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Relationship in Alaska Native Corporations' Return on Equity From Sector

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Abstract

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MBA, Walden University, 2008

BS, University of Texas at Dallas, 2003

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

In 1999, Stephen Colt studied the 12 regional corporations formed under the Alaska Native Claims Settlement Act of 1971 (ANCSA). Colt reviewed the financial data from 1973 to 1993 and found the regional corporations lost approximately $380 million in business operations. However, the regional corporations increased their revenue from $714 million in 1993 to $8.575 billion in 2014. No further study of those subsequent 20 years has been conducted, so a data set to see if Colt's conclusions hold was created. This multivariate correlational study tested two theories on the regional corporations: the theory of the economic efficiency of lump-sum payments in promoting economic growth and the theory of interest. The research questions explored relationships between the non-windfall return on equity and the absolute and differential returns from the various sectors the corporations invested in and compared the value of the corporations from the discounted free cash flow to firm model to the value of investing the initial ANCSA cash in U.S. treasuries. This study utilized a feasible generalized least squares model and a one-sample *t* test on secondary data (the annual reports of the 12 corporations from 1994 to 2014). Using this approach, the business operations earned $3.4 billion, or approximately $3.8 billion more than during Colt's 1999 study. The corporations' value was placed at $6.9 billion, $3.8 billion more than the value derived from the ANCSA cash invested in U.S. treasuries. This study promotes positive social change by creating new knowledge and gives data for policymakers considering land claims legislation of the current outcomes of ANCSA.

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Chapter 1: Introduction to the Study

The passage of the Alaska Native Claims Settlement Act of 1971 (ANCSA) was a departure from the prior government-to-government relationship with Alaskan Tribes (Arnold, 1978; McClanahan, 2006). Through the passage of ANCSA, congressional leaders extinguished the land claims of Alaskan Natives and created corporations governed by Alaskan Natives with the mission to positively impact the economic and social needs of their shareholders (Arnold, 1978; McClanahan, 2006). In this chapter, I introduce the seminal research into ANCSA by Stephen Colt (1999) and the current study where I retested the hypotheses in Colt's study for economic efficiency and developed a valuation for the shares of the corporations. This chapter includes the theoretical foundations of this research, research questions and hypotheses and the significance of the study. It also contains the background, problem statement, and purpose for this study. The definitions and assumptions, scope and delimitations, and limitations are also covered.

Background of the Study

In 1971, congressional leaders extinguished the aboriginal title of Alaska Natives to 375 million acres in Alaska in exchange for fee simple title of 40 million acres and $962.5 million through the passage of ANCSA (Arnold, 1978; McClanahan, 2006; Worl & Kendall-Miller, 2018). The resulting 12 ANCSA regional corporations and approximately 200 village corporations received the title and cash from the settlement (Arnold, 1978; McClanahan, 2006; Worl & Kendall-Miller, 2018). Alaskan Natives living outside of Alaska received shares in the 13th regional corporation through an

amendment to ANCSA in 1975 (Arnold, 1978). Each Alaskan Native who was at least 18 years old with at least a quarter blood quantum was granted 100 shares in a regional corporation and either 100 shares in a village corporation or listed as an at-large regional shareholder (Arnold, 1978; McClanahan, 2006). The leaders of these corporations were to concern themselves with the real social and economic needs of Alaska Natives, including managing the lands for economic growth and preservation of cultural sites (Arnold, 1978; Christensen, 2020; McClanahan, 2006; Worl & Kendall-Miller, 2018).

In 1999, Stephen Colt published his dissertation on ANCSA. In his seminal study, Colt (1999) reviewed the financial data for the corporations from 1973 to 1993 to determine whether this lump-sum transfer was economically efficient in stimulating economic growth. He tested several hypotheses to determine whether there were statistically significant relationships between return on equity (ROE) and the sectors the corporations invested in and those subsidiary businesses' structure. Colt specifically looked at whether there was a management effect on ROE in the various sectors and attempted to determine whether these corporations' leaders efficiently sacrificed ROE for their shareholders' employment.

Colt's (1999) theoretical foundation for his dissertation was the second theorem of welfare economics on lump-sum transfers as economically efficient in stimulating economic growth (Mas-Colell et al., 1995). The second theorem of welfare economics is still a valid theory, with researchers testing new economic theories based on the first and second fundamental theorem of welfare economics (Lipsey, 2017; Ng, 2017). Colt utilized the neoclassical growth theory in his dissertation, and since then researchers have

augmented the Solow growth model with other factors to identify the burden of public debt to economic growth (Dombi & Dedak, 2019). Tavani and Zamparelli (2017) concluded that classical models with induced technical change resemble the neoclassical exogenous growth model results. I utilized the same economic theories as Colt used in his study (Colt, 1999).

In his study, Colt (1999) did not estimate the corporations' value or the benefits provided to its shareholders. I utilized the most common valuation model used by professionals based on the theory of interest (Fisher, 1930)—the discounted free cash flow valuation model (Allee et al., 2020; Pinto et al., 2019)—to estimate a value for the ANCSA regional corporations and the benefits they provided. Pinto et al. (2019) surveyed 13,500 investment professionals and concluded they used the discounted free cash flow model in 80.1% of cases. Allee et al. (2020) partnered with the American Institute of Certified Public Accounts (AICPA) to survey valuation specialists and found the discounted cash flow methodology was the most common methodology used by valuation specialists to estimate a value of a private firm. To inform future policymakers, the valuation in this study offers data never previously collected on the outcomes of ANCSA.

The gap in the literature is significant. Although the ANCSA regional corporations increased their revenue from $714 million in 1993 to $8.575 billion in 2014, no further study on their impact on the economic status of their shareholders has been conducted (ANCSA Regional Association, 2016; Colt, 1999; Lind, 2019). I created the next 20-year data set relative to the Colt study and retested several of the hypotheses to

see if the results still hold (Colt, 1999). Additionally, I established the corporations' value utilizing an application of the theory of interest in the discounted free cash flow valuation model (Fisher, 1930).

Problem Statement

American Indian and Alaskan Native (AI/AN) populations lag in all economic indicators. Jones (2017) observed that 33% of AI/AN children live in poverty compared to the national average of 18%. AI/AN families also had a median household income 31% lower than the national average (U.S. Census Bureau, 2017). The general management problem is that AI/AN populations have a socioeconomic status below the rest of the population and this impoverished state has negative social impacts.

Research has shown that in general terms poverty has long-term negative social impacts for those who live with it (Crouch et al., 2020). Crouch et al. (2020) concluded there was a strong association between child abuse and poverty, as well as between the intensity of the abuse and poverty as well. Childhood trauma negatively affects economic success and educational attainment into adulthood (Bunting et al., 2018). These adverse childhood experiences increase the parenting stress when these children themselves become parents, which was linked to a higher likelihood of child neglect and abuse (Lange et al., 2019), thus creating an intergenerational reinforcing cycle of poverty and abuse.

The passage of ANCSA was a departure from the previous government-to-government relationship with Alaskan Tribes (Arnold, 1978; Christensen, 2020; McClanahan, 2006; Worl & Kendall-Miller, 2018). Treaties authorized reservations to be

held in trust and guaranteed payments for health and education benefits from the Federal government in perpetuity. Through passage of ANCSA, congressional leaders extinguished land claims of Alaskan Natives and created corporations governed by Alaskan Natives with the mission to positively impact the economic and social needs of their shareholders (Arnold, 1978; Christensen, 2020; McClanahan, 2006; Worl & Kendall-Miller, 2018). Congressional leaders authorized a lump-sum payment of cash and land and established over 200 ANCSA corporations without continued federal oversight. In his seminal study of ANCSA, Colt (1999) reviewed the first 20 years of financial data for the corporations to determine whether this lump-sum transfer was efficient in stimulating economic growth. Although the ANCSA regional corporations have increased their revenue by more than 10-fold, no further study on whether they stimulated economic growth for their shareholders has been conducted (ANCSA Regional Association, 2016; Lind, 2019).

The specific management problem under investigation was whether Colt's conclusions on the economic efficiency of the lump-sum transfer in stimulating economic growth hold for the subsequent 20-year period. Colt (1999) did not estimate the value of the corporations or the benefits provided to their shareholders. I utilized the discounted free cash flow valuation model (Allee et al., 2020; Pinto et al., 2019) estimated a value for the ANCSA regional corporations and the benefits they provide. With this study, I was able to retest the hypotheses in Colt's study for economic efficiency and develop a valuation for the shares of the corporations.

Purpose of the Study

The purpose of this quantitative study was to test two theories on the regional corporations established under ANCSA. The theory of the economic efficiency of lump-sum payments in promoting economic growth (Bourguignon, 1991; Lipsey, 2017; Ng, 2017; Zhang, 2017) was tested by examining the relationship between the independent variable (passive investment rate of return) to the dependent variable (ROE) for both the group and individual ANCSA regional corporations. The independent variable was generally defined as the absolute rate of return of the passive investments held by the ANCSA regional corporations. The dependent variable was generally defined as a specific form of ROE for both the group and individual corporations controlled for windfall tax sales and resource rents.

The second part of the study tested the theory of interest by examining the relationship between the independent variable (value of initial ANCSA settlement invested in U.S. treasuries as of 2014) to the dependent variable (value of ANCSA regional corporations at the end of 2014 established by the discounted free cash flow model; Allee et al., 2020; Pinto et al., 2019). The independent variable was generally defined as the value of the initial ANCSA settlement cash provided to the regional corporations as a group invested in 1-year U.S. treasuries until the end of 2014. The dependent variable was generally defined as the value of the ANCSA regional corporations as a group at the end of 2014 established by the discounted free cash flow model (Allee et al., 2020; Pinto et al., 2019).

The third part of the study tested for a relationship between the independent variables (differential return attributed to the business sector) and the dependent variable (a specific form of ROE) for both the group and individual ANCSA regional corporations (Colt, 1999). The independent variables were generally defined as differential returns in the local, statewide, oil, local public works and Small Business Administration (SBA) 8(a)-contracting sectors. The dependent variable was generally defined as a specific form of ROE for both the group and individual corporations controlled for windfall tax sales and resource rents.

Research Questions and Hypotheses

I designed a series of research questions to drive the current study and used secondary data from the ANCSA regional corporations' annual reports to calculate the answers to the questions. In order to discover how the next 20-year data set (1994–2014) altered the results of the Colt's (1999) seminal study, I retested some of Colt's hypotheses on the next 20-year data set of secondary data. The hypotheses that I retested were as follows:

1. What is the relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and the absolute return on passive investments?
    a. H_0: There is no statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and absolute return on passive investments.

   b. H_1: There is a statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and absolute return on passive investments.

2. What is the relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential returns in the statewide sector?

   a. H_0: There is no statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential returns on the statewide sector.

   b. H_1: There is a statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential returns on the statewide sector.

3. What is the relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential returns in the local sector?

   a. H_0: There is no statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential returns on the local sector.

   b. H_1: There is a statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential returns on the local sector.

4. What is the relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential returns on the oil sector?
    a. H_0: There is no statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential returns on the oil sector.
    b. H_1: There is a statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential returns on the oil sector.

A question that was not asked in Colt's (1999) study was what was the market value of the ANCSA regional corporations themselves and the benefits provided to shareholders. Establishing the value of the shares through the use of the discounted free cash flow valuation methodology answered this question (Allee et al., 2020; Pinto et al., 2019). In the next 20-year data set, the SBA 8(a)-contracting program significantly impacted the ANCSA regional corporations and should be included as a separate sector to the original Colt study (Colt, 1999). Hypotheses to answer these questions were added to the other hypotheses for this study:

5. What is the relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential returns on the SBA's 8(a) contracting sector?
    a. H_0: There is no statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential returns on the SBA's 8(a) contracting sector.

   b. H_1: There is a statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential returns on the SBA's 8(a) contracting sector.

6. What is the relationship between the differential value between the value of the 12 ANCSA regional corporations based on the discounted free cash flow valuation model at the end of 2014 and the initial ANCSA settlement cash provided to the 12 ANCSA regional corporations as a group invested in 1-year U.S. treasuries until the end of 2014?

   a. H_0: There is either no or a negative statistically significant relationship between the differential value of the 12 ANCSA regional corporations based on the discounted free cash flow valuation model at the end of 2014 and the value of the initial ANCSA settlement cash provided to the 12 ANCSA regional corporations as a group invested in 1-year U.S. treasuries until the end of 2014.

   b. H_1: There is a positive statistically significant relationship between the differential value of the 12 ANCSA regional corporations based on the discounted free cash flow valuation model at the end of 2014 and the value of the initial ANCSA settlement cash provided to the 12 ANCSA regional corporations as a group invested in 1-year U.S. treasuries until the end of 2014.

The research questions allowed me to investigate whether the second 20-year data set of ANCSA regional corporation financial performance altered the conclusions of Colt

(1999). The design of this study gave researchers 40 years of data to investigate the economic efficiency of ANCSA in growing the economy of Alaska Native shareholders. Establishing the market value for the shares allowed researchers to understand the value of the asset provided by ANCSA to the shareholders.

Theoretical Foundation

The theoretical framework of this study was based on Bourguignon's theory on poverty reduction and growth along with the theory of welfare economics and the presumption of lump-sum payments being an efficient model for improving the economic status of a group (Bourguignon, 1991; Mas-Colell et al., 1995; Ng, 2017). ANCSA was one of the few times U.S. congressional leaders have decided to issue a lump-sum payment to a minority group to grow their economic status (Colt, 1999). Although the ANCSA regional corporations have increased their revenue by more than 10-fold, no further study on their impact on the economic status of their shareholders has been conducted (ANCSA Regional Association, 2016; Lind, 2019). I created the next 20-year data set relative to the Colt study and retested several of the hypotheses to see if the results still held (Colt, 1999). A valuation of the regional corporations was established utilizing an application of the theory of interest in the form of the discounted free cash flow valuation model (Fisher, 1930).

Nature of the Study

I conducted this study using the quantitative methodology and from a transformational worldview. The research design was to conduct a multivariate correlational statistical analysis utilizing SPSS general linear models and a one-sample *t*

test on secondary data. The discounted free cash flow valuation model was used to establish a value for the corporations based on secondary data. The data set collected included the universe of the 12 ANCSA regional corporations, making this study a census and not a sample of these corporations. I collected the annual reports of the ANCSA regional corporations for the period 1994–2014 as the next 20-year data set to the previous period of 1973–1993 (Colt, 1999). I retested several of the hypotheses from Colt (1999), utilizing the generalized least squares (GLS) methodology used by Colt on the new set of secondary data. This research design was consistent with the requirements of the underlying research questions and ultimately led to an understanding of the economic efficiency of ANCSA in growing the economy of Alaska Native shareholders.

Definitions

Non-windfall return on equity (ROE): A specific form of ROE derived from the audited financial statements. Only non-windfall net income remains when windfall tax sales and resource rents are removed (Colt, 1999).

Return on equity (ROE) on passive investments: A specific form of ROE and directly reported in the audited financial statements as investment income (Colt, 1999).

ANCSA regional corporations: The original 12 regional corporations: AHTNA Incorporated; Aleut Corporation; Arctic Slope Regional Corporation (ASRC); Bering Straits Native Corporation (BSNC); Bristol Bay Native Corporation (BBNC); Calista Corporation; Chugach Alaska Corporation; Cook Inlet Region Inc. (CIRI); Doyon Limited; Koniag Incorporated; NANA Regional Corporation Incorporated; Sealaska Corporation (Lind, 2019).

Statewide sector: Defined by Colt (1999) as those assets on the audited financial statements of the ANCSA regional corporations dedicated to all business not falling within the Local or Oil sectors.

Local sector: Defined by Colt (1999) as those assets on the audited financial statements of the ANCSA regional corporations dedicated to businesses serving the population in the region the corporation represents.

Oil sector: Defined by Colt (1999) as those assets on the audited financial statements of the ANCSA regional corporations dedicated to businesses serving existing oil development and production on the North Slope fields.

Discounted free cash flow model: Defined as the discounted free cash flow to firm (FCFF) model utilizing the U.S. gross domestic production (GDP) as the long-term growth assumption and the build-up method of estimating the Weighted Average of Cost of Capital (WACC) (Allee et al., 2020). The build-up method consists of the United States' 1-year treasury bond rate as the risk-free rate (Allee et al., 2020).

Small Business Administration (SBA) 8(a)-contracting program: The SBA administers a program where Federal contracting opportunities are provided to an eligible business owned by socially and economically disadvantaged individuals (sba.gov). These opportunities are limited to just these eligible entities and these entities are provided opportunities for sole-source contracts.

Small Business Administration (SBA) 8(a)-contracting sector: Defined as those assets on the audited financial statements of the ANCSA regional corporations dedicated to businesses serving the Federal government through the SBA 8(a) program.

Assumptions

This study had two primary assumptions. The first was that while the U.S. 1-year treasury rate fluctuates daily, utilizing the average yield as the proxy for that year's value would not materially impact the performance of the discounted FCFF model. The reason to avoid the daily fluctuations for the value of the 1-year treasury rate was that they could introduce noise outside the scope of this study. The second assumption was while the 12 ANCSA regional corporations have different fiscal year ends associated with their audited financial statements, the timing differences of those inputs would not materially impact the study. Attending to the timing differences for the various inputs derived from the audited financial statements could introduce noise outside the scope of this study.

In addition to the assumptions mentioned above, there was a set of assumptions required of data to utilize the GLS regression. These assumptions included holding that there was a linear relationship between the independent and dependent variables, that the regressions created normally distributed residuals, that there was no multicollinearity of the independent variables, and that there were at least two independent variables. The multivariate linear regression assumptions that were violated and corrected through GLS included the assumption that there was no heteroskedasticity and no serial correlation in the variable. Chapter 3 of this paper describes the testing of statistical assumptions under the heading Data Analysis Plan. These statistical instruments were consistent with the methodology of Colt's (1999) study.

Scope and Delimitations

The purpose of this quantitative study was to expand on Colt's (1999) seminal study of ANCSA. In that study, Colt reviewed the first 20 years of financial data for the ANCSA regional corporations (from 1973 to 1993) to determine whether this lump-sum transfer was economically efficient in stimulating economic growth. I focused the scope of this study on the next 20 years of the ANCSA regional corporations' financial data (1994–2014) to determine whether Colt's conclusions still hold. I chose this time period to match the existing study size.

The data set included the universe of the 12 ANCSA regional corporations making this study a census and not a sample of these corporations (the 13th regional corporation ceased operations in 2009). The last financial report collected for this corporation was the 2002 report. I removed this corporation from the current study as it was no longer in existence, and Colt (1999) did not address it in his seminal study on ANCSA. I also excluded the ANCSA village corporations from this study because most village corporations are not required to file annual reports with the State of Alaska. The database necessary to include ANCSA village corporations does not exist.

New data created with this study included the ANCSA regional corporations' market value and shareholders' benefits. The establishment of the shares' value through the discounted free cash flow valuation methodology created these data (Allee et al., 2020; Pinto et al., 2019).

A notable delimitation of this study was that I did not explore any other valuation methodologies. Valuation specialists also tend to value private companies; however, the

most common valuation method utilized by these professionals is the discounted cash flow model, which includes the discounted free cash flow model (Allee et al., 2020; DiGabriele & Riley, 2018). Finally, the indigenous value system of the Alaska Native shareholders uses a definition of success that includes many additional factors than just profitability (Lind, 2019). I did not attempt to value the other indigenous values in this study.

Limitations

One limitation of this study involved history. The data set timeframe was significant as it contained 2008–2009 when the United States was in a recession caused by the housing crisis. Extremely low oil prices impacted the State of Alaska throughout the final years of this study. However, utilizing an extensive data set of 20 years and selecting the feasible GLS estimator managed this threat to internal validity (Warner, 2020). The selection of ROE also helped to normalize the ANCSA regional corporations' earnings (Colt, 1999).

Another limitation of this study is related to instrumentation, namely the manual completion of the asset allocations from the annual reports. I followed the same methodology as used by Colt (1999). I minimized coding bias by conducting a two-stage allocation. In the first stage, invested assets were allocated to the identified subsidiaries with no further allocation to the broad categories of assets. In the second stage, I returned to the top and allocated the assets identified per subsidiary to the sector that it was primarily serving.

The design of this nonexperimental quantitative multivariate study limited the effects of testing and bias validity. The use of secondary data eliminated the threat from testing; however, the manual asset allocation required in the design introduced the possibility of researcher bias. As the researcher, I had never worked for any of the ANCSA corporations nor was I a shareholder. To further control this potential threat, I utilized the same methodology as Colt (1999). The development of a value for the ANCSA regional corporations' shares utilizing the discounted free cash flow model required developing a long-term growth rate and the WACC. To reduce researcher bias, I utilized the most commonly used methodology for these inputs (Allee et al., 2020; DiGabriele & Riley, 2018).

This study built a data set for the 20 years from 1994 to 2014 for all 12 ANCSA regional corporations. Although this methodology introduced no risk to these findings' generalizability to the regional corporations, there is a limitation to applying this study's conclusions to the ANCSA village corporations or non-ANCSA corporations.

Significance of the Study

I investigated the economic efficiency of ANCSA in the development of economic growth for the Alaska Native shareholders, as previously studied by Colt (1999), and developed a valuation for the shares of the corporations. I collected the next 20-year data set of the ANCSA regional corporations' financial performance to retest several of the hypotheses from Colt's study. The valuation of these entities allows researchers to understand the value created by the corporations.

Significance to Theory and Practice

ANCSA was one of the few times the U.S. congressional leaders have decided to issue a lump-sum payment to a minority group (Alaskan Natives) to grow their economic status (Colt, 1999). In his seminal study of ANCSA, Colt (1999) reviewed the first 20 years of financial data for the corporations to determine if this lump-sum transfer was economically efficient in stimulating economic growth. Significant changes occurred in the data for the next 20 years which required study, including the end of net operating losses, SBA 8(a)-contracting becoming significant, continued development on ANCSA lands occurring and the acquisitions pursued by the ANCSA regional corporations leading to a massive increase in revenue—from $714 million in 1993 to over $8.5 billion in 2014 (ANCSA Regional Association, 2016; Colt, 1999). I utilized the most common valuation model used by professionals, and based on the theory of interest (Fisher, 1930), the discounted free cash flow valuation model (Allee et al., 2020; Pinto et al., 2019), I estimated a value for the ANCSA regional corporations and the benefits they provide. The valuation offered data never previously collected to inform future policymakers on the outcomes of ANCSA

Significance to Social Change

Through the passage of ANCSA, congressional leaders extinguished land claims of Alaskan Natives and created over 200 ANCSA corporations governed by Alaskan Natives with the mission to positively impact the economic and social needs of their shareholders (Arnold, 1978; Christensen, 2020; McClanahan, 2006; Worl & Kendall-Miller, 2018). The social implications of this study are significant for Alaskan Natives as

researchers have 40 years of data to investigate the economic efficiency of ANCSA and can develop an understanding of the impacts on the socio-economic status of Alaskan Natives and the ability of lump-sum payments to grow the economy.

Summary and Transition

Based on his findings, Colt (1999) concluded the ANCSA regional corporation group's average performance was poor, and the data strongly rejected the idea that the lump-sum payment efficiently grew the economic status of this group. Yet much has changed since Colt's study. For example, in 2014, the ANCSA regional corporations paid more than $155 million in dividends, or 64% of all dividends paid during the entirety of Colt's study (ANCSA Regional Association, 2016; Colt, 1999). Nor did Colt calculate a valuation of the ANCSA regional corporations, which is an important consideration when determining the economic efficiency of growing the economic status of a minority group.

The theories explored in this study are Bourguignon's theory on poverty reduction and growth along with the second theorem of welfare economics and the presumption of lump-sum payments being an efficient model for improving the economic status of a group (Bourguignon, 1991; Mas-Colell et al., 1995; Ng, 2017). I created the next 20-year data set relative to Colt's (1999) study and retested several of the hypotheses to see if the results still held. Applying the theory of interest through the discounted free cash flow valuation model, I developed valuations of the regional corporations (Fisher, 1930). In the next chapter, I explore the existing literature to properly place this study in context with the body of knowledge on this subject. The review of the existing literature helped justify the need for the current study.

Chapter 2: Literature Review

Congressional leaders altered the traditional government-to-government relationship with Alaskan Tribes with the passage of ANCSA (Arnold, 1978; McClanahan, 2006). In his seminal study of ANCSA, Colt (1999) reviewed the first 20 years of financial data for the corporations to determine if this lump-sum transfer was economically efficient in stimulating economic growth. The specific management problem under investigation was whether Colt's conclusions on the economic efficiency of the lump-sum transfer in stimulating economic growth for the next 20-year period held. Colt did not estimate the value of the corporations or the benefits provided to its shareholders. The purpose of this quantitative study was to test two theories on the regional corporations established under ANCSA: the theory of the economic efficiency of lump-sum payments in promoting economic growth and the theory of interest.

The current literature on the topic of ANCSA is scarce. Lind (2019) investigated the success of the ANCSA regional corporations in the context of indigenous values. Others looked at the relationship between resource extracting companies and the communities, Tribes and ANCSA corporations impacted by their activities (Berman et al., 2020; Tysiachniouk, 2020). This literature review begins with the short history of ANCSA and the seminal and related works associated with the financial or economic success of the ANCSA corporations. Additionally, I explore the recent research on the neoclassical growth theory based on the first and second theorem of welfare economics and the presumption of lump-sum payments being an efficient model for improving the

economic status of a group. Finally, I also look into the recent literature on the theory of interest in developing a valuation of the shares of a corporation.

Literature Search Strategy

I searched within the following databases: Academic Search Complete, ABI/Inform Collection, Accounting, Tax and Banking Collection, Business Source Complete, Dissertations & Theses @ Walden University, ProQuest Dissertations & Theses Global and Thoreau @ Walden University Library. I also searched Google Scholar. The key terms used in these searches included the following (alone or in combination): Alaska Native Claims Settlement Act, Alaska Native Corporations, ANCSA corporations, regional corporations, Stephen Colt, Sharon Lind, Robert Arnold, 8(a) contracting, government contracting, share value, valuation of shares, valuation of private companies, private firm valuation, private equity valuation, discounted cash flow, market-multiple, asset-based valuation, real options valuation, income approach valuation, discounted free cash flow, weighted average cost of capital, discount rates, risk-free rate, dividend policy and valuation, Franck Bancel, Solow growth model, unconditional cash payment, optimal poverty reduction, poverty reduction, lump-sum payment and economic growth, neoclassical growth model, neoclassical growth theory, second theorem welfare economics and theory of interest. The search for seminal theory articles and studies specific to ANCSA was not bound in time. The search for current literature was restricted to articles, theses, or dissertations published in 2017 or after. The research identified in this literature review is a product of this search strategy related to the problem statement and purpose of this study.

Theoretical Foundation

Microeconomic Theory

Microeconomic theory involves the individual decision-maker and how those decision-makers interact through the markets. The first fundamental welfare theorem is the formal expression of Adam Smith's "invisible hand." When markets are complete, meaning individuals trade every good at known prices and individuals are price takers with perfect competition, then a Pareto optimal equilibrium will be achieved when a competitive (or Walrasian) equilibrium occurs (Mas-Colell et al., 1995). The concept of Pareto optimality in economics refers to when it is no longer possible to improve one person's economic state without harming the economic state of another person. This identified Pareto optimality is the point at which society does not waste resources nor is economically inefficient (Mas-Colell et al., 1995).

The second fundamental welfare theorem of microeconomic theory mathematically proves that in complete markets—as assumed by the first theorem—lump-sum transfers of wealth can achieve new Pareto optimal outcomes as a competitive equilibrium (Mas-Colell et al., 1995). A public authority that desires a more equitable distribution of wealth can, with lump-sum payments, reallocate wealth and allow the free market to work to achieve a competitive equilibrium (Mas-Colell et al., 1995). Together, these two microeconomic theorems are known as the fundamental theorems of welfare economics.

ANCSA was a sizeable one-time transfer of wealth by congressional leaders with substantial lump-sum properties (Colt, 1999). In his seminal study of ANCSA, Colt

(1999) reviewed the first 20 years of financial data for the corporations to determine if this lump-sum transfer was economically efficient to promote the social goal of bringing the Alaska Natives into the modern economy. Since the Colt study, no researcher has viewed ANCSA through the foundation of welfare economics until this current study. The field of welfare economics continues to be studied.

Policymakers rarely pursue lump-sum transfer of assets to grow the economic standing of a minority group, instead typically utilizing current income transfers (Colt, 1999). In recent years, unconditional cash transfers have received renewed attention (Berman, 2018). Berman (2018) studied the Alaska Permanent Fund Dividend (PFD) impact on poverty among Alaska's indigenous people. The PFD is an example of unconditional cash transfers in the form of universal basic income to all Alaska residents paid from the sovereign wealth fund of Alaska from the oil rents received by the state (Berman, 2018). Berman concluded that the PFD had a substantial impact on poverty rates among rural Alaskan Native populations (Berman, 2018). Researchers have conducted eight studies on unconditional cash transfer programs under the Transfer Project and have concluded that these transfers reduce poverty and positively impact human capital development (Handa et al., 2018).

Neoclassical Growth Theory

Neoclassical growth theory as developed by Robert Solow and Trevor Swan was designed to explain how labor, capital and technology with a single commodity production output drives a steady economic growth rate (Solow, 1956). The use of accumulated capital to increase production or save determines economic growth and the

capital has a diminishing return until the economy reaches a steady-state (Solow, 1956). Bourguignon (1991) explained there is a fundamental tension between economic growth and alleviating poverty. Investing in the poor will take time before positive outcomes occur, and the investment in the poor comes at the cost of investments in other areas that may be more productive in growing the economy as a whole (Bourguignon, 1991).

Colt (1999) framed the approach taken with ANCSA as following a typical neoclassical growth theory where the congressional leaders were trying to use the for-profit structure of the regional corporations to force savings by Alaska Natives to grow their economic status as a group. In his seminal study of ANCSA, Colt reviewed the first 20 years of financial data for the corporations to determine if this lump-sum transfer was economically efficient in stimulating economic growth. ANCSA was a sizeable one-time transfer of wealth by congressional leaders with substantial lump-sum properties, which allowed Colt to test the neoclassical growth theory on ANCSA. Since the Colt study, no researcher has viewed ANCSA through the foundation of neoclassical growth theory until this current study.

In a recent study, Dombi and Dedak (2019) utilized neoclassical growth theory and the Solow growth model to identify the impacts to long-term output growth by the crowding-out effect of public debt on physical capital. The authors concluded that the Solow growth model could be used to calculate the upper boundary of the range for the impacts of public debt on long-term growth. Zhang (2017) utilized an integrated Walrasian equilibrium and neoclassical growth theory model to introduce social status into economic growth theory. Zhang concluded that individual households' preference

for social status impacts their savings and consumption rates, ultimately impacting wealth and income in the long term.

Theory of Interest

In 1930, Irving Fisher published his dissertation and created the theory of interest, positing that individuals prefer a dollar now over a dollar later, and as such, those dollars must be valued differently. Fisher (1930) created the concept of the time value of money and the discounting of future cash flows to their present value. Williams (1938) further expanded the time value of money as a way to value stocks. His theory of investment value created the discounted present value methodology for valuing stocks by introducing the discounted cash flow model (Williams, 1938). In this study, I used the theory of interest to create a valuation of the shares of the ANCSA regional corporations. The valuation methodology was the discounted free cash flow to the firm model.

Researchers conducted a scientific survey of the Chartered Financial Analyst Institute members who identify equity analysis as one of their job responsibilities (Pinto et al., 2019). Almost 80% of those who returned surveys indicated that they utilize the present discounted value approach (Pinto et al., 2019). Of those respondents, 86% utilized the discounted free cash flow model, and of those, the free cash flow to firm model was the dominant model (Pinto et al., 2019). A recent research partnership with the American Institute of Certified Public Accountants surveyed 172 valuation specialists who prefer the discounted cash flow model for valuing companies (Allee et al., 2020). Equity analysts preferred the Capital Asset Pricing Model (CAPM) to develop the cost of

capital while the valuation specialists preferred the build-up method with a risk-free rate and a risk premium (Allee et al., 2020; Pinto et al., 2019).

I utilized the most common valuation model used by professionals, and based on the theory of interest (Fisher, 1930) and the discounted free cash flow valuation model (Allee et al., 2020; Pinto et al., 2019) estimated a value for the ANCSA regional corporations and the benefits they provide. The valuation offered data never previously collected to inform future policymakers on the outcomes of ANCSA.

Literature Review

In 1971, congressional leaders extinguished the aboriginal title of Alaska Natives through the passage of ANCSA and established 12 regional and approximately 200 village corporations (Arnold, 1978). In recent years, there have been a limited number of articles written on this subject and most of those are by legal scholars (Christensen, 2020; Edwards, 2018; Karns, 2018; Louthen, 2019; Schutt & Schutt, 2017). Recently, two dissertations were written on the subject of the performance of the ANCSA corporations and are closely related to this study (Lind, 2019; Snigaroff, 2019).

ANCSA

Through the passage of ANCSA, congressional leaders utilized the corporate form to compensate Alaska Natives for extinguishing their aboriginal title. Congressional leaders and Alaska Native leaders negotiated to avoid the Federal reservation system and instead developed organizations focused on their shareholders' social and economic needs (Arnold, 1978; McClanahan, 2006).

The United States purchased Alaska from Russia in 1867, but the Treaty of Cession did not extinguish aboriginal title to the land; it only recognized the Alaska Natives as part of the U.S. indigenous population (Arnold, 1978; Colt, 1999). The Organic Act of 1884 contained language acknowledging the aboriginal title of the Alaska Natives and required they be left undisturbed on the land they occupied (Colt, 1999). Pressure from the salmon industry to establish salmon canneries and related infrastructure in Southeast Alaska encroached on the Alaska Native lands and harmed their food supplies (Arnold, 1978; Colt, 1999). The subsequent interest in gold in the southeast, interior, and western regions of Alaska brought large numbers of Whites to Alaska and continued the encroachment on native lands (Arnold, 1978). Congressional leaders passed other laws that established the Tongass National Forest in Southeast Alaska and the Chugach National Forest in southcentral Alaska, removing millions of acres from the public domain (Arnold, 1978). Congressional leaders also established Mount McKinley National Park in the interior of Alaska (Arnold, 1978). The establishment of these parks further encroached on native lands.

Congressional leaders passed the Native Allotment Act of 1906 and the Native Townsite Act of 1926 to protect native lands by allowing them to be taken into trust by the Federal government for Alaska Native use (Arnold, 1978). Neither of these laws effectively protected the land and only a few individual Alaska Natives received allotments in Southeast Alaska. The Athabaskan Chiefs located in the interior of Alaska met to discuss their options and resolved to live free like they always had and not within the confines of a reservation held in trust by the U.S. government (Arnold, 1978).

Congressional leaders continued the trend of allowing land to be placed in trust for Alaska Natives when they extended the Indian Reorganization Act to Alaska in 1936 (Arnold, 1978). As a result, Alaskan Native Tribes could organize Tribal governments under this Act and request reservations for them. In the 1940s, the U.S. government took approximately 1.4 million acres into trust for Alaska Native Tribes in seven different reservations (Arnold, 1978).

During the same period that congressional leaders passed laws to allow land to be held in trust, Alaska Natives were consolidating their political power (Arnold, 1978; McClanahan, 2006). Congressional leaders made all Alaska Natives citizens of the United States through the Citizen Act of 1924, which also provided for voting rights (Arnold, 1978). Alaska Native leaders across Alaska started forming regional native organizations to organize their political power. In Southeast Alaska, the Alaska Native Brotherhood and Alaska Native Sisterhood, formed respectively in 1912 and 1915, worked to gain the right to vote (Arnold, 1978; McClanahan, 2006). Starting in 1929, the leaders of the Alaska Native Brotherhood petitioned the U.S. government to allow them to bring suit for removing the Tongass National Forest and Glacier National Park from the public domain without the permission of the Tlingit and Haida Tribes, who asserted aboriginal title to those lands (Arnold, 1978; Colt, 1999; McClanahan, 2006). In 1935, congressional leaders recognized the Central Council of Tlingit and Haida Indians Tribes of Alaska as a single tribe to represent all Alaska Natives of Tlingit and Haida descent and authorized the tribe's lawsuit against the U.S. government (Central Council of Tlingit and Haida Indian Tribes of Alaska, n.d.). The tribe won the lawsuit and established that

the Tlingit and Haida people had occupied virtually all of Southeast Alaska and therefore had aboriginal title (Arnold, 1978; Colt, 1999). The court established the value of those lands in 1944 at a nominal $.50 per acre, which informed the Alaska Native leaders that a judicial course of action would not satisfy their goals and that political action was required (Arnold, 1978; Colt, 1999).

The impetus for ANCSA began with the pressure put on Alaska Native land rights from congressional leaders passing the Alaska Statehood Act of 1958. The Act formally established the State of Alaska and provided it with property rights of 104 million of the 375 million acres in Alaska (Arnold, 1978; Colt, 1999; McClanahan, 2006). In the 1960s, Alaska Native Tribal governments submitted claims of aboriginal title on 337 million acres in Alaska (Arnold, 1978). In 1966, a statewide native organization was created—the Alaska Federation of Natives—to lead land rights claims for Alaska Natives (Arnold, 1978; Colt, 1999; McClanahan, 2006). Also in 1966, Secretary of the Interior Stuart Udall, through administrative action, froze all pending land transfers until the settlement of land disputes with Alaska Natives (Arnold, 1978; Colt, 1999; McClanahan, 2006). The final event that brought many of the political entities to the common goal of settling the land claims was in 1967 when a massive oil discovery was made in Prudhoe Bay on land owned by the State of Alaska—a discovery that would require a massive pipeline to be built across 700 miles of disputed lands (Arnold, 1978; Colt, 1999; McClanahan, 2006). This discovery (if developed) would generate billions in royalties to the State of Alaska and create a massive economic boost for Alaska in construction to develop the infrastructure and the continued production of oil for decades (Arnold, 1978; Colt, 1999;

McClanahan, 2006). In 1971, 4 years after the oil discovery, congressional leaders successfully concluded negotiations with Alaska Native leaders to pass ANCSA (Arnold, 1978; Colt, 1999; McClanahan, 2006).

The passage of ANCSA was a departure from previous government-to-government relationships with Alaskan Tribes (Arnold, 1978; Christensen, 2020; McClanahan, 2006; Worl & Kendall-Miller, 2018). Alaska Native leaders referred to ANCSA as a grand experiment providing land in fee simple title instead of being held in trust by the U.S. government (Arnold, 1978; McClanahan, 2006). They desired genuine self-determination and the fee simple land and the state-chartered corporations eliminated continued oversight by the Federal government. ANCSA was a law and not a treaty allowed for it to be amended through time as required (McClanahan, 2006; Worl & Kendall-Miller, 2018).

ANCSA led to the creation of corporations governed by Alaskan Natives with the mission to positively impact their shareholders' economic and social needs (Arnold, 1978; Christensen, 2020; McClanahan, 2006; Worl & Kendall-Miller, 2018). With the passage of ANCSA, congressional leaders created 12 regional corporations and over 200 village corporations with 22 million acres allocated to the village corporations and the remaining 18 million acres allocated to the regional corporations (Arnold, 1978). They also revoked all of the reserves previously created except for the Annette Island Reserve for the Metlakatla Indian Community and excluded this tribe from ANCSA.

The cash portion of the settlement was $962.5 million coming from two sources; the Federal government would pay $462.5 million from the U.S. Treasury's Alaska

Native Fund over 11 years and $500 million from a 2% share of revenue derived from federal and state lands in Alaska over an indefinite period (ESG, 1984). For the first 5 years, the regional corporations received the cash and would distribute 10% to individual shareholders and 45% to the village corporations based on the number of shareholders for each corporation (Arnold, 1978; ESG, 1984). After the first 5 years, the regional corporations started providing 50% of the cash to the village corporations and no more direct distributions to shareholders occurred (Arnold, 1978; ESG, 1984).

All Alaska Native U.S. citizens with a blood quantum of at least one-quarter of Aleut, Eskimo, or Alaska Indian blood and 18 years of age were eligible to receive stock in the ANCSA corporations (Arnold, 1978). Every eligible person received 100 shares of ANCSA regional corporation stock, and if the shareholder's village was certified by the Bureau of Indian Affairs as eligible for a village corporation, they received an additional 100 shares of ANCSA village corporation stock (Arnold, 1978; ESG, 1984). If the shareholder's village was determined not eligible or if they did not select a village, they became "at-large" shareholders, meaning when cash was provided to village corporations by the regional corporation, these shareholders received a direct payment equal to the per shareholder payment the village corporations received (ESG, 1984). For those eligible living outside of Alaska, a vote created a new regional corporation (ESG, 1984). The vote established the 13th regional corporation in 1975 (ESG, 1984). The 13th regional corporation distributed half of its cash directly to its shareholders and did not share in the land settlement (ESG, 1984).

The regional corporations were required to be state-chartered for-profit corporations. They received surface and subsurface estate of the 18 million acres allocated to them. The village corporations received surface estate to the 22 million acres while the regional corporation representing the village corporation's region received the subsurface estate of those lands (Arnold, 1978; ESG, 1984). ANCSA also contained a clause in section 7(i) which required the regional corporations to share 70% of all revenue received from timber sales and subsurface resources on ANCSA lands (ESG, 1984; McClanahan, 2006). This led to over a decade of lawsuits to define revenue and ultimately was settled out of court by the 12 regional corporations (Schutt & Schutt, 2017). Section 7(j) in ANCSA required half of the 7(i)-revenue to be shared with the village corporations in each region (ESG, 1984; McClanahan, 2006). Initially, the shares in ANCSA corporations could not be transferred or sold for 20 years, but later in the 1987 amendments the shares would remain unalienable unless a corporation holds a referendum to make the shares saleable (Colt, 1999; ESG, 1984).

Financial Performance of ANCSA Corporations

The first article on the financial performance of the ANCSA regional corporations was published in 1989 by Jonathan Karpoff and Edward Rice. This article utilized the theory of the firm, which predicted the unusual organizational structure of the 13 regional corporations would negatively impact their performance by increasing monitoring costs and eliminating several shareholder activism mechanisms (Karpoff & Rice, 1989). The researchers utilized the data set of the annual reports for the regional corporations from 1976 to 1983 and created a control group of publicly traded corporations listed on the

1983 Compustat Annual Industrial tape. The authors matched the control group by industry and level of sales and constructed a measure of operating earnings over operating assets, which eliminated passive investments from the equation to focus on active business (Karpoff & Rice, 1989). The evidence that the regional corporations underperformed came from comparing the ANCSA regional corporations operating returns to the control firms was significant at the 1% level. The mean operating income over operating assets for the ANCSA corporations was -.087 compared to the control firms at .04, illustrating a significant underperformance (Karpoff & Rice, 1989). The regional corporation Cook Inlet Regional Inc. and its control firm match North European Oil Royalty Trust were significant outliers in the study, and both were eliminated from the statistical tests on financial performance (Karpoff & Rice, 1989).

Karpoff and Rice (1989) acknowledged that the inefficiencies from the restrictions placed on the organizational structure may not have caused the poor performance of the corporations, so they explored several alternative explanations. First, they looked at whether the inability of shareholders to sell their shares led to the preference for high dividend payments immediately over long-term profits. The control firms paid higher dividends than the ANCSA regional corporations as measured by mean dividend payments of the groups. The results appear to negate this alternative explanation as the control firms performed better and paid more dividends than the ANCSA regional corporations (Karpoff & Rice, 1989). The authors also investigated if the section 7(i) requirements to share 70% of revenue from natural resource development on the ANCSA land provided to the 12 regional corporations with a land base encouraged them to

manipulate accounting income or control costs on those revenues. The 7(i)-revenue distributed among the corporations was $67.3 million of the $1.7 billion in revenue reported (Karpoff & Rice, 1989). Karpoff and Rice concluded that the relatively small amount of 7(i) revenue could not be the primary reason for the poor performance of the ANCSA regional corporations.

One unexplored alternative explanation was the undercapitalization of the corporations. By 1980, the corporations only received approximately half of the ANCSA cash (ESG, 1984). By 1984, only 7% of the land was conveyed with a patent and another 53% was interim conveyed (ESG, 1984). A cloud hung over the interim conveyed ANCSA land because of the uncertainty from inholdings, exterior boundaries and other potential encumbrances, making it harder to get financing and develop those parcels (ESG, 1984). Karpoff and Rice (1989) did conclude that the organizational structure created more shareholder disputes as illustrated in control contests, board and CEO turnover as predicted by the theory of the firm. The ANCSA corporations experienced more than five times the number of dissident control contests than the control firms and experienced both CEO and board turnover rates at almost three times the level of the control firms (Karpoff & Rice, 1989).

Colt (1999) analyzed a data set from 1973 to 1993 of the annual reports of the 12 regional corporations to test a set of hypotheses to determine if the group-based lump-sum transfer of assets was economically efficient in promoting growth. Colt also explored the cross-sectional variation in performance based on a sector of investment and the structure of the subsidiaries. His approach toward economic efficiency was based on

neoclassical growth theory and social welfare economics where there is one production function and after transferring assets to the poor the economy would eventually return to a Pareto optimum equilibrium (Bourguignon, 1991; Colt, 1999).

In his research, Colt (1999) created a modified ROE. He was focused on operational income from the businesses developed by the corporations which was a similar approach to the first study on ANCSA (Colt, 1999; Karpoff & Rice, 1989). Colt divided each regional corporation's net income into four components: resource rents, windfall tax loss sales, returns on passive income and the resulting residual of net income from active business (Colt, 1999). The regional corporations did not carry the ANCSA lands on their balance sheets that would be depleted as they conducted resource extraction, so Colt determined they could not be included with active businesses (Colt, 1999). Another modification stemmed from the fact that in 1984 the ability for companies to sell their net operating losses to other companies ended for every entity except the ANCSA corporations (Colt, 1999). Congress ended this monopoly on net operating loss sales in 1988. The vast majority of net operating loss sales for the ANCSA regional corporations occurred between 1986 to 1990 and windfall income from these sales booked through 1993 amounted to $417 million (Colt, 1999). Colt determined these sales were extraordinary in nature and removed them from the definition of net income from active business. Colt also removed net income from passive investments from his definition of net income from active business in a similar fashion to the previous study on the financial performance of ANCSA regional corporations (Karpoff & Rice, 1989).

Colt (1999) estimated a reasonable amount for the social overhead costs of the ANCSA regional corporations having responsibility for activities not related directly to operating their businesses. Starting with the general administrative costs for the regional corporations in their formative years, Colt created a formula that took 1 million dollars and added the fraction of acres of land received by the corporation over the most acres of land provided to a single corporation. Doyon Limited received the most acreage and their land base became the denominator for the land fraction (Colt, 1999). The next fraction in the formula is the number of original shareholders of the corporation over the corporation with the most shareholders. Sealaska Incorporated had the most shareholders and its shareholder count became the denominator in this fraction. Colt used the formula to determine the social overhead to allocate to each corporation between $1 and $3 million (Colt, 1999). He added this amount for social overhead back into net income and computed the ROE from active business as a residual after removing passive investment, resource rents and sales of net operating losses income (Colt, 1999).

Colt (1999) divided the assets of the regional corporations into four sectors: passive investment, oil sector, local sector and the statewide sector (including all other assets). The ROE from each corporation could then be allocated based on the asset allocation to create testable hypotheses (Colt, 1999). Colt assumed the statewide sector could be impacted by a potential endogeneity problem and developed an instrument to check the robustness of the financial returns for this sector to test for that problem. He utilized this new structure to test for deferential ROE in the various sectors (Colt, 1999). Colt also created a new sector labeled public works to contain the investments from Artic

Slope Regional Corporation. This sector was only available to them as the North Slope Borough created a large lucrative construction project for them to complete (Colt, 1999). Colt developed an asset allocation strategy to test the deferential ROE based on the five joint venture structures: oil sector joint venture with non-native majority partners, statewide sector joint venture with non-native majority partners, local sector joint venture with non-native majority partners, all ANCSA corporation joint ventures in any sector and joint ventures in any sector with minority non-native partners (Colt, 1999).

Colt (1999) concluded that as a group the regional corporation's active businesses earned a ROE of -3.0% and lost $380 million over the 1973–1993 period. He also concluded only the local and public work sectors outperformed the passive investment sector (Colt, 1999). The joint ventures with non-native partners, both minority- and majority-owned, outperformed the corporations' returns without a non-native partner (Colt, 1999). Colt concluded the poor economic performance of the active businesses provided some evidence against the argument that a group-based lump-sum transfer of assets to a poor minority group would result in economic growth for that group.

The Colt (1999) study required several manual calculations which increased the chances of introducing errors to the data (Lind, 2019). For example, he manually extracted passive investment, resource rents and windfall tax loss sales income from net income to calculate the ROE for active businesses (Colt, 1999). This definition for ROE is unique to the study and is not easily compared to other studies (Colt, 1999). Colt also manually created asset allocations between sectors and with the five forms of joint ventures, which could introduce errors in the data. Colt also took the early years of

operations to determine an appropriate number for the social overhead cost. The assumption was that most of the general and administrative costs in the beginning are attributable to social overhead, which may not be a valid assumption (Colt, 1999). Finally, he also assumed that costs would remain constant throughout time and based on the number of shareholders and land base for the corporation, which again may not be valid (Colt, 1999).

One of the studies on the financial performance of the ANCSA corporations within the current literature was by Lind (Lind, 2019). In her dissertation, Lind viewed the performance of the ANCSA regional corporations through a lens of indigenous values to create a definition of success for these unique indigenous organizations. She identified three areas to analyze: financial success, opening enrollment to future generations and success of board leadership (Lind, 2019). Lind concluded that success must be measured differently in ANCSA corporations as their missions perpetuate an entire culture. She developed a definition that included other elements not generally considered for financial success and whole new areas in board leadership and the enrollment of future generations (Lind, 2019).

Her literature review identified that the body of knowledge was missing a published work with current financial conditions and comparisons of the 12 ANCSA regional corporations (Lind, 2019). Lind (2019) stated that the Colt (1999) study was the most in-depth review of financial operations for the ANCSA corporations at the time of publication. Her study built a data set of financial data for the ANCSA regional corporations for 2004–2017 based on the annual reports and (inclusive of the restatement

of figures) also contained in the proxy statements for the corporations (Lind, 2019). The inclusion of restated numbers, the decision to avoid manual manipulations of the data and the lack of Colt's definition of ROE derived from operations did not allow for the retesting of his hypotheses and left a gap in knowledge this current study fills (Colt, 1999; Lind, 2019).

Lind's definition of financial success for the ANCSA regional corporations included net income, shareholder equity, dividends paid, employment of shareholders, and educational benefits provided and donations to regional service (Lind, 2019). The need to view these corporations through the lens of indigenous values altered the definition to include much more than the traditional definition of financial success for western public corporations (Lind, 2019). Lind concluded that the regional corporations are financially successful because between 2004 and 2017 these corporations generated approximately $4 billion in net income and paid more than $2 billion in dividends. These corporations reported assets valued at $7.7 billion in 2017 (as undeveloped ANCSA land was not on the balance sheet; Lind, 2019). Her study illustrated significant growth for the ANCSA corporations from the end of the Colt (1999) study (Lind, 2019). The ANCSA regional corporations between 1973 and 1993 reported $596 million in net income and paid $243 million in dividends on assets of approximately $1.5 billion in 1993 (Colt, 1999). The ANCSA regional corporations grew their asset base by more than 500% in the 23 years between studies (Colt, 1999; Lind, 2019). But comparability is limited as the Lind study only contained 13 years of data while the Colt study contained 20 years and

the ANCSA regional corporations paid more than eight times of dividends during the former period (Colt, 1999; Lind, 2019).

Lind (2019) explored the opening of enrollment in the ANCSA regional corporations as part of the definition of success based on indigenous values. She posits this because ANCSA created corporations, a western structure, for a collectivist population with indigenous values, and the owners were still able to shape these entities to be more representative of their society (Lind, 2019). Each regional corporation had the authority to amend the articles of incorporation to issue stock to Alaska Natives born after 1971 or who were qualified per the original law but left off the rolls (ANCSA Amendments of 1987, 1988). Amending the articles of incorporation for issuing additional stock required a vote of the shareholders and does not generate additional capital for the corporation (ANCSA Amendments of 1987, 1988; Lind, 2019). Corporations that opened their enrollment increased the number of shareholders, which diluted the benefits from the corporation and increased the number of people who would qualify for shareholder preferences in employment and serve on the board of directors (Lind, 2019). Lind concluded that the traditional model of corporations would reject this concept, but the ANCSA corporations have become part of the self-image of the shareholders. Shareholders have familial relationships with other shareholders and, in many cases, have a family member or an acquaintance on the board of directors (Lind, 2019). The ANCSA corporations provide shareholder preference for employment, and because of such preferences, many shareholders are employees or know many of the corporation's employees (Lind, 2019). Six of the 12 regional corporations have opened

their enrollment to future generations. All these factors illustrate that success for the ANCSA corporations included more than financial factors in Lind's study (Lind, 2019). Lind also indicated that whether the enrollment opening adds to the corporation's success needs additional research.

The final element of success for ANCSA regional corporations in Lind's study was the success of the board of directors (Lind, 2019). The structure of the regional corporations required shareholders to be on the board of directors, eliminating the ability to have independent directors (Lind, 2019). Lind pointed out that the shareholder preferences in employment exacerbate the lack of independence at the board and management levels. Lind illustrated that the chair of the various boards was relatively stable for the 13 years of her study. Two corporations had the same chair in the study, five corporations had two chairpersons, three corporations had three chairpersons and one corporation each had four or five chairpersons (Lind, 2019). Lind indicated that further research on ANCSA board composition, turnover rates for board members and CEOs, and the impacts on the corporation's financial success is necessary. The study contains a data set that would allow this research to be conducted (Lind, 2019). Previous research has historical data on the board and CEO turnover rates that could be compared to current trends to identify improvements in these elements (Karpoff & Rice, 1989; Lind, 2019).

Legal and Governance Studies of ANCSA Corporations

The bulk of the current literature on ANCSA corporations are non-technical articles in legal journals or tangential academic dissertations or theses. One study explored the ANCSA 7(i) revenue settlement agreement and illustrated the importance of

this settlement agreement to the regional corporations (Schutt & Schutt, 2017). Congressional leaders created section 7(i) in ANCSA to spread the benefits of resource extraction on the lands granted by the passage of ANCSA to all of the corporations (Schutt & Schutt, 2017). The section requires each regional corporation that derived revenue from the subsurface estate or harvesting timber from the ANCSA lands to share 70% of revenue with the other regional corporations based on the original enrollment for each corporation (Colt, 1999; Lind, 2019; Schutt & Schutt, 2017). This section brought on a decade of lawsuits between the regional corporations as they sought to define what revenue meant (Schutt & Schutt, 2017). The regional corporations shared $2.5 billion through this mechanism between 1982 and 2016 (Schutt & Schutt, 2017). The next section of ANCSA, 7(j), requires the regional corporations to share 50% of those revenues received under 7(i) with the village corporations and at-large shareholders in their regions (Colt, 1999; Lind, 2019; Schutt & Schutt, 2017). The 12 regional corporations developed a settlement agreement accepted by the courts in 1982, ending all lawsuits on this subject (Schutt & Schutt, 2017). Yet the fact this lawsuit remained unsettled until 1982 and that by 1983 only 7% of all ANCSA lands were patented could mean Karpoff and Rice (1989) may not have controlled for lawsuits and conveyance costs adequately by their chosen remedy of not utilizing the early years in their study (ESG, 1984; Karpoff & Rice, 1989; Schutt & Schutt, 2017).

Several articles described the conflicting objectives associated with the passage of ANCSA. In her thesis, Poehlein explored how the law utilized the Alaska Natives' desire to have true economic freedom as a means to assimilate them into the modern economy

through the use of the corporate model for their settlement (Poehlein, 2018). Another article built on this hidden intent of congressional leaders to assimilate Alaska Natives and illustrated the ANCSA corporations have taken on significant responsibilities that are not maximizing shareholder wealth as perceived by western society (Worl & Kendall-Miller, 2018). ANCSA corporations donate significant funding to regional native non-profits, select land with significant cultural but limited economic value and provide significant benefits beyond the dividends issued (Christensen, 2020; Worl & Kendall-Miller, 2018). Christensen held the governance structure of the Alaska Native corporations as an example of autochthonous governance, or the legal structure outside of common law that conforms with indigenous values.

Snigaroff and Richards (2021) acknowledged the conflicting purpose of the corporate model with the need to continue the culture in perpetuity. They instead advocated for the ANCSA corporations to develop an endowment model to reduce the risk of failure that is potentially the outcome for operating businesses (Snigaroff & Richards, 2021). The endowment model of the university system allows for a much longer life cycle than corporations, with those universities with endowments being far more secure (Snigaroff & Richards, 2021). The 2017 Tax Act significantly improved the tax status of settlement trusts in which ANCSA corporations could create an endowment (Edwards, 2018; Snigaroff & Richards, 2021). ANCSA corporations could now contribute to the settlement trusts at the 10% tax rate, experience significant savings on the corporate tax rate and contribute $250,000 from the 7(i) revenues directly without the revenue stopping at the corporation (Edwards, 2018; Snigaroff & Richards, 2021).

Snigaroff and Richards advocated for the ANCSA corporations to utilize this trust authority to minimize taxes and diversify by investing in assets throughout the world market and eliminating the going concern risk associated with operating businesses.

Some articles explored the complex relationships among tribes, state and local governments, and the ANCSA corporations in the context of resource extraction industries in Alaska (Berman et al., 2020; Tysiachniouk, 2020). Impacted communities can pursue several modes of benefit-sharing, the most common being the paternalistic model where governments tax the industry for benefits. The partnership model includes more negotiated benefits for regional authorities or other companies (Tysiachniouk, 2020). The ANCSA corporations have been able to leverage their land ownership and political power to receive additional benefits from resource extraction activities, taking on more of a partnership model of benefit-sharing with the extractive industry (Tysiachniouk, 2020). One example of these additional benefits is between 30% and 40% of all goods and services provided to ConocoPhillips Alaska operations come from ANCSA corporations (Tysiachniouk, 2020).

Berman et al. (2020) analyzed the long-term benefits of the mining industry operating under a social license to operate concept within the Northwest Arctic Borough. The Red Dog mine is located within the borough and on ANCSA land owned by NANA. This study found that over 10 years, residents of the Northwest Arctic Borough who worked at the mine earned 80% more than residents who did not (Berman et al., 2020). Due to the negotiated shareholder employment preferences, NANA shareholders represented over 50% of the workforce at the mine (Berman et al., 2020). Berman et al.

concluded that over a quarter of work-aged residents were employed at the mine at some point. The researchers found that working for the mine increased mobility, with most of the NANA shareholders working at the mine living outside of the region (Berman et al., 2020).

Two articles focused on the impacts of the court case, Sturgeon v. Frost, on the value of ANCSA lands (Karns, 2018; Louthen, 2019). The lawsuit dealt with the ability of the National Park Service to regulate private land held within conservation system units, which impacts approximately 18 million acres of ANCSA lands (Karns, 2018; Louthen, 2019). If the National Park Service regulations applied to the ANCSA land, it would end development for resource extraction and tourism and subsistence activities of their shareholders on approximately 40% of all lands provided through ANCSA (Karns, 2018; Louthen, 2019). Louthen concluded that the U.S. Supreme Court, in their 2019 decision on the Sturgeon v. Frost case holding National Park Service regulations only apply to public lands, circumvented the significant harm it could have caused to the value of ANCSA lands.

Valuation of Private Equity

Researchers have never established a value for the shares of the ANCSA corporations. The Colt study (1999) was a complete financial performance review for the ANCSA regional corporations, but he did not value the shares (Lind, 2019). The current study on ANCSA that reviewed the financial data from 2004 to 2017 did not establish a value for the regional corporation shares because none of the corporations have voted to change their articles of incorporation to allow shares to be sold (Lind, 2019). The

ANCSA regional corporations, as of 1991, can amend their articles of incorporation to end the restriction on selling stock, but as of 2019, none of them have done so (ANCSA Amendments of 1987, 1988; Lind, 2019). Regardless, the shares can become saleable and represent an asset owned through the passage of ANCSA. The valuation offers data never previously collected to inform future policymakers on the outcomes of ANCSA.

Since researchers have never previously created a value for the ANCSA regional corporation and there are several ways to value equity, the current literature must be searched for the most common valuation methodology by professionals. Privately held firms hire valuation specialists to determine their firm's value for multiple reasons, including selling the firm, taxes, or litigation (Allee et al., 2020). ANCSA corporations are privately held companies of the sort assessed by valuation specialists (Allee et al., 2020). Equity analysts are the other profession that conducts a valuation of equity as a routine part of their professional activity. Valuation specialists and equity analysts cover the bulk of the professions that value equity and their practices can be used to determine the most common valuation methodology used by professionals (Allee et al., 2020; Pinto et al., 2019).

A study by Allee et al. (2020) partnered with the AICPA surveyed valuation specialists and found that the discounted cash flow methodology was the most common methodology used by valuation specialists to estimate the value of a private firm. Pinto et al. (2019) had a survey sample of 13,500 CFA Institute members who identified themselves as professional equity analysts and achieved a response rate of 14.7% on the survey they conducted. The researchers found that 92% of respondents utilized a market-

multiple approach and 78.8% utilized a present discounted value approach (Pinto et al., 2019). In this study, Pinto et al. concluded that when the survey respondents used a discounted cash flow methodology, they used the discounted free cash flow model in 80.1% of cases.

Additionally, researchers have found that the free cash flow to the firm (FCFF) was the most popular model (Pinto et al., 2019). The survey of valuation specialists focused on what components were utilized in the discounted cash flow method and did not conclude that a specific model was the most used (Allee et al., 2020). Allee et al. concluded that an economy-wide growth rate such as GDP was the most common growth rate that was applied. The most common cost of capital approach was the build-up method consisting of a treasury note as the risk-free rate and a subjective risk premium based on size, industry and other firm characteristics (Allee et al., 2020). These surveys provided evidence to suggest that the most common valuation methodology utilized by professionals are the discount cash flow method and the market-multiple method (Allee et al., 2020; Pinto et al., 2019).

Valuation specialists are the most likely group to value ANCSA corporations since they would conduct those valuations for tax and litigation purposes (Allee et al., 2020). ANCSA corporations so far have not authorized the selling of their shares and, therefore, would not be subject to mergers and acquisitions, which is a significant portion of the private equity valued by equity analysts (Berk & DeMarzo, 2014; Lind, 2019). Because of those facts, I placed more weight on the most common valuation model of the valuation specialists.

Of the survey respondents of CFA Institute members that valued equity as part of their regular duties, 92% utilized the market-multiple approach to valuation (Pinto et al., 2019). The market-multiple approach based on price-to-earnings is the most commonly used approach by equity professionals and was the only method used across all sectors (Huikku & Pöyhiä, 2020; Pinto et al., 2019). A recent study found that even though most analysts who followed the company Nestle used the market-multiple approach, all but one utilized the discount cash flow model as a secondary model to support the value derived by the market-multiple approach (Huikku & Pöyhiä, 2020). Another study on the stock recommendations from all 13 Polish Brokerage houses in the first nine months of 2010 found that 99.1% utilized the income approach (Adamczyk & Zbroszczyk, 2017). Further, of those recommendations utilizing the income approach, 84.7% utilized the FCFF method (Adamczyk & Zbroszczyk, 2017).

The simplicity of the market-multiple approach is one reason it is so popular, and it has the added benefit of being an easy way to communicate the valuation to a client (Beld, 2017; Huikku & Pöyhiä, 2020). The market-multiple approach establishes what the market is willing to pay on average for a particular industry comparable to a company the analyst is trying to value. The value developed for the company is not based on the company itself but rather the market value of the industry at the time of valuation (Beld, 2017). One of the market-multiple method assumptions is that there is a perfect substitute for the company; therefore, both companies should sell for the same price (Knudsen et al., 2017).

But the notion of a perfect substitute is an unrealistic assumption for ANCSA corporations because of their unique requirements and the differences in sectors and size of each corporation (Knudsen et al., 2017). Researchers have already established that the structure and purpose of the ANCSA corporations are unique and not readily comparable to other corporations (Colt, 1999; Karpoff & Rice, 1989; Lind, 2019; Schutt & Schutt, 2017). Beyond the need to perpetuate a culture and share revenues through 7(i), all of the ANCSA regional corporations are conglomerates with exposure to various industries (Lind, 2019). The size of the corporations based on revenue differs dramatically between the 12 regional corporations, with a range for revenue between $2.67 billion to $211 million (Lind, 2019). It would be hard to find publicly listed companies to compare to the ANCSA corporations because of the structural differences previously noted. It is also unlikely that different comparable companies would be found for each corporation to value all 12 regional corporations.

As a result of these concerns and because most valuation specialists utilize the discounted free cash flow method to value private companies (Allee et al., 2020), I utilized the most common valuation model used by professionals—namely the discounted free cash flow valuation model (Allee et al., 2020; Pinto et al., 2019)—and estimated a value for the ANCSA regional corporations.

The utilization of the discounted FCFF model requires multiple rates to be selected. Valuation specialists most commonly select an economy-wide growth rate like GDP growth for forecasts after the explicit forecast horizon (Allee et al., 2020). In this study, I used the GDP growth rate for the United States of America in the model. The

discount rate is the next rate that must be determined. Allee et al. (2020) found that valuation specialists utilized the build-up method to estimate the discount rate. One study reviewed transactions from mutual fund managers representing many investors and concluded that the CAPM model is more consistent with investor behavior (Berk & van Binsbergen, 2017). CAPM uses the expected return of the market to estimate the systematic risk in a specific company by estimating the market beta (Cooper et al., 2021). Yet historical market betas are less reliable when calculating the appropriate cost of equity for privately held companies and instead require building a risk premium based on the company's specific characteristics (Cooper et al., 2021).

While there are multiple approaches to developing the correct market risk premium to add to the risk-free rate, the most common approach is the build-up approach (Cooper et al., 2021). Cooper et al. concluded that the cost of capital for private companies is much higher than those constructed through the traditional methodologies. However, all 12 of the ANCSA regional corporations have significant revenues derived from government contracts and government contractors have a statistically significant lower cost of equity (ANCSA Regional Association, 2016; Esqueda et al., 2019). There was a potential risk that I developed an inappropriate discount rate based on the subjectiveness of the build-up method. I mitigated that risk by following the methodology as described by the professionals (Allee et al., 2020; Beld, 2017; Cooper et al., 2021; DiGabriele & Riley, 2018; Esqueda et al., 2019). The current literature suggests that the most common discount rate for private companies estimated by valuation specialists is

the build-up method. This study utilized the build-up method to estimate the appropriate discount rate in the FCFF model.

Summary and Conclusions

The academic body of knowledge on the financial performance of the corporations created with the passage of ANCSA is scarce. In the seminal study, Colt (1999) analyzed a data set from 1973 to 1993 of the annual reports of the 12 regional corporations to test a set of hypotheses to determine if the group-based lump-sum transfer of assets was economically efficient in promoting growth. Lind (2019) stated that Colt's study was the most in-depth review of financial operations for the ANCSA corporations at the time of publication. Her study built a data set of financial data for the ANCSA regional corporations for 2004–2017 based on the annual reports and inclusive of the restatement of figures also contained in the proxy statements for the corporations (Lind, 2019). The Lind study looked at financial performance as just one component of what the definition of success should be when viewed through the lens of indigenous values, and her data cannot be used to retest Colt's hypotheses, which is a significant gap in the literature. Yet Lind showed the ANCSA regional corporations grew their asset base by more than 500% in the 23 years between studies (Colt, 1999; Lind, 2019). This growth in revenue, assets and equity indicates that the conclusions of Colt's study may no longer hold. This current study utilized the same multiple regression analysis as Colt did to retest several hypotheses to see if they still hold in the following data set of 1994—2014.

There is a tremendous amount of research on valuation techniques in both privately and publicly held companies. Research shows the most common valuation

method for private corporations is the discounted cash flow method utilizing the FCFF model (Adamczyk & Zbroszczyk, 2017; Allee et al., 2020). No researcher utilized any of the valuation methodologies on the ANCSA regional corporations. As of 2019, none of the regional corporations have voted to make their shares saleable, accounting for one gap in the literature (Lind, 2019). The first hypothesis of the Colt (1999) study dealt with the ability of the regional corporations to generate an ROE above the risk-free rate. That hypothesis dealt only with creating value but did not consider whether that value was retained for the future. An evaluation of the shares is needed to determine the value of the asset owned by the Alaska Native shareholders and the value created and retained within these corporations. In the current study, I compared the corporation's value to the value of investing the cash provided in the settlement in 1-year treasury bills as of the end of 2014. The value of the shares and the relationship between the value of those shares to the value of the settlement cash invested in risk-free assets was new knowledge created by this study.

Chapter 3: Research Method

The purpose of this quantitative study was to test two theories on the regional corporations established under ANCSA: the theory of the economic efficiency of lump-sum payments in promoting economic growth and the theory of interest. This current study retested some of the hypotheses in Colt's (1999) study for economic efficiency during the period 1994–2014 to see if his conclusions hold and develop a valuation for the shares of the corporations as of 2014. In this chapter, I present the research design and rationale for the current study. I also present the methodology, describe the population and the data analysis plan for each hypothesis, discuss threats to external and internal validity, and review the construct validity. The chapter ends with a description of the ethical procedures used in this study and a summary of the chapter.

Research Design and Rationale

The research design for this study was to conduct a multivariate correlational statistical analysis utilizing SPSS general linear models and a one-sample *t* test on secondary data. The discounted free cash flow valuation model established a value for the corporations based on secondary data. The research questions allowed me to investigate how the second 20-year data set of ANCSA regional corporation financial performance may alter the conclusions of Colt (1999). The design was appropriate for this study because it parallels the design used in the seminal study and allowed for the retesting of some of those hypotheses (Colt, 1999). The design also allowed for testing new hypotheses related to a new industry, 8(a)-contracting, that becomes significant during this timeframe for all of the corporations. The data set collected was the universe of the

12 ANCSA regional corporations, making this study a census and not a sample of these corporations. Establishing the market value for the shares allows researchers to understand the value of the asset provided by ANCSA to the shareholders. No manipulation of the variables occurred for this study, and there was no control group. This study was a correlational investigation into the relationship between the various independent and dependent variables.

The first independent variable was the absolute return on passive investments of the regional corporations as a group. An asset allocation occurred to identify the assets belonging to the various sectors. The trade receivables and general assets, such as the corporate headquarters identified in the balance sheet, were excluded. The remaining assets were allocated to specific businesses and as financial assets. This approach was the same methodology utilized in Colt's (1999) study. I did not attempt to allocate the assets into the various sectors to avoid identification errors. Once all assets for all years had been allocated to the businesses and as financial assets, I returned to the beginning and allocated the businesses to the sectors (i.e., passive, local, local public works, statewide, oil and SBA 8(a)-contracting). Colt utilized the same methodology in the seminal study.

The dependent variable was the non-windfall return on equity of the regional corporations as a group. I needed to isolate ROE from the windfall payments derived from net operating loss sales and resource asset sales. First, I added the taxes back into net income as reported on the annual reports. Second, I added the net resource sharing transfers to villages and other regions back into net income as reported on the annual reports. These additions returned net income back to pretax, presharing net cash

generated from each corporation. Windfall tax-loss sales were directly reported in the annual reports and were only anticipated for 1994 when Arctic Slope Regional Corporation and AHTNA Incorporated finalized the last sales of net operating losses. I allocated 2% for costs associated with these sales, which was the same methodology as Colt (1999) and essentially allowed for 2% of the revenue to be included in net income to offset management costs associated with these transactions. The 7(i)-revenue reported on a single corporation's annual report was sufficient to generate the universe of 7(i)-revenue received by the regional corporations. The 7(i)-revenue was net of uniform expenses per the 7(i) agreement that all 12 regional corporations were signatories to. The 7(i) revenue was the resource rents from the land that Colt described as asset sales without offsetting depletion charges. I removed the 7(i) revenue from net income, leaving the net income without windfall revenue. I divided the net income without windfall revenue for all 12 regional corporations by the shareholder equity to generate the dependent variable—the non-windfall return on equity of the regional corporations as a group.

The asset allocation described previously also allocated the remaining assets to specific businesses identified in the annual report. This asset allocation created the return for the passive sector, local sector, local public work sector, statewide sector, oil sector and the SBA 8(a)-contracting sector. The passive sector return was removed from each of the other listed sectors to provide the independent variables: differential return for the local sector, local public works sector, oil sector, statewide sector, and the SBA 8(a)-contracting sector. As previously described, these independent variables were tested

against the dependent variable the non-windfall return on equity of the regional corporations as a group.

The next independent variable was the value of the initial ANCSA settlement cash provided to the 12 regional corporations as a group invested in 1-year U.S. treasury bills until the end of 2014. All interest earned on these treasury notes was reinvested annually. The yield rate for each year was the average yield of the 1-year U.S. treasury bill for that year.

The dependent variable was the valuation of the 12 regional corporations as a group based on the discounted free cash flow to firm model at the end of 2014. I used the build-up method for the discount rate consisting of the risk-free rate, equity premium and company-specific risk premium. The average yield for the 1-year U.S. treasury bill was used as the risk-free rate from historical data on macrotrends.com. The equity premium rate comes from historical data compiled on the data archives contained at the New York University's website. The final portion of the risk premium was developed with historical data from the New York University's website for industry and size risk premiums and subjectively altered to account for firm-specific characteristics.

Methodology

Population

The population for this study was the 12 regional corporations created by congressional leaders through the passage of ANCSA. Alaskan Natives living outside of Alaska received shares in the 13th regional corporation through an amendment to ANCSA in 1975 (Arnold, 1978). Colt (1999) and Lind (2019) did not address the 13th

regional corporation in either study on ANCSA. The 13th regional corporation ceased operations in 2009. The last financial report collected for this corporation was the 2002 report. I removed this corporation from the current study as it was no longer in existence and was not addressed in Colt's study.

Archival Data

This study utilized archival data from several private, university, and state databases. The majority of the data for this study consist of annual reports of the 12 ANCSA regional corporations from 1994 to 2014. The Alaska Resources Library and Information Services (ARLIS) contained the annual reports for all 12 corporations from 1994 to 2002. I went to ARLIS and scanned the annual reports and saved them onto my external hard drive. The 12 regional corporations provide the State of Alaska Division of Banking and Securities with a copy of their annual reports annually. I collected the annual reports for all 12 regional corporations from this database for 2010 to 2014. The State of Alaska has a retention policy that removes reports from these corporations from their database after 5 years. The University of Alaska at Fairbanks Library has in its collection the remaining missing annual reports necessary to have a complete set of 1994 to 2014 for Bering Straits Native Corporation and Koniag Incorporated. I visited this library and scanned these annual reports onto my external hard drive. The remaining annual reports for the other ANCSA regional corporations I collected directly from the corporations. I contacted the shareholder relations department for the remaining 10 regional corporations to collect the annual reports from 2003 to 2009. The best source of these documents was the State of Alaska database since this is the official depository for

them. The Alaska libraries with annual reports in their collections are reputable sources for these data and were the best source for those annual reports not currently contained in the State of Alaska database. The regional corporations provide annual reports to each of their shareholders and are interested in maintaining the integrity of their annual reports. The regional corporations were the best source for the historical annual reports unavailable from other sources since they are the original creators of these documents.

The valuation of the shares required that I have the historical returns of the stock market, historic industry cost of capital, historic risk measurements by market capitalization class, and historic implied equity risk premiums. The New York University's Stern School of Business maintains a website database that contains these data. I retrieved these data from the website and saved them as Microsoft Excel spreadsheets on my external hard drive. New York University is a prestigious private research university, and Dr. Damodaran, a Professor of Finance at the Stern School of Business, maintains the database. This source of data is reputable and the best source as it was already in the format required for this study. Another input for the valuation of these shares was the GDP of the United States. The U.S. Department of Commerce, Bureau of Economic Analysis maintains a website database that contains these data. I retrieved these data from the website and saved them to my external hard drive. The U.S. government is a reputable source of these data and was the best source as the official agency designated to collect and maintain these data. The final data set was on a website database maintained by Macrotrends. This data set is the historical interest rate for the 1-year treasury notes of the United States. I downloaded the data on treasury notes from the

website database and saved them to my external hard drive. Macrotrends is a highly reputable investment research platform and a reputable source of these data. The data on the Macrotrends website were already in the format required for this study, making this website the best source of these data.

The archival secondary data were available from these various databases except for the ANCSA regional corporations at no cost and with no other permission required to utilize the data in this study. The 10 regional corporations that provide the annual reports for the years 2003–2009 were the only databases that are not publicly available. I will keep all years of annual reports from all 12 regional corporations confidential to secure the data from these private databases. The data were public when provided to the State of Alaska, but some of those annual reports are no longer available from this public source.

Data Analysis Plan

This study used the IBM SPSS software to complete a multivariate linear regression analysis and a one-sample *t* test to examine the relationships between the independent variables and dependent variables associated with each research question. I screened the data utilizing histograms and descriptive statistics to identify any missing data values and remove outliers in the data for the multivariate linear regression analysis and the one-sample *t* test. Histograms and scatterplots were utilized to ensure the variables are linear and have a normal distribution required for multivariate linear regression. Scatterplots and histograms of the residuals were utilized to ensure the assumptions of exogeneity and no multicollinearity are not violated. A histogram was utilized to ensure the variables have a normal distribution for the one-sample *t* test.

Heteroskedasticity was found in the seminal study, and I tested for this error for the multivariate linear regression analysis using a Breusch-Pagan LM test (see Colt, 1999). Heteroskedasticity was found, and I corrected for this error utilizing the feasible GLS with estimated covariances. The independence for the one-sample *t* test was assumed since the data collected was a census of the regional corporations and not a sample.

Multivariate Linear Regression Models

The mathematical equations utilized for the regression model are identified below.

$$ROE_{it} = \beta_0 \, RO\_PA_{it} + \varepsilon_{it} \quad (1)$$

ROE_{it} is the non-windfall return on equity of corporation *i* in year *t*. The subscript *i* is for each of the 12 regional corporations and subscript *t* is for each of the years from 1994 to 2014. RO_PA_{it} is the absolute return from the passive investment sector for corporation *i* for year *t*, and ε is the error term for corporation *i* for year *t*.

$$ROE_{it} = \alpha \, RO\_PA_{it} + \beta_1 (RO\_O_{it} - RO\_PA_{it}) + \beta_2 (RO\_S_{it} - RO\_PA_{it}) + \beta_3 (RO\_L_{it} - RO\_PA_{it}) + \beta_4 (RO\_PU_{it} - RO\_PA_{it}) + \beta_5 (RO\_SBA_{it} - RO\_PA_{it}) + \varepsilon_{it} \quad (2a)$$

ROE_{it} is the non-windfall return on equity of corporation *i* in year *t*. The subscript *i* is for each of the 12 regional corporations and subscript *t* is for each of the years from 1994 to 2014. RO_PA_{it} is the absolute return from the passive investment sector for corporation *i* for year *t*. RO_O_{it} is the absolute return from the oil sector for corporation *i* for year *t*. RO_S_{it} is the absolute return from the statewide sector for corporation *i* for year *t*. RO_L_{it} is the absolute return from the local sector for corporation *i* for year *t*. RO_PU_{it} is the absolute return from the public works local sector for corporation *i* for year *t*. Public

works local sector is a sector only available to Arctic Slope Regional Corporation as the North Slope Borough created large lucrative construction project for them to complete. RO_SBA_{it} is the absolute return from the SBA 8(a)-contracting sector for corporation *i* for year *t*, and ε is the error term for corporation *i* for year *t*.

When RO_PA_{it} was subtracted from the return for each sector, it left the differential return of that sector for corporation *i* for year *t*. This equation can be rewritten as shown below:

$$ROE_{it} = \alpha\ RO\_PA_{it} + \beta_1\ DR\_O_{it} + \beta_2\ DR\_S_{it} + \beta_3\ DR\_L_{it} + \beta_4\ DR\_PU_{it} + \beta_5\ DR\_SBA_{it} + \varepsilon_{it} \quad (2b)$$

This measures the differential return from each sector over the baseline return on the passive investment sector. DR_O is the differential return from the oil sector for corporation *i* for year *t*. DR_S is the differential return from the statewide sector for corporation *i* for year *t*. DR_L is the differential return from the local sector for corporation *i* for year *t*. DR_PU is the differential return from the public works local sector for corporation *i* for year *t*. DR_SBA is the differential return from the 8(a)-contracting sector for corporation *i* for year *t*. ε is the error term for corporation *i* for year *t*. I was able to determine if the return from each sector is statistically significantly different than the return on the passive investment sector, which allowed the t-statistic on each sector (utilizing the *t* test on each coefficient β_1 to β_5) to test if the return from that sector is greater than the return on the passive investment sector.

The final mathematical equation measured the absolute return for each of the individual sectors:

$$ROE_{it} = \beta_0\, RO\_PA_{it} + \beta_1\, RO\_O_{it} + \beta_2\, RO\_S_{it} + \beta_3\, RO\_L_{it} + \beta_4\, RO\_PU_{it} + \beta_5\, RO\_SBA_{it} + \varepsilon_{it} \quad (3)$$

ROE_{it} is the non-windfall return on equity of corporation *i* in year *t*. The subscript *i* is for each of the 12 regional corporations and subscript *t* is for each of the years from 1994 to 2014. RO_PA_{it} is the absolute return from the passive investment sector for corporation *i* for year *t*. RO_O_{it} is the absolute return from the oil sector for corporation *i* for year *t*. RO_S_{it} is the absolute return from the statewide sector for corporation *i* for year *t*. RO_L_{it} is the absolute return from the local sector for corporation *i* for year *t*. RO_PU_{it} is the absolute return from the public works local sector for corporation *i* for year *t*. RO_SBA_{it} is the absolute return from the SBA 8(a)-contracting sector for corporation *i* for year *t*. ε is the error term for corporation *i* for year *t*.

Assumptions for Multivariate Linear Regression

The assumptions required in order to utilize the multivariate linear regression models above were normal distribution of values, a linear relationship, no correlation between the independent variables and the error term, no multicollinearity among the independent variables and homogeneous variances. Each of these assumptions was tested for as outlined in the Data Analysis Plan described above. The results of all tests are reported in Chapter 4.

One-Sample *t* Test

I utilized a *t* test to determine if the differential value of the 12 regional corporations was a statistically significant positive number. I defined differential worth as FCFF–TBILL = μ_D. FCFF is the value from the discounted free cash flow to firm model

for the 12 regional corporations as of the end of 2014. TBILL is the value of ANCSA cash for the 12 regional corporations invested in U.S. 1-year treasury bills from 1973 until the end of 2014. μ_D is the differential value from the discounted free cash flow to firm model for the 12 regional corporations above the value of the ANCSA cash for the 12 regional corporations invested in U.S. 1-year treasury bills as of the end of 2014.

Assumptions for One-Sample t *Test*

The assumptions for the one-sample *t* test were that the dependent variable value from the discounted free cash flow firm model for the 12 regional corporations had to be numerical and continuous, had a normal distribution of values, and did not contain any outliers. The data points also had to be independent of each other. Each of these assumptions was tested for as outlined in the Data Analysis Plan described above. The results of all tests are reported in Chapter 4.

Research Questions

RQ1: What is the relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and the absolute return on passive investments?

RQ2: What is the relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return in the statewide sector?

RQ3: What is the relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return in the local sector?

RQ4: What is the relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return in the oil sector?

RQ5: What is the relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and return in the SBA's 8(a) contracting sector?

RQ6: What is the relationship between the differential value between the value of the 12 ANCSA regional corporations based on the discounted free cash flow valuation model at the end of 2014 and the initial ANCSA settlement cash provided to the 12 ANCSA regional corporations invested in 1-year U.S. treasuries until the end of 2014?

Hypotheses

RQ1 hypotheses associated with equation (3) are listed below.

H_0: There is no statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and absolute return on passive investments.

H_1: There is a statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and absolute return on passive investments.

RQ2 hypotheses associated with equation (2b) are listed below.

H_0: There is no statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return on the statewide sector.

H_1: There is a statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return on the statewide sector.

RQ3 hypotheses associated with equation (2b) are listed below.

H_0: There is no statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return on the local sector.

H_1: There is a statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return on the local sector.

RQ4 hypotheses associated with equation (2b) are listed below.

H_0: There is no statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return on the oil sector.

H_1: There is a statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return on the oil sector.

RQ5 hypotheses associated with equation (2b) are listed below.

H_0: There is no statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return on SBA 8(a)-contracting sector.

H_1: There is a statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return on the SBA 8(a)-contracting sector.

RQ6 hypotheses associated with the *t* test on differential value are listed below.

H_0: There is either no or a negative statistically significant relationship between the differential value of the 12 ANCSA regional corporations based on the discounted free cash flow valuation model at the end of 2014 and the value of the initial ANCSA settlement cash provided to the 12 ANCSA regional corporations invested in 1-year U.S. treasuries until the end of 2014.

H_1: There is a positive statistically significant relationship between the differential value of the 12 ANCSA regional corporations based on the discounted free cash flow valuation model at the end of 2014 and the value of the initial ANCSA settlement cash provided to the 12 ANCSA regional corporations invested in 1-year U.S. treasuries until the end of 2014.

Analysis Plan for RQ1

I ran the linear regression model described in equation (3) above utilizing the SPSS multiple regression analysis function. I determined statistical significance for each coefficient using the *t* test. I also examined and explained the coefficient for the independent variable to determine the strength and power of the correlation of the model.

The null hypotheses for RQ1 were rejected if the t-stat for the independent variable—average absolute return on passive investments—was below the p-value threshold of .05. If the null hypothesis was rejected, I affirmed the alternate hypothesis.

Analysis Plan for RQ2-5

I ran the linear regression model described in equation (2b) above utilizing the SPSS multiple regression analysis function. I determined the statistical significance for each coefficient using the *t* test. I also examined and explained the coefficients for each of the independent variables to determine the strength and power of the correlation of the model.

The null hypotheses for RQ2-5 were individually rejected if the t-stat for the independent variable—differential return on the statewide sector, local sector, oil sector and SBA 8(a)-contracting sector (respectively)—were below the p-value threshold of .05. If the null hypothesis was rejected, I affirmed the alternate hypothesis.

Analysis Plan for RQ6

I ran the one-sample *t* test described above utilizing the SPSS one-sample *t* test function. The t-stat was determined to be statistically significant if it is lower than the p-value. The p-value threshold for significance was set at the .05 value.

The null hypotheses for RQ6 were rejected if the t-stat for the independent variable—the differential value of the 12 ANCSA regional corporations based on the discounted free cash flow valuation model at the end of 2014—was above 0 and the p-value threshold was below the threshold of .05. The null hypothesis was rejected if the t-stat for the independent variable was a positive number with a p-value below the set p-value of .05. If the null hypothesis was rejected, I affirmed the alternate hypothesis.

Threats to Validity

External Validity

One threat to the external validity of this study regarded history. The data set timeframe was significant at 20 years as it contained the years 2008–2009 when the United States was in a recession caused by the housing crisis. Extremely low oil prices impacted the State of Alaska throughout the final years of this study. Utilizing an extensive data set of 20 years and selecting the feasible GLS estimator managed this threat to internal validity (Warner, 2020). The selection of ROE also helped to normalize the ANCSA regional corporations' earnings (Colt, 1999). The modified form of ROE developed by Colt and continued in this study removed streams of net income in order to arrive at the non-windfall ROE of the regional corporations. The specificity of this variable introduced the threat to external validity (that this study would not be comparable to other studies on the same ANCSA regional corporations). This threat was accepted as the purpose of the study was to expand on the seminal work of Colt, which created the modified form of ROE that was used in this study. This study built a data set for the 20 years from 1994 to 2014 for all 12 ANCSA regional corporations. Although this methodology introduced no risk to the generalizability of these findings to the regional corporations, there was a limitation to applying this study's conclusions to the ANCSA village corporations or non-ANCSA corporations.

Internal Validity

A threat to the internal validity of this study was related to instrumentation, namely the manual completion of the asset allocations from the annual reports. I followed

the same methodology as Colt (1999) in his seminal study of ANCSA. I minimized coding bias by conducting a two-stage allocation. In the first stage, invested assets were allocated to the identified subsidiaries with no further allocation to the broad categories of assets (Colt, 1999). In the second stage, I returned to the top and allocated the assets identified per subsidiary to the sector that they were primarily serving (Colt, 1999). The design of this nonexperimental quantitative multivariate study limited the effects of testing and bias validity. The use of secondary data eliminated the threat from testing. However, the manual asset allocation required in the design introduced the possibility of researcher bias. As the researcher, I had never worked for any of the ANCSA corporations nor am I a shareholder. To further control this potential threat, I utilized Colt's same methodology (Colt, 1999). The development of a value for the ANCSA regional corporations' shares utilizing the discounted FCFF model required developing a long-term growth rate and the WACC. To reduce researcher bias, I utilized the most commonly used methodology for these inputs (Allee et al., 2020; DiGabriele & Riley, 2018).

Construct Validity

The ANCSA regional corporations are all headquartered in the State of Alaska and all have significant operations within the state. This could have introduced a threat to construct validity in this study. All of the regional corporations also had significant operations in the 8(a) program which could have introduced another threat to the construct validity of this study. The statewide sector incorporated many different industries into one sector, and this could have introduced a threat to construct validity in

this study. A detailed analysis of the economy of the State of Alaska or changes to the 8(a) program during the study timeframe and how that might impact the operations of the regional corporations was beyond the scope of this study. A detailed analysis of the various industries contained within the statewide sector was also outside the scope of this study. Future studies could build on this research to analyze those elements. It is also important to note that this study was correlational and did not establish any causal links between the variables studied. This study repeated several of the hypotheses contained in Colt's (1999) study to see whether his conclusions hold; however, comparing and contrasting the statistical results of the performance of the regional corporations between the two time periods was not possible.

Ethical Procedures

This study utilized secondary archival data of the annual reports for the 12 ANCSA regional corporations. Each regional corporation reports these annual reports and proxy statements to the State of Alaska Division of Banking and Securities annually and they are publicly available. No additional permission was required to access these annual reports from the State of Alaska. Since all 12 of the corporations in this study are required to report this information there was not a need to conceal the identity of the corporations. The State of Alaska only retains the last 5 years of information from each of these corporations, so in many instances I requested access to these data directly from the corporations in the study. In some cases, the corporations requested that I not share the raw annual reports with others. I saved these data to a password-protected external hard

drive to protect these data from being released. I chose to make all annual reports for these 12 regional corporations confidential.

The annual reports of the 12 regional corporations include the names of officers and board members of the individual corporations. No individuals in the annual reports are identified in this study since these data used in this study was financial data of the corporations. The study design utilizing financial performance data of the corporations further protected individuals involved with the corporation as financial results cannot be attributed to individual decision-makers within each corporation. The restriction of keeping the annual reports confidential also protected the individual's names in the reports.

Summary

The research design for this study was to conduct a multivariate correlational statistical analysis utilizing SPSS general linear models and a one-sample *t* test on secondary data. The methodology chosen was appropriate for this study because it was the design used in the seminal study and allowed for the retesting of some of those hypotheses (Colt, 1999). Five of the research questions were answered with two multivariate regression analysis of six independent variables and one dependent variable. The study created new data on the value of the 12 regional corporations utilizing the discounted FCFF model. A one-sample *t* test was utilized to determine if the differential value of the 12 regional corporations was positive and statistically significant over investing at the risk-free rate.

The research questions allowed me to investigate how the second 20-year data set of ANCSA regional corporation financial performance may alter the conclusions of Colt (1999). The results of these statistical tests and the conclusions from those tests are presented in the coming chapters.

Chapter 4: Results

The purpose of this quantitative study was to test two theories on the regional corporations established under ANCSA: the theory of the economic efficiency of lump-sum payments in promoting economic growth and the theory of interest. This current study retested some of the hypotheses in Colt's study for economic efficiency during the period 1994–2014 to see if his conclusions hold and developed a valuation for the shares of the corporations as of 2014. I received Walden Institutional Review Board (IRB) approval number 10-20-21-0048741 for this study. In this chapter, I describe the data collection process, the assumptions required for the study, and the results of testing those statistical assumptions. I present the results of the statistical tests and other examinations from this study. The research questions answered and the hypotheses tested in this study are listed below.

RQ1: What is the relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and the absolute return on passive investments?

H_0: There is no statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and absolute return on passive investments.

H_1: There is a statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and absolute return on passive investments.

RQ2: What is the relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return in the statewide sector?

H_0: There is no statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return on the statewide sector.

H_1: There is a statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return on the statewide sector.

RQ3: What is the relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return in the local sector?

H_0: There is no statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return on the local sector.

H_1: There is a statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return on the local sector.

RQ4: What is the relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return in the oil sector?

H_0: There is no statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return on the oil sector.

H_1: There is a statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return on the oil sector.

RQ5: What is the relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and return in the SBA's 8(a) contracting sector?

H_0: There is no statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return on SBA 8(a)-contracting sector.

H_1: There is a statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return on the SBA 8(a)-contracting sector.

RQ6: What is the relationship between the differential value between the value of the 12 ANCSA regional corporations based on the discounted free cash flow valuation model at the end of 2014 and the initial ANCSA settlement cash provided to the 12 ANCSA regional corporations invested in 1-year U.S. treasuries until the end of 2014?

H_0: There is either no or a negative statistically significant relationship between the differential value of the 12 ANCSA regional corporations based on the discounted free cash flow valuation model at the end of 2014 and the value of the initial ANCSA settlement cash provided to the 12

ANCSA regional corporations invested in 1-year U.S. treasuries until the end of 2014.

H_1: There is a positive statistically significant relationship between the differential value of the 12 ANCSA regional corporations based on the discounted free cash flow valuation model at the end of 2014 and the value of the initial ANCSA settlement cash provided to the 12 ANCSA regional corporations invested in 1-year U.S. treasuries until the end of 2014.

Data Collection

I collected archival data from several private, university, and state databases. The ARLIS contained the annual reports for all 12 corporations from 1994 to 2002. I collected the annual reports for all 12 regional corporations from the State of Alaska Division of Banking and Securities database for 2010 to 2014. I collected the annual reports from 2003 to 2009 from the University of Alaska at Fairbanks Library for Bering Straits Native Corporation and Koniag Incorporated. The remaining annual reports for the other ANCSA regional corporations I collected directly from the corporations. I contacted the shareholder relations department for the remaining 10 regional corporations to collect the annual reports from 2003 to 2009.

I used these annual reports to create the data set for the universe of the 12 ANCSA regional corporations, making this study a census and not a sample. I used the annual reports to create the asset allocation required to run the linear regression to establish the various sectors' absolute average returns and differential average returns.

Figure 1 contains the corporations' average asset allocation over the 1994-2014 period. Passive assets drop from 57% to 37% of assets within the study. Although passive assets declined throughout the study, this asset class had the largest allocation of assets. Local assets were always a tiny fraction, starting the study at 3%, growing to 8% in 1999, and then steadily declining to 1% by the end of the study. Public local assets follow a similar pattern as local assets starting at 14%, growing to 18% by 1996, then slowly declining for the remainder of the study ending at 8% of assets. Statewide assets were relatively stable as a percentage of total assets, starting at 20% of assets and growing to 22% by 2009. Statewide assets begin growing faster after 2009, with an asset allocation of 32% by 2014. Oil assets are also reasonably flat in growth, starting at 6% and ending in 2014 at 7% of total assets. SBA 8(a) contracting assets grow significantly, starting at 1% in 1994 and peaking in 2010 at 20% of assets before slowly declining to 15% by 2014.

Figure 2 illustrates the average asset allocation of each corporation by year. ASRC held the least amount of passive assets of the group averaging 31%, and Sealaska held the most, averaging 73% of total assets held within the passive asset class. The majority of corporations held 50% or more of total assets in passive assets. The corporations never invested heavily in local assets, but BSRC, Bering Straits Regional Corporation, averaged 30% of total assets in this class. The next largest average allocation was Calista with 8%. CIRI and Aleut Corporation averaged the most significant percentage of total assets in the statewide sector with 64% and 44%, respectively. Doyon Limited held the most significant average percentage of oil sector assets at 30% of total assets. Five corporations allocated 0% of their assets to the oil

sector. AHTNA and Chugach allocated the most of all corporations to the SBA 8(a) sector averaging 25%; six corporations allocated more than 10% to the sector, and CIRI averaged 1% of total assets in the SBA 8(a) sector.

Figure 1

Average Allocation by Year

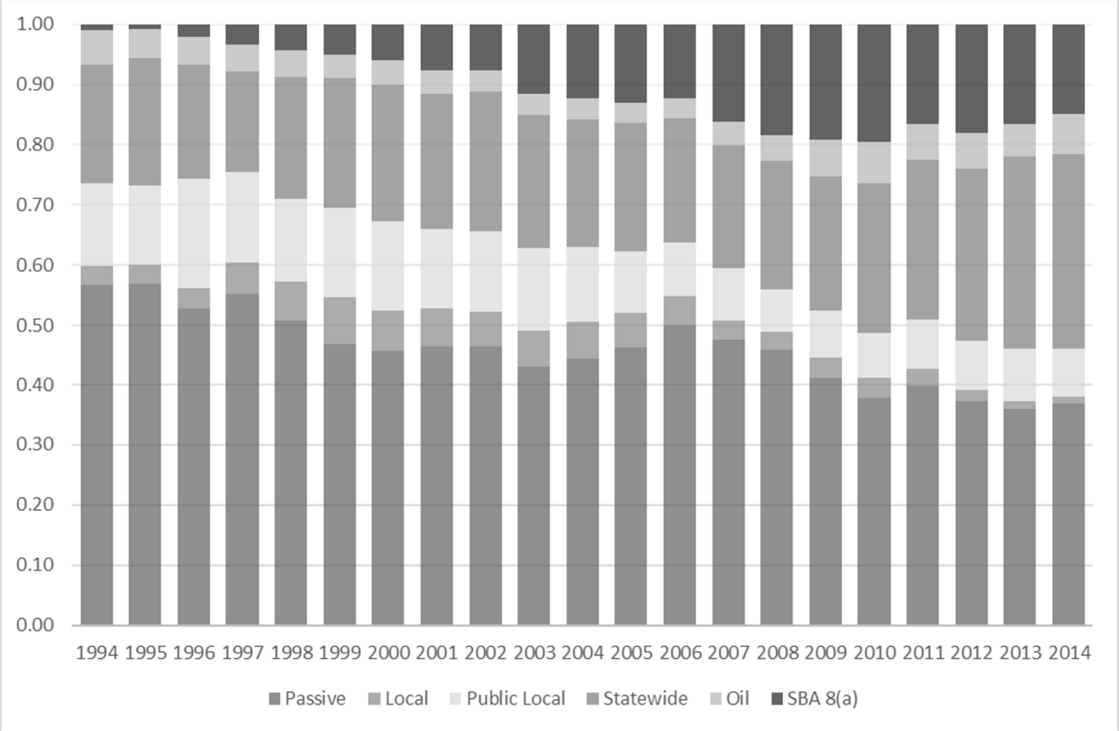
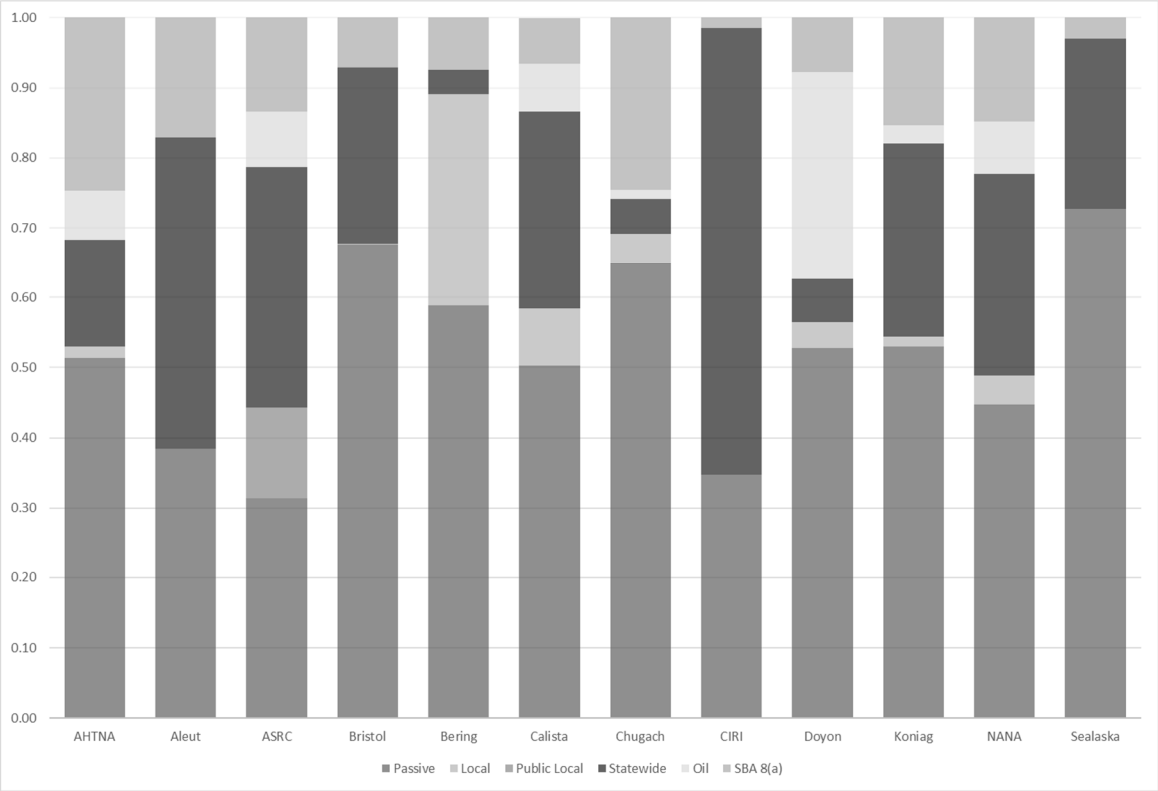


Figure 2

Average Allocation by Corporation



I also utilized the annual reports to create the non-windfall return on equity for each corporation as described in Chapter 3. I utilized the Koniag Inc. annual reports to establish the universe of 7(i)-revenue received by the corporations. The 7(i) revenue was shared based on a formula, and one set of observations was sufficient to determine the amount received by each corporation (Colt, 1999). The corporations have different fiscal years, so when I built the universe of 7(i)-revenue from one corporation, I introduced some minor measurement noise into the data set. I received 7(i)-payment information from AHTNA Inc. for 2000–2014 for each corporation that made 7(i)-payments. With this information, I established the amount each corporation that paid 7(i)-revenue also

retained for those years. Finally, I used the individual corporations' annual reports from 1994–1999 to create the amounts paid out in 7(i)-revenue and retained for each corporation based on the previously established universe. I then allocated and removed resource rents from each corporation based on these data. I developed each individual corporation's asset allocations based on the annual reports for that corporation as described in Chapter 3. The corporations are listed in Table 1 with the corresponding ROE as reported in the annual reports and the non-windfall ROE.

Table 1

Regional Corporations with Average Return on Equity

Corporation	Reported ROE	Non-windfall ROE
AHTNA	5.41%	-.46%
Aleut	13.86%	7.53%
Arctic Slope	18.23%	9.85%
Bristol Bay	13.10%	12.23%
Bering Straits	9.73%	2.91%
Calista	12.82%	1.90%
Chugach	27.78%	33.25%
Cook Inlet	8.63%	9.50%
Doyon	6.57%	8.21%
Koniag	11.39%	7.95%
NANA	5.54%	.73%
Sealaska	4.01%	-2.60%
Total Group	11.23%	9.36%

Note. ROE = return on equity.

The valuation of the shares required I have the historical returns of the stock market, historic industry cost of capital, historic risk measurements by market capitalization class, and historic implied equity risk premiums. The New York University's Stern School of Business maintains a website database that contains these data (Damodaran, 2022). I retrieved these data from the website. Another input for the

valuation of these shares was the GDP of the United States. The U.S. GDP was negative 3.5% in 2020 during a time impacted by the COVID-19 pandemic (Bureau of Economic Analysis, 2021). I estimated the U.S. GDP at 3% based on the 2018 GDP of 3% and the average GDP for the United States from 1961 to 2020 at 2.98% (Macrotrends, n.d.-a). I retrieved these data from the website maintained by Macrotrends. I collected more annual reports for all 12 regional corporations from the State of Alaska Division of Banking and Securities database for 2015–2018. I used these inputs for the FCFF model. I used actual data for the 2015–2018 years instead of forecasting those elements. I only forecasted 2019 performance, and 2020 became the terminal year. The valuation was based on actual financial performance through 2018 and limits the impact of the subjective forecasting I had to perform to create the values. The value developed from the discounted FCFF model for the corporations was $6.9 billion and excluded the unusual asset of 16 million acres of land and 22 acres of subsurface estate owned by the corporations (ESG, 1984).

The final data set was on another website database that Macrotrends maintains. This data set is the historical interest rate for the average yield of a range of U.S. Treasury securities, all adjusted to the equivalent of a 1-year maturity (Macrotrends, n.d.-b). I downloaded the treasury note rates from the website database. The average rate of return on the treasuries for the 1994 to 2014 period was 5.6%. Congressional leaders provided the initial cash from the passage of ANCSA from 1972 to 1982 (ESG, 1984). Those amounts and timing were used with the treasury rate and compounded annually to establish a value of that cash at the end of 2014 of $3.1 billion.

Study Results

I developed the dependent variable, non-windfall return on equity for each of the 12 corporations for all 21 years, producing 252 observed values. I developed the independent variables asset allocations in passive, local, public local, statewide, oil, and SBA 8(a) sectors for each of the 12 corporations for all 21 years, producing 252 observed values. I developed the dependent variable, value from the discounted FCFF model, for each of the 12 corporations for 2014, producing 12 observed values. I developed the independent variable, value of initial cash invested in treasuries, for each of the 12 corporations for 2014, producing 12 observed values.

Hypothesis Testing

I used a multivariate linear regression model in the form of equation (3) to test the hypotheses for Research Question 1. The hypotheses are listed below:

H_0: There is no statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and absolute return on passive investments.

H_1: There is a statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and absolute return on passive investments.

Multivariate Linear Regression Model

The mathematical equation below was used in this study to measure the absolute return for each of the individual sectors:

$$ROE_{it} = \beta_0 RO\_PA_{it} + \beta_1 RO\_O_{it} + \beta_2 RO\_S_{it} + \beta_3 RO\_L_{it} + \beta_4 RO\_PU_{it} + \beta_5 RO\_SBA_{it} + \varepsilon_{it} \quad (3)$$

This equation measured the absolute return from each sector. ROE_{it} is the non-windfall return on equity of corporation *i* in year *t*. The subscript *i* is for each of the 12 regional corporations and subscript *t* is for each of the years from 1994 to 2014. RO_PA_{it} is the absolute return from the passive investment sector for corporation *i* for year *t*. RO_O_{it} is the absolute return from the oil sector for corporation *i* for year *t*. RO_S_{it} is the absolute return from the statewide sector for corporation *i* for year *t*. RO_L_{it} is the absolute return from the local sector for corporation *i* for year *t*. RO_PU_{it} is the absolute return from the public works local sector for corporation *i* for year *t*. RO_SBA_{it} is the absolute return from the SBA 8(a)-contracting sector for corporation *i* for year *t*. ε is the error term for corporation *i* for year *t*. I was able to determine whether the absolute return from each sector is statistically significant to the non-windfall return on equity, which allowed the t-statistic on each sector (utilizing the *t* test on each coefficient β_0 to β_5) to test whether the return from that sector was statistically significantly different than the non-windfall return on equity.

Assumption Verification

As I built the dependent variable, non-windfall return on equity, I identified outliers in the data set. I tested this observation with the Kolmogorov-Smirnov normality test, with a *p* value of .000. This test confirmed that the data set did not have a normal distribution. I investigated the data to ensure there were no data entry errors in the data set and confirmed the outliers were due to the actual performance of the underlying

corporations. I chose not to remove outliers because the data set is the complete census of the corporations in my study. I used scatterplots of the dependent variable, non-windfall return on equity, and each independent variable individually. By analyzing the scatterplots, I determined that the independent variables had a weakly linear relationship with the dependent variable.

I used a scatterplot of the residuals and predicted values for the dependent variable, non-windfall return on equity, to test for homoscedasticity and observed a funnel shape, indicating the variable had heteroscedasticity. I conducted the Breusch-Pagan LM test, in which the *F* test was significant with a *p* value of .021. I corrected this error utilizing the feasible GLS as Colt (1999) did in his study.

I tested for collinearity and multicollinearity by reviewing the variance inflation factors. The tolerance scores were above .1, and the variance inflation factors were less than 5. All of the variance inflation factors were between 1.038 and 1.370. I assumed there was no collinearity or multicollinearity.

I tested for autocorrelation using the Durbin-Watson test statistic. The Durbin-Watson test statistic was 1.907, within the critical range of 1.5 to 2.5, and I assumed the data did not contain any autocorrelation. I used SPSS to save the residual from the regression and created a lagged variable of the residual. To test for serial correlation, I ran a linear regression with the residual as the dependent variable and the lagged residual as the independent variable. The model was not statistically significant, with a *p* value of .426, indicating serial correlation was not present. I assumed there was no serial correlation in the data set.

Multivariate Linear Regression Analysis

I used SPSS linear regression function to run the regression model illustrated in equation (3) with the data from the regional corporations. The regression model had a *p* value of .000 for the *F* test verifying the model was statistically significant. The adjusted R^2 was low at .108, meaning the asset allocations in this model explained 10.8% of the variation in non-windfall return on equity. The absolute return for the passive sector was statistically significant with a *p* value of .001 and I rejected the null hypothesis and affirmed the alternative hypothesis. The coefficient represented the absolute return provided by investing in passive assets and was .108. The absolute return from the local sector was statistically significant with a *p* value of .017. The absolute return for the SBA 8(a) sector was significant at the 90% confidence level with a *p* value of .085.

In the Colt study (1999), one of the robustness checks was to utilize the non-windfall income over the total assets to create the dependent variable non-windfall return on assets. I created the dependent variable and used the SPSS linear regression function to run the regression. The regression model had a *p* value of .000 for the *F* test and the adjusted R^2 was still low at .171. The statistical significance of the coefficients followed the same pattern as the previous regression, and absolute return for the passive and local sectors were statistically significant at the 95% confidence level. The absolute return for the SBA 8(a) was statistically significant at the 90% confidence level. There was significant movement in the coefficients with statewide approximately doubling, local increasing by approximately a third, public local dropping to slightly negative, oil

becoming positive, and SBA 8(a) essentially dropping by half. The results of the SPSS analysis are illustrated in Table 2 below.

Table 2

Estimated Average Returns by Sector

Estimation method	FGLS	FGLS regression through the origin	FGLS regression through the origin	FGLS
Investment Sector	Dependent variable: non-windfall return on equity		Non-windfall return on total assets	
Absolute return		.108** (.033)	.061** (.016)	
Passive Differential and absolute return in	Differential	Absolute	Absolute	Differential
Statewide	-.105* (.063)	.003 (.040)	.008 (.021)	-.053* (.032)
Local	-.362** (.123)	-.255** (.106)	-.159** (.047)	-.219** (.055)
Public Local	-.003 (.186)	.104 (.184)	-.006 (.084)	-.067 (.085)
Oil	-.147 (.116)	-.039 (.101)	.018 (.039)	-.043 (.045)
SBA 8(a)	.146 (.151)	.254* (.147)	.112* (.058)	.051 (.061)

Note. Pooled sample of $N = 12$ corporations over $T = 21$ years
** Indicate the coefficient was statistically significant at the 95% confidence level
* Indicates the coefficient was statistically significant at the 90% confidence level
Standard errors in parentheses
Estimated by Feasible GLS to correct for heteroskedasticity

Hypothesis Testing

I used a multivariate linear regression model in the form of equation (2b) to test the hypotheses for research questions 2–5. The hypotheses are listed below:

RQ2 hypotheses:

H_0: There is no statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return on the statewide sector.

H_1: There is a statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return on the statewide sector.

RQ3 hypotheses:

H_0: There is no statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return on the local sector.

H_1: There is a statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return on the local sector.

RQ4 hypotheses:

H_0: There is no statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return on the oil sector.

H_1: There is a statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return on the oil sector.

RQ5 hypotheses:

H_0: There is no statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return on SBA 8(a)-contracting sector.

H_1: There is a statistically significant relationship between the ANCSA regional corporation group's non-windfall return on equity (ROE) and differential return on the SBA 8(a)-contracting sector.

Multivariate Linear Regression Model

The mathematical equation below was used in this study to measure the differential return for each of the individual sectors:

$$ROE_{it} = \alpha\ RO\_PA_{it} + \beta_1\ DR\_O_{it} + \beta_2\ DR\_S_{it} + \beta_3\ DR\_L_{it} + \beta_4\ DR\_PU_{it} + \beta_5\ DR\_SBA_{it} + \varepsilon_{it} \quad (2b)$$

This equation measured the differential return from each sector over the baseline return on passive investment sector. DR_O is the differential return from the oil sector for corporation *i* for year *t*. DR_S is the differential return from the statewide sector for corporation *i* for year *t*. DR_L is the differential return from the local sector for corporation *i* for year *t*. DR_PU is the differential return from the public works local sector for corporation *i* for year *t*. DR_SBA is the differential return from the 8(a)-contracting sector for corporation *i* for year *t*. ε is the error term for corporation *i* for year *t*. I was able to determine if the return from each sector is statistically significantly different than the return on the passive investment sector, which allowed the t-statistic on each sector (utilizing the *t* test on each coefficient β_1 to β_5) to test if the return from that sector is greater than the return on the passive investment sector.

Assumption Verification

As I built the dependent variable, non-windfall return on equity, I identified outliers in the data set. I tested this observation with the Kolmogorov-Smirnov normality

test with a *p* value of .000. This test confirmed that the data set did not have a normal distribution. I investigated the data to ensure there were no data entry errors in the data set and confirmed the outliers were due to the actual performance of the underlying corporations. I chose not to remove outliers because the data set is the complete census of the corporations in my study. I used scatterplots of the dependent variable, non-windfall return on equity, and each independent variable individually. By analyzing the scatterplots, I determined that the independent variables had a weakly linear relationship with the dependent variable.

I used a scatterplot of the residuals and predicted values for the dependent variable, non-windfall return on equity, to test for homoscedasticity and observed a funnel shape, indicating the variable had heteroscedasticity. I conducted the Breusch-Pagan LM test, for which the *F* test was significant with a *p* value of .021. I corrected this error utilizing the feasible GLS as Colt (1999) did in his study.

I tested for collinearity and multicollinearity by reviewing the variance inflation factors. The tolerance scores were above .1, and the variance inflation factors were less than 5. All of the variance inflation factors were between 1.038 and 1.370. I assumed there was no collinearity or multicollinearity.

I tested for autocorrelation using the Durbin-Watson test statistic. The Durbin-Watson test statistic was 1.907, within the critical range of 1.5 to 2.5, and I assumed these data did not contain any autocorrelation. I used SPSS to save the residual from the regression and created a lagged variable of the residual. To test for serial correlation, I ran a linear regression with the residual as the dependent variable and the lagged residual

as the independent variable. The model was not statistically significant, with a *p* value of .426, indicating serial correlation was not present. I assumed there was no serial correlation in the data set.

Multivariate Linear Regression Analysis

I used SPSS linear regression function to run the regression model illustrated in equation (2b) with the data from the regional corporations. The regression model had a *p* value of .062 for the *F* test verifying the model was not statistically significant. The adjusted R^2 was low at .022, meaning the asset allocations in this model explained 2.2% of the variation in non-windfall return on equity. The absolute return for the passive sector was the constant in this model and statistically significant with a *p* value of .001. The differential return from the local sector was statistically significant with a *p* value of .004. The overall model was not statistically significant and so affirmed the null hypotheses for the statewide, local, oil, and SBA 8(a) sectors for research questions 2–5. The differential return for the statewide sector was significant at the 90% confidence level with a *p* value of .098.

In Colt's study (1999), one of the robustness checks was to utilize the non-windfall income over the total assets to create the dependent variable non-windfall return on assets. I created the dependent variable and used the SPSS linear regression function to run the regression. The regression model for the differential return had a *p* value of .003 for the *F* test and the adjusted R^2 was still low at .050. The statistical significance of the coefficients followed the same pattern as the previous regression, with the absolute value of the passive sector as the constant and the differential return for the local sector

was statistically significant at the 95% confidence level. The differential return for the statewide sector was statistically significant at the 90% confidence level. There was significant movement in the coefficients, with statewide approximately doubling, local increasing by approximately a third, public local dropping significantly, oil increasing approximately two-thirds, and SBA 8(a) essentially dropping by approximately two-thirds. The results of the SPSS analysis are illustrated in Table 2.

Hypothesis Testing

I utilized a one-sample *t* test to test the hypotheses for research question 6. The hypotheses are listed below:

H_0: There is either no or a negative statistically significant relationship between the differential value of the 12 ANCSA regional corporations based on the discounted free cash flow valuation model at the end of 2014 and the value of the initial ANCSA settlement cash provided to the 12 ANCSA regional corporations invested in 1-year U.S. treasuries until the end of 2014.

H_1: There is a positive statistically significant relationship between the differential value of the 12 ANCSA regional corporations based on the discounted free cash flow valuation model at the end of 2014 and the value of the initial ANCSA settlement cash provided to the 12 ANCSA regional corporations invested in 1-year U.S. treasuries until the end of 2014.

One-Sample *t* Test

I defined differential worth as FCFF–TBILL = μ_D. FCFF is the value from the discounted free cash flow to firm model for the 12 regional corporations as of the end of

2014. TBILL is the value of ANCSA cash for the 12 regional corporations invested in U.S. 1-year treasury bills from 1973 until the end of 2014. μ_D is the differential value from the discounted free cash flow to firm model for the 12 regional corporations above the value of the ANCSA cash for the 12 regional corporations invested in U.S. 1-year treasury bills as of the end of 2014.

Assumption Verification

The assumptions for the one-sample *t* test were numerical and continuous variables, a normal distribution of values, and independence of each other. I reviewed the data set of the underlying value for each corporation developed by using the discounted FCFF model and the differential values. I concluded that both variables were numeric and continuous in scale. I utilized the Shapiro-Wilk test statistic to determine normal distribution because the sample size was below 50. The Shapiro-Wilk test statistic had a *p* value of .000 and .002 for the discounted FCFF model value and the differential value. I reviewed the values of the corporations and found Arctic Slope Regional Corporation (ASRC) has a value more than three times larger than the mean for the group. I removed the outlier, ASRC, and reviewed the Shapiro-Wilk test statistic with a *p* value of .091. This confirmed that after removing ASRC the group was roughly normally distributed. I ran the one-sample *t* test with and without ASRC. I assumed the independence of the data set because it was a census of the corporations and not a sample.

One-Sample t *Test Analysis*

I used SPSS compare means function to run the one-sample *t* test which was compared to the test variable of 0. The *t* value was 2.021, which was above the critical

value of 1.796 and had a *p* value of .034. I rejected the null hypothesis for research question 6 and affirmed the alternative hypothesis. The mean differential value of the 12 regional corporations was positive and statistically significantly different from 0. I ran the one-sample *t* test without ASRC which was compared to the test variable of 0. The *t* value was 2.671 with a *p* value of .0115. I similarly rejected the null hypothesis for research question 6 and affirmed the alternative hypothesis for the group excluding ASRC.

I conducted an additional one-sample *t* test where I calculated the resource rents the corporations booked as income from 1973 to 2014 and added it as a stream of income to purchase additional treasuries. The $296 million in Colt's study (1999) was allocated to each corporation equally from 1973 to 1993. The resource rents during 1994 to 2014 were allocated to each corporation in the year the rents were generated. Colt took 2% away from passive investments and net operating loss sales and I removed 2% of the resource rents every year for management fees. The one-sample *t* test was conducted on the differential value of the 12 corporations from the discounted free cash flow to firm model over the treasuries plus resource rents value compared to the test variable of 0. The *t* value was .220 below the critical value of 1.796 with a *p* value of .415. I affirmed the null hypothesis. The mean differential value was positive but not statistically significantly different from 0. I did not repeat this *t* test excluding ASRC as the mean differential value of the group was negative and would affirm the null hypothesis. I summarize the results of these one-sample *t* tests in Table 3 below.

Table 3

Values of the 12 Regional Corporations

	Mean FCFF model value	Mean T-BILL value	Mean T-BILL with resource rents value	Mean DIFF over T-BILL value	Mean DIFF over T-BILL with resource rents value
12 regional corporations	$574,788,488	$257,860,349	$542,132,395	$316,928,139*	$32,656,092
Corporations without ASRC	$438,664,165	$267,155,793	$520,041,509	$171,508,372*	($81,377,344)

Note. FCFF = discounted free cash flow to firm model; DIFF = differential value of the FCFF over the other listed value. Twelve regional corporations was the mean of the values for the corporations as a group. Corporations without ASRC was the mean of the values of the 11 corporations as a group excluding ASRC. All values exclude the unusual asset of 16 million acres of land and 22 acres of subsurface estate owned by the corporations.

* Indicates the *t* value was statistically significant.

Summary

The research questions in this study attempted to determine if the asset allocation strategies of the 12 regional corporations impacted the non-windfall return on equity and whether the returns from the various sectors achieved statistically significant higher returns than the passive investment sector. The final research question attempted to determine if the 12 regional corporations created value greater than a strategy of investing in U.S. treasuries could produce. I determined that the estimated absolute return from the passive sector was statistically significant with linear regression analysis. The linear regression model for research questions 2–5 was only statistically significant at the 90% confidence level, and I affirmed the null hypothesis for research questions 2–5. I

used a one-sample *t* test on the differential value of the 12 regional corporations to evaluate research question 6. I rejected the null hypothesis as the differential value was positive and statistically different from the test variable of $0. These findings indicate that the existing research conclusions do not hold in the second 20-year data set of ANCSA regional corporation financial performance. This study expanded the current body of knowledge of the ANCSA corporations. I discuss the findings in the following chapter.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this quantitative study was to test two theories on the regional corporations established under ANCSA: the theory of the economic efficiency of lump-sum payments in promoting economic growth and the theory of interest. This current study retested some of the hypotheses in Colt's (1999) study for economic efficiency during the period 1994–2014 to see if his conclusions hold and develop a valuation for the shares of the corporations as of 2014.

The regression model for the estimated absolute values was statistically significant, but the second model for the estimated differential values did not achieve statistical significance at the 95% confidence level. The adjusted R^2 for both models was low at .108 and .022, respectively. The estimated absolute return from the passive and local asset sectors was statistically significant, and the estimated absolute return from the SBA 8(a) sector was statistically significant at the 90% confidence level. The regression model for the estimated differential returns was statistically significant at the 90% confidence level, with the estimated returns from the passive and local sectors statistically significant at the 95% confidence level, and the statewide sector statistically significant at the 90% confidence level. The one-sample *t* test was statistically significant, indicating the mean differential value from the discounted free cash flow to firm model over the value from the U.S. treasuries was positive and statistically significantly different than 0.

Interpretation of Findings

The existing research on the ANCSA regional corporations is scarce. In this study, I investigated whether Colt's (1999) conclusions on whether the lump-sum transfer was economically efficient in stimulating economic growth for the next 20-year period held. Although the linear regressions in this study and those in Colt's study are not directly comparable, the underlying financial performance is. This study disconfirms the previous conclusions of Colt. Based on the results of the regressions, I conclude that in future studies a new model may be needed as the same statistical significance was not achieved in the next period. This study created valuations of the corporations based on the discounted free cash flow to firm model, knowledge not seen in the current literature until this study. The interpretation of findings begins with a review of the financial performance of the corporations, continues with a discussion of the regression models, and ends with an examination of the findings on valuation of the corporations.

Financial Performance

Colt (1999) built the dependent variable, non-windfall return on equity, from reviewing the annual reports of the 12 regional corporations. I created the same variable utilizing his methodology. By 1993, the corporations' gross revenues had increased to $714 million. Assets and equity started at approximately $100 million and equity reached $1.066 billion and assets reached $1.5 billion by 1993 (Colt, 1999). In the current study equity grew to $3.894 billion, assets grew to $6.625 billion, and revenues grew to $8.6 billion by 2014. Figure 3 illustrates this growth:

Figure 3

Gross Revenue, Assets, and Equity: All Regional Corporations

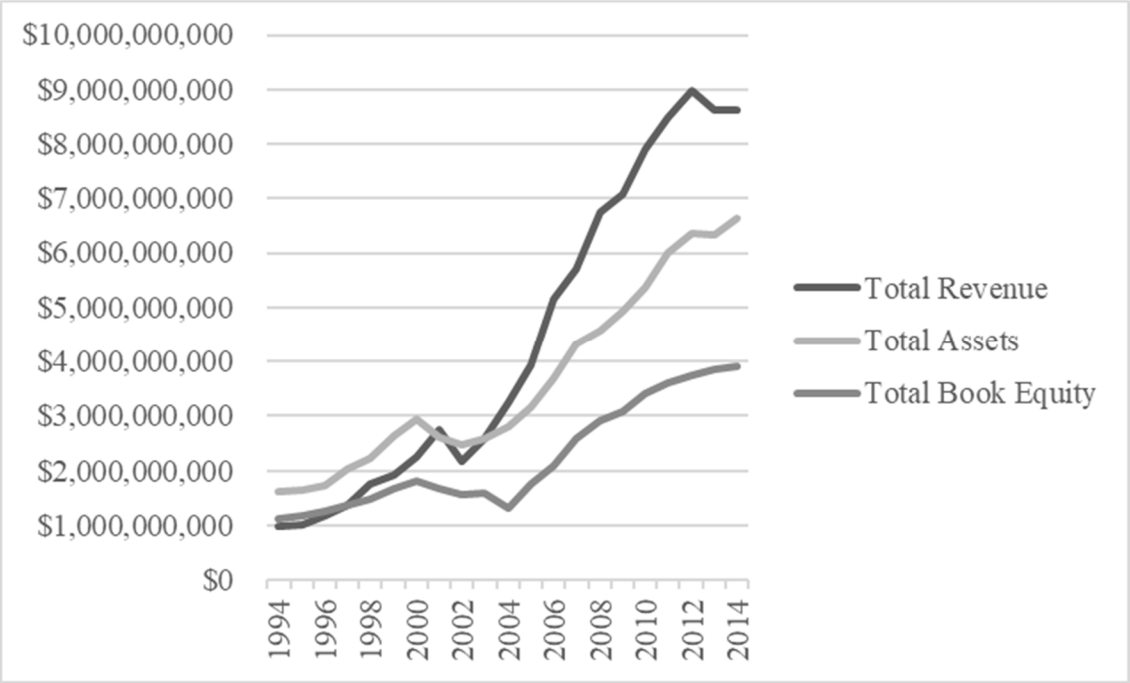


Figure 3 shows that, around 2002, the revenue of the regional corporations grew at a very high rate and, by the end of this study, achieved growth of more than 800%. Total assets for the regional corporations followed a similar pattern as revenue and grew by more than 440%. Equity grew the least during the period but still increased by more than 350%.

Colt (1999) created a table illustrating the sources and uses of wealth during the 1973 to 1993 period. I recreated a version of that table and added the data from this study as Table 4 for comparison purposes.

Table 4

Sources and Uses of Wealth, Colt and Stuckey Study

Data point	1973–1993	1994–2014	Percentage growth
Net income	$596	$5,025	843%
Dividends paid	$243	$2,623	1,079%
1993 equity	$1,066		
2014 equity		$3,894	365%

Note. All dollar amounts are in millions of dollars.

Table 4 illustrates a similar growth in the data points from the Colt study to this current study, with net income increasing by more than 800% and dividends paid by more than 1,000%. Substantial growth occurred between the period investigated by Colt (1999) and the period examined in the current study.

In Colt's (1999) study, the dependent variable, non-windfall return on equity, was created from the reported ROE for the corporations. First, the taxes paid and the 7(j) distributions paid to the village corporations were added back into net income. The income from selling the net operating losses was removed from net income, allowing for a 2% management fee to be retained. Finally, the income derived from natural resource rents was removed from net income creating non-windfall income. Non-windfall income was divided by the average equity for each year to create the non-windfall return on equity for each corporation. I created Table 5 to describe the changes involving each of those steps for the original period (Colt) and the current study (Stuckey).

Table 5

Changes in Return on Equity Between Colt and Stuckey

Corporation	Reported ROE		Pre-Tax and Share		Excluding NOL		Excluding Re. Rents	
	COLT	STUCKEY	COLT	STUCKEY	COLT	STUCKEY	COLT	STUCKEY
Ahtna	4.50%	5.41%	4.30%	11.88%	2.90%	11.02%	1.80%	-0.46%
Aleut	-9.30%	13.86%	-11.90%	15.25%	-13.00%	14.78%	-13.00%	7.53%
Arctic Slope	13.10%	18.23%	27.20%	18.81%	26.70%	14.18%	2.80%	9.85%
Bristol Bay	5.00%	13.10%	2.10%	17.16%	-0.60%	17.16%	-0.70%	12.23%
Bering Straits	-40.70%	9.73%	-48.70%	26.78%	-63.00%	26.78%	-66.90%	2.91%
Calista	-7.50%	12.82%	-24.60%	33.37%	-28.00%	33.37%	-28.00%	1.90%
Chugach	5.30%	27.78%	4.00%	35.63%	-7.40%	40.37%	-13.40%	33.25%
Cook Inlet	12.00%	8.63%	16.80%	10.81%	14.90%	11.13%	7.30%	9.50%
Doyon	12.80%	6.57%	12.60%	13.09%	1.90%	13.09%	0.80%	8.21%
Koniag	10.70%	11.39%	4.80%	15.94%	-12.10%	15.94%	-12.20%	7.95%
NANA	2.70%	5.54%	4.80%	11.54%	4.50%	11.54%	0.50%	0.73%
Sealaska	7.70%	4.01%	10.20%	8.01%	3.50%	8.01%	-3.20%	-2.60%
TOTAL GROUP	3.90%	11.23%	5.40%	15.08%	1.50%	14.67%	-3.00%	9.36%

Note. ROE = return on equity; NOL = net operating losses.

The first change was in reported return on equity taken directly from the annual reports of the corporations. From 1973 to 1993 the average for the group was 3.9%, which grew to 11.23% during the current study (1994–2014). The average return on equity was significantly higher in the current study. In the original study, three corporations had a negative return on equity, with Bering Straits Regional Corporation having the highest at -40.70%. In the current study, all corporations achieved a positive return on equity, with a major shift in Bering Straits Regional Corporation, which achieved a positive 9.73%. During Colt's (1999) study, the sale of net operating losses was significant, with over $400 million recorded as income, compared to the current study, with the Arctic Slope Regional Corporation finalizing the sale of operating losses for approximately $121 million. There were several corporations that negotiated settlements with the IRS to finalize all transactions requiring some to pay the IRS for

some of the income received in previous years. After all transactions were finalized and the 2% management fee associated with the sales was allocated, a total of $95 million was removed from net income of the corporations during this study. The final step was to remove the natural resource rents from net income. During Colt's study, this left the corporations as a group at a negative 3% return on equity, but that changed to a positive 9.36% in the current study. This change in non-windfall return on equity reversed the conclusion in Colt's study that the ANCSA corporations made unproductive investments and now points to upholding the growth theory that lump-sum transfers of capital are economically efficient.

Colt (1999) determined that the regional corporations had a total loss of $380 million in business operations. Colt took the non-windfall income of the group and reduced it by the passive investment returns (again minus a 2% money management fee) and added a social overhead of between $1 and $3 million for each corporation for each year. The result was the net income from business operations. In the current study, the total income earned from business operations for the group of regional corporations was $3.4 billion or approximately $3.8 billion better than the previous period. Table 6 illustrates the changes between Colt's study and the current study:

Table 6

Comparison of Income from Business Operations for the Regional Corporations

Data point	1973–1993	1994–2014
Reported net income	$596	$5,025
Plus: Taxes	$5	$1,064
Plus: Resource rents transferred out	$159	$1,013
Less: Net NOL sales proceeds	($408)	($95)
Less: Natural resource rents	($480)	($2,896)
Less: Net passive investment income	($532)	($1,129)
Plus: Social overhead costs	$280	$421
Equals: Net income from business operations	($380)	$3,404

Note. All dollar amounts reported in millions of dollars. Social overhead for 1973 to 1993 is reported in real 1993 dollars. Social overhead for 1994 to 2014 is reported in nominal dollars. Social overhead averages to $1.67 million per year per corporation or $20 million annually. NOL means the net operating losses that were sold.

Table 6 captures the scale differences between the first period from 1973 to 1993 and the second period 1994 to 2014. Reported net income was $596 million in the first period and $5 billion in the second. The regional corporations paid $5 million in income taxes in the first period and over $1 billion in the second. This figure hides the fact that two corporations—the Aleut Corporation and the Sealaska Corporation—received more in refunds than they paid in taxes. The Aleut Corporation was able to get favorable tax legislation passed by Congress that created large future tax savings in relation to some of the Adak land transactions. The company transferred the footprint of the Adak airport and equipment to the State of Alaska and other property and equipment to the City of Adak, which the tax legislation allowed replacement value to be considered for income tax purposes, generating significant tax losses. The Aleut Corporation received

approximately $56 million in tax refunds, and the Sealaska Corporation received approximately $25 million during the current study. The resource rents shared with the village corporations through the 7(j) provision was $159 million in the first period and over $1 billion in the second. The sharing of resource rents is distorted as two regional corporations merged with the majority of the village corporations in their respective regions (AHTNA Incorporated and NANA Incorporated). I was unable to readily identify the correct allocation of resource rents for these two corporations so retained the 50% sharing that was the original basis of 7(i). This means that, during this allocation of resource rents back into net income, these two corporations received more than they actually paid to the village corporations. The corporations earned more than double the income from passive investments in the second period: over $1 billion and the business operations earned over $3 billion. The financial performance of the regional corporations increased dramatically between the two time periods and points to a substantial change between Colt's study (1999) and the current study.

Asset Allocations

The linear regression model for equation (3), absolute returns, was statistically significant, with the estimated absolute return for the passive and local sectors reaching statistical significance at the 95% confidence level. The estimated absolute return for the SBA 8(a) sector was significant at the 90% confidence level. The linear regression model for equation (2b), differential returns, was statistically significant at the 90% confidence level, with the estimated differential return for the local sector reaching statistical significance at the 95% confidence level and the estimated differential return for the

statewide sector reaching statistical significance at the 90% confidence level. I only rejected the null hypotheses associated with Research Question 1. The estimated absolute return for the passive sector had a statistically significant relationship to the non-windfall return on equity and was estimated at 10.8%. The average return of the Standard and Poor 500 index for 1994–2014 was 11.12% (Damodaran, 2022), so the estimated average from the passive sector appears reasonable.

Accepting the 90% confidence level for the differential return model, the estimated absolute return for the SBA 8(a) contracting sector, and the estimated differential return for the statewide sector, I continue the discussion of findings. With this lower confidence level, the two sectors that never achieved statistical significance are public local and oil sectors. The estimated return of the statewide sector was essentially 0% returns with the differential return being .105 less than the estimated absolute return from the passive sector, or .3% positive return. SBA 8(a) contracting was estimated at 25.4% absolute returns. This estimated return appears to confirm 8(a) contracting was the most profitable sector for the regional corporations to invest in. In the asset allocation process, the companies performing in the 8(a) sector also received government contracts outside of the 8(a) set aside, but the majority of those contracts were from 8(a), so those assets were allocated to the SBA 8(a) sector. If the annual report indicated federal government contracting but did not indicate 8(a) set aside, those assets were allocated to the 8(a) sector as well. This means the broader federal contracting sector was influencing this sector.

The local sector estimated absolute return was -25.5%, indicating the regional corporations performed poorly in the local sector. A review of the asset allocations for the group shows the local sector grew from 3% at the start of the study and peaked at 8% in 1999. The trend from that point was a slow downward trend for the asset allocation to 5% in 2006 and a drop to 3% in 2007 before falling to 1% in 2013 and 2014. This large negative estimated return may be due to overinvestment in the local sector which was subsequently written off in later years. In 2009, NANA Regional Corporation, Inc. began the construction of the new Nullagivik Hotel in Kotzebue, which was completed late in 2011. In 2013, NANA Regional Corporation, Inc. recognized a write-down in non-current assets related to the hotel of $29.3 million as they found the cash flows generated did not support the current valuation. Chugach Alaska Corporation in 2000 recognized a write-down of the local sector assets that amounted to two-thirds of that sector and 15% of all assets in the asset allocation. Several other corporations stopped leasing portions of their headquarters building to others, bringing the local sector asset allocation to 0. All of this could have negatively impacted the estimated returns from the local sector. The robustness check of return on assets has the estimated absolute return from the local sector at -15.9% instead of the -25.5% in return on equity regression. All of the regressions estimate a negative return from the local sector, differing only in magnitude.

The estimated differential return for the statewide sector of -10.5% less than the passive return of 10.8%, means the return was essentially 0%. It might be that the statewide sector is too large now and needs to be broken into smaller segments. Colt (1999) used the statewide sector to represent the modern economy, but in the period for

this study, the corporations appear to be fully embedded in the modern economy. The statewide sector for the entire group is twice the size (as a percentage of assets) of the SBA 8(a) contracting and the public local sectors. Statewide is four times the size of the local sector and half the size of the passive sector. In total dollars, the statewide sector represents $1.2 billion to $1.65 billion in assets. For example, Cook Inlet Regional Corporation invested heavily in the digital wireless telephone networks and generated approximately $750 million in net income when they liquidated a large portion of that position in 2000 and 2001. This successful operation was classified as a statewide sector investment in this study and would represent approximately 15% of the net income for the entire group over the entire data set. Additional studies are necessary to better understand the impacts of the statewide sector on the regional corporations.

Valuations

In this study, I used the discounted FCFF model to estimate the 12 regional corporations' value and a mean value for the group. The actual financial performance of the regional corporations was taken from the annual reports until 2018. I reviewed averages and trends over the previous 4 years to forecast the various inputs into the discounted FCFF model for 2019. I set the terminal year at 2020 with a growth rate set at the average of the U.S. GDP growth rate from 1962 to 2020. The unusual event of the global pandemic caused by the coronavirus significantly suppressed the GDP in 2020 and would be inappropriate to use as a terminal growth rate. I reviewed the GDP in 2018, the first full year without the pandemic and the average of the GDP, both of which were 3% (Macrotrends, n.d.-a).

I created the discount rate through the build-up method. I created the risk-free rate and the equity risk premium for the market with the historic data from New York University (Damodaran, 2022). The 2021 study conducted by Cooper et al. utilized private company acquisition data from 2008 to 2014 and concluded that the company-specific risk rate, including industry risk, had a mean of 23.8% for private companies within the data set. I utilized the mean company-specific risk from this study as the starting point for the remaining risk premium in the discount rate. The study concluded there was a size premium, with larger companies having lower company-specific risk (Cooper et al., 2021). The study found the same with the age of the company, with older companies having a lower company-specific risk (Cooper et al., 2021). The size of the regional corporations was significantly larger than the private companies contained in the study's data set, with average sales being $1.3 million versus the $720 million average for the regional corporations in 2014. The study data set has an average age of 16.7 years, whereas the regional corporations are over 40 years old (Cooper et al., 2021). These facts led to the conclusion that the company-specific risk of the regional corporations should be at or below the mean company-specific risk from the study.

Esqueda et al. (2019) found the risk was reduced for private companies supplying government agencies as a major customer. In 2014, 28.5% the regional corporations' revenue was earned from 8(a) contracts (ANCSA Regional Association, 2016). The ANCSA Regional Association (2012) found in 2009 that 8(a) contracting revenue for the regional corporations peaked at 46% of total revenues and was still 35% of revenue at the end of 2012. From the review of the regional corporations' annual reports, it is clear the

expertise created from contracting in the 8(a) program allowed the corporations to be successful in government contracting outside the 8(a) program. The revenue derived from government contracts for the regional corporations was higher than the amount provided from 8(a), thus making government agencies major customers of the regional corporations. A study found non-operating earnings reduced firm risk by reducing vulnerability to economic shocks and the ability to lower volatility in earnings for the firm (Jory et al., 2021). The authors concluded that every 1% increase in non-operating earnings reduced firm risk by .435% (Jory et al., 2021). From the annual reports, I concluded approximately 33.5% of earnings came from the corporations' passive investment holding. The amount of 7(i) income retained after the corporations paid 7(j) to the village corporations accounted for approximately 20.5%. This income does not include the retained earnings from the corporations that produced earnings to be shared through 7(i) as those would be part of operating earnings. The 20.5% was the amount that comes to the regional corporations from the other regional corporations and was truly non-operating earnings. All of these factors led to the conclusion that the company-specific risk associated with the regional corporations was relatively low, bringing the total risk of these corporations to approximately 12% higher than the overall market.

Table 3 in Chapter 4 summarizes the results of the one-sample *t* test. The results of that *t* test indicated the regional corporations were able to generate wealth for the shareholders that exceeded the value that would have been realized if the initial cash provided to the regional corporations were invested in a basket of U.S. Treasuries. In total dollars, the 12 regional corporations were valued at the end of 2014 at

approximately $6.9 billion in this study, while the value from investing in treasuries was approximately $3.1 billion. The regional corporations were able to pay dividends that amounted to approximately $2.9 billion while generating value above double what would have been generated from investing in treasuries. Beyond paying dividends, the regional corporations provided funding for scholarships for shareholders, and donations to non-profits at a significant rate—11% of net income in 2011–2014 (ANCSA Regional Association, 2016). The regional corporations generated significant wealth for the shareholders through their operations and dividends and other services provided to their shareholders.

Understanding the regional corporations also received title to 16 million acres and rights to the subsurface estate of another 22 million acres owned by the village corporations, I ran an additional one-sample *t* test including resource rents derived from the land and invested in the same treasuries. I subtracted 2% of the resource rents to cover management fees, which was the same methodology Colt (1999) utilized for management fees for sales of net operating losses and passive investments. When I included those revenues to purchase additional treasuries, the regional corporations' value based on the discounted FCFF model was still $400 million higher.

The discounted FCFF model does not value assets but rather the cash flows derived from those assets. The regional corporations have a significant asset base not included on the balance sheets that have not been operationalized. The majority of the land provided to the regional corporations has not been developed and should be included as an asset that adds value beyond what was derived from the discounted free cash flow

model. I did not include the estimate of the value of this land as it would be present in both of the values used in the one-sample *t* test. I reviewed current land offerings from the State of Alaska and found remote land without access was selling for approximately $1,900 an acre, assuming no waterfront access (dnr.alaska.gov). Larger tracts of land sell at significantly less per acre, so I used half of the rate for remote land to estimate a value for the land owned by the regional corporations. The ANCSA Regional Association (2016) estimated a conservative value of these lands at $1,000 per acre, which was in line with the $950 per acre I used to estimate the value for this study. The 16 million acres would add $15.2 billion to the value of the regional corporations based on those estimates for price per acre. This value assumed all of the 16 million acres are undeveloped, which was incorrect, but also assumed the remaining land has no additional resources to increase the land value. This overestimation of the number of acres was moderated by the assumption of no additional resources and by not assigning a value to the additional subsurface estate of the 22 million acres of the village corporations' lands the regional corporations also own. The estimated value of the land increased the value of the regional corporations by the end of 2014 to approximately $22.1 billion.

The Snigaroff study (2019) found that the value lost by the unmarketability of the shares of the regional corporations was approximately one-third of the total value. Robert Snigaroff also thought this value could give some idea of the value Alaska Natives are putting on cultural continuation, the primary purpose of not allowing these shares to be sold. Based on the current study's estimate of value, that value would be approximately $2.3 billion. This cannot be used as a true value since that has not been studied; it lends a

number to the theoretical question from Snigaroff. The value of the corporations developed in this study assumed the free cash flow generated from the government contracting was retained, meaning the acquiring firm must also qualify for the 8(a) program. This restriction would most likely lower the value of the corporations by at least 25% of revenues the 8(a) program represents. Further, land ownership is complicated by the fact that 70% of profits from the lands must be distributed to the other regional corporations, possibly lowering the value assigned to the land by the same amount.

Lind (2019) concluded that the opening of the enrollment in the regional corporations could be one of the definitions of success for these corporations. It allowed additional shareholders beyond the original shareholders to become owners and share in the cultural identity carried within the regional corporations (Lind, 2019; Snigaroff, 2019). These original shareholders decided to open enrollment through a vote and willingly gave up approximately 33% of the value of their shares and dividend payments. The current study estimated $31,397 in share value and $11,949 in dividend payments from 1994 to 2014 for each original shareholder with 100 shares. More research needs to be conducted to specifically answer the question of what value to place on Alaska Native culture and cultural continuation, but this study allows for estimates to be assigned to the questions and values from previous studies (Lind, 2019; Snigaroff, 2019).

Limitations of the Study

I started the study by reviewing the asset allocation from the first year to the last year of Colt's (1999) study. I found that the statewide sector was approximately 10 percentage points lower and the public local was approximately 10 percentage points

higher in the current study. The oil sector was approximately four percentage points lower, and the SBA 8(a) sector, which did not exist in Colt's study, was one percentage point. There is a year in between studies for the asset allocations. Colt used the 1992 annual report to build the 1993 asset allocations. The current study used the 1994 annual report to build the asset allocations for 1994, so some of the difference in asset allocations between the two studies could have been reallocations that occurred in 1993. It also illustrates one of the limitations of this study. In Colt's study, he estimated average returns from each sector which cannot be compared to this study as they are not the same variables due to the subjective nature of the asset allocations themselves. To clarify this issue, a single researcher would need to conduct the asset allocation on both data sets in a consistent fashion.

Another possible limitation of the current study is that asset allocations could be impacted by endogeneity or omitted variables. If unidentified reasons exist to explain the asset allocations chosen by the regional corporations, I might have a biased estimate of the returns from each sector. Preferences of the board of directors or management team experience in specific industries are two examples of possible variables that explain the asset allocations, and additional research would be necessary to explore this issue.

Recommendations

Future studies can address the limitations of the current study. The first limitation is that the two data sets between the current study and the Colt study (1999) are estimated returns by sector and cannot be compared. A future study combining the two data sets and conducting the asset allocations could address this limitation. This future study might

yield estimated returns for each sector that meet or exceed the confidence level necessary to alter the conclusions.

The statewide sector was estimated to have essentially a 0% return. A future study could explore the impacts of dividing this sector into smaller subsets as it currently holds many industries. Currently, this sector includes real estate like commercial buildings and residential land, investments in tourism businesses, hotels, manufacturing, digital wireless telephone networks, oil and gas exploration not on the north slope, alternative energy projects, an oil refinery, gas stations, heavy equipment rentals, and consulting and construction companies.

The regional corporations offer shareholder preferences in hiring, but the current study did not conduct any research on the impacts of these preferences. A future study could quantify the value of these preferences to the shareholders' social and economic status. A future study could also study the impact of shareholder hire on the corporation's performance. One of the definitions of success in the Lind study (2019) could be researched to see if it increases the corporation's performance by merging the values of the shareholder managers and owners.

The current study focused on regional corporations, but the ANCSA of 1971 also created approximately 200 village corporations. Additional studies to test the asset allocation model on the village corporations could significantly improve the understanding of the impacts of ANCSA on the social and economic status of the shareholders. A study on the village corporations could include a study of the quality-of-

life improvement generated by the village corporations and the dividend payments from the individual corporation.

The seminal article on the regional corporations utilized the theory of the firm, which predicted the unusual organizational structure of the 13 regional corporations would negatively impact their performance by increasing monitoring costs and eliminating several shareholder activism mechanisms (Karpoff & Rice, 1989). A future study could conduct a similar study comparing the financial performance of the regional corporations to a control group to see if the conclusions hold in a future period. The financial performance of the corporations improved significantly from the Colt (1999) study to this current study. A future study could investigate whether the performance improvements identified in the current study would change the conclusions of the seminal research by Karpoff and Rice.

Implications

Since the regional corporations are more than western-style corporations and have a purpose that includes cultural continuation (Lind, 2019; Snigaroff, 2019), their actual value was much more than the estimated value generated with the discounted FCFF model. This study only estimated the value of the regional corporations based on the discounted FCFF model. The study also illustrated that the estimated value was more than double that of passively investing in U.S. Treasuries while also paying $2.8 billion in dividends. Beyond dividends, these corporations from 2009 – 2014 averaged providing 10% of their net income to scholarships and donations to non-profits (ANCSA Regional Association, 2012; ANCSA Regional Association, 2016).

This study promotes positive social change by creating new knowledge and gives data for policymakers considering land claims legislation of the current outcomes of ANCSA. The findings in this study and the information reported provide valuable information for the leaders of regional corporations to consider as they make decisions impacting the corporations themselves.

The SBA 8(a) contracting sector of this study gives some information on the benefits of that program to the regional corporations. This offers some additional information to policymakers on how the 8(a) program impacted the regional corporations. It is important to remember that the SBA 8(a) includes a significant portion of other government contracting outside the 8(a) program (i.e. all corporations with 8(a) contracting revenue had additional contracting revenue with the Federal government outside the 8(a) program). The individual companies that were allocated to the SBA 8(a) sector realized a majority of their revenue from the 8(a) program.

ANCSA was one of the few times the U.S. congressional leaders have decided to issue a lump-sum payment to a minority group to grow their economic status. The seminal study (Colt, 1999) found that the performance of the regional corporations did not support the second theorem of welfare economics. In that study, the lump-sum payment provided by congressional leaders through ANCSA was not economically efficient for improving the economic status of Alaska Natives. The current study found that the conclusions of Colt (1999) did not hold in the next 20 years. The current study's findings in reversing the conclusions of the Colt study provide some additional support

for the neoclassical growth theory and the second fundamental theorem of welfare economics.

Conclusions

This study altered earlier research findings showing that the regional corporations' initial financial performance was poor and improved over time (Colt, 1999). The regional corporations lost $380 million on business operations in the first 20 years of financial data (Colt, 1999). In the next 20 years of financial data, the regional corporations were able to generate $3.4 billion of income from business operations. The dividends grew from $296 million to $2.6 billion.

This study also found that the SBA 8(a) contracting sector was a thriving area for investment for the regional corporations with an estimated absolute return of 25%. The assets allocated to passive investments earned an estimated absolute return of 10%, and the local sector earned negative returns as estimated by the asset allocation regression. The trend in the local sector shows the percentage of assets allocated to the sector tripled to 9% by 2009 but by 2014 only represented 1% of all assets. The negative return in the local sector and the trend in the percentage of assets may point to overinvestment by the corporations in the region they represent.

The estimated value of the corporation's businesses was approximately $6.9 billion. The study compared the mean value of the regional corporations to the mean value provided by passively investing in U.S. treasuries the initial cash provided from ANCSA and found the mean value of the corporations was above the value of the treasuries. This study indicates that the value generated by the business operations of the

regional corporations provided additional value to their shareholders over the value that could be derived from investing in treasuries. The study found the corporations' value from the discounted free cash flow model was $6.9 billion ($22.1 billion when the land value is included) while providing over $2.8 billion in dividends to their shareholders.

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