision, yet is still so new that such a shift towards equity may not be trusted by community stakeholders, making this rank 2nd amongst alternatives on this criteria.

Outcomes Matrix

The Outcomes Matrix below ranks how each alternative compares to the others across the employed criteria, with a score of one indicating that a given alternative is the best performer for a given criterion – with total lowest score being the "best" for the alternatives. It should be noted that the criteria were not weighted, as shown in the table below, given each alternative represented a key facet of IA's decisionmaking process.

Table 1: **Outcomes Matrix**

	Status Quo and Evaluate in 2028	Conditional Repayment Loans	Grant-Based Capacity Building	Equity/Quasi-Equity Investments
Cost	2	3	1	4
Equity	2	4	1	2
Effectiveness	3	1	4	2
Alignment	1	3	4	2
SCORE	8	11	10	10

VIII. Recommendation

As shown in the Outcomes Matrix, the lowest ranking option he recommendation is to let IA's current allocation of the Catalytic Capital Pool mature (that is, maintain the Status Quo allocation) then fully evaluate in 2028 right before the fund's maturation date to guide potential changes. The rationale for recommending Alternative 1 is multifaceted.

In addition to having the lowest score, making it the closest to being ideal for each criteria, this option also has the most consistent - and consistently high - scores across all criteria. Its lowest criteria score, ranking 3rd for *Effectiveness* at unlocking private capital stems from the recency of IA's efforts rather than any demonstrated ineffectiveness at their strategy. By pursuing this option, IA is not precluding or limiting its ability to pursue new avenues for innovative financing mechanisms over time, such as equity and quasi-equity deals. The other alternatives would, to varying degrees, limit the potential to pursue options beyond the stated alternative.

Likewise, other partners are currently building pipelines that complement the Catalytic Capital Pool. Any rapid changes from the status quo would slow down the deployment of capital and frustrate essential regional partners. IA needs to continue building alignment with these partners, understanding where they are going and how they can fill the gaps they want to address. The pipeline of investment-ready projects is dependent on these partners, and it takes time to learn and understand what they want to do and find something that aligns with their goals. Changes to the Catalytic Capital Pool could be perceived as competitive and create an opportunity cost by hindering the development of these critical partnerships. This option provides the greatest balance in unlocking private capital and turning investment-worthy projects into investment-ready ones while responding to IA's relatively small scale and scope given its level of development. The status quo is the best option for effectively building on IA's current efforts and existing resources rather than creating a new business model or approach.

Finally, and most importantly, changing the structure and allocation of the catalytic capital pool would break the tenuous trust that has been built for the pool among regional stakeholders (Personal Interview; Stephanie Tyree). "In Appalachia, trust is given slowly. The expectation is that eventually you are going to break your promise and if you've put money into something there's an expectation that you are going to be taken advantage of." If IA changes the fund now, IA could end up losing the trusted partners the organization was established to work with. For example, an unnamed IA lending partner early SWOT analysis revealed that IA would be their biggest opportunity and biggest threat. If IA changes the fund now, it could end up losing the trusted partners the organization was established to

work with, which would be detrimental to its mission and long-term success.

Critical to this recommendation is the incorporation of a full evaluation in 2028 after the fund's projected drawdown date to guide potential changes. This evaluation should be planned as a *comprehensive process* that engages *internal and external stakeholders* (e.g., IA team members, funded entrepreneurs, community members, policy makers) and explores *direct impacts* (e.g., revenue generated, jobs created, outcomes/deliverables created, technical knowledge gained) and *indirect effects* (e.g., satisfaction levels, community cohesion, volunteering/civic engagement) using *qualitative and quantitative methods*. These efforts could draw on the model highlighted in the *Harvard Business Review* as an "evidence-based way to estimate social and environmental returns" of impact investing (Addy et al., 2019).

Despite the noted strengths of this option, there are potential limitations. Notably, IA's current work is untested with no prior proof of concept efforts to support it, meaning this work could potentially be misguided and/or ineffective. Also, IA's work is heavily based on credit enhancements, meaning it substantially relies on external private lenders to co-invest and it will need to get its money back. The strength of IA's business model and significant local and investing expertise present in IA and its governance structure mitigate these potential limitations - but do not remove them.

On balance, the Status Quo with 2028 Evaluation offers the most robust set of benefits with no greater downsides - and arguably fewer downsides - than any of the other alternatives. Because this option will unlock private capital while continuing IA's efforts that are specifically designed to accomplish its vision and foster equity without duplicating efforts that exist elsewhere in the ecosystem, this option is the best Alternative for both IA and the investment ecosystem in Central Appalachia.

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IX. Implementation

To implement this evaluation, IA must bring in an independent analyst, likely drawn from an academic setting in the region, who will help draft and implement evaluation instruments to best assess the balance of financial returns and maintain “evidence-based way to estimate social and environmental returns” of impact investing (Addy et al., 2019). Likewise (e.g., domains covered) in both quantitative and qualitative realms, then implement the instruments through ongoing assessments with primary stakeholders, including the IA Board and personnel, current catalytic investors and donors. This review will also help document key secondary stakeholders to orient strategy toward, which include in-region partners - who work or want to work with IA, prospective donors such as external foundations, along with thought-leaders & thought lenders such as C3, CCI, and MIE.

The first step in this process is the Annual Deal Review, which involves analyzing each set of deals at the end of the fiscal year. This review will assess how well the deals met their target metrics for financial returns and how effectively IA's deals aligned with their vision, such as lending to diverse entrepreneurs and ventures. The Annual Deal Review will provide a snapshot of the program's performance and help identify any immediate areas for improvement.

The next stage is the 3-Year Deal Review, which will evaluate the early outcomes and final returns of the funded projects. By the third year, IA will be able to assess the initial financial returns against the targets set for each deal. This review will also consider the broader impacts of the funded projects on the entrepreneurial ecosystem, allowing IA to make necessary adjustments to their strategies based on these early outcomes.

In addition to the 3-Year Deal Review, IA will conduct a 3-Year Closed Deal Review and a 3-Year Unfunded Deal Review. The Closed Deal Review will analyze all deals that have been completed within the previous three years, segregating shorter and longer-term deals to understand their differences in performance and impact. This review will provide valuable insights into the overall success rate of the program and help identify patterns that can inform future investment decisions. The Unfunded Deal Review will examine the projects that were not selected for funding during the same period, providing an opportunity to assess the equity implications of IA's investment decisions and identify potential gaps in their strategy. This is key as Andrew Crosson, CEO of IA, is required to track all financial inquiries and document reasons for closing files. However, given capacity, Andrew needs greater bandwidth and support to document not just why files are being closed and how the decision was made, but what the eventual outcome of the closed deal was. Having a committee of both internal and external stakeholders Implementing a Salesforce dashboard can help streamline the tracking and analysis of unfunded projects, providing valuable insights for improving IA's investment strategy and promoting a strong entrepreneurial ecosystem.

Finally, the 5-Year Comprehensive Deal Review will assess the long-term impact of the FY2022 deals on Central Appalachia's social and entrepreneurial ecosystem. This review will evaluate the direct impacts of the funded projects, such as job creation, revenue generation, and other quantitative measures. It will also consider qualitative factors, such as the projects' effects on community cohesion, satisfaction levels, and civic engagement. The 5-Year Comprehensive Deal Review will provide a holistic understanding of the program's effectiveness and its contribution to the region's economic and social well-being. The timeline can be seen in Figure _ below.

IA's ongoing analysis will be vital in analyzing how IA itself can be most nimble to the ever-changing capital flows in the region. For example, if the EPA and ARC come out with new programs, there will be changes depending on who receives funding, and IA will need to adapt to different partners. Furthermore, political feasibility should be considered in the evaluation, as changes in the federal administration (can have significant impacts on the availability and direction of funding for economic development in the region. IA's nimbleness allows it to go where the money streams are, which is a strength that should be maintained. By maintaining the status quo and conducting a comprehensive evaluation in 2028, IA can effectively navigate these challenges and opportunities while preserving the trust and partnerships it has established..

X. Conclusion

Thomas, West Virginia, by 2005 was by only 2% of its buildings. Today, due to steady community development and investments in entrepreneurs through intermediaries, Thomas has transformed to where businesses are now on a waitlist to open up downtown. The revitalization process in Thomas was driven by community involvement and the creative and strategic utilization of capital (Pipa, 2022). It was examples like Thomas that helped form the basis of Invest Appalachia. Capital flowing through rooted intermediaries in the region with community and stakeholder involvement. Invest Appalachia represents the model for how to turn the successes of a single case study of how capital can flow upstream into a vision for taking the Thomas, WV model towards economic flourishing across Central Appalachia. If IA can continue to be a rooted partner, nimble and flexible, and ready to learn to succeed Central Appalachia will thrive.

Appendices

Appendix A –

Explanation of ***Methodology - Review of the Literature:*** To generate a robust set of resources on impact investing as well as economic development in Appalachia, a digital search of articles and books through the UVA Library was conducted. The following search terms were used: <impact investing>, <social entrepreneurship>, <sustainable finance>, <rural economic development>, <rural investment>, <Appalachia investment>, and <economic development Appalachia>. In addition to the above search, several journals that previously published key articles relevant to economic development in Appalachia and/or impact investing were explored: *Journal of Rural Studies, Journal of Appalachian Studies, Stanford Social Innovation Review,* and *Harvard Business Review*. Without a large body of literature specifically focused on Appalachia's non-extractive economic development, to increase the relevance of the findings the search focused particularly on areas with broken markets. Despite this, generalizability is difficult given Appalachia's unique setting and challenges.

Assumptions expanded:

Cost: Appendix B is the table of calculations used to produce the cost estimates for each alternative. It is important to first clarify that IA's staffing model is described as an collaborative organizational approach, combining a streamlined staffing framework with the pre-existing individual and organizational capabilities within the region. To that end in 2023, under the **Status Quo** they now have 2 staff members, a Director of Community Impact and Director of Grants and Operations both of whom oversee the operations of the Catalytic Capital pool. Data and budgets were provided by Invest Appalachia's Form 990 tax records, and only reflect the assumed operational costs associated with *changes to the allocation of the Catalytic Capital Pool*. These DO NOT represent the total budget of IA, nor its costs associated with the traditional loan fund. The shift between alternatives is focused on the strategy of allocation rather than the quantity of the Catalytic Fund itself, aiming to extend beyond the current annual allocation of $1M by not only deploying the same amount but also expanding the total capital available. This alternative, like all alternatives, is under the assumption that CEO Andrew Crosson's objective is to increase the fund to $3M annual deployment and that the fund's allocation current allocation strategy, will represent a solid proof of concept that evaluation would be most effective through this strategic allocation (Personal Interview; Stephanie Randolph). I make certain assumptions about the nature of IA's hiring process (unable to start until FY 2025), biannual review process with external consultants - specifically the intermittent

expenditure on consultants assumes targeted investments in strategic planning or market analysis on this biannual basis, and budgetary growth for occupancy.

Under **Alternative 2 to grow the allocation of both IA Fund focused Credit Enhancements and standalone Conditional Repayment Loans,** I assume additional resources for the maintenance of an innovative finance pool, for additional due diligence and at 10% above the current Catalytic Pool allocation, meaning that starting FY 2025, 10% of what would have been spent on services for the other 58% of the allocation will go towards the operations of CCLs and CE as IA grows the amount of the pool to $3 million.

Likewise, under **Alternative 3 with expanding the Catalytic Fund's allocation for TA Grants for supporting sector** , there is an assumption of $45,000 for professional consultants related to understanding the landscape of grants supports for technical assistance, specifically from and among CDFIs. Additionally, there is the aforementioned $50,000 fund for operations to assist in initiatives for collaboration among TA funders and assistance for hosting those initiatives. This number is based on estimates taken, anecdotally, from USDA Rural Partners Network's Annual Cost of Summits.All of these numbers come directly from the 2022 IA 990 and will be updated in April with the release of the 2023 IA 990. I use estimates of inflation from the Congressional Budget Office's Economic Outlook Report which estimates the inflation rate to be 2.2%, 2.1%, 2.1%, 2.3% and 2.3% for FY 2024 through FY 2028 respectively (Swagel, 2023).

Under **Alternative 4 with replacing grant-based funding with equity and quasi-equity deals,** the main consideration is the need for both external and internal due diligence for the growth in taking all of the models and data the greatest financial needs would fall under greater due diligence costs as "every loan is worth 5-7 grants in due diligence costs" (Personal Interview Quote from Mae Humiston, IA Director of Grants and Operations).

Equity:

A key finding from this research is the data gaps surrounding differential access to capital among diverse entrepreneurs. That is one of the reasons, racial lending through intentionality is key to IA's lending mission as traditional lending, so it is safe to assume that IA will strive to ensure equity in its deal making. However, intentionality in financial deal-making is difficult and there is no guarantee that specific forms of capital allocation will yield more or less equitable outcomes. Financial lending, while legally blind to race and gender, continues to perpetuate disproportionate impacts on black and brown

entrepreneurs. Small businesses in Appalachia tend to be nonemployer firms that are disproportionately White and male-owned (United States Census Bureau, 2020). White individuals, comprising roughly 79.8% of Appalachia's total population, disproportionately own 88.0% of the Region's small businesses, reflecting an overrepresentation that is mirrored on a national scale (Figure 1). In contrast, Black and Latino communities in Appalachia are underrepresented in business ownership, with ownership rates of 7.0% and 2.7%, despite constituting 10.2% and 5.8% of the population, respectively. Importantly though, Appalachia boasts higher rates of Black business ownership compared to the broader United States, indicating a potential area of strength within the Region, however still well-below the racial makeup of the region.

Appendix B – Additional Figures:

Figure 1

	Appalachia Population (%)	U.S. Population (%)	Appalachia Small Business Ownership (%)	U.S. Small Business Ownership (%)
Race / Ethnicity				
White	***79.8%***	***75.5%***	***88.0%***	***80.5%***
Black/African American	***10.2%***	***13.6%***	***7.0%***	***2.4%***
Latino(a)	***5.8%***	***19.1%***	***2.7%***	***4.2%***
Asian	***1.5%***	***6.3%***	***3.8%***	***10.9%***
Other (American Indian/ Pacific Islander)	***1.5%***	***1.6%***	***0.3%***	***0.8%***
Gender				
Male	***55.4%***	***49.6%***	***80.8%***	***74.0%***
Female	***44.6%***	***50.4%***	***19.2%***	***26.0%***

Sources: United States Census Bureau. (2020). Annual Business Survey, 2020, United States Census Bureau. (2020). Nonemployer Statistics, 2020, United States Census Bureau. (2020). Annual Community Survey, 2020.

Effectiveness: Each alternative will need to be assessed using both qualitative and quantitative metrics. Measuring and assessing the effectiveness of each alternative using regional quantitative date for unlocking private and public capital and stimulating economic activity, especially in regions like Central Appalachia, is complex and difficult. The past half decade has seen ever changing and sporadic amounts of capital and capital absorption in the region, with aggregate supply of capital growing to a record high of $86B from $45B just 3 years prior (Figure 2). despite a decline in the total amount of venture capital from 2019 to 2022, the number of equity **deals** in Appalachia rose by 11.1%, outstripping the national growth rate of 8.1% (Figure 3; Pitchbook, 2019-2022). This

indicates that while overall funding decreased, the number of investments didn't necessarily follow suit, hinting at a shift towards smaller, potentially more numerous deals. The disparity in average deal sizes between Appalachian and non-Appalachian areas further complicates the evaluation. In Appalachia, deals ranged from $50,000 to $7.9 million, compared to $1.0 million to $18.8 million elsewhere, suggesting a focus on smaller ventures that may not capture the full scope of economic impact. Moreover, Appalachian small businesses consistently received 5% to 6% of the total Public SBA 7(a) loans annually, both in dollar amounts and the number of loans, nationally. This steady support underscores the difficulty in measuring effectiveness, as it reflects both the commitment among federal lenders to maintaining the region's resilience but also the ongoing challenges small businesses face, especially during the pandemic. In essence, the interplay of these factors—variability in deal sizes, the focus on smaller ventures, the impact of the pandemic on lending practices, and the economic environment making it challenging to definitively assess the effectiveness of each alternative at unlocking capital in stimulating economic activity in regions like Appalachia.

Figure 2

Total Aggregate Supply in Appalachia (Dollar Amount)	*2017*	*2018*	*2019*	*2020*	*2021*
United States	*$1T*	*$1.11T*	*$1.56T*	*$1.97T*	*$1.77T*
Appalachian Region	*$45B*	*$48B*	*$50B*	*$86B*	*$69B*
Appalachia as a % of U.S.	*4.5%*	*4.3%*	*4.3%*	*4.4%*	*3.9%*
North Central Appalachia	*$3,246,253,682*	*$3,745,533,696*	*$3,692,616,225*	*$6,323,955,701*	*$4,797,605,160*

Garreth Bartholomew

Central Appalachia	***$1,468,384,859***	***$1,570,142,358***	***$1,877,836,463***	***$2,810,158,907***	***$2,323,568,451***
South Central Appalachia	***$9,263,479,231***	***$10,111,088,465***	***$10,533,146,014***	***$18,207,224,186***	***$14,923,882,141***

Sources: CDFI Fund Data Releases. (2023). U.S. Department of the Treasury. https://www.cdfifund.gov/documents/data-releases; National Credit Union Administration. (2023). Call report quarterly data. https://ncua.gov/analysis/credit-union-corporate-call-report-data/quarterly-data; U.S. Small Business Administration. (2023). PPP FOIA, https://data.sba.gov/en/dataset/ppp-foia

Alignment:

After conducting a series of interviews

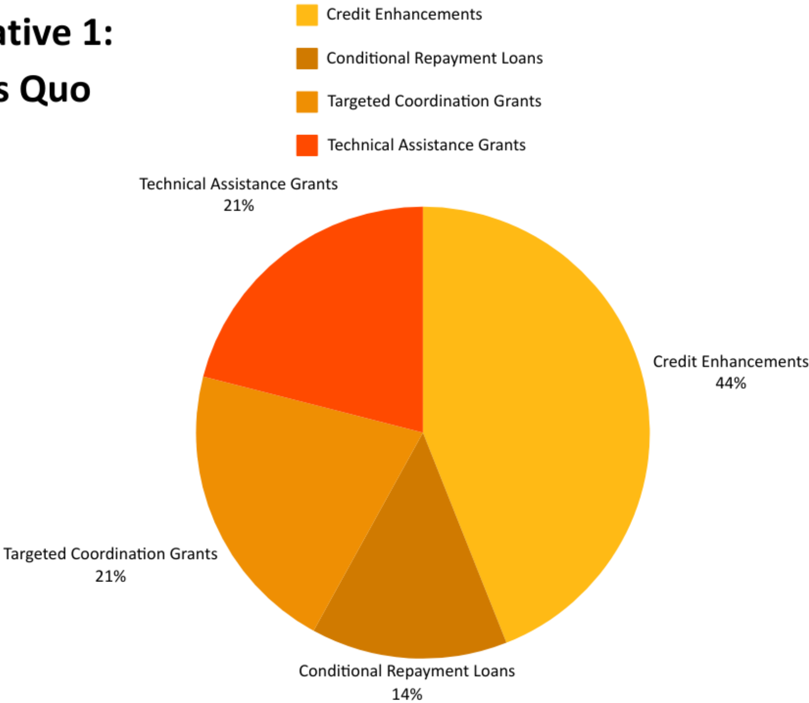
Given how important expert judgment from stakeholders who are familiar with IA's priorities and the broader context within which it operates, I believe qualitative interviews will be for assessing each alternative under this criteria. So I believe my analysis remains somewhat of a data gaps, but I hope this will be somewhat alleviated by the interviews I conduct over Spring Break. My hope is to have a good sense of what exists with regards to the landscape of data before interviews, conduct a thorough review of all available data and identify potential sources of supplementary information. And then use that supplementary information to develop interview guides that are flexible and can adapt to different respondent knowledge levels, ensuring that useful information can be gathered despite gaps. I plan to, after interviews, immediately review notes and identify areas where data gaps still exist in understanding how each alternative is aligning with IA's priorities and external capital demand and supply.

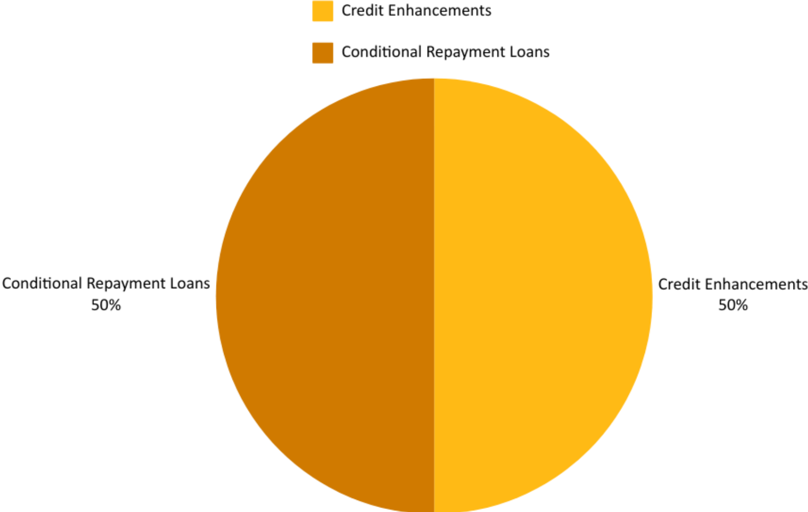
Figure 3

	FY 2023	FY 2024	FY 2025
Annual Deal Review	Analyze FY 2022 Deals	Analyze FY 2023 Deals	Analyze FY 2024 Deals
3 Year Deal Review			Analyze FY 2022-24 Deals
3 Year Closed Deal Review			Analyze Closed FY 22-24 Deals
3 Year Unfunded Deal Review			Analyze Unfunded FY 22-24 Deals
5 Year Comprehensive Deal Review			

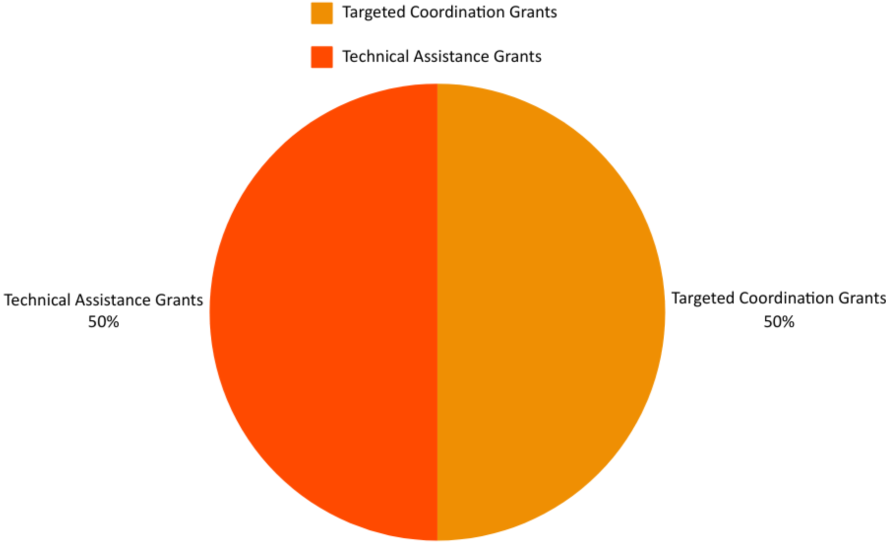
FY 2026	FY 2027	FY 2028	FY 2029
Analyze FY 2025 Deals	Analyze FY 2026 Deals	Analyze FY 2027 Deals	Analyze FY 2028 Deals
		Analyze FY 2025-27 Deals	
		Analyze Closed FY 22-24 Deals	
		Analyze Unfunded FY 2025-27 Deals	
		Analyze FY 2022-27 Deals	

Appendix C - Allocations for Alternatives

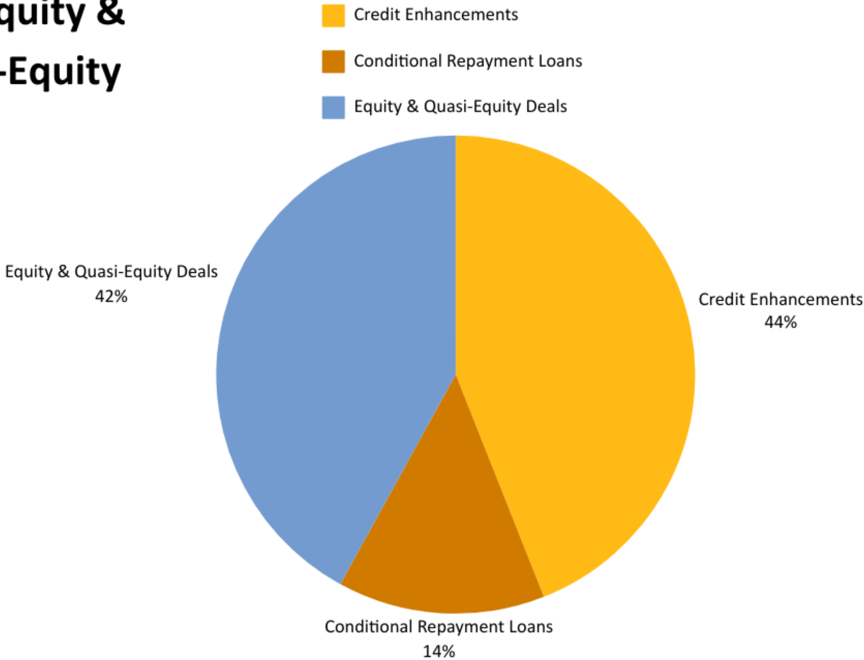




Alternative 3: Convert Fund to Grant-only:



Alternative 4: 42% Equity & Quasi-Equity



Appendix D - Alternative Costs

Status Quo						
	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	
2.5 FTEs (by 2025)	$200,000	$253,000	$263,120	$273,645	$284,591	
Legal, Insurance, Accounting	$55,000	$91,667	$130,952	$163,690	$181,878	
Office & Occupancy Expenses	$35,000	$58,333	$83,333	$104,167	$115,741	
Conferences, Community-oriented travel reimbursement	$25,000	$41,667	$59,524	$74,405	$82,672	
Professional Consultants (Market Landscape)	$0	$150,000	$0	$150,000	$0	
Total	$315,000	$594,667	$536,930	$765,907	$664,882	$2,877,384
Inflation	$315,000	$606,213	$562,704	$826,312	$738,727	$3,048,957
Discount Rate 5.1%	$305,825	$565,272	$500,400	$700,097	$595,238	$2,666,834
Exclusively Credit Enhancements and Conditional Repayment Loans						
	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	
3 FTEs (by 2025)	$200,000	$298,000	$309,920	$322,317	$335,209	
Legal, Insurance, Accounting	$55,000	$137,500	$196,429	$245,536	$272,817	
Office & Occupancy Expenses	$35,000	$77,778	$111,111	$138,889	$154,321	
Conferences, Community-oriented travel reimbursement	$40,000	$66,667	$95,238	$119,048	$132,275	

Professional Consultants	$60,000	$200,000	$0	$150,000	$0	
Due Diligence	$22,000	$44,000	$66,000	$66,000	$66,000	
Total	$412,000	$823,944	$778,698	$1,041,789	$960,623	$4,017,054
Inflation	$315,000	$839,943	$816,079	$1,123,953	$1,067,316	$4,162,290
Discount Rate 5.1%	$400,000	$783,217	$725,720	$952,275	$860,002	$3,721,214

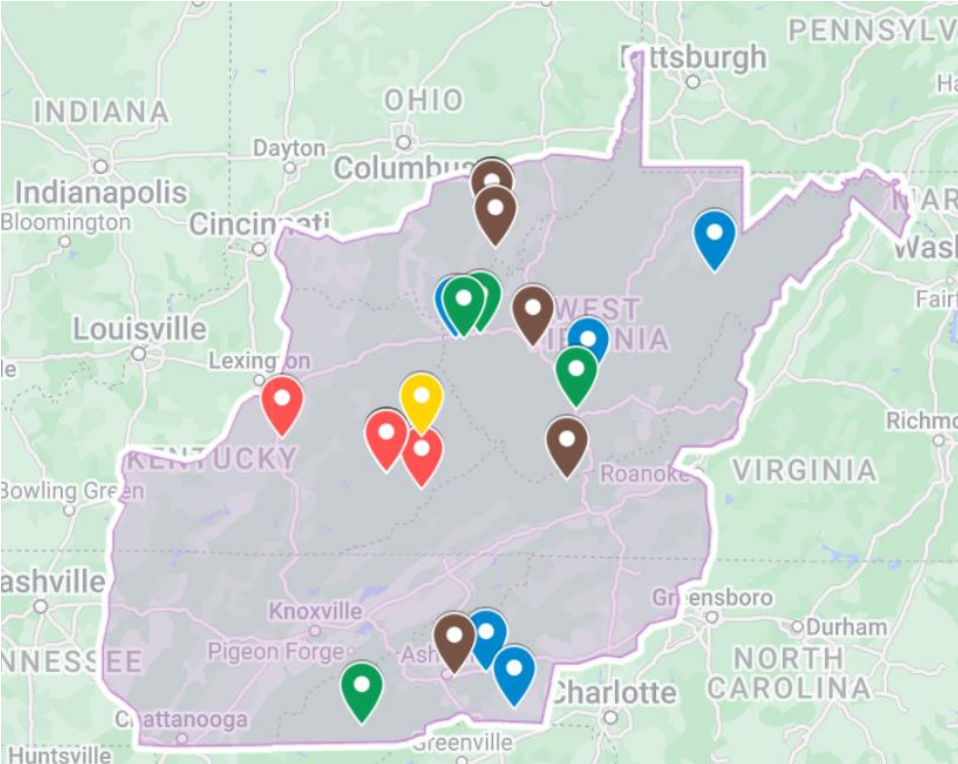
Exclusively Grant-based for Technical Assistance						
	FY 2024	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	
2 FTEs (no hires)	$200,000	$208,000	$216,320	$224,973	$233,972	
Legal, Insurance, Accounting	$50,000	$83,333	$119,048	$148,810	$165,344	
Office & Occupancy Expenses	$30,000	$50,000	$71,429	$89,286	$99,206	
Conferences, Community-oriented travel reimbursement	$25,000	$41,667	$59,524	$74,405	$82,672	
Professional Consultants	$45,000	$150,000	$0	$150,000	$0	
Sector-Specific Support and Collaboration Infrastructure	$50,000	$50,000	$50,000	$50,000	$50,000	
Total	$400,000	$583,000	$516,320	$737,473	$631,194	$2,867,987
Inflation	$315,000	$594,320	$541,106	$795,636	$701,298	$2,947,360
Discount Rate 5.1%	$388,350	$554,182	$481,193	$674,107	$565,079	$2,662,911

42% Equity & Quasi-Equity Models						
	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	
3.5 FTEs (by 2025)	$200,000	$343,000	$356,720	$370,989	$385,828	
Legal, Insurance, Accounting	$75,000	$125,000	$178,571	$223,214	$248,016	
Office & Occupancy Expenses	$65,000	$108,333	$154,762	$193,452	$214,947	
Conferences, Community-oriented travel reimbursement	$50,000	$83,333	$119,048	$148,810	$165,344	
Professional Consultants	$200,000	$150,000	$150,000	$150,000	$150,000	
Due Diligence - External Consults	$35,000	$50,000	$50,000	$50,000	$50,000	
Due Diligence - Internal Maintenance	$25,000	$25,000	$25,000	$25,000	$25,000	
Total	$650,000	$859,667	$959,101	$1,086,465	$1,164,135	$4,719,368
Inflation	$315,000	$876,359	$1,005,142	$1,172,152	$1,293,431	$4,662,084
Discount Rate 5.1%	$631,068	$817,173	$893,850	$993,112	$1,042,198	$4,377,401

*** Inflation is noted from Congressional Budget Office's Economic Outlook Report estimating the inflation rate to be 2.2%, 2.1%, 2.1%, 2.3% and 2.3% for FY 2024 through FY 2028 respectively (Swagel, 2023)**

Appendix E - Interactive Map of Catalytic Investments

- Invest Appalachia Service Area
  - Individual styles
  - Invest Appalachia Service Ar...
- Conditional Repayment Grant
  - Individual styles
  - Mountain Association
  - Appalachian Impact Fund
  - HOMES Inc.
  - Housing Development Alliance
  - Redbud Financial Alternatives
- Loan Guarantee
  - Individual styles
  - Martin IGA
- Recoverable Grant
  - Individual styles
  - New Leaf Justice Enterprise...
  - New Roots Community Farm
  - Coalfield Development Corpo...
  - Woodlands Development & L...
  - Kitsbow Apparel
  - Appalachian Social Enterpris...
  - Conductor Solar
  - Grahamtown Housing Initiati...
- Short-term Repayable Grant
  - Individual styles
  - Howell's Mill Summer Camp
  - Huntington City Mission
  - Just for Kids Advocacy Center
  - Nikwasi Initiative
- Technical Assistance Grant
  - Individual styles
  - Western Women's Business ...
  - Shagbark Seed & Mill
  - Snowville Creamery
  - Black By God
  - Mount Terra



Legend

Appendix F - List of Catalytic Deals by Year and entrepreneurial demographics

2022:

- **Total Businesses: 8**
- **Female-Owned: 50.0%**
- **BIPOC-Led: 37.5%**

2023:

- **Total Businesses: 15**
- **Female-Owned: 46.7%**
- **BIPOC-Led: 20.0%**

Combined (2022 & 2023):

- **Total Businesses: 23**
- **Female-Owned: 47.8%**
- **BIPOC-Led: 26.1%**

2022:

Mountain Association - Berea, KY - female owned, BIPOC led

Black By God - Charleston, WV, female owned, BIPOC led

Appalachian Impact Fund - Hazard, KY, female-led

Mount Terra - Bluefield, VA, female led

HOMES Inc. - Whitesburg, KY

Nikwasi Initiative - Franklin, NC, BIPOC led

Housing Development Alliance - Hazard, KY

Redbud Financial Alternatives - Hazard, KY

2023:

Appalachian Social Enterprise Summit - Athens, OH

Coalfield Development Corporation - Huntington, WV

Conductor Solar - Athens, Ohio

Grahamtown Housing Initiative - Rutherford County, NC, bipoc led, female led

Howell's Mill Summer Camp - Ona, WV

Huntington City Mission - Huntington, WV bipoc led

Just for Kids Advocacy Center - Berkeley, WV, female led

Kitsbow Apparel - Old Fort, NC

New Leaf Justice Enterprises/SAOP Recovery Villages - Athens County, OH, female led

New Roots Community Farm - Fayetteville, WV, bipoc led, female led

Shagbark Seed & Mill - Athens, Ohio, female led

Snowville Creamery - Meigs County, Ohio

Western Women's Business Center - Asheville, NC, female led

Woodlands Development & Lending - Elkins, WV, female led

Martin IGA - Martin, KY

Appendix D - Explanation of Credit Enhancements and Non_Extractive Financial Techniques:

First Loss Capital offers the potential to moderate risk and catalyze "more risk-averse sources of capital" (GIIN, 2013, p. 4). Sometimes referred to as "subordinated debt," first-loss capital means the initial investor would be willing to bear the first economic loss if the borrower does not repay in full or if assets lose value so as to reduce the risk for other investors - incentivizing those investors by minimizing their risk. The use of first-loss capital for impact investment is currently growing, with key examples available across a range of wealthy nations (GIIN, 2013)

Loan Guarantees mitigate collateral requirements for low-wealth borrowers and are often used in conventional funding including the US Small Business Administration's support for small businesses (GIIN, 2013). Loan guarantee programs have great potential for unlocking private capital for investment worthy projects, but such guarantees are subordinate to market-rate seeking private capital (that is, are only paid after the market-rate lender has been paid) so it is difficult to discern and evaluate the unique impact of credit guarantees (Meyer, 2000).

Conditional Repayment Loans (CRL) on the other hand are an example of *Non-extractive finance* which is defined as no more repayment going to the provider of the finance than the wealth that is created by the borrower's use of the loan. This is specifically "patient capital," meaning if no wealth is created over a usual market rate term, nothing is returned to the lender (SEED, 2023). However, if wealth is created, it can be repaid to the lender even if it is after the negotiated lending term, and this is not considered extractive. One specific CRL example is a deal in which borrowers are not required to make interest or principal repayments until they are able to cover operating costs, including market-rate salaries (Berg, 1999).

IA has engaged in two distinct forms of conditional repayment loans: Repayable Loans and Recoverable Grants. A repayable loan is essentially a financial arrangement where the recipient receives funds from a grantor (such as a government agency). IA has made a variety of repayable loans, particularly for solar as seen in the Huntington City Mission and Howell's Mill Summer Camp which were short-term, zero-interest, unsecured bridge loans to facilitate the installation of rooftop solar arrays, with repayment tied to the reimbursement from the federal solar Investment Tax Credit (ITC) for rooftop installations. The key facet of each deal is that they were directly linked to the receipt of federal solar ITC, indicating a clear, anticipated repayment event.

Source: Bartholomew, Garreth, Huntington City Mission (left), Howell’s Mill Summer Camp in Ona, WV (right)

A recoverable grant like the one for Coalfield Development focus on sustainability and impact, with the expectation of eventual recovery. This Coalfield deal was structured as an unsecured loan at 0% interest. to finance the Black Diamond sustainability hub project, which is part of the EDA Build Back Better Challenge Grant to the ACT Now Coalition. This financing serves as part of the required non-federal match. IA designed this to bring the project's debt service down to a level financially viable for the building's revenue model, where repayment is expected through the revenue generated by the building housing mission-aligned enterprises and combining with other financing sources (a bank loan and an IA Fund loan) to build this capital stack. The key piece of this, like any, recoverable grant is the return of the original grant amount (either in whole or part) is only tied to achieving certain impact-focused targets or milestones where the approach is holistic, aiming for sustainability and long-term impact, not necessarily financial returns with multiple mission-aligned enterprises involved.

Source: Bartholomew, Garreth, Coalfield Development HQ at West Edge Factory in West Huntington, WV

References

Addy et al. (2019). Calculating the Value of Impact Investing. Harvard Business Review. https://hbr.org/2019/01/calculating-the-value-of-impact-investing

Agger, A., Damgaard, B., & Sørensen, E. (2016). Sustaining area-based initiatives by developing appropriate "anchors": the role of social capital. International Journal of Urban Sustainable Development, 8(2), 153–167. https://doi.org/10.1080/19463138.2016.1199398

AND Magazine. (2021). CDFIs filling lending gaps in local financial and community development system. Retrieved from https://and.flintandgenesee.org/cdfis-filling-lending-gaps-in-local-financial-and-community-development-system/

Ankarhem, M., Daunfeldt, S.-O., Quoreshi, S., & Rudholm, N. (2010). Do Regional Investment Grants Improve Firm Performance? Evidence from Sweden. The Annals of Regional Science, 45(1), 195–214. https://doi.org/10.1007/s00168-009-0295-9

Appalachian Community Capital. (2023). Small Business Lenders on a Mission. Retrieved from Appalachian Community Capital

Appalachian Regional Commission. (2007). Access to Capital and Credit for Small Businesses in Appalachia.

Appalachian Regional Commission. (2007). Entrepreneurship in Appalachia: A report to the Appalachian Regional Commission. 1

Appalachian Regional Commission. (2019). County Economic Status in Appalachia, FY 2019 https://www.arc.gov/map/county-economic-status-in-appalachia-fy-2019/

Appalachian Regional Commission. (2021). Grants and Opportunities. Retrieved from Grants and Opportunities - Appalachian Regional Commission

Appalachian Regional Commission. (2021). POWER Initiative. https://www.arc.gov/power-initiative/

Appalachian Regional Commission. (2023). Appalachian Region: Economic Overview. Retrieved from ARC

Basile, I., Dutra, J., & Nakhooda, S. (2020). Blended Finance Funds and Facilities - 2018 Survey Results Part II. Convergence.

Benjamin, L., Rubin, J., & Zielenbach, S. (2004). Community Development Financial Institutions: Current Issues and Future Prospects. Journal of Urban Affairs, 26(2), 177–195. https://doi.org/10.1111/j.0735-2166.2004.00196.x

Berg, G., & Pattillo, C. (1999). Predicting currency crises: The indicators approach and an alternative. Journal of International Money and Finance, 18(4), 561-5861

Bertzky, M., Hagedorn, K., Kozak, M., Martínez-López, J., Verburg, P. H., Reenberg, A., Rahbek, C., & Pascual, U. (2020). THE STATE OF THE EVIDENCE ON BLENDED FINANCE FOR SUSTAINABLE DEVELOPMENT. World Development, 130, 104926. https://doi.org/10.1016/j.worlddev.2020.104926

Brimont, L. (2017). Crowdfunding, a new tool for local sustainable development policies? Iddri.

Broady, K., McComas, M., & Ouazad, A. (2021). An analysis of financial institutions in Black-majority communities: Black borrowers and depositors face considerable challenges in accessing banking services.

Carter, A. (2006). Building an Investment Market for Economic Development. Economic Development Quarterly, 20(1), 3–14. https://doi.org/10.1177/0891242405283163

CDFI Fund Data Releases. (2017-2023). U.S. Department of the Treasury. https://www.cdfifund.gov/documents/data-releases

Chirchietti, N. (2017). The role of Innovation Hubs taking start-ups from idea to business. In Proceedings of the 11th European Conference on Innovation and Entrepreneurship (pp. 125–132). Academic Conferences International Limited.

Circular City Funding Guide. (n.d.). Equity and quasi-equity. Retrieved February 29, 2024, from https://www.circularcityfundingguide.eu/funding-types-and-their-applicability/equity-and-quasi-equity/

Cohen, M. (2017). Crowdfunding as a Financing Resource for Small Businesses. Journal of Business and Economics, 8(1), 1–10.

Community Development Financial Institutions Fund. (2023). Investing for the Future. Retrieved from CDFI Fund

Crosson, A. (2021). Countering Rural Disinvestment: Appalachia's Ecosystem-Based Approach. Nonprofit Quarterly

Cumberland Heights. (2020). The Appalachian Opioid Crisis. https://www.cumberlandheights.org/blogs/appalachian-opioid-

crisis/#:~:text=At%20Cumberland%20Heights%2C%20we%20understand,to%20one's%20health%20and%20wellbeing.

dela Rama, M., & Rowley, C. (2012). Anchor institutions and local economic development through procurement: an analysis of strategies to stimulate the growth of local and minority enterprises through supplier linkages. In Corporate Governance in Less Developed and Emerging Economies (pp. 229–252). Emerald Group Publishing Limited.

Donald, H. (2013). CDFIs: Intermediaries for Financing to Low-Income Communities. In The Oxford Handbook of Civil Society (pp. 388–399). Oxford University Press.

Doran, A., & Jordan, D. (2000). Publicly sponsored regional venture capital: what can the UK learn from the US experience? Venture Capital: An International Journal of Entrepreneurial Finance, 2(4), 313–332. https://doi.org/10.1080/13691060050135076

Dyer, D., Gregersen, H., Christensen, C., & Burrill, G. (2016). Venture capital investment, regional innovation and new business creation: a research note. Journal of Business Strategy, 37(2), 3–8. https://doi.org/10.1108/JBS-07-2015-0074

Fahe. (2023). Community Development Financial Institution. Retrieved from Fahe

Fairlie, R., Robb, A., & Robinson, D. T. (2020). Black and White: Access to Capital among Minority-Owned Startups. Management Science, 68(4), 2377-2400

FDIC. (2021). The FDIC National Survey of Unbanked and Underbanked Households.

Fed Communities - 2021 CDFI Survey Key Findings. (2021) Retrieved from https://fedcommunities.org/data/2021-cdfi-survey-key-findings/

Fehder, D. C. (2019). Spillover Effects of Startup Accelerator Programs: Evidence from Venture-Backed Startup Activity (Working paper).

Fehder, D., & Hochberg, Y.V... (2014). Accelerators and the Regional Supply of Venture Capital Investment (Working paper).

Fehder, D. C., & Hochberg, Y. V. (2018). Can Accelerators Accelerate Local High-Growth Entrepreneurship? Evidence from Venture-Backed Startup Activity (Working paper).

Figueroa-Armijos, M., & Johnson, T. G. (2016). Entrepreneurship policy and economic growth, solution or delusion? Evidence from a state initiative. Small Business Economics, 47(4), 1033-47. https://doi.org/10.1007/s11187-016-9750-9

Fili, A., Berggren, B., & Silver, L. (2013). The Impact of Financial Capital, Human Capital and Social Capital on the Evolution of Business Angel Networks. International Journal of Entrepreneurship and Innovation Management, 17(1/2/3), 24–40. https://doi.org/10.1504/IJEIM.2013.052669

Friederici, N. (2017). Innovation Hubs in Africa: An Entrepreneurial Perspective. In The Oxford Handbook of Africa and Economics: Volume 2: Policies and Practices (pp. 1–20). Oxford University Press.

Global Impact Investing Network (GIIN). (2013). Catalytic First Loss Capital. https://missioninvestors.org/sites/default/files/resources/CatalyticFirstLossCapital.pdf

Grilli, L. (2018). There must be an angel? Local financial markets, business angels and the financing of innovative start-ups. Regional Studies, 52(12), 1640–1651. https://doi.org/10.1080/00343404.2018.1431623

Guerrero, M., Liñán, F., & Cáceres-Carrasco, F. R. (2021). The influence of ecosystems on the entrepreneurship process: a comparison across developed and developing economies. Small Business Economics, 57(1), [Article 1733]. https://doi.org/10.1007/s11187-020-00392-2

Hochberg, Y. V. (2016). Accelerating Entrepreneurs and Ecosystems: The Seed Accelerator Model. Innovation Policy and the Economy, 16(1), 25–51. https://doi.org/10.1086/684985

Invest Appalachia. (n.d.). Home. 3

Invest Appalachia Inc. (2022). Form 990: Return of organization exempt from income tax (Cat. No. 11282L). Retrieved from Candid.

Invest Appalachia. (2022, January 12). Catalytic capital: A new way to invest in Appalachia. 4

Invest Appalachia. (2023, January 11). Catalytic capital: A new way to invest in Appalachia. 5

Invest Appalachia. (2023). IA Pitch Deck 2Q23

Invest Appalachia. (2023). Catalytic Capital Overview

Jung, E., Kim, S., & Kim, H.-W. (2015). Community Engagement and Collective Evaluation in Crowdfunding. In Proceedings of the 18th ACM Conference Companion on Computer Supported Cooperative Work & Social Computing (pp. 217–220). ACM.

"A Just Transition for Finance." (2020, October 22). LPE Project. 2

Katonáné Kovács, J., & Szabó, K. (2017). Rural Enterprise Hub Supporting Rural Entrepreneurship and Innovation – Case Studies from Hungary. In Rural Development and Entrepreneurship (pp. 1–16). IGI Global.

Kauffman Foundation. (2019). Entrepreneurial Ecosystem Building Playbook. https://www.kauffman.org/ecosystem-playbook-draft-3

Kim, J.-H., & Wagman, L. (2020). The Impact of Peer-to-Peer Lending on Entrepreneurship. In The Oxford Handbook of Entrepreneurial Finance (pp. 1–20). Oxford University Press.

Labor for Sustainability. (n.d.). A Just Transition for Appalachia. https://www.labor4sustainability.org/articles/a-just-transition-for-appalachia-is-there-a-way/

LA Local Rental Owners Collaborative (LROC). (2021). LA rental owner collaborative pilot slides [PDF]. The Preservation Compact. [6]

Leistritz, F., & Sell, R.S... (1998). Regional Economic Development: Evaluation of a Local Initiative in North Dakota (Working paper).

McKinsey & Company. (2023). Underestimated start-up founders: The untapped opportunity. McKinsey & Company. Retrieved from https://www.mckinsey.com/featured-insights/diversity-and-inclusion/underestimated-start-up-founders-the-untapped-opportunity

Meyer, R. L., & Nagarajan, G. (2000). Evaluating credit guarantee programs in developing countries. The Ohio State University, Department of Agricultural, Environmental and Development Economics3

Minin, D.V... (2019). Investment's features In Order To Ensure Sustainable Development In The Longterm. Economics and Finance, 1(1), 1–10.

Mody, A., & Wheeler, D. (1990). Methods of loan guarantee valuation and accounting. The World Bank Economic Review, 4(1), 23-432

National Committee for Responsive Philanthropy. (2018). As the South Grows: So Grows the Nation. [7] https://www.ncrp.org/publication/as-the-south-grows-so-grows-the-nation

National Credit Union Administration. (2023). Call report quarterly data. https://ncua.gov/analysis/credit-union-corporate-call-report-data/quarterly-data

Next Street. (June, 2017). Access to capital for entrepreneurs in Central Appalachia. Next Street research report.

Next Street. (Winter, 2020). San Antonio Report. https://nextstreet.com/wp-content/uploads/2022/06/SanAntonio-Report_FINAL.pdf

Next Street. (May, 2022). Fahe - Appalachia Next Street White Paper. https://nextstreet.com/wp-content/uploads/2022/05/Fahe_Next-Street_White-Paper_vFF-3.pdf

Nonprofit Quarterly. (2021). Countering Rural Disinvestment: Appalachia's Ecosystem-Based Approach. Retrieved from Nonprofit Quarterly

Perry, A., Rothwell, J., & Harshbarger, D. (2020). The devaluation of businesses in Black communities. The Brookings Institution

Piazza, A. (2018). Essays on Angel Investing in the Entrepreneurial Ecosystem (Doctoral dissertation). Rice University.

Pierrakis, Y., & Collins, L. (2013). Crowdfunding: A New Innovative Model of Providing Funding to Projects and Businesses. In Handbook of Research on IPOs (pp. 369–381). Edward Elgar Publishing.

Pipa, T. (2022). Protecting community integrity during a creative transformation in West Virginia. Brookings. https://www.brookings.edu/articles/protecting-community-integrity-during-a-creative-transformation-in-west-virginia/

Porter, P. D. (2013). Building CDFI Capacity in Lending and Business Models: A Case Study of the Community Development Venture Capital Alliance's Capacity Building Program for Community Development Venture Capital Funds (Doctoral dissertation). Harvard University.

Randolph, S.K., Deputy Director, Cassiopeia Foundation. (March 2024). Personal Interview.

Rodriguez, K. (2016). Angel Groups: Developing a Regional Economic Development Strategy for Robust Seed Capital Ecosystems for Entrepreneurs (Master's thesis). University of North Carolina at Chapel Hill.

Rolland, K. (2015). Breakthroughs in CDFI Capital Access: The Role of Impact Investors and Foundations in Supporting CDFIs to Scale Their Impact and Sustainability (Master's thesis). Massachusetts Institute of Technology.

Roswinna, W., Zainuddin, Z., & Zainuddin (2023). Attractive Regional Investment Model for Investors. Journal of Accounting and Finance Management, 3(1), 1–12.

S&P Global. (2021). Central Appalachia Coal Production Drops to Over 37-Year Low in 2020 https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/coal/020521-central-appalachia-coal-production-drops-to-over-37-year-low-in-2020-msha

Sanchís-Pedregosa, C., Martínez-Abascal, E., Fernández de Guevara, J., & Cardone-Riportella, C. (2020). Guaranteed Crowdlending Loans: A Tool for Entrepreneurial Finance Ecosystem Sustainability. Sustainability, 12(18), 7525. https://doi.org/10.3390/su12187525

SBA 7(a) Loans. (n.d.). Retrieved from https://www.sba.gov/funding-programs/loans/7a-loans

Schwartz, A. E., Ellen, I. G., Voicu, I., & Schill, M. H. (2006). The external effects of place-based subsidized housing. Regional Science and Urban Economics, 36(6), 679–707. https://doi.org/10.1016/j.regsciurbeco.2006.04.002

SCOP Venture Capital. (2022, August 2). These regions have the most incoming venture capital.

Scott, J., Recto, M. C., & Kivell, J. (2023). Sizing the CDFI market: Understanding industry growth. Federal Reserve Bank of New York

Seed Commons. (n.d.). Non-Extractive Finance. https://seedcommons.org/about-seed-commons/seed-commons-approach-to-non-extractive-finance/

Ševid, Ž. (2007). Community Development Banking to Foster Entrepreneurship. In Entrepreneurship and Development in South-East Europe (pp. 93–102). Springer.

Sierra-Escalante, K., & Mousley, P. (2018). Blended finance: a stepping stone to creating markets. International Finance Corporation.

Smith, E. (2021, January 6). Human Rights in Appalachia: Socioeconomic and health disparities in Appalachia. UAB Institute for Human Rights Blog.

Smith, R., & Hannigan, T. J. (2015). Now and Later? Mentorship, Investor Ties and Performance in Seed-Accelerators (Working paper).

State of West Virginia Plan and Annual Strategy Statement Appalachian Regional Commission. (2022). Retrieved from State of West Virginia Plan and Annual Strategy Statement Appalachian Regional Commission

Stephens, H., & Partridge, M. (2010). Do small businesses matter for economic growth in Appalachia? Agricultural, Environmental, and Development Economics, The Ohio State University. https://aede.osu.edu/sites/aede/files/publication_files/Heather_Stephens_SRSA_2010_Paper_Draft.pdf

Stone, J (2023, October 27). Appalachian Impact Fund. ICIA. https://iciaptos.com/appalachian-impact-fund/

Swagel, P. L. (2023, February 8). The Budget and Economic Outlook: 2023 to 2033. Congressional Budget Office. [9]

The Appalachia Partnership Initiative. (2020). Investments in K–12 Education and Catalyzing the Community. Retrieved from The Appalachia Partnership Initiative

The Foundation for Appalachian Kentucky. (n.d.). Appalachian Impact Fund. https://www.appalachianky.org/appalachian-impact-fund/

United States Census Bureau. (2020). Annual Business Survey, 2020.

United States Census Bureau. (2020). Nonemployer Statistics, 2020

United States Census Bureau. (2020). Annual Community Survey, 2020.

U.S. Census Bureau. (n.d.). Poverty

U.S. Department of Housing and Urban Development. (2023). Ohio. Retrieved from HUD Ohio

U.S. Small Business Administration. (2023). PPP FOIA. https://data.sba.gov/en/dataset/ppp-foia

U.S. Small Business Administration. (2023, April 12). U.S. Small Business Administration implements rules to address persistent capital access gaps for small businesses [Press release]

United States Department of Agriculture. (2023). USDA Rural Development. Retrieved from USDA

Virginia.gov. (2023). Department of Housing & Community Development. Retrieved from Virginia.gov

Welbon, Y. (2021, May 26). Building a Pipeline for BIPOC Creatives. MacArthur Foundation. Retrieved from https://www.macfound.org/press/grantee-stories/building-a-pipeline-for-bipoc-creatives

Werth, J., & Boeert, P. (2011). Co-Investment Networks of Business Angels and the Performance of Their Start-Up Investments. International Journal of Entrepreneurial Venturing, 3(3), 261–282. https://doi.org/10.1504/IJEV.2011.041648

Williams, T., Benjamin, L., Rubin, J., & Zielenbach, S. (2022). How Community Development Financial Institutions (CDFIs) are shaped by Funders through Data Collection, Impact Measurement, and Evaluation (Working paper).

World Resources Institute. (2008). The Bottom Line on State and Federal Policy Roles. Retrieved from WRI

Xu, J. (2019). Is There a Trade-Off between Protecting Investors and Promoting Entrepreneurial Activity? Evidence from Angel Financing. Social Science Research Network. https://doi.org/10.2139/ssrn.3497694

Zerbe Jr., R. O., Han, X., Layton, D., & Leshine, T. (2002, October). A history of discount rates and their use by government agencies [PDF]. University of Washington.