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Employee Stock Option Grants and Firm Performance in the Netherlands

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1. INTRODUCTION

Although executive stock options—the right granted to management and/or employees to buy a company's stock at a pre-specified price during a specified length of time—have become a well-established part of management compensation in the USA (Hall and Liebman 1998; Murphy 1999), their use has permeated Continental Europe only recently. Listed companies in the Netherlands started to use this form of compensation extensively as of the mid-1990s. The idea underlying the use of stock options is that they can turn paid managers into owners, thus aligning their interests with those of shareholders. As a result, company managers will be more motivated to strive towards firms' financial-market-related performance. Moreover, these stock-based compensation plans may not only strengthen the link between compensation and performance for existing recipients, but can also assist a firm in bringing talented new staff on board. This appears especially relevant in high-tech sector firms.

Stock-based compensation has fuelled an avalanche of criticism from different sources. The Prime Minister of the Netherlands qualifies some option schemes as 'exhibitionistic enrichment'. The main Dutch trade union federation argues that, because of stock option awards, a typical Dutch manager now earns many times the wage of an average factory worker. This raises questions of justice and inequality of incomes and may, in turn, undermine harmonious labour relations within the country (*Het Financieele Dagblad*, 31 August 1999). Duffhues (2000) stresses the agency aspects of stock option plans referring to incentives to earnings management and/or distorted financial decision making. He proposes to introduce a new type of compensation option namely 'Delayed Average Rate Executive Call Options' (DARECOs). The pay-off of this option is based on the average realized market price during the employment contract of the option holder.

The controversy with stock options is also present in other European countries like Belgium, France, Germany, and Spain. The *Wall Street Journal Europe* in its 12 December 1999 issue reviews the situation in Europe and notes the following: 'stock options and the wealth that accompanies success in the new economy are widely regarded in Europe as

immoral, unjust or just plain excessive'. *The Economist* (7 August 1999) also observes that the spread of stock options may be distorting the economy, contributing to a temporary overvaluation of equities, encouraging shortsighted managerial decisions, and storing up problems for companies in the future.

In the wake of this heated discussion, we sketch the main characteristics of employee stock option plans adopted by Dutch listed companies. A campaign for better governance and transparent disclosure regarding executive compensation has started in the Netherlands in 1997 following recommendations of the Peters Committee.¹ One of these recommendations was that stock options issued to board members and other employees should be reported in annual reports together with the most important conditions. Since no legal requirement exists, Dutch companies voluntarily disclose information on aggregate compensation. Other important details such as the level and the composition of each executive's compensation, stock option grant date, stock option terms, and managerial share ownership are usually not reported. Almost three-quarters of Dutch quoted firms award stock options as part of employee compensation schemes. In more than 70 per cent of cases, stock options are exclusively granted to directors and senior managers. The popularity of stock options as a form of executive compensation has increased considerably as can be observed from the fact that half of all outstanding management stock options was granted in 1997.

The results of this chapter suggest that granting stock options depends on corporate operating performance. While controlling for firm-specific characteristics such as firm-size, leverage and industry, and corporate governance characteristics such as ownership structure and anti-takeover devices, we also find that stock option grants influence future firm performance.

The outline of the remaining part of the chapter is as follows. Section 2 explores the contrasting merits, expounds the pros and cons of stock options and concisely reviews prior research. Section 3 describes the sample and Section 4 presents the features of employee stock option plans in the Netherlands. The relationship between corporate performance and employee stock option grants is investigated in Section 5. Finally, Section 6 summarizes the main findings.

2. THE PROS AND CONS OF EXECUTIVE STOCK OPTIONS

The first argument in favour of executive stock option schemes is that agency conflict between managers and shareholders are reduced. With an increased alignment of interests, managers have incentives to take those actions that increase shareholder wealth. Empirical evidence on the use of stock option schemes come primarily from the USA. Heath *et al.* (1999) find that the mean expected value of stock options constitutes 160 per cent of base yearly salary in the US (the median is 35 per cent). Conyon and Murphy (1999) compare the composition of chief executive officers' pay in the US with that of the UK. They find that stock option grants constitute one-third of total pay of US CEOs compared to only 10 per cent for UK CEOs. In addition, the median stock option compensation for US CEOs is more than ten times that of UK CEOs. Hall and Liebman (1995) find that, for a given change in firm value, the incentive effects of salary and bonus changes are fifty-three times smaller than those from stock options. With long-term compensation schemes, managers

have, therefore, increased incentives to spend more effort to achieve higher earnings and/or market value.

A second argument is that executive stock options reduce the risk-averse behaviour of managers (Murphy 1999). When managers receive compensation in the form of fixed salary only, they do not have additional incentives in searching for new and value maximizing investments. This feature, along with their inability to diversify firm-specific human capital and their concern for job security, reinforces a tendency for managers towards avoiding risky investment projects. Empirical support of the risk-averse hypothesis in the US is found by DeFusco *et al.* (1990). For firms announcing the adoption of executive stock options plans, they find an increase in the variability of stock returns.

Thirdly, stock option plans can also bring about considerable tax advantages for employees and firms (Beatty 1995; Conyon and Murphy 1999). The tax impact of stock options in the Netherlands is analysed by Veld (1999). For personal income tax purposes, the value of employee stock options is determined by Dutch tax authorities as a percentage of the price of the underlying stock and is taxed as ordinary income at the moment these options are received by an employee. This rule can lead to a favourable tax treatment of employee stock options in a booming market.² Moreover, if an employee can demonstrate that the fiscal value of stock options is above the fair value (which is hardly the case), then the option is taxed according to the fair value.

Finally, stock option schemes are considered to be an attractive employment condition for both existing and new employees. Granting stock options has become a necessity in competitive and international labour markets, where retaining and attracting highly qualified personnel is an outright challenge. In this way, employee options schemes reduce a firm's asset risk, which results in a lower systematic risk of the stock (Duffhues 2000).

There exist several arguments against the use of employee stock options. Some authors do not find a strong link between executive stock options and performance (Jensen and Murphy 1990). Likewise, Conyon *et al.* (1995) report a very small pay-performance sensitivity in the UK. Stock options may make managers non-neutral with respect to risk-taking. Given that stock options become more valuable as the volatility of stock returns increases, managers may be inclined to raise company risk in an inadvertent way. Yermack (1997) confirms this potentially opportunistic behaviour by USA managers who receive stock options prior to the release of good news. Furthermore, executive stock options may allow managers to convert private information into hard cash through insider trading transactions.

Another important criticism of executive stock options is that these are poorly understood. Executive stock options are not transferable and the exercise decision is made by executives who can influence the stock price itself. Stock option plans easily get the nod of non-executive board members, without a deep understanding of the complex nature of stock options and the incentives they create (Hall and Liebman 1998). Additionally, the costs of stock options for the shareholders and the firm are not adequately reported in company's financial statements (Matsunaga 1995; Duffhues *et al.* 1999). Murray *et al.* (1998) find that USA companies granting management options overstated their profits by as much as 50 per cent in the financial year ending 1998. Stock options are often stumbling stones in mergers between US and foreign companies (*The Economist*, 8 May 1999).³ Finally, stock options create puzzles for risk managers because of the short position in the stock after

granting options. These positions create emphatic questions about the need for hedging (Duffhues 2000).

3. SAMPLE DESCRIPTION

Our investigation is based on all 168 industrial firms listed on the Amsterdam Exchanges at the end of 1998. Companies in the Netherlands are encouraged to voluntarily disclose information on top management compensation—including salary, bonus, and stock options—in the annual reports. No other strict requirements exist for full and timely disclosure. Information on the award of stock option plans is disclosed by 119 companies (71 per cent of all listed Dutch companies) in the annual reports. Six recent IFOs were excluded from the sample.

As there is no standardized reporting practice, Dutch companies disclose compensation-related information in annual reports in a variety of ways. It is common for companies to report the aggregate compensation of all board members. Thus, it is not possible to know managerial compensation on individual basis. Some companies report only the total number of outstanding employee stock options while some others report only the total number of options granted during the particular year. Many companies report information on stock options granted to all employees as a whole without providing separate figures on those granted to board members. Only a few Dutch companies report separately detailed information on stock options, salary and bonus for individual managers. It is also difficult to assess the reason of granting employee stock options. The most cited reason for using stock option schemes is the desire to strengthen the involvement of managers and employees in the firm (mentioned by 18 per cent of firms).

For all firms listed in 1998, which report employee stock options grants in the 1997 annual reports, we hand-collect all disclosed information: option-specific data such as price and number of options granted to management and other employees, price and number of options exercised, and the total number of stock options outstanding. Total assets, total sales, market capitalization, and/or its number of employees, firm-age, operating income, after-tax net income and industry type are collected from annual reports, and from the database REACH.

Prior studies show that compensation practices differ across industries (DeFusco *et al.* 1990; Conyon and Murphy 1999; Murphy 1999). Thirteen per cent of our sample belongs to the construction industry, 10 per cent to metals and machinery, and 9 per cent to each of these three industries: electronics, financials, and wholesale trade. Computer and technology-oriented firms constitute 6 per cent of the sample.

The descriptive statistics of sample firms as of 1997 are shown in Table 28.1: Panel A reports firm characteristics and Panel B presents performance measures. The company with the largest market value of common equity that has adopted a stock option plan is valued at Euro 108 billion (Royal Dutch), while the smallest firm has a market value equal to Euro 39 million (Porceleynne Fles). The median debt-to-equity ratio (D/E) is almost 2, but varies widely. For instance, the D/E ratio of the financial firm van der Hoop Effectenbank is almost 33, whereas that of Philips Electronics amounts to a mere 1.7. Philips Electronics has the largest number of employees (268,000 employees) followed by Ahold (121,000 employees),

Table 28.1. Summary statistics of *sample* firms awarding employee stock options

	TA (Euro '000)	TS (Euro '030)	MVE (Euro '000)	D/E	EMPL	Listing
<i>Panel A: Firm characteristics</i>						
Mean	9,239,983	3,206,061	3,567,355	3.29	n,461	23
Median	349,168	519,173	334,224	1.91	2,684	13
Minimum	1446	366	3,918	0.09	12	2
Maximum	379,560,378	71,135,040	108,284,212	37.99	268,431	118
Standard deviation	45,883,050	8,754,860	11,873,057	4.92	3,111	23
No. of firms	113	110	113	113	113	112
	EPS (Euro)	OPS (Euro)	ROA (%)	ROE (%)	PE	M/B

<i>Panel B: Firm performance</i>						
Mean	2.087	3.189	0.087	0.173	17.65	5.766
Median	1.507	2.268	0.097	0.176	14.5(1)	2.655
Minimum	2.111	2.119	-1.784	-5.850	-19.423	0.340
Maximum	13.623	18.698	0.369	1.713	113.353	113.621
Standard deviation	2.192	3.146	0.201	0.636	16.446	12.341
No. of firm:	113	113	113	113	113	113

The table shows summary statistics for the following variables: total assets (TA), total sales (TS), market value of equity (MVE), debt/equity ratio (D/E), average number of people employed (EMPL), number of years elapsed since the start of listing (Listing), earnings per share (EPS), operating earnings per share (OPS), return on total assets (ROA), return on common equity (ROE), price-earnings ratio (PE), market-to-book ratio of common equity (M/B).

4. THE AWARD OF EMPLOYEE STOCK OPTIONS

All but two sample companies disclosed data on the total number of options outstanding at fiscal year-end 1997. The first column of Table 28.2 (TOTOPT) shows that the average firm has 1.50 million employee stock options outstanding and that the number of options varies widely. For instance, Baan Company has 22.3 million outstanding stock options,

Table 28.2. Summary statistics of employee stock options granted by Dutch firms

	TOTOPT	MNGOPT	MGRNT97	MNGT/TOT	ORNT/MNGT	ORNT/TOT	OPT/NOO	EX/HRP	EX/BVE	EX/MVE
0	1,305,262	582,752	349,255	0.73	0.377	0.226	0.873			
0	292,000	132,400	72,500	1	0.31	0.15	0.868			
1	4,000	4,000	2	0.037	0	0.001	0.189			
1	22,309,000	7,109,538	7,711,000	1	1.236	0.231	1.803			
5	3,394,763	1,245,433	972,733	0.306	0.298	0.332	0.278			
No. of firms		59	44			111	107	106	106	106

management (MNGOPT); number of options granted to management in 1997 (MGRNT97); fraction of management options relative to total outstanding options (MNGT/TOT); fraction of management options granted in 1997 relative to outstanding management options (GRNT/MNGT); fraction of management options granted in 1997 relative to total outstanding options (EX/SHRP); fraction of total exercise value relative to market value of equity (EX/MVE).

whereas Porceleyne Fles has only 4,000 stock options. The median number of total outstanding stock options amounts to 292,000. The second column of Table 28.2 provides information on the total number of management options outstanding (MNGOPT). Only fifty-nine firms (52 per cent) disclose this information. In light of the opaque disclosure on management options, we cannot ascertain whether these options belong to executive/non-executive board members and/or senior managers.⁵ Management options are most widespread at Philips Electronics, with the maximum number of management options outstanding equal to 7.1 million, whereas Porceleyne Fles has only 4,000 options. It is interesting to note that in two firms, managers are kept out of stock option plans as these are targeted at other employees on an exclusive basis. Seventy-nine companies (70 per cent) disclose information on stock options awarded to senior managers during the fiscal year 1997 (MGRNT97). The average number of options granted during the year 1997 equals 349,255 while the median number amounts to 72,500. Many multinational enterprises such as Royal Dutch, Philips, Ahold, PolyGram, KNP-BT, and KLM are leading the way in granting management options.

The fraction of total outstanding management options relative to the total outstanding stock options (MNGT/TOT) is presented in the fifth column of Table 28.2: the lion's share of stock options (73 per cent) is granted to board members and senior managers. The next two columns of Table 28.2 show the fraction of management options granted in 1997 relative to the total number of outstanding management options (GRNT/MNGT) and relative to the total number of outstanding stock options (GRNT/TOT), respectively. Fifty per cent of total management options is granted in 1997. The number of stock options granted to senior managers in 1997 is equal to 38 per cent of the total number of outstanding stock options.

The fraction of total stock options relative to the total number of outstanding common stocks (OPT/NOS) averages 3 per cent, while the median is 1.5 per cent. In contrast, Aboody (1996) reports that the mean fraction of outstanding stock options relative to outstanding shares is 9.4 per cent in the US (median is 7.5 per cent). This low ratio for our sample firms indicates that Dutch firms are exposed to neither a huge risk of earnings-per-share dilution nor voting power dilution. But, the risk of dilution can be substantial for specific companies. For instance the sample contains one firm which has granted stock options to its employees amounting to 23 per cent of total common shares outstanding.

Information on the exercise price of stock options is also collected from annual reports. Several firms disclose detailed information containing the exercise price of stock options with differing maturities. In the final three columns of Table 28.2, the fraction of the average exercise price relative to the share price (5X/SHRP) is disclosed. As companies do not usually report the prevailing market price of stocks at the time of granting stock options or announce the exact grant date, the end-of-fiscal year share price is used, as a benchmark. The average exercise price of employee stock options is about 88 per cent of the end-of-year share price. Murphy (1999) reports that the exercise price equals the grant-date fair market value in 95 per cent of the regular option grants in the USA. The mean fraction of total exercise value relative to the book value of firm's equity (EX/BVE) equals 12 percent (with a median of 4 per cent). Finally, the average fraction of total exercise value relative to the market value of common equity (EX/MVE) is 2.5 per cent.

5. EMPLOYEE STOCK OPTIONS AND FIRM PERFORMANCE

We now test the relationship between stock option grants and firm performance. The standard testing procedure followed in the compensation literature uses manager's compensation as the dependent variable and firm performance as the independent variable (Murphy 1999). As stock options are a form of incentive-based compensation, a non-contemporaneous form of relationship is estimated. Previous studies (Canyon and Murphy 1999; Murphy 1999) indicate that monitoring mechanisms used by shareholders usually depend on size, leverage, and industry. As other governance mechanisms may influence executive compensation, we control for these governance characteristics. For example, when ownership concentration of firms is high, shareholders have higher incentives to monitor managers more closely, which reduces the need to use incentive-based compensation. We also control for the presence of anti-takeover devices. Almost all Dutch firms have multiple takeover defence measures that reduce the disciplinary effect of the market for corporate control (Kabir *et al.* 1997). In the absence of takeover threats, shareholders may try to restore managerial discipline with increased incentive-based compensation. Managers of protected firms may also have a decisive say in setting their own compensation.

Regressions (1) and (2) of Table 28.3 are univariate, relating previous year's performance with current year's stock option grants. These results indicate that previous period's operating performance has a positive influence on stock option grants. The multivariate analysis (regressions (3) and (4)) include firm-specific and corporate governance characteristics. Including four control variables does not affect the positive relationship between firm performance and stock option grants. The ROA coefficient increases slightly, but the corresponding *t*-value declines somewhat. ROE is also positive and statistically significant. Firm size, as measured by the natural logarithm of total assets, is negatively related with stock option grants. Leverage, as measured by the debt-equity ratio, is significantly positive in regression (3), but insignificant in regression (4). Ownership concentration, as measured by the Herfindahl value of all blockholdings, is insignificant in both regressions. Similarly, the coefficient of the anti-takeover device, which is a dummy variable that equals 1 if a firm has issued non-voting shares and 0 otherwise, has no significant impact on stock option grants.⁶ Since firm size and ownership concentration are correlated, a separate regression is estimated omitting firm size, but the results do not materially change. The results obtained from this study are qualitatively similar to those reported by de Jong *et al.* (2000). Likewise, they do not find a significant relationship between firm value as measured by Tobin's *Q* and different corporate governance characteristics like ownership structure and anti-takeover measures.

By granting stock options to managers and employees, subsequent performance of firms is expected to improve. Therefore, we estimate a model using ROA and ROE for the year 1998 as the dependent variable and stock option grants in 1997 as the explanatory variable. The regression results are presented in Panel B of Table 28.3. The univariate results of regressions (5) and (6) show that stock options granted in 1997 have a significant positive impact on the ROA and ROE in 1998. Of the four control variables, none is statistically significant in regression (7), and only leverage is significant in regression (8). The regression

Table 28.3. Regression results for stock option grants and firm performance

Panel A: Regression of stock option grants on prior firm performance

	(1)	(2)	(3)	W
Intercept	0.325*** (7.577)	0.334*** (9.187)	1.327*** (4.451)	1.473*** (5.597)
Return on assets	0.460** (1.946)		0.596 (1.539)	
Return on equity		0.101*** (2799)		0.163** (2.105)
Firm-size			-0.076*** (-3.121)	-0.078*** (-4.139)
Leverage			0.235* (1.913)	-0.025 (-0.972)
Ownership concentration			0.141 (0.708)	0.078 (0.394)
Anti-takeover device			-0.006 (-0.095)	0.005 (0.071)
Adj. R ²	0.04	0.09	0.27	0.29
F-statistic	3.79**	7.84***	5.76***	6.35***

Panel B: Regression of future firm performance on stock option grants

	(5) ROA98	(6) ROE98	(7) ROA98	(8) ROE98
Intercept	0.067*** (5.220)	0.242*** (2948)	0.197** (2.268)	0.82 (1.347)
Stock option grants	0.102*** (3.966)	0.463*** (28.18)	0.726** (2.206)	0.73 (1.433)
Firm-size			0.009 (-1.620)	-0.038 (-1.125)
Leverage			0.004 (1.215)	0.082*** (4.192)
Ownership concentration			0.36 (0.620)	4)
Anti-takeover device			0.012 (0.674)	0.020 (0.191)
Adj. R ²	0.19	0.10	0.16	0.26
F-statistic	15.68***	7.94***	3.21	5.6***

This table shows the results for the regression model where the dependent variable is the fraction of management options granted in 1997 relative to total outstanding options (panel A). The explanatory variables are the following: firm performance in 1996 measured by ROA and ROE; firm-size is the natural logarithm of book value of total assets; leverage is measured by the debt-equity ratio; ownership concentration is measured by the Herfindahl index of all blockholdings; anti-take-over device is measured by a dummy variable with a value of 1 if the firm has preferred defense share mechanism, 0 otherwise. Panel B shows the results for the regression model where firm performance of 1998 (measured by ROA and ROE) is used as the dependent variable. The explanatory variables include stock option grants defined as the fraction of management options granted in 1997 relative to total outstanding options. The F-statistic is reported within parentheses. ***, **, and * represent statistical significance at 1, 5, and 10 per cent level, respectively.

analysis is also performed with industry dummies, none of which is statistically significant. Overall, the results presented here indicate that employee stock option grants are closely related to firm's accounting performance. Well performing companies issue stock options and, once options are granted, there is an impact on firm performance.

6. CONCLUSION

Stock options are increasingly used as part of management and employee remuneration in the Netherlands. There exists no legal regulation mandating publicly traded companies to disclose information on executive compensation and employee stock options, though there are 'recommendations' of accounting organizations. Seventy-one per cent of Dutch listed companies disclose information about management and employee stock option schemes. Stock options are largely the prerogative of managers. On balance, 73 per cent of total employee stock options are held by executive board members and top managers. Half of all outstanding management stock options are granted in 1997 alone. We find a positive relationship between stock option grants and firm's operating performance. Firms with high returns grant relatively more employee stock options. Furthermore, stock option schemes lead to higher operating performance in the subsequent year.

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Notes

1. The Committee on Corporate Governance, popularly known as the Peters Committee (named after its chairman), addressed corporate governance issues in the Netherlands. It has formulated forty recommendations on the disclosure of governance-related information and the working of management and supervisory boards. The Peters Committee is equivalent to the Cadbury Committee in the UK.
2. In the US, stock options generally do not result in taxable income until the year of exercise or later. In addition, this income is often taxed at a reduced capital gains rate.
3. Investors and executives of non-US firms appear to have difficulties in accepting the generous stock option compensation practice prevailing in US firms.
4. A meaningful analysis would involve comparing performance with that of a matched sample of firms without stock options. But, the small number of Dutch listed firms without stock options does not allow such analysis.
5. Many firms report options awarded to top ranking officials without making specific reference to management board. It is also not possible to determine whether managers of the remaining sample firms receive stock options or not. Hence, these and following descriptive statistics should be interpreted with some caution.
6. Additional analysis is performed including industry dummies in these regressions. The coefficients of industry dummies are mostly positive but not statistically significant. Also, other proxies for ownership concentration and anti-takeover devices are used as explanatory variables. There are no qualitative changes in the obtained findings. These regression results are, therefore, not presented.

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