

## **Agency Theory and Trust Ownership of Shares**

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# Agency Theory and Trust Ownership of Shares

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## Abstract

The problems of agency theory related to security valuation are normally discussed in the context of “owner-managers” and “outside shareholders”, and/or equity-holders and debt-holders. In this paper we discuss agency problems that emerge when there is only one shareholder (and no debt), but where the shareholder is a trust with separate income and capital beneficiaries. Trust ownership of this sort is not uncommon. The agency problems emerge as the two classes of beneficiaries have claims on cash flows that occur at different times, with income beneficiaries having claims until “capital” is transferred to the capital beneficiaries. The agency problems that are discussed are dividends, risk shifting, capital structure, cost capitalization, and investment policy. In all cases agency problems arise, and in some respects the agency problems are more pervasive than in the more “orthodox” settings.

JEL G30, K22, L30.

# Agency Theory and Trust Ownership of Shares

## 1. Introduction

Agency explanations are given for a wide range of phenomena that are of interest to economists and accountants. These include explanations relating to organizational design (the “rules of the game” or “organizational architecture”), the depth of capital markets, the distribution of shareholdings and price-to-book ratios, the quality of external financial reporting and the adherence to international accounting standards, and the level and pricing of debt.

In this paper we analyze the conflicts of interest that emerge when the dominant shareholder is a trust with separate “capital” and “income” beneficiaries. Disputes between these groups are sometimes dealt with in the courts, but with the courts generally being unwilling to interfere with decisions taken by the trustees as to what is income and what is capital. Here we show the nature of the conflict by illustrating the impact on the claim of each class of beneficiaries by reference to common agency issues. One important difference between this setting and all others is that only one shareholder is required – the trust.

Trusts can be important owners of shares. For example New Zealand’s largest electricity distributor, now called Vector Limited, is 75% owned by a trust with separate income and capital beneficiaries. The trustees appoint the directors, and consumers at three-yearly elections in turn elect the trustees. As at June 2005 the company had \$NZ4.9 billion in assets and \$NZ3.1 billion in borrowings. The authors’ interest in this agency problem resulted from litigation surrounding a dispute over distributions to the income beneficiaries of the trust during 2000.

Section 2 of the paper provides some background information about the trust referred to in the preceding paragraph, and the particular the dispute that resulted in the litigation. Sections 3 and 4 describe and analyze some forms of potential conflict between capital and income beneficiaries. Section 5 discusses the constraints on realization of the potential for conflicts and is followed by the conclusion.

## **2. Vector Limited and its majority “owner”**

In this section some information is provided about the particular institutional setting that motivated the analysis of the agency problems of trust ownership.

The electricity sector in New Zealand has undergone substantial reform since the late 1980s. Some of these changes affected the organization of the industry (for example the separation of transmission and distribution activities from generation and retailing, and the splitting of one major generation company into four separate companies), and others were concerned with governance issues. Within the latter, all regional distribution activities had to be undertaken by companies (which replaced the previous Power Boards and other forms of entities), but the nature of the ownership of these companies was to be determined locally – that is by the consumers in the relevant regions.

In the case of Auckland city, the Auckland Electric Power Board’s (AEPB’s) business was transferred to a company called Mercury Energy Limited (Mercury) and the shares in that company were issued to the Auckland Energy Consumer Trust (AECT). In 1998 Mercury was forced to sell its retail (and generation) businesses and as part of that process changed its name to Vector Limited (Vector).<sup>i</sup> In 2005 the company issued \$593 million of shares to the public leaving the AECT with a 75.1% ownership of the company.

Under New Zealand law the maximum life of a trust is 80 years. Most New Zealand regions adopted a trust model of ownership for their local lines/retailing company as part of this restructuring, although the large majority of these had a single class of beneficiaries. Over the life of the trusts, “income” is distributed each year to consumers and at the end of the life of the trust (80 years or earlier) the trust assets are also distributed to consumers. However the AECT and three other energy trusts have a dual beneficiary structure – income beneficiaries and capital beneficiaries. For the AECT, the income beneficiaries are the nearly 300,000 Auckland residents consuming electricity distributed by Vector and the capital beneficiaries are the three local authorities<sup>ii</sup> covering the geographical area earlier serviced by the AEPB. The income

beneficiaries each year receive dividends paid by Vector to the AECT. For residential power consumers this is a fixed amount (for 2005 this was about \$NZ180), independent of the volume of electricity consumed. The income beneficiaries will continue to receive these dividends for eighty years from the date of establishment of the AECT, that is until 2073. At that time, ownership of the shares held by the AECT will transfer to the capital beneficiaries.

An energy trust and the company it owns are legally separate bodies but the operational dimension of the combined structure is in substance similar to a consumer co-operative. In that respect the structure is arguably an efficient response to the problem of the power lines (i.e. distribution) part of Mercury's business being a natural monopoly. However, that benefit of the structure is possibly outweighed by inefficiencies resulting from the weaker governance arrangements that apply as compared with those in operation for an actual consumer co-operative (where proportional ownership is usually tied directly to the quantity supplied or purchased) or for a stock exchange listed company with a widely dispersed ownership base.

The litigation referred to above arose as a result of a series of large dividends paid by Vector to the AECT, and the announcement by AECT that it intended to pay those amounts to the income beneficiaries.<sup>iii</sup> In this case, the dividends were sufficiently large to result in a negative Retained Earnings balance in Shareholders Funds. In New Zealand the Companies Act states that the board of directors of a company may authorize "distributions" (and a dividend is a distribution) as long as it is satisfied "on reasonable grounds" that the company will be able to satisfy a "solvency test" immediately after the distribution. A company is solvent if "it is able to pay its debts as they become due in the normal course of business," and the "value of the company's assets is greater than the value of its liabilities."<sup>iv</sup> Therefore dividends are not dependent on earnings, and there is no notion that "capital must be maintained intact" in contemporary New Zealand company law. As long as the solvency test is satisfied, distributions can be made, and the central question that arose in this litigation was whether they were "capital" or "income." Further, some of the profits arose from "capital gains" (for example the sale of Vector's retail customer base for about \$NZ300 million, when Vector (Mercury) was forced to sell its retail business). The capital beneficiaries' representatives also argued that this was "capital", not "income".

This present paper deals with the potential conflict between the interests of the income beneficiaries and the capital beneficiaries of energy trusts such as the AECT and, in general, any trust with a dual beneficiary structure. Testamentary trusts are a common case of such trusts; for example, where the deceased's partner receives a life interest and the residue passes to the deceased's children on the death of the partner.

### 3. Potential Conflicts

Let

- $V$  = value of the shares
- $F_t$  = expected free cash flow in period  $t$
- $e$  = cost of equity
- $T$  = years until the capital beneficiaries obtain ownership of the shares
- $V_I$  = value of the interest of the income beneficiaries
- $V_C$  = value of the interest of the capital beneficiaries

Then the value of the shares in a company held by a trust may be stated as:

$$\begin{aligned}
 V &= \frac{F_1}{1+e} + \frac{F_2}{(1+e)^2} + \dots + \frac{F_T}{(1+e)^T} + \frac{F_{T+1}}{(1+e)^{T+1}} + \frac{F_{T+2}}{(1+e)^{T+2}} + \dots \\
 &= \sum_{t=1}^T \frac{F_t}{(1+e)^t} + \sum_{t=T+1}^{\infty} \frac{F_t}{(1+e)^t} \\
 &= V_I + V_C \tag{1}
 \end{aligned}$$

In general it will be true that if the company operates as a successful business, then both the income and capital beneficiaries will be better off. Specifically, if the company was able to identify policies which would increase the expected free cash flow stream,  $\{F_t\}$ , without simultaneously increasing  $e$ , then adoption of such policies would increase the wealth of both classes of beneficiaries. However, the company could adopt policies that would have the result of increasing the wealth of the income beneficiaries of the trust at the expense of the capital beneficiaries of the trust, or vice versa. The policy areas in which such results could arise are dividend policy, the risk policy of the

company, the capital structure choice decision, capitalization of a set of expected outflows or inflows, and investment policy. These are dealt with in the sub-sections below.

In the first three areas the results strongly parallel the equity-debt conflicts results that may arise in the context of investor-owned companies (Jensen and Meckling (1976), Galai and Masulis (1976)).

One of the cases that follows is illustrated by an example that is specific to a power retailing company. All other results have general applicability. For the sake of simplicity, the analysis presented in each part of the section assumes as the base case a no growth company, and thus:

$$\begin{aligned} V_I &= \frac{eV}{1+e} + \frac{eV}{(1+e)^2} + \dots + \frac{eV}{(1+e)^T} \\ &= V[1 - (1+e)^{-T}] \end{aligned} \tag{2}$$

and

$$V_C = \frac{eV}{(1+e)^{T+1}} + \frac{eV}{(1+e)^{T+2}} + \dots$$



$$= V(1+e)^{-T} \quad (3)$$

#### 4. Analysis of the Potential for Conflict

##### 4.1 Dividends

In a company with a normal shareholding structure, the payment of larger dividends now would (absent information effects) have no impact on shareholder wealth. However, in the case of a trust with income beneficiaries and capital beneficiaries the payment of additional dividends results in a wealth transfer from the capital beneficiaries to the income beneficiaries. This can be shown as follows. Assume that for the no growth company, an additional sum of \$D is paid at  $t = 1$ .<sup>v</sup> The interests of the income and capital beneficiaries then become  $V_I^*$  and  $V_C^*$  respectively, where

$$\begin{aligned} V_I^* &= \frac{eV + D}{1+e} + \frac{eV - eD}{(1+e)^2} + \frac{eV - eD}{(1+e)^3} + \dots + \frac{eV - eD}{(1+e)^T} \\ &= V_I + \frac{D}{1+e} - \left[ \frac{eD}{(1+e)^2} + \frac{eD}{(1+e)^3} + \dots + \frac{eD}{(1+e)^T} \right] \\ &= V_I + \frac{D}{1+e} - \frac{eD}{(1+e)^2} \cdot \frac{1-(1+e)^{-(T-1)}}{e/(1+e)} \\ &= V_I + D(1+e)^{-T} \end{aligned} \quad (4)$$

and

$$\begin{aligned} V_C^* &= \frac{eV - eD}{(1+e)^{T+1}} + \frac{eV - eD}{(1+e)^{T+2}} + \dots \\ &= V_C - \left[ \frac{eD}{(1+e)^{T+1}} + \frac{eD}{(1+e)^{T+2}} + \dots \right] \end{aligned}$$

$$\begin{aligned}
&= V_C - \frac{eD}{(1+e)^{T+1}} \cdot \frac{1}{e/(1+e)} \\
&= V_C - D(1+e)^{-T} \tag{5}
\end{aligned}$$

Thus payment of the additional dividend results in the income beneficiaries gaining the amounts with present value  $D(1+e)^{-T}$  while the capital beneficiaries suffer an equal loss. The amount of the wealth transfer is larger, the larger is the dividend, the lower is the cost of equity, and the earlier is the date on which the capital beneficiaries succeed to ownership of the shares in the company.<sup>vi</sup> Exactly the converse result would apply for a reduction in dividends.

## 4.2 Risk Shifting

The effect of shifting the investment mix of the company to projects with higher risk is to increase the risk associated with equity and thus to increase the cost of equity. Assuming commensurate increases in expected cash flows and the cost of equity, the value of the firm will not change. However, in this case the increase in risk will cause a transfer of wealth from the capital beneficiaries to the income beneficiaries. Assume that a shift in the investment mix of the no growth company results in the cost of equity increasing to  $e_1$ . Cash flows increase from  $eV$  to  $e_1V$ , so  $V$  is unchanged. The interests of the income and capital beneficiaries then become  $V_I^{**}$  and  $V_C^{**}$  respectively, where:

$$\begin{aligned}
 V_I^{**} &= \frac{e_1V}{1+e_1} + \frac{e_1V}{(1+e_1)^2} + \dots + \frac{e_1V}{(1+e_1)^T} \\
 &= V [1 - (1+e_1)^{-T}] \\
 &= V_I + V[(1+e)^{-T} - (1+e_1)^{-T}] \tag{6}
 \end{aligned}$$

and

$$\begin{aligned}
 V_C^{**} &= \frac{e_1V}{(1+e_1)^{T+1}} + \frac{e_1V}{(1+e_1)^{T+2}} + \dots \\
 &= V(1+e_1)^{-T} \\
 &= V_C - V[(1+e)^{-T} - (1+e_1)^{-T}] \tag{7}
 \end{aligned}$$

Thus the increase in risk causes a wealth transfer of  $V[(1+e)^{-T} - (1+e_1)^{-T}]$  from the capital beneficiaries to the income beneficiaries. The amount of the transfer is larger, the larger are both  $V$  and the increase in risk, and the earlier is the date on which the capital beneficiaries succeed to ownership of the shares in the company. Exactly the converse result would apply for a reduction in risk.

Normally the agency problem of asset substitution (that is, investing in a “higher risk” project than was anticipated) is described where there is a negative net present value project and a debt overhang. Wealth is then transferred to the equity holders from the debt-holders via the asset substitution. In the case of trusts with separate income and capital beneficiaries, no debt is required. Any project, even those generating cash flows to cover their aggregate costs, will result in wealth transfers.

### 4.3 Capital Structure

Introducing debt or increasing the level of debt in the capital structure will increase the cost of equity and, in the case of a classical tax system, will also increase the value of the company. However, in New Zealand, dividend imputation tax applies and therefore, in terms of tax effects only, the weighted average cost of capital is constant and the value of the company thus remains the same. A change in debt will cause wealth transfers in the same way as was analysed above for the case of a change in the investment mix. Any increase in leverage will increase  $e$  and will result in wealth transfers between the sets of beneficiaries. Hence an expansion of the firm that is financed by debt and which has a zero net present value will result in wealth transfers between beneficiaries – from the capital beneficiaries to the income beneficiaries.<sup>vii</sup> The larger the increase in debt, the larger the transfer of wealth from the capital beneficiaries to the income beneficiaries.

### 4.4 Capitalisation of Costs

Capitalisation and payment (or receipt) of a set of expected outflows<sup>viii</sup> or inflows causes wealth transfers between the beneficiaries. Assume that for the no growth company an adverse event occurs. The event is expected to result in additional outflows of \$ $c$  in each of years 1 and 2 with total present value of \$ $K$ , where  $T > 2$ . The value of the company thus declines to  $(V - K)$  and the interests of the income and capital beneficiaries become  $V_I^{***}$  and  $V_C^{***}$  respectively, where:

$$\begin{aligned}
V_I^{***} &= \frac{eV - c}{1 + e_1} + \frac{eV - c}{(1 + e)^2} + \frac{eV}{(1 + e)^3} + \dots + \frac{eV}{(1 + e)^T} \\
&= V_I - K
\end{aligned} \tag{8}$$

and

$$\begin{aligned}
V_C^{***} &= \frac{eV}{(1 + e)^{T+1}} + \frac{eV}{(1 + e)^{T+2}} + \dots \\
&= V_C
\end{aligned} \tag{9}$$

Thus the wealth of the income beneficiaries decreases by  $K$  but the wealth of the capital beneficiaries remains the same. However, if the company were to “value” and discharge the resulting liability (that is, close out its exposure to the anticipated cash outflows of  $\$c$  per annum), then the value of the company would remain at  $(V - K)$  but the interests of the income and capital beneficiaries would become  $V_I^{****}$  and  $V_C^{****}$  respectively, where:

$$\begin{aligned}
V_I^{****} &= \frac{eV - eK}{1 + e} + \frac{eV - eK}{(1 + e)^2} + \dots + \frac{eV - eK}{(1 + e)^T} \\
&= V_I - K + K(1 + e)^{-T}
\end{aligned} \tag{10}$$

and

$$\begin{aligned}
V_C^{****} &= \frac{eV - eK}{(1 + e)^{T+1}} + \frac{eV - eK}{(1 + e)^{T+2}} + \dots \\
&= V_C - K(1 + e)^{-T}
\end{aligned} \tag{11}$$

Thus by closing out a set of expected outflows, the company causes a wealth transfer of  $K(1 + e)^{-T}$  from the capital beneficiaries to the income beneficiaries. The amount of the transfer is larger, the larger is  $K$ , the lower is the cost of equity, and the earlier is the date on which the capital beneficiaries succeed to ownership of the shares in the company. Exactly the converse result would apply for a set of expected inflows.

## 4.5 Investment Policy

In the absence of budget constraints and other market imperfections, it is normal to argue that the company should implement any project for which the net present value is nonnegative. However, in certain cases this policy could result in wealth transfers from one set of beneficiaries to the other. Consider an investment with outlay of  $M$  and which is expected to yield  $r_1M$  each year to time  $T$  and  $r_C M$  in all later years. The NPV of the project is given by:

$$\begin{aligned} \text{NPV} &= \left[ \frac{r_1 M}{1+e} + \frac{r_1 M}{(1+e)^2} + \dots + \frac{r_1 M}{(1+e)^T} \right] + \left[ \frac{r_C M}{(1+e)^{T+1}} + \frac{r_C M}{(1+e)^{T+2}} + \dots \right] - M \\ &= \frac{r_1 M}{e} [1 - (1+e)^{-T}] + \frac{r_C M}{e} (1+e)^{-T} - M \end{aligned}$$

Thus  $\text{NPV} \geq 0$  if

$$[(1+e)^T - 1]r_1 + r_C \geq e(1+e)^T \quad (12)$$

That is,  $\text{NPV} \geq 0$  if (i)  $r_1 \geq e$  and  $r_C \geq e$ , or

(ii)  $r_1 \geq e$  and  $e \geq r_C \geq e(1+e)^T - [(1+e)^T - 1]r_1$ , or

(iii)  $r_C \geq e$  and  $e \geq r_1 \geq \{e(1+e)^T - r_C\}[(1+e)^T - 1]^{-1}$ .

The regions in  $r_1 \times r_C$  specified by conditions (i), (ii), and (iii) are illustrated in Figure 1 below.

**(Figure 1 about here)**

If the project is implemented and condition (i) holds then both classes of beneficiaries benefit from the project. However, if condition (ii) holds, then the income beneficiaries benefit at the expense of the capital beneficiaries. This case may appear unrealistic but

would arise if, for example, there were a contractual obligation to continue the project beyond time  $T$ .<sup>ix</sup> If condition (iii) holds, then the capital beneficiaries benefit at the expense of the income beneficiaries. This could easily be the case if “low” cash flows precede high cash flows. This could also easily induce underinvestment – if the income beneficiaries consider that benefits from an investment will accrue to the capital beneficiaries.

## **5. Limitations on Potential for Conflict**

Is the potential for conflict an issue of substance for the case of a trust such as the AECT? It might be argued that while the electricity reforms of the early nineties resulted in new structures for the industry, the position of consumers was actually unchanged. The Municipal Electricity Departments and Electricity Power Boards (the local distribution entities that existed before corporatisation) operated with an “accounting” break even pricing model. Thus, in a stationary state, consumers of electricity in the AEPB’s district could expect to obtain each year a benefit equal to the capital charge component of the total true cost of their purchases of electricity. In principle, the property right to this expected continuing benefit would have been capitalised into property prices for property owning consumers and reflected in the rents paid by tenant consumers. Assuming equally efficient operation by the AEPB’s successor company and distribution by the AECT of the company’s income to consumers, the benefits over the life of the trust would be maintained. Furthermore, if the reforms were effective, that is, the efficiency of operation improved, then the benefits over those years would actually increase. On obtaining ownership of the shares, the three local councils would be expected to provide additional benefits to their constituents at least equal to the income derived from the company. Therefore, as the property rights would overall be at least maintained it could be concluded that the potential transfers of wealth are a non-issue.

This conclusion suffers from at least two defects. Firstly, the property rights are ill defined, cannot be separately traded, and it is unlikely that the rights would be accurately reflected in the bargains struck in property sale or rental agreements.<sup>x</sup> Secondly, it is unlikely that the additional benefits made available by councils would bear any correspondence to the benefits individual consumers obtained as a reduction in

the cost of their purchases of electricity. Thus there is a real and substantial potential for conflict between the interests of income and capital beneficiaries of energy trusts such as the AECT.

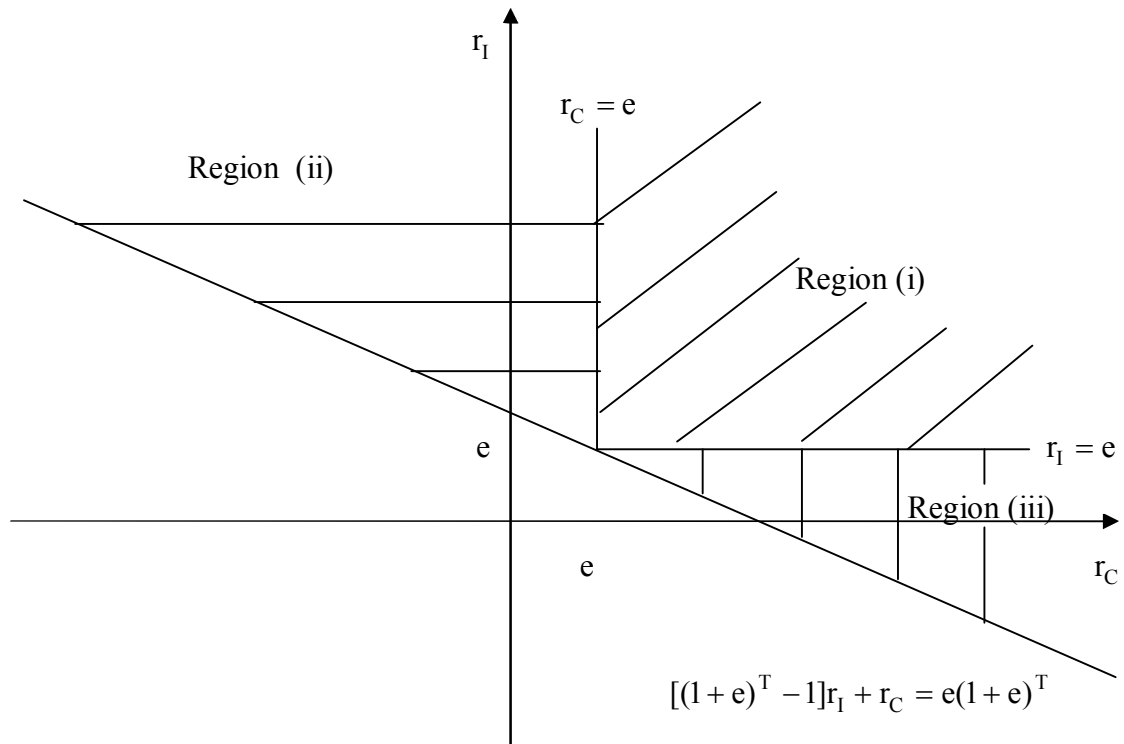
In principle, the transfers of wealth could go in either direction. However, the trustees appoint the directors of the company and therefore with triennial election of trustees by consumers, unconstrained pursuit of self-interest by the trustees would ensure that actual transfers passed only from capital beneficiaries to the income beneficiaries. There are certain administrative controls in operation on the company such as preparation of a Statement of Corporate Intent<sup>xi</sup>, and the trustees and directors are of course subject to extensive legal and other constraints on their actions. The trustees have a fiduciary duty to the beneficiaries of the trust and the directors have a legal duty to act in the best interests of the company. Nevertheless, the trustees have no specific guidance from either the trust deed or the law on balancing the interests of the income and capital beneficiaries and the only legal constraint on the company's ability to pay dividends is the solvency test – ability to meet debts as they are expected to become due and positive net worth. Thus the pressure of triennial elections is likely to see continuing transfers from the capital to income beneficiaries and this pressure can be expected to be particularly acute during the latter part of the life of the trust.

## **6. Conclusion**

Agency theory is traditionally concerned with potential conflicts of interest between “outside” shareholders and the owner-managers, and debt-holders and shareholders. This paper looks at agency issues where there is only one shareholder but where there are different claimants on the timing of the cash flows. The owner of shares here is a trust with different income and capital beneficiaries.

This paper shows that agency issues with regard to dividends, investment, and financing decisions also have applicability with trust ownership. In some respects the agency problems are more pervasive, as it becomes unnecessary to invoke special conditions (like a debt overhang and negative net present value projects) to explain and illustrate an agency problem.





**Figure 1:** In region (i) both sets of beneficiaries benefit from investment in the project. However, in region (ii) the income beneficiaries benefit at the expense of the capital beneficiaries and the converse occurs in region (iii).

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## Endnotes

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<sup>i</sup> Mercury had to make a choice between lines (the natural monopoly part of the activity), and retailing electricity. This choice was required as a result of legislative changes that stopped lines companies being involved in other parts of the sector (generation and retailing).

<sup>ii</sup> The Auckland City Council, Manukau City Council, and Papakura District Council.

<sup>iii</sup> From 1994 to 1997 Mercury Energy Limited distributed approximately 60% of earnings. In 1998 it reported a loss and did not pay a dividend. In the 1999 - 2000 years it declared dividends of almost twice earnings, and it was these dividends that were of concern to the capital beneficiaries.

<sup>iv</sup> These provisions are contained in sections 4, 52, and 53 of the Companies Act 1993.

<sup>v</sup> The result derived is not sensitive to when \$D is paid, as long as it is sometime in the period when dividends are paid to the income beneficiaries, that is some time in the first T periods.

<sup>vi</sup> It should be noted that if, say,  $T = 70$ , the effect of discounting is to make the transfers quite small. However, for periods as far into the future as  $T = 70$ , issues of intergenerational equity also arise in choice of the discount rate (see Portney and Weyant, (1999)).

<sup>vii</sup> It is acknowledged that additional debt may provide governance benefits, particularly in this case where each beneficiary's claim on the value of the firm is small.

<sup>viii</sup> In the context of this litigation this occurred in the following way. Vector had entered into a series of forward contracts for the purchase of electricity. As a result of the movement in electricity prices these contracts were out of the money. Vector then chose to close out the obligation by making a large payment.

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<sup>ix</sup> Many projects like open-cast mining have large negative flows towards the end of their lives as a result of having to restore land and waterways etc. Further, the residual income calculation is arbitrary to the extent that it depends upon the pattern of accounting depreciation that is applied over the life of the asset.

<sup>x</sup> It should be noted that with ill-defined property rights there is also the potential for conflict between the interests of current and future income beneficiaries. This issue is not explored in this paper.

<sup>xi</sup> As there are no well-defined property rights in equity, the legislation that is relevant for electricity lines companies requires a “Statement of Corporate Intent.” In essence this is an ex-ante contract between the company and its “owners” which specifies distribution policy, maximum levels of debt, performance targets etc. It can be thought of as an administrative process that is aimed at reducing some of the potential agency costs.