

**Non-Tradable Shares and Firm Underperformance:
The Alaska Native Corporations Case Revisited**

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Abstract

A historical settlement between the US government and the Alaskan Natives (ANCSA) in 1971 provides an opportunity to test one of the main tenets of the theory of the modern corporation: that of principal agent problem when management is separated from diffused ownership. Earlier researchers in 1989 argued that underperformance of ANCSA firms provide evidence in support of alienability of shares as a necessary component of an efficient corporate structure. The alienability of shares clause in ANCSA was transformed with a 1991 amendment that allow revoking it with a majority vote of the ANCSA stockholders. Using data from 1976 to 2006, we show that the *right to decide* alienability of shares has a significant and positive impact on firm performance.

Keywords: principal agent problem, Alaskan Natives settlement, ANCSA, diffusion of ownership, ownership structure, corporate governance structure, external controls, internal controls, and firm performance.

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I. Introduction

In 1971, the Alaska Natives Claim Settlement Act (ANCSA) a historic settlement between the United States government and the Alaskan Natives, created thirteen corporations as part of a settlement of claims to Alaskan land and sub-surface rights. These thirteen corporations were established using a unique governance and operating structure which included the distribution of shares in the corporations to Native Alaskans, but with the stipulation that these shares remained non-transferable until 1991². The alienability of shares is core to one of the main tenets of the theory of the modern corporation: the separation of management and control when shares are diffused among many shareholders. Karpoff and Rice (1989, 1992) studied the performance of ANCSA firms and argued that underperformance of ANCSA firms is the result of the lack of external control that comes with the transferability of shares.

Several changes in the governance and operating structure of the ANCSA firms have taken place since these studies and warrant a revisit of the issue of governance and alienability of shares. The non-transferability of shares provision was set to expire in 1991, but in 1988 the bylaws were amended to extend the expiration date to 1993 and in 1991, the stockholders of these corporations voted to make the alienability provision extend indefinitely. Upon this vote, shares in the ANCSA corporations remain inalienable unless a petition is distributed and signed by one-third of shareholders and

² See Karpoff and Rice (1989, 1992) and Colt (1999a, 1999b) for a detailed presentation of the features and characteristics of the settlement.

then is approved by shareholders in a majority vote.³ This change still provides ANCSA shareholders with an option, though difficult to exercise, to make the shares transferable.

We argue that ANCSA provides us with a natural experiment to investigate several aspects of corporate governance. The 1991 amendment of the ANCSA bylaws provides the opportunity to test the relationship between firm performance and strength of corporate governance structure⁴. As argued and found by Karpoff and Rice (1989, 1992), the underperformance of ANCSA firms prior to 1983 can be attributed to the weak corporate governance structure of ANCSA firms resulting from the zero alienability of shares provision. The corporate governance structure of ANCSA firms was likely to become stronger after 1992 when the option to allow transfers of shares provision was adopted (we call this a period of “partial” alienability). Thus, we would expect that the performance of ANCSA firms would improve during this period. However, the possibility that underperformance of ANCSA corporations may be the result of the operating structure (e.g. limited accessibility to managerial talent, lack of investment opportunities, etc) also needs to be investigated. Though mostly work in progress, we will address this issue in this study. We use financial data from 1971 to 2006 to build a control sample using a propensity score matching technique that takes into account several firm characteristics and an accounting measure of systematic risk. This control sample represents firms with full alienability (full transferability of shares). We then test for the effects of full, “partial”, and zero alienability of shares on firm performance. We

³ This can still be overturned by a voting procedure, but is no longer set to expire at any given date

⁴ We are currently investigating the possibility that ANCSA internal controls evolved to strengthen the “weak” governance structure prevailing prior to 1983.

find that ANCSA firms underperform⁵ the control group in the pre-1983 period, a period of zero alienability of shares; however, they outperform the control group during the post-1992 period. While ANCSA firms' performance improves from pre-1983 to post-1992 period, the performance of the control sample remains statistically unchanged. In short, we provide evidence consistent with ANCSA firm performance improving once the special option of potential transferability of shares is available. These results support the hypothesis that firm performance is related to the strength of the corporate governance, particularly the transferability of shares provisions.

We are currently implementing a methodology for testing whether internal control mechanisms are evolving (adaptive control mechanism) and assessing the impact of this evolution on firm performance. We are also investigating whether access to labor markets and weak investment opportunities are important determinants of underperformance beyond the effects of governance structure.

II. Background

The Alaska Native Claims Settlement Act (ANCSA) was signed into law on December 1971 (Public Law 92-203). It awarded Native Alaskans \$962.5 million and clear title to 44 million acres of land, in exchange for ending all legal claims against the US government.⁶ The settlement required the Native Alaskans to form corporations at two levels, one at the Village and one at the Regional, to which all claimants belonged. There were about 79,000 eligible members from over 200 villages, who, upon proof of at

⁵ Firm performance is measured with six variables of accounting returns: ROA, ROA2, ROE, ROE2, CFTA, and CFE.

⁶ The Alaska Native Corporations own 10% of the land in the state of Alaska (figure for 2000). These lands came mainly from public domain federal lands (which decreased from 77.2% of total acreage in 1960 to 16.5% in 2000). For details see Hull and Leask, 2000.

least one quarter blood relations with Alaska Native ancestry, received 100 shares of the village corporation (within the defined regional corporation) and 100 shares of the regional corporation. Not all Native Alaskans chose to participate in this settlement. Seven villages chose to remain as separate nations inside the US (Arctic Village, Venetie, Elim, Tetlin, Klukwan, Gamble, and Savoonga), and they received additional federal land from the US government (Anders and Anders, 1987). Of those who participated in the settlement in 1971, twelve regional corporations were formed (Sealaska, Koniag, Aleut, Bristol Bay, Ahtna, Cook Inlet, Doyon, Nana, Artic Slope, Chugach, Calista and Bering Straight).⁷

In addition to the monetary pay out, the regional corporations were given the rights to sub-surface lands, while the village corporations owned the surface rights of the land. The regional corporations also were set up as for-profit organizations, while the village levels were explicitly structured as not-for-profit entities. The regional corporations could sell the resources they owned, such as timber, oil, and even the land itself. All regional corporations started functioning with an elected board of directors by 1976 (Karpoff and Rice, 1989, p. 71).

Disbursement of the settlement money started in 1971 and was completed in 1981 while land conveyance took longer to complete, as it was usually fraught with disputes and lawsuits (Anders and Anders, 1987). The payments to individuals and from land

⁷ A 13th corporation was added later to the originally devised 12 regional corporations to include all those who missed the initial settlement. The 13th corporation includes Native Alaskans who did not reside in the state and who were not born yet. It currently has about 5,500 members. It differs from other corporation in that it is excluded from owning any surface and subsurface lands which were distributed to the other corporations. It only received part of the lump sum payment disbursed thru the Alaska Native Fund, set up by the US government and the State of Alaska. Of the \$52 million disbursed to this corporation, half of the amount was paid to the shareholders and the remaining \$27 million are deemed lost due to mismanagement. Sources: <http://www.lbblawyers.com/ancsa.htm>, ANCSA online resource center, materials accessed in June 2007.

sales were non-taxable (for land, the exemption stopped in 1991, thereafter developed land were taxed at local, state, and federal level). The ANCSA regional corporations also qualified for minority status that grants them preferential access to federal contracts (Karpoff and Rice, 1989, p. 73). This advantage has been exploited more effectively in recent years by several of the ANCSA corporations, especially in obtaining contracts through Homeland Security.

Among other ANCSA regulations, the regional corporations were allowed to merge with the native corporations within their region, provided there are at least 7 regional corporations (Anders and Anders, 1987). Shareholders also have the right to vote for liquidation of their regional corporation and set up “settlement trust” in its place, which is managed by a board of Trustees. These Trusts, by the settlement law not-for-profit, is to invest in “prudent investments.”

A particularly significant provision in ANCSA, and directly related to the purpose of this paper, concerned the alienability of the shares: shareholders were restricted from selling them to non-Alaskans until mid-December of 1991. This provision was amended in 1988 to allow for the right to petition for their alienability to the board of a corporation starting in 1991. The petition required 33.33% or more signatures of all voting members of the corporation. For the alienability to be adopted, the resolution must pass by a majority of all shares with voting rights (with similar rules for repurchase). Given the conventional wisdom regarding the valuable role of alienable shares in the monitoring of management, it is interesting that as of today, none of these corporations have voted to support alienable shares.⁸

⁸ The alienability of shares restriction rules does not apply to the shareholders of four regions: Bristol Bay, Cook Inlet, Aleut, and Koniag, who must vote instead to extend the restriction.. Alaska Federation of

Another unique feature of these corporations is the provision which requires that 70% of the profit from sale of natural resources be shared with the other 12 regional corporations, proportional to the number of shareholders. This set-up essentially requires that each regional corporation bear all losses to its businesses but allow other corporations to share its profit greatly disturbing managerial incentives to undertake risk or even exert effort.

III. Literature Review and hypothesis development

The unusual characteristics of the Alaska Natives settlement caught the attention of researchers in the late 1980s and early 1990s. Anders and Anders (1987) argue that the subsistence and traditional lifestyle of the Native Alaskans ruled them ill-equipped to operate businesses successfully, despite their having co-existed with western values for over 200 years. McNabb (1992) points to the concept of “private property” as alien to the traditional “common property” based culture of the Alaska Natives therefore creating a handicap for them to benefit from the settlement.

The settlement also attracted the attention of economists, among them are Karpoff and Rice (1989, 1992) and Colt (1999, 2001). Karpoff and Rice examine share transferability and organizational performance of ANCSA regional corporations. They argue that the inability to trade the shares should lead to higher managerial opportunistic behaviors and firm underperformance; that alienable rights should lead to fewer proxy fights; and that inalienability of shares should lead shareholders to diversify risks by pushing for more diversification. They find evidence that share alienability is associated

Natives Newsletter, Volume VI, Number Two, April 20, 1987. These shares were also protected from sale, pledge, lien, assignment, and bankruptcy (except divorce, separation and child support).

with firm underperformance, costly infighting of shareholders, and high turnover among managers and directors. They find weaker evidence for low corporate performance such as unusual monitoring and incentive mechanisms, high general and administrative expenses, excessive diversification, heavy investments in financial assets, and low managerial compensation.

Karpoff and Rice (1992) revisited the ANCSA corporations three years later. Using updated financial data from 1984 to 1989 and including the 13th corporation, the authors assert that return on equity, return on assets, and return on operations had not changed significantly from the prior period examined (1976-1983). They conclude that the healthier financial outlook of some of these corporations was mainly the result of a one-time tax law change that benefited these corporations and the creation of paper earnings resulting from changes in the way non-developed lands were accounted.

Colt (1999a) provides the most in-depth examination of the financial performance of ANCSA corporations. Using data from the regional corporations from 1973 to 1993, Colt shows that monetary and resource transfers to the corporations are unsuccessful as development tools and that institutional constraints on share transferability weaken the discipline of the market toward inefficiency. The general hypothesis tested in these studies is that non-transferability of shares negates the important disciplining role of external control mechanisms creating a weak governance structure that leads to firm underperformance. The amendments made to the by-laws and in particular the optional nature of share alienability provides us with a natural laboratory to further test this general hypothesis. Because the share alienability provision under the 1991 amendment is a shareholder's decision (can be revoked with a majority vote from the shareholders) and

not a mandate, the governance structure of ANCSA firms should be stronger during post-1992 period relative to the pre-1983 period. Thus, we should expect to observe an improvement in ANCSA firms' performance across these periods. Since the pre-1983 is a period of full share alienability and the post-1992 can be seen as a period of partial share alienability, we postulate the first hypothesis as follows⁹:

H1: post-1992 financial performance of ANCSA corporations as measured by traditional accounting return measures is expected to be better than pre-1983 performance.

When using a sample of control firms that do not have constraints on share transferability, we have a situation that allows us to test whether ANCSA performance is related to share alienability accounting for ANCSA specific circumstances. We, therefore, postulate the following hypothesis:

H2: Financial performance of firms with no restrictions on share transferability is better than ANCSA firm performance.

One of the stated goals of ANCSA corporations is to improve the social and economic welfare of the native Alaskan people. As argued by Colt (1999), the resulting effect is a high propensity of ANCSA corporations to pay dividends and to provide employment to the community and particularly its shareholders. We test the same

⁹ Because land was not fully conveyed until the early 1990's and the tax loophole was removed in 1991, the period between 1983 and 1992 is likely to be a period with a lot of statistical noise and difficult to assess the determinants of firm performance. Thus, we do not consider this period in the formulation of our hypotheses or in our analysis.

hypothesis as in Karpoff and Rice (1989) that ANCSA firms pay more dividends than its counterpart control group¹⁰.”

H3: ANCSA firms are more likely than non-ANCSA firms to have higher levels of dividend payouts.

However, such relation changed during the post-92 period as the option brought by the shareholders’ vote on alienability presumes a strengthening of ANCSA governance and therefore a lowering of the propensity for dividend payments. This leads to the following hypothesis,

H4: ANCSA dividends patterns for the post-1992 period are significantly different than the ANCSA dividends pattern in the pre-83 period.

Additionally, the trade and learning curve argument states that corporations formed by Native Alaskans who historically have traded with non-Natives are more likely to acquire managerial and market talent faster than ANCSA firms with no ties to non-natives. Colt (1999a) makes a similar conjecture with his learning effect hypothesis. Access to managerial talent will provide ANCSA firms with the necessary managerial skills to improve performance. One approach to acquire or access the managerial expertise is through the formation of joint ventures with non-natives. We hypothesize the following:

¹⁰ We are currently collecting information to test the Coles (1999a)’ hypothesis that substandard accounting returns generated significantly increased employment in ANCSA firms.

H5: ANCSA firms that enter into joint ventures with non-Native corporations are likely to experience financial performance improvements.

In this version of the paper, we are presenting empirical results for the testing of H1 to H4. We are currently working on completing the data collection and methodology implementation for testing H5.

IV. Data and methodology

Due to the evolving nature of ANCSA structure, three distinctive periods can be identified: (1) 1976-1983 which is the period tested in Karpoff and Rice (1989) and what we consider the start-up period in which there was absolutely no possibility for transferring shares, (2) 1986-1992 which is a transition period in which a couple of amendments to the non-transferability of shares provision were made, where land conveyance was completed, and where a favorable tax loophole existed from 1986 to 1988 that significantly improved ANCSA corporations performance, and (3) 1993-2006 which is a period in which the inalienability of ANCSA shares provision was extended indefinitely, though the option to remove it with a shareholders' vote remains. We refer to these three periods as pre-83, amendment, and post-92 periods respectively.

Karpoff and Rice (1989, 1992) used a control matching sample based on level of sales. We are limited in our ability to replicate their result in this paper, because, among other reasons, several of the control firms in their procedure are no longer in existence. Survivorship bias is of concern in this type of comparative analysis. Given that many of

the control firms selected in these studies have since been acquired or dissolved, Karpoff and Rice's concern about a potential bias from selecting only firms that survived the entire analysis period is a valid concern. Another issue with matching procedures is the validity of the variables used in the matching to capture the risk dimensions of the firm under studied and the "eyeball" nature of the matching procedure.

Optimally, the control group should be constructed so that both the control firm and the corresponding ANCSA firm have the same level of systematic risk. This is typically done using market based betas. Since ANCSA firms are not publicly traded, an alternative procedure is to use an accounting beta to capture the systematic risk. Beaver and Manegold (1975), Karels and Sackley (1993), Kulkarni, Powers, and Shannon (1991), and Almisher and Kish (2000) are among researchers who have used and investigated the properties of accounting betas and their relation with market-based betas. The procedure to compute accounting betas is the same as that for market betas: accounting earnings returns for each firm are regressed against the market accounting earnings returns (See Almisher and Kish (2000) for a detailed presentation of the estimation procedure). We basically use two measures of accounting earnings returns. One is computed as net income divided by book value of equity (ROE) and the other one is computed as net income divided by total assets (ROA).¹¹ We also use modified versions of these two measures where net income plus interest paid is used instead of net income and call the resulting two measures as ROE2 and ROA2 respectively. We use OTC-Bulletin as a proxy for the market and use an equally weighted market index to estimate accounting betas over the period 1992 to 2006. We use firms listed in the OTC-

¹¹ We use the procedure in Ball and Brown (1969), Gonedes (1973), and Beaver and Manegold (1975) and described in detail in Almisher and Kish (2000) to account for instances when the fiscal year ending is not December 31.

Bulletin (codified as exchange =13 in Compustat) which are the group of firms with the closest asset size to the average asset size of the ANCSA firms.¹² However, it is not clear that accounting betas fully capture the market (systematic) risk of the firm as the correlation between accounting and market based betas is much lower than one as documented in Beaver and Manegold (1975), Ismail and Kim (1989), and Karels and Sackley (1993). One possible approach to capture the additional unexplained variation is to employ a multi-factor accounting beta. An alternative is to construct a control group using statistical techniques that allow us to capture the interacting effects of financial characteristics including the systematic risk measured by accounting betas. We use propensity scores matching to obtain a group of comparable OTC-Bulletin firms for each ANCSA firm. See Caliendo and Kopeinig (2008), Dehejia and Wahba (2002), and Rosenbaum and Rubin (1985) for details of this methodology and its implementation. Data on ANCSA corporations is obtained from financial statements filed at the Alaska Security Commission. Financial data for the comparison group are from Compustat. We use the natural log of total assets, revenues, total liabilities, liability to asset ratio, selling and general and administrative expensed (SG&A), SG&A squared, four-digit sic code, book value of equity and compute a propensity score for each firm. We obtain a matched group for each ANCSA firm, but the matching is not necessarily one to one given that some firms have fewer or greater observations across years. The matching method use is a local linear regression (preferred to kernel matching for efficiency), using a logit regression to compute the propensity score, with common support, and bootstrapping for standard error at 50 repetitions. We use Stata V.10 psmatch2 to carry out the propensity score matching procedure. The matching procedure creates a control sample that best

¹² There are between 934 and 1399 firms in this group during the years 1993 to 2006.

matches each of the ANCSA firms in terms of accounting betas in the post-1992 period. The betas selected for this procedure are betas estimated using cash flow to assets returns (CFTA). The betas for ANCSA and their corresponding control groups are presented in table 1.

Table 1 about here

The PSM procedure allows us to create a control sample for each ANCSA firm that statistically has the same systematic risk as the ANCSA firm. Thus, allowing us to perform an analysis of accounting returns as if they were risk-adjusted returns.

VI. Empirical results

6.a ANCSA and non-ANCSA firm performance

We first concentrate on the pre-1983 period to compare with previous studies on ANCSA performance. Mean values of our four measures of firm performance for ANCSA and control firms are presented in Table 2. The z-values for the Wilcoxon sign rank test are also presented in the table.

Table 2 about here

The control sample represents firms with 100% transferability of shares while ANCSA firms have no transferability of shares during the pre-1983 period. Consistent with the findings of previous studies, there is a substandard level of ANCSA firm's performance for the period prior to 1983. Looking at the means of the ANCSA firms relative to the control firms, the ANCSA firms perform at a lower level in every return

measure than the matched control firm. The z-value for the Wilcoxon sign rank test for every measure is significant at least at the 5% level. These results are consistent with hypothesis 2 and suggest that the non-transferability feature present in ANCSA firms during the pre-1983 period adversely affects firm performance. It is important to note that the observed weak ANCSA performance could be due to the difficulties being faced by the ANCSA firms from inception. One possible way to address this issue is by controlling for the unique aspects of ANCSA environment in a multivariate analysis (we are currently working on this analysis). Alternatively, we can compare the ANCSA performance for the period after 1992 to a control group. During the post-1992 period, there exists an option to convert to full transferability of shares for ANCSA firms. Since this feature is more beneficial than the complete prohibition of shares transferability for the pre-1983 period, we would expect an improvement in ANCSA firm performance relative to a control group – our hypothesis 2 in this paper. Table 3 presents the means and z-values for the Wilcoxon sign rank tests for each return measurement comparison.

Table 3 about here

The results show that during the post-1992 period ANCSA firms outperform the control group grouping in four return measures: ROE, ROE modified, ROA, and ROA modified. The z-value for the Wilcoxon test for each of these measures is significant at at least at the 5% level. Returns based on cash flows to total assets and to equity while lower for ANCSA firms are not statistically different from the control group. These results support hypothesis 2 of the paper. While we were expecting an improvement in performance from the pre-1983 period to reflect the benefits of partial transferability of

shares, we were not expecting ANCSA firms to outperform the non-ANCSA firms. This suggests that either the partiality of shares transferability under the by-laws modification of ANCSA appears to be as effective as the full transferability of the control group or that there are special circumstances that favor ANCSA firms. One approach to address this issue is to compare the inter-period performance of the ANCSA firms and of the control sample.

6.b Post-1992 vs. pre-1983 performance

We expect to shed some light into whether changes in performance of ANCSA firms is related to the transition from full restriction on transferability of shares to having the option to remove such restriction by comparing the ANCSA firms' performance for post-1992 period with their performance for the pre-1983 period and contrasting it to the same inter-period performance of the control firms. The results of the inter-period comparisons for the ANCSA and control sample are presented in table 4.

Table 4 about here

The ANSCA firms went from a lower performance than the control firms in the pre-1983 period to a higher performance in the post-1992 period. As expected, we do not observe a statistically significant change in the performance of the control sample. This result is consistent with the fact that there has been no change in the transferability of shares provisions of the control sample firms. These results are consistent with hypothesis 1 of the paper and provide partial support to the view that relaxing the

restrictions on the transferability of shares of ANCSA firms was beneficial for the firms and their stakeholders.

6.c Dividend payouts of ANCSA and non-ANCSA firms

In this section, we attempt to investigate the extent and impact of social goals that ANCSA firms are required to fulfill according to their by-laws, in particular, providing employment and cash flows in the form of dividends to its shareholders, and how these behaviors or patterns change after 1992. Similar to previous studies, we utilize dividend payments as percentage of net income. To test hypotheses 3 and 4 of the paper, we compare this dividend payout ratio for ANCSA and control sample group and across the pre-1983 and post-1992 periods. The mean values for the payout ratio and the z-value for the Wilcoxon rank test are presented in table 5.

Table 5 about here

There is **no statistical difference** between the dividend payouts of ANCSA firms and control sample firms during the **pre-1983** or the post-1992 periods. There is no statistical difference of the dividend payouts from the pre-1983 to the post-1992 period. These results are inconsistent with the view that ANCSA firms actively acted on their mandate to provide cash flows to its stockholders and do not support hypotheses 3 and 4 of the paper.

Further research

This paper is work-in-progress and we are currently completing the data collection and methodology for testing the last hypothesis outlined in the paper. We will also conduct an analysis of other potential sources of firm underperformance in particular the impact of inaccessibility to labor markets and limited investment opportunities. Finally, we plan to investigate whether internal mechanisms evolve and adapt to compensate for weak governance structures. This could be a possible explanation of the observed reluctance to eliminate the non-transferability requirement.

VI. Conclusions

The transferability of shares is a cornerstone of external corporate governance. ANCSA firms presented earlier researchers with the opportunity to test a fundamental implication of restricting shares transferability; that firm performance will suffer in the absence of a strong market for corporate control. In 1991, the by-laws of ANCSA were modified to incorporate the indefinite restriction on shares transferability but with the option to revoke the provision with a majority vote of the shareholders. This feature provides us with a unique environment to test the relationship between firm performance and the strength of corporate governance structures. We argue that after 1992, ANCSA firms' performance should improve to reflect the stronger corporate governance structure resulting from the potential to revoke the alienability of shares provision. We also implement a propensity score methodology to construct control samples that reflect similar levels of systematic risk as ANCSA firms. We find that ANCSA firms underperform their control sample during the period of full alienability of shares (prior to 1983) but outperform the control sample after the option to revoke share alienability is adopted (post-1992). The improvement in performance from pre-1983 to post-1992 is

only observed for the ANCSA firms. While we still need to statistically control for other possible causes of ANCSA firms' performance improvement, a more relevant conclusion to financial economics is about the role of fully and well defined property rights: the fact that the ANCSA firms "had" the right to determine the alienability of the shares appears to show positive effect on the performance of the firms, compared to control firms.

Table 1: Accounting beta estimates for ANCSA and non-ANCSA firms (control group)

Accounting betas are estimated using annual cash flow returns for up to 8 years for the pre-1983 period and up to 14 years for the post-1992 period. Cash flow returns are computed as earnings before interests, depreciation, and taxes scaled by total assets. The average annual return for the firms listed in the OTC-Bulletin exchange in Compustat that have available data was used as the market index. Number of observations for average beta, standard errors for the difference in beta, and p-values for the t-statistic are shown in parenthesis respectively.

Periods	Average beta, matched control firms	Average beta, Ancsa firms	Difference in beta (control sample – Ancsa group)	t-statistic (p-value)
Pre-1983	0.64 (11)	-1.07 (24)	-0.53 (0.76)	2.24 (0.02)
Post-1992	0.41 (7)	-0.43 (26)	0.83 (2.09)	0.40 (0.35)

Table 2: Pre-1983 performance for ANCSA and control sample

This table shows the average annual accounting returns for the pre-1983 period. The pre-1983 period covers the years 1976 to 1983. During the pre-1983 period, there was no transferability of shares for ANCSA firms as stipulated in the ANCSA agreement. ROE is computed as net income divided by book value of common equity; ROE modified as net income plus interests divided by common equity; ROA as net income divided by total assets; ROA modified as net income plus interests divided by total assets; CFTA as earnings before interests, depreciation, and taxes divided by total assets; and CFE as earnings before interests, depreciation, and taxes divided by common equity. The ANCSA group is comprised of 13 native corporations. The control sample has 98 firms obtained through a propensity matching score methodology from the list of firms categorized in the Compustat tapes as being listed in the OTC-Bulletin exchange (observations with the value of 13 for the variable *exch* in the tapes). Financial data from Compustat is annual data as of the fiscal year. When the fiscal year for a firm ends prior to July, the fiscal year end data for the prior year is used instead.

Accounting return measures:	ANCSA (n = 487)	Control sample (n = 487)	Wilcoxon sign rank z-value
ROE	-3.70%	1.50%	5.29
ROE modified	-1.37%	1.50%	3.24
ROA	-2.07%	0.92%	4.5
ROA modified	-1.53%	0.92%	2.6
CFTA	0.63%	1.41%	4.03
CFE	-1.11%	2.96%	5.23

Table 3: Post-1992 return performance for ANCSA and non-ANCSA groups

This table shows the average annual accounting returns for the pre-1992 period. The pre-1992 period covers the years 1992 to 2006. During the post-1992 period stockholders of the ANCSA firms have the option to revoke the non-transferability of shares by a majority vote of the community. This amendment to the ANCSA by-laws was adopted in 1991. Definitions of accounting returns and sample compositions are presented in Table 2.

Accounting return measures	ANCSA (n=486)	Control sample (n= 486)	Wilcoxon sign rank z-value
ROE	2.36%	0.63%	2.87
ROE modified	3.18%	1.08%	3.10
ROA	1.62%	0.40%	3.18
ROA modified	1.95%	0.59%	3.41
CFTA	0.71%	1.94%	1.23
CFE	-2.13%	3.14%	1.42

Table 4: Post-1992 versus pre-1983 return performance for ANCSA and control sample

This table shows the differences in the average annual accounting returns from the 1992-2006 to the 1976-1983 periods. Definitions of accounting returns and sample compositions are presented in Table 2.

Accounting return measures:	Difference in return for ANCSA firms	Wilcoxon sign rank z-value	Difference in returns for control sample	Wilcoxon sign rank z-value
ROE	6.06%	6.29	-0.87%	1.17
ROE modified	4.55%	5.40	-0.42%	0.79
ROA	3.69%	6.53	-0.52%	0.89
ROA modified	3.48%	5.70	-0.33%	0.62
CFTA	0.08%	5.57	0.53%	1.27
CFE	-1.02%	5.62	0.18%	0.87

Table 5: Dividend ratios for ANCSA and control sample

This table presents dividend payout ratios for the ANCSA and the control samples for the pre-1983 and post-1992 periods. Dividend payout ratio is computed as total dividends paid divided by net income. Definitions of the samples are presented in Table 2.

Periods:	ANCSA (n=425)	Control sample (n =489)	Wilcoxon sign rank z-value
Pre-1983	3.6%	43.8%	0.43
Post-1992	192%	24.0%	2.38
Difference between periods: Post1992 – pre1983	188.4%	-19.8%	
Wilcoxon sign rank z-value for difference between periods	1.02	0.07	

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