Employees as Creditors: Protecting their Claims

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Introduction

The failure of a firm has significant implications for its employees, most obvious of which is loss of employment and the economic and social consequences thereof. An additional cost is the financial loss arising from claims of the employee on an insolvent employer, which are unable to be met due to insufficient assets of the failed firm. These claims arise from accrued entitlements to (annual or long service) leave, redundancy payments triggered by insolvency which result from legislative provisions, or pension fund claims where, for example, contributions have been reinvested in the employing firm.

Losses to employees arising from employer insolvency have led to public policy intervention designed to protect employees against such loss. Underlying such intervention is recognition that some form of failure exists in the "market" for employee entitlements. While that can provide the rationale for intervention, it does not identify which (if any) of several potential policy remedies is appropriate.

Unfortunately, policy interventions sometimes occur as an initial response to urgent social and economic problems and become entrenched, even though they have not been subjected to a rigorous cost-benefit assessment against alternatives. It is argued here, that the current Australian approach to protecting employee entitlements falls into this category.

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[*] Director, Melbourne Centre for Financial Studies. This paper draws on material in Davis and Burrows (2003) and Davis and Lee (2005).

That current approach involves, primarily, an *ex post*, taxpayer funded, compensation scheme (GEERS) for lost entitlements of employees of failed firms. It was introduced in 2001 (amending a similar scheme introduced the previous year). *Ex ante*, it is an explicit government guarantee to a specific group of creditors (employees) to businesses, provided free of charge.

Such a policy approach has not generally found favor in other credit markets where market failure is perceived to exist. It has, for example, been used in crisis situations in banking markets to protect depositors, but few would argue that it is preferable to available alternatives as a permanent approach.

In banking, those alternatives include such things as explicit, industry funded, deposit insurance schemes, minimum capital requirements, depositor priority / preference (over other claimants), and asset portfolio restrictions. Employee entitlements are quite different to bank deposits, and the debtors (businesses and banks respectively) operate quite differently, but there is merit in considering whether similar alternatives are preferable to, or could complement, the GEERS compensation scheme.[1]

In this paper, some alternative mechanisms for protecting employee entitlements are analyzed and compared. It is argued that the costs of the approach adopted in Australia, involving a tax-payer government guarantee scheme, could be considerably reduced by simultaneous implementation of several alternative mechanisms. It is argued that the costs of these alternatives are much less than commonly perceived, and less than the benefits which would arise from their introduction.

Underpinning the argument is recognition that employees are, to some degree, involuntary creditors of their employers and unable to assess or easily manage the

credit risk associated with this status. The policy options examined in this paper can be seen as alternative (although not mutually exclusive) methods for reducing the credit risk faced by employees.

In Section 1 of this paper, some background to the nature of employee entitlements and problems arising from company failures is given. Section 2 elaborates on the notion of employees as creditors to their employer and the sources of market failure. Section 3 suggests a number of alternative (or complementary) policy approaches which might be adopted. Section 4 provides information on the cost of alternatives (or complements) to the GEERS scheme, and Section 5 concludes.

1.   Employee Entitlements and Company Failures

Employee entitlements consist of claims on the employer for amounts such as unpaid wages, unused annual or long service leave entitlements, as well as contingent claims such as redundancy payments which do not accrue until the workers' employment contracts are terminated at the point of insolvency.[2] These amounts and the risk involved can be substantial from the perspective of the employee, particularly since any loss occurring through employer insolvency occurs simultaneously with loss of employment.

Several large company failures at the start of the millennium made unpaid employee entitlements a political issue of importance. The collapse of Ansett Airlines left some 16,000 employees with an estimated $670m worth of employee entitlements unpaid (DPL, 2002). Other notable failures at around the same time included OneTel (with

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[1] One additional policy measure has been to accord employee entitlements priority status over other unsecured creditors in the event of insolvency, but behind secured creditors.
[2] In Australia, superannuation entitlements of employees participating in a company scheme are protected separately.

1,400 employees owed a total of $19m in accrued entitlements), Australian mining giant Pasminco, insurance company HIH and retailer Harris Scarfe[3].

But the problem is not confined solely to large corporate collapses. It has been estimated that up to 20,000 workers lose their jobs every year because of failed businesses and that, in total, employees would face about $140m a year in unpaid entitlements (DPL, 2004).

Through employee entitlements, employees provide (perhaps unwillingly) credit to their employer as a form of working capital at an implicit interest rate unrelated to the credit risk involved (Davis and Burrows, 2003).

For most employers, the amount of funding derived from this source is a relatively small proportion of the total funding of the company, although in aggregate the amount involved exceeds $50 billion (Davis and Burrows, 2003). Table 1 illustrates for an illustrative sample (and gives average figures for a large sample) of Australian listed companies using 2003 annual report data. For some labor intensive companies, employees are very significant creditors while, on average, employee entitlements are around 5 per cent of total debt claims.

2.   Employee Entitlements as a Form of Credit

The finance provided to companies by employees by way of entitlements involves risk, return and governance considerations. Consider the case of a firm which at some date has accrued obligations to employees of, for example, long service leave.

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[3] Other notable insolvencies include Patrick Stevedores, Exicom, the Sizzler Chain, Braybrook Manufacturing, Coogi and Cobar Mines.

Because that leave will not be taken until some future date, employees are providing credit to the company. The implicit, promised, rate of return on the credit provided is the rate of wages growth (since the dollar value of entitlements when paid is calculated by multiplying days accrued by the current salary level). This is unlikely to appropriately reflect the credit risk faced by the creditor employee.

There are several reasons to believe that there is "market failure" in this credit market. First, employees are to some degree "involuntary creditors", and do not have complete flexibility in adjusting the amount of credit provided, to the employer by way of accrued entitlements. Second, employees have limited ability to assess the credit risk of their employer. Third, optimal wealth allocation would be unlikely to lead to employees voluntarily holding significant financial wealth in the form of loans to their employer because default on those loans will occur simultaneously with loss of wage-income following company failure.[4] Fourth, corporate financing of this form does not involve capital market discipline or monitoring.

3.   Alternative Policy Responses

Faced with market failure in a credit market, there are a number of alternative policy responses which warrant comparison using (at least an implicit) cost-benefit analysis.

The current policy approach is primarily an *ex post* one of dealing with the symptoms of the market failure. Employee-creditors are eligible for compensation from a taxpayer funded scheme (GEERS) if their employer becomes insolvent and unable to meet its obligations. (Upper limits are placed on the amount of compensation which can be claimed.) GEERS becomes a claimant on the assets of the insolvent company, in place of the employee creditors to whom compensation has been paid.

Two other planks of policy are, however, also relevant, and aim to reduce the ultimate cost of claims made on the scheme. The first is the *Corporations Law* prohibitions on companies trading while insolvent (and thus running down assets available to meet creditor claims), together with the *Corporations Law Amendment (Employee Entitlements) Act 2000* which makes it an offence to take actions (such as transferring assets between related companies) designed to avoid payment of employee entitlements. The second is the granting of *preferential unsecured creditor* status to (and ranking of priority between different types of) employee entitlements.

Despite such measures, the cost of GEERS to the taxpayer is substantial. Recoveries by GEERS from the assets of failed businesses appear to be less than 10 per cent of the amount of compensation paid to claimants, which exceeded $60 million in 2002-3. (DPL, 2004). Moreover, legal complexities abound through financial engineering by creditors which may have the effect of thwarting the objectives behind granting of preferential unsecured creditor status. Floating charges over company assets which crystallize into a fixed (secured) charge upon insolvency are a case in point.[5]

One possible modification to the GEERS approach, consistent with what is commonly advocated for bank depositor protection schemes, would be to implement a user pays charge for the insurance protection provided by the scheme. In practice, administrative costs and difficulties in estimating fair insurance premiums appear to make such an approach infeasible. Taxpayer funding is then required, but at the cost of eschewing the opportunity to provide appropriate incentives to, and discipline of, employers through price signals (insurance premiums) based on estimates of credit

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[4] In theory, if not in practice, employees could seek implicit compensation for the risk borne on finance provided via deferred benefits through higher wage rates.
[5] The priority of such floating charges over employee entitlements was the subject of a recent U.K. court case (Tyndall, 2005) which determined that priority lay with employee entitlements.

risk. Similarly, inappropriate distributional consequences result with employers which are high credit risks not facing appropriately higher funding costs for employee provided credit.

Alternative *ex ante* approaches are possible, which tackle the problem prior to the event of failure and reduce or eliminate the "loss given default" faced by employees when an employer fails. One such possibility is to require that claims of employees are secured against risk free assets held by the employer. Another is to elevate the priority status of claims of employees above that of other creditors of the employer (the maximum priority proposal).

These alternative approaches have been implicitly or explicitly rejected by government on the apparent grounds that they impose excessive costs on companies through increases in the cost of debt finance. In the subsequent section it is argued that the costs of such approaches are much less than commonly argued and that they warrant consideration as a complement to a compensation scheme.

4. Assessing the Cost of Some Alternatives

In this section, an assessment of the cost of two alternative approaches to protecting employee entitlements will be made. The *Deferred Benefit (DB) Account* and the *Maximum Priority Proposal (MPP)* can both be seen as mechanisms for reducing the *Loss Given Default (LGD)* faced by employee creditors in the event of company failure. Because each reduces, but does not completely eliminate, credit risk, they are better seen as complements rather than alternatives to a GEERS style scheme. Their merit is that the cost to taxpayers of GEERS would be reduced, and that they would also improve credit market discipline over employers.

The DB Account

The *DB Account* (Davis and Burrows, 2003) envisages employers maintaining balances at least equal to reasonable aggregate provisions for entitlements in designated DB accounts at financial institutions. In the event of insolvency, employee entitlement claims would be paid from that account.

Administrative costs of such a scheme would be very small. The apparent drawback of such a scheme is that it appears to involve an increase in funding costs to employers, since the "free" working capital provided by employee entitlements must be replaced by other sources. In some cases that may be the case, but (as will be argued below) that is where employees are currently subsidizing high risk employers by involuntary provision of credit at a rate of return which does not reflect the credit risk involved.

Table 2 provides a highly simplified balance sheet for an employer. Panel A depicts the situation in the absence of the *DB Scheme*, while Panel B assumes that such a scheme has been implemented. The difference arising from the introduction of such a scheme is the addition of an equal value of assets and liabilities (corresponding to the size of employee entitlements) to both sides of the balance sheet. (For simplicity, it is assumed that no changes in working capital requirements occur). The liability of employee entitlements (of amount X) is secured against the asset of the *DB Account* (of amount X). Additional debt funds (of amount X) must be raised from the capital markets to replace the funds now tied up in the *DB Account*.

In a perfect capital market, where employees were receiving an appropriate, credit risk related return on funds provided by way of employee entitlements, this would have no effect on company value. Employee entitlements, now being free of credit risk, would receive a rate of return equal to that paid on the *DB Account*, against

which they are secured. The additional debt funds raised would have the same cost as the employee entitlement credit being replaced.

In practice new debt finance raised may cost significantly more than the funds being replaced. However, where that reflects capital market based assessment of the borrower's credit risk, the implication is that the employer was previously being subsidized by the employee-creditor who was not receiving an appropriate risk related return on funds provided. The employer now faces a cost of funds appropriately related to the credit risk involved and is exposed to capital market monitoring and discipline.

Ultimately, the economic case against adopting such an approach appears to rely on administrative costs, problems associated with compliance, and capital market imperfections which create additional (non-risk related) costs for companies forced to raise additional funds to replace those currently received from employee-creditors. While such costs and problems do exist, it is not apparent that they are of sufficient size to prevent consideration of such a scheme, at least as a complement to a GEERS style compensation fund..

The Maximum Priority Proposal (MPP)

The MPP was announced by the Prime Minister on 14 September 2001. It envisaged employee entitlements being elevated in priority above secured creditors. However, as part of its stock-take of Corporate Insolvency Laws, the Parliamentary Joint Committee on Corporations and Financial Services recommended: "that the maximum priority proposal not be adopted." (PJCCFS), 2004). Acceptance of finance industry assertions about the adverse effects of the MPP on the corporate credit market

appeared to be significant in reaching this conclusion. Unfortunately, little (if any) empirical evidence has been provided to support such assertions.

Davis and Lee (2005) provide some such empirical evidence, drawing on credit risk modeling techniques commonly used in financial markets. Those techniques utilize option pricing theory, and were initially popularized as a method of assessing credit risk by the work of Merton (1974). Credit spreads (the margin paid by the borrower over the risk free rate) are estimated by noting that a holding a risky debt security issued by a company can be modeled as equivalent to holding a risk free debt plus writing a put option over the assets of the debt issuer (with the strike price of the option equal to the promised debt payment). Consequently, credit spreads can be estimated once the leverage of the company and volatility of its asset value are known.

The option pricing approach can be applied to estimate credit spreads for both first ranking debt and for more junior debt. The effect of the *MPP* can thus be assessed by calculating the change in credit spread required by secured lenders if their first ranking status is downgraded to second ranking behind employee entitlements.

Some intuition behind the results derived from such an approach can be gained by noting that the credit spread on a debt security will be driven by the two key parameters of expected *Loss Given Default (LGD)* and *Probability of Default (PD)*. The expected return on a debt security (r^e) which has a contractual rate of r_q can be written as:

$$1+r^e = (1-PD)(1+r_q) + PD(1+r_q)(1-LGD) = (1+r_q)(1-PD \times LGD) \tag{1}$$

Consequently, to maintain a given expected return, increases in the probability of default and in the loss given default must be accompanied by increases in the quoted interest rate (and thus the credit spread over the risk free rate).

Consider a company which has secured debt obligations of D and employee entitlement of X (and no other liabilities) outstanding. It will become insolvent if assets fall below $(D+X)$, and PD is the probability of this event occurring. Suppose that A is the expected value of assets available to meet creditor claims if the company becomes insolvent, and that $A<D$. For secured creditors, the loss given default is then $(D-A)$, and employees would receive nothing. If employee entitlements are placed ahead of secured creditors under the MPP, secured creditors now have a higher loss given default of $(D - (A-X))$.[6] Because of the increase in LGD, the credit spread on secured debt will increase, but the extent of the increase will depend upon the size of X relative to D. If employee entitlements (X) are small compared to secured debt (D), the increase in LGD for secured debt will be small. If the probability of default (PD) is also small then, from equation (1) the increase in credit spread will be small.

The option pricing approach enables estimates of the increase in credit spread from the MPP to be estimated for companies with differences in overall leverage, relative importance of employee entitlements, and underlying business risk (as measured by asset volatility). Figure 1 provides a depiction of the payoffs for secured creditors (owed D) both before and after the introduction of the MPP. Before the MPP, the payoff as depicted is equivalent to that from holding a risk free debt, promising D, and writing a put option over the assets of the firm with a strike price of D. The Merton model for estimating the credit spread uses this equivalence, since to prevent arbitrage

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[6] This assumes A>X. If available assets (A) are less than employee entitlements (X), the LGD for the secured creditors under the MPP would be D.

profits, the current market value of the risky claim of *D* due at time T (at the risky

interest rate r_q per cent) must equal that of the risk free claim of *D* (at the risk free rate

of *r* per cent) less the market value of the put option *P*, which is calculated using the

Black- Scholes option pricing equation. Thus, using the arbitrage relationship:

$$De^{-rT} - P = De^{-r_qT} \tag{2}$$

the credit spread $(r_q - r_f)$ can be derived as:

$$r_q - r = -\ln[N(d_2) + N(-d_1)/L]/T \tag{3}$$

where N(.) is the cumulative normal distribution function, L = De^{-rT}/V is a "quasi-

leverage" ratio (where V is the firm's current value), σ is the volatility of firm value,

and

$$d_1 = [\ln\left(\frac{V}{D}\right) + \left(r + \frac{1}{2}\sigma^2\right)T]/\sigma\sqrt{T} \tag{4}$$

and

$$d_2 = d_1 - \sigma\sqrt{T} \tag{5}$$

Under the *MPP,* the payoff to secured creditors (who rank behind employee

entitlements promising X) is now equivalent to that from: (a) holding a risk free debt,

promising *D*, (b) writing a put option over the assets of the firm with a strike price of

D+X, and (c) buying a put option over the assets of the firm with a strike price of *X*.

(This is also equivalent to buying a call option with a strike price of *X* and selling a

call option with a strike price of *D+X*). Using this equivalence, the credit spread for

secured creditors under the *MPP* is now

$$r_q^{\#} - r = -\ln\{m[N(d_2^*) - N(d_2^{\#})]/L + N(d_2^*) + [N(d_1^{\#}) - N(d_1^*)]/L\}/T \qquad (6)$$

where the ratio of employee entitlements to firm value is given by m = Xe^{-rT}/V, and

$$d^{\#}_1 = [\ln\left(\frac{V}{X}\right) + \left(r + \frac{1}{2}\sigma^2\right)T]/\sigma\sqrt{T} \qquad (7)$$

$$d^{\#}_2 = d^{\#}_1 - \sigma\sqrt{T} \qquad (8)$$

$$d^*_1 = [\ln\left(\frac{V}{D+X}\right) + \left(r + \frac{1}{2}\sigma^2\right)T]/\sigma\sqrt{T} \qquad (9)$$

and

$$d^*_2 = d^*_1 - \sigma\sqrt{T} \qquad (10)$$

Davis and Lee (2005) provide estimates of the change in credit spread ($r_q^{\#}$ - r_q) for a range of realistic parameter values of volatility and leverage ratios for Australian companies. Note that (in addition to asset volatility) the key parameters are the ratios of secured debt to assets and of employee entitlements to assets. (Unsecured debt, and thus the more traditional leverage ratio of total debt/assets is not directly relevant, since unsecured debt ranks behind both secured debt and employee entitlements. Insolvency may occur if total assets fall below total debt but, if there is significant unsecured debt, not involve any shortfall for secured creditors and employees).

Based on a sample of 244 listed companies, almost 50 per cent of companies have secured debt/assets of less than 20 per cent and employee entitlements/assets of less than 1.5 per cent. For realistic assumptions about asset volatility, the probability of default (PD) of such companies is quite small, and the change in the expected loss given default for secured creditors arising from the *MPP* is also relatively small.

Consequently, the estimated change in credit spreads is extremely small, in the order of 2 basis points p.a. for five year debt (when asset volatility of 30 per cent p.a. and a risk free interest rate of 5 per cent p.a. is assumed).

For a group of more highly levered companies (secured debt/assets >40%, employee entitlements/assets >2.5%), the estimated increases in credit spreads are as high as 50 basis points, although only around 2 per cent of companies in the sample used fall into this category. While high, significant changes such as this indicate that employees (or, through GEERS, taxpayers) are currently bearing credit risk of those firms for which they are not compensated.

Based on these results, it appears premature to conclude that the maximum priority proposal would involve significant disruption to credit markets. For most companies the effect on credit spreads would appear to be negligible. For a small group of companies, there may be significant increases in the cost of secured debt, but those are the ones benefiting from a subsidized cost of debt at the expense of employees and/or taxpayers.

5.   Conclusion

This paper provides some initial steps towards an informal cost-benefit comparison of various policy approaches to dealing with the problem of default on employee entitlements in the event of employer insolvency. It has been argued that the approach currently adopted, of a taxpayer funded, ex post, compensation scheme, is at variance with policy approaches favored in other credit markets where investor protection is deemed to be an important issue. Given the specific nature of the credit market for employee entitlements, the political pressures arising when newly unemployed workers face additional financial hardship through employer insolvency, and the fact

that other policy approaches do not provide 100 per cent protection, there is a case for continuation of such a compensation scheme. (The desirability of rapid and cost effective payment of entitlements in such situations also prompts a role for a compensation scheme as a component of the insolvency process).

There are strong grounds for complementing the GEERS scheme with other policy measures, such as those outlined here. Both the *Deferred Benefits Scheme* and the *Maximum Priority Proposal* would reduce the cost of GEERS to the taxpayer by reducing the credit risk of employee entitlements. In addition, higher credit risk companies would no longer receive implicit subsidies from employee-creditors and would face enhanced credit market discipline.

Table 1
Employee Entitlements and Company Financial Structure
Selected Australian Companies: 2003

ASX Code	Company Name	Employee Entitlements as % of			Secured Debt/ Market Value
		Secured Debt*	Total Debt	Market Value (Debt + Equity)	
	Selected companies				
CML	Coles Myer	51%	12%	4%	8%
TLS	Telstra	23%	4%	1%	5%
RIO	Rio Tinto	49%	7%	2%	4%
BHP	BHP Billiton	21%	6%	2%	8%
FOA	Foodland	5%	3%	1%	28%
AMC	Amcor	14%	5%	2%	13%
TEM	Tempo	87%	26%	12%	14%
TOL	Toll	26%	11%	3%	11%
CCL	Coca Cola Amatil	10%	5%	2%	19%
WHS	Warehouse Group	152%	7%	2%	1%
RIN	Rinker	6%	3%	1%	13%
BLD	Boral	323%	7%	3%	1%
SKE	Skilled Group	169%	26%	7%	4%
Sample of 244 listed companies					
	Mean	19.7%	6.5%	2.1%	10.6%
	Median	11.0%	3.3%	1.1%	9.6%

Source: Davis and Lee (2005)

Table 2

Balance Sheet Effect of the Deferred Benefit Scheme

Before				**After**			
Assets		Liabilities		Assets		Liabilities	
Physical	*K*	Debt	*D*	Physical	*K*	Debt	*D+X*
Financial	*F*			Financial	*F*		
		Provisions for Employee Entitlements	*X*	DB Account	*X*	Provisions for Employee Entitlements	*X*
		Equity	*S*			Equity	*S*

Figure 1

Change in Secured Debt Payoff under the MPP

The solid line shows the payoff to secured creditors who are owed D when they rank ahead of other claimants (employee entitlements) who are owed X. The dashed line shows the secured creditor payoff when ranked behind the other claimants under the MPP. (For firm asset values A>D+X, the firm is not insolvent and secured creditors receive D in both cases).
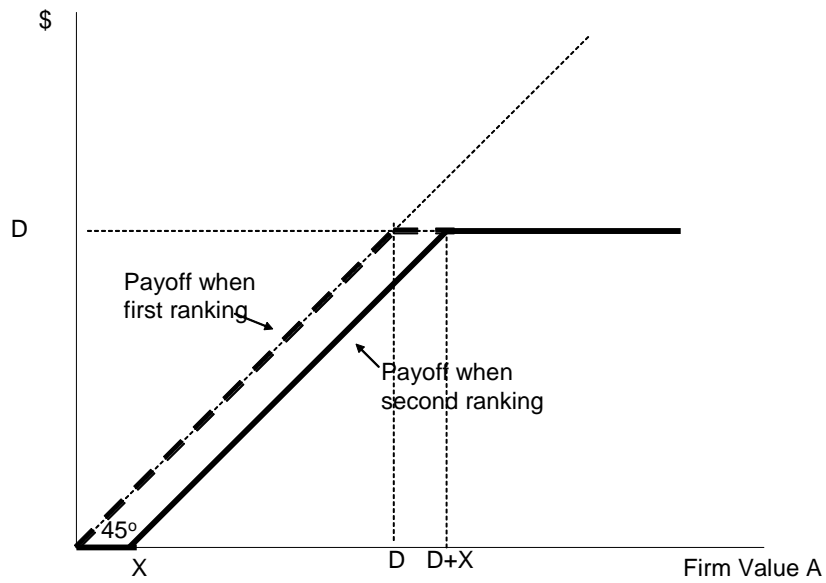
REFERENCES

Davis K and G Burrows, (2003) "Protecting Employee Entitlements" *The Australian Economic Review*, June, Vol. 36 No. 2, pp. 173-80.

Davis K and J Lee (2005) "Employee Entitlements and Secured Creditors: Assessing the Effects of the Maximum Priority Proposal", *mimeo*, Department of Finance, The University of Melbourne,

DPL (2004) "Corporate Insolvencies and Workers' Entitlements" Department of the Parliamentary Library, E-Brief: Online Only, issued Date August 2001; Updated 15 September 2004 http://www.aph.gov.au/library/intguide/econ/insolvencies.htm

Merton R, (1974) "On the Pricing of Corporate Debt: The Risk Structure of Interest Rates" *Journal of Finance* pp. 449-470

PJCCFS (2004) *Corporate Insolvency Laws: a Stocktake*, Parliamentary Joint Committee on Corporations and Financial Services June 2004, Commonwealth of Australia 2004, ISBN 0 642 71400 2, Senate Printing Unit, Parliament House, Canberra. http://www.aph.gov.au/Senate/committee/corporations_ctte/completed_inquiries/2002-04/ail/report/ail.pdf

Tyndall F, (2005) "UK ruling could help Walter's workers" *Australian Financial Review*, 27 July, p9.