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Work-Family Benefits: Which Ones Maximize Profits?*

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Despite the growing attention given to work-family programs in the popular media (e.g., Hammonds, 1996; Lawlor, 1996; Moskowitz and Townsend, 1995), few studies have attempted to measure their financial impact on the firms which provide such benefits (see Lobel and Faught (1996) for difficulties in quantifying the effects of specific programs). This study attempts to fill the gap by determining which work-family programs have a significant effect on the profitability of the firm and measuring the magnitude of that impact. In the process, we are able to pinpoint particular benefits that our sample firms may, from the point of view of maximizing profits, be over-providing or under-providing[1] relative to their optimal level. While we follow standard economic practice and focus on profit-maximization, we are aware that for many firms, profits are not the sole motivating factor as, increasingly, organizations are becoming sensitive to the pressures facing employees endeavoring to balance family and job responsibilities.

One source of pressure on firms to introduce work-family programs came from the changing needs of a

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[1] Economic theory suggests that for any firm which has a clear-cut objective, there exists an appropriate level of benefits which is consistent with its stated objectives. Hence the terms "over- and under-provide" would refer to benefit levels that are higher or lower than this theoretical optimum.

work force increasingly comprised of women with families (Hammonds, 1996). The increased participation of women in the labor force occurred not only for all women (56% in 1996 versus 51% in 1980), but was especially dramatic (a jump from 45% in 1980 to 63% in 1996) for married women with children under the age of six (U.S. Department of Commerce, 1998). Consequently, there was a substantial rise in the number of dual-earner families. For instance, in 1996, in over half of the 53 million married couples both husband and wife worked outside the home. These dual-earner families significantly outnumbered the 10.1 million "traditional" married couple families in which the husband worked for pay and the wife did not (Bureau of Labor Statistics and Bureau of the Census, 1997). These trends contribute to the fact that currently only 16 percent of full-time workers go home to a non-employed spouse (Barker, 1995). The stress of having another full-time job waiting at home after a full day at the office has both professional and personal effects (Johnson, 1995). These stresses are likely to lower the effectiveness of workers, as indicated by numerous studies (Auerbach, 1988; Axel, 1996; Bailyn, 1993; Ferber and O'Farrell, 1991; Gonyea and Googins, 1992; Magid, 1983; Zigler and Frank, 1988).

With the changing demographics of their work force, many companies began to revamp their work-family programs. Anecdotal evidence suggests that this was done in part to accommodate the needs of a work force increasingly comprised of women with families (Hammonds, 1996). For instance, the rise of dual income families made certain traditional benefits, such as family medical care, redundant. Whereas in 1993, 82 percent of full-time employees in medium and large private establishments were covered by the firms' medical care plans, by 1997 that figure dropped to 77 percent (Bureau of Labor Statistics, 1997a). Concurrently, other new benefits became increasingly relevant for employees such as the ability to take a day off to care for a sick child, a flexible schedule to attend a parent-teacher conference, extended family leave to accommodate long-term family illnesses, child-care subsidies, and onsite day-care. The net effect is that total benefits have mushroomed into a major expense for firms, comprising around 28 percent of the total cost of compensation (Bureau of Labor Statistics, 1997b).

Has the expansion of programs helped worker productivity? To date, studies about work-family programs and productivity have either relied on anecdotal evidence to examine a range of programs or have used statistical analysis to look at only one specific type of work-family program. Focusing first on studies in the former category, surveys indicate that many employers have been experimenting with new or enhanced work-family benefits to increase worker productivity by reducing absenteeism and turnover (Hammonds, 1996). Numerous studies use anecdotal evidence gathered through interviews with managers, workers and CEOs to support the claim that the implementation of work-family programs radically improves productivity (Barker, 1995; Capowski, 1996; Galinsky *et al.*, 1991; Hammonds, 1996; Johnson, 1995; Lawlor, 1996; Osterman, 1995; Soloman, 1994). Other studies use nation-wide, multi-firm surveys to confirm the belief of managers that

such programs lead to improved recruitment, morale, public image, absenteeism and turnover (Burud *et al.*, 1984; Magid, 1983; Perry, 1982). In addition, there are case studies of particular firms that have implemented such programs; these bring out the disparity between the managers' and the workers' estimates of the effect on productivity (Friedman, 1991). Consistently, the workers' estimate of the effect is greater than that of managers. Furthermore, these case studies point to significant variation in the success of these programs across firms, which suggests that the corporate culture and the structure of the work have a substantial impact on how successful these programs are. For example, the proportion of managers who perceived an increase in productivity from a subsidized on-site child-care center ranged from 32% to 72% depending on the study, while the proportion of employees who perceived such an increase ranged from 47% to 73%.

In contrast to studies relying on anecdotal evidence, Shepard *et al.* (1996) use statistics to analyze productivity. Their study, however, focuses on the pharmaceutical industry and only considers the effect of one particular benefit: flex-time. Using a random effects model, they conclude that the effect of flex-time on productivity was positive and both statistically and economically significant.

Our study departs from earlier work in both scope and methodology. What makes our study unique is that we apply statistical analysis to a broad range of work-family programs across many firms and industries. This enables us to draw policy conclusions based on a careful study of actual data rather than on casual empiricism.

The remainder of this article is as follows. The empirical model which underlies our statistical analysis is developed in the next section. Thereafter, we discuss the data used in the study and present selected descriptive statistics. Our empirical results which follow indicate that programs vary significantly with regard to their impact on firm profitability. Finally, we conclude, give policy recommendations, acknowledge limitations of the study, and suggest avenues for further research.

Empirical Model of Firm Profitability and Work-Family Programs

An important determinant of a firm's profit function is compensation to its employees. In this section we build a simple model of a profit function which seeks to answer the question, "Which work-family programs affect the profitability of the firm and what is the magnitude and direction of this effect?" The theoretical underpinning of our model is the efficiency compensation theory whereby employers pay above-market compensation — be it in terms of wages, benefits or both — to increase worker productivity. This productivity boost can come from several sources: by the higher quality of workers that are attracted, by an improvement in efficiency of existing workers, and by a reduction in employee turnover. Workers who are being paid above-market compensation are assumed to be less likely to quit, feel more committed to the firm, and be more industrious. To the extent that this is the case, the firm can also invest more in training and push workers harder, perhaps by asking for longer hours. The combined effect will allow the

firm to increase profits (Yellen, 1991).[2]

Though the efficiency wage theory implies that higher compensation leads to increased profits through a productivity stimulus, the theory is too general to be used by firms as a practical guideline. To a firm struggling with problems of budget allocation, specific information identifying those benefits yielding highest returns and determining their optimal level is crucial. We seek to provide this information by focusing on a selected subset of benefits.

Assuming that a firm's goal is to maximize profits, the profit function may be expressed as follows:

$$\pi = R\ (p, q) - C\ (c) \qquad (1)$$

where π is the profit function, R and C are the total revenue and total cost functions, respectively, p is the product price, q is a vector of all factors affecting output (including capital, labor, productivity and demand factors), and c is a vector of factors affecting costs (including wages and benefits).

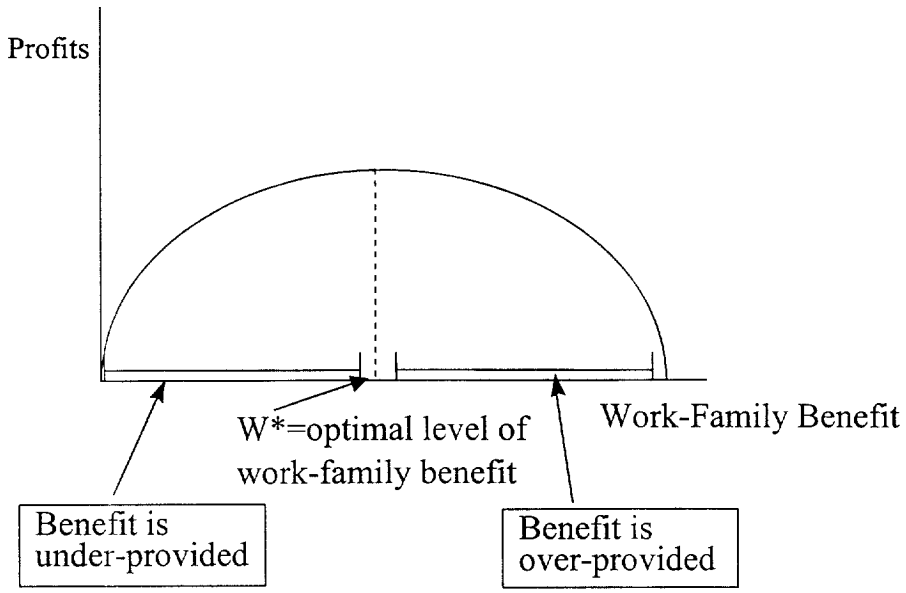
According to the theory of efficiency compensation, there will be both direct and indirect effects of benefits on a firm's profits. Higher benefits directly increase a firm's costs. Indirect effects stem from two separate mechanisms as described in the efficiency compensation literature (e.g., Campbell, 1993, Cappelli and Chauvin, 1991). First, productivity goes up, *ceteris paribus*, as better workers are attracted and existing workers are induced to reduce shirking. Second, turnover costs decrease as relatively higher compensation tends to inhibit potential quitters.

The profit-maximizing firm will choose the level of each work-family benefit it provides by equating the marginal revenue of that benefit with its marginal cost. In other words, the firm will continue to raise the level of the work-family benefit as long as the increased revenue exceeds the additional cost. Assuming that the marginal effect of an increase in a work-family benefit on productivity is positive but diminishing and that the marginal cost does not decrease, the firm can fall into one of three categories, as shown in Figure I. First, a firm can offer exactly the optimal amount of the work-family benefit, in which case the marginal impact on profit of an increase in the benefit is neutral. Second, it could be under-providing the benefit, in which case we should see a positive marginal effect of that benefit on profits. Lastly, it could be over-providing the benefit, in which case we expect to see a negative marginal effect on profits. Thus, the signs of the coefficients in our model are important in interpreting the results of our model, since they provide an indicator of whether each benefit is over- or under-provided in our sample of firms, at least from the point of view of maximizing profits.

Our estimation employs a standard statistical modeling technique called reduced form estimation in which underlying structural equations may be combined into one multivariate regression model (Greene, 1999). Our reduced form model determining the

[2] A separate theory that attempts to explain why a firm offers generous benefits is the theory of compensating wage differentials. According to this theory, a firm might offer generous benefits to offset relatively low wages, perhaps because a firm finds this cost-effective. However, Johnson and Provan (1995) do not find support for this theory in a random survey of women conducted in 1991.

Figure I - The Effect of Work-Family Benefits on Profits



profit rate thus incorporates factors influencing both demand and supply for the output of the firm. The profit rate is considered a function of four groups of variables. Two of them, capital intensity and work-family benefits, represent the firm's supply curve. In addition there are two series of dummy variables, one series for years (representing changes in demand) and a second series for firms, thus accounting for industry differences, demand factors and market structure. Note that labor intensity is not included as a regressor since this is a reduced form model and labor intensity is endogenous to the production decision. Since we have no reason to believe that work-family programs and the productivity enhancements they may generate have an impact on such costs as interest expenses or income tax expenses, the measure of profit rate chosen is operating income divided by sales. Operating income is defined as net sales from which the cost of goods sold as well as general and administrative expenses have been deducted.[3]

The model which forms the basis of our analysis therefore is:

$$\Pi_{it} = \beta_0 + \beta_1(K/S_{it}) + \beta_{2t}(WF_{hit}) + \beta_{3h}(DY_t) + \beta_i(DF_i) + \varepsilon_{it} \qquad (2)$$

[3] There are different measures of profit in the literature, but for our purpose, based on our data, the standard profit measure we use seemed most appropriate. One alternative measure, for instance, uses cost per unit of capital, which is not recorded in accounting statements of firms. Imputing such costs has its own hazards (Scherer, 1980).

where i = firms 1 through n
t = time periods 1 through T
h = specific work-family benefits 1 through k
Π = profit rate, which is calculated as real operating income as a fraction of sales for firm i in time period t
K/S = capital intensity, which is calculated as the value of property, plants and equipment as a fraction of sales for firm i in period t
WF = a vector of work-family benefits for the firm i in period t
DY = a vector of dummy variables denoting years
DF = a vector of dummy variables denoting firms
ε_{it} = a classic error term

As it is necessary to control for firm-specific variation in the profit rate (Greene, 1999; Hsiao, 1986), two options are available: using a fixed effects or a random effects model. Both models allow the researcher to account for unobservable factors (such as corporate culture, the nature of the industry, market structure and demand for product) which contribute to differences in the profit rate between firms. The fixed effects model achieves this by allowing for differences across firms in the constant term of equation (2) as represented by our vector of dummy variables denoting firms (DY). On the other hand, a random effects model assumes a second error term which varies by firm.

The fixed effects model was felt to be appropriate for two reasons (Hsiao, 1986). First, the fixed effects model has the flexibility of not assuming that the individual effects are uncorrelated with the other regressors in the model. Such an assumption would be restrictive in our case since it is possible that individual effects may in fact be picking up unobserved productivity factors such as management techniques and the integration of technology into the workplace. If so, one may conceive of firms, progressive in leadership styles and uses of technology, also being progressive with respect to work-family programs. Second, the data do not come from a random sample but rather from the companies that provide the "best" work-family programs in the country. Random effects models are considered appropriate when the data are drawn randomly from a large population, an assumption that we did not feel was warranted. However, for completeness, we did attempt to estimate a random effects model. We estimated the error term and the firm disturbance term by using data from the within-cell regression and the between-cell regression. The resulting negative estimate for the firm disturbance term provided further evidence that the random effects model is inappropriate for these data (Greene, 1999).

Data Used in the Analysis and Descriptive Statistics

The data used in this study come from *Working Mother* magazine's annual survey of "The 100 Best Companies for Working Mothers" (Moskowitz and Townsend, 1991-1995). The editors of *Working Mother* rank the top 100 companies based on their responses to questions on the various programs they offer and the programs' usage. As a result, these data are not taken from a random sample of companies but are derived from a sample

of only those firms that have the most extensive work-family programs in the country. Clearly, the results of our study may not be generalized to all firms, but are, nevertheless, useful in understanding companies already committed to offering such wide-ranging work-family programs. Furthermore, while it is not appropriate to apply our point estimates to the entire universe of firms, one generalization may yet be possible. If a work-family benefit is under-provided by a firm in this sample consisting of firms highly committed to providing such benefits, a reasonable inference is that such a benefit is under-provided by firms in general.

The *Working Mother* survey covers a wide variety of programs such as after-school and holiday programs, information and referral services for child and elder care, alternative work schedules, subsidized onsite child care, family leave, and assistance to parents adopting a child. Due to data limitations, however, we are limited to studying a subset of the full range of benefits. As a result of a significant increase in the variety of programs since the beginning of the *Working Mother* surveys in 1986, we are constrained to examining the years 1991 through 1995 during which time we can observe the same 9 programs for all companies. We also limited the analysis to publicly traded companies, due to inadequate availability of financial data for private firms. These restrictions yield 245 observations over five years (1991 through 1995) for 95 different firms. This is, perforce, an unbalanced panel since every firm does not appear every year.

The work-family benefit programs which are included are: paid leave for a family member's illness, maternity leave beyond 12 weeks, adoption assistance, subsidized onsite child care, permitting work at home, job sharing, flex-time, compressed workweek, and part-time work. Instead of merely indicating whether a program was offered or not, our analysis is enriched by the fact that, for several specific work-family programs, our data allow us to include a measure of the extent to which each program is used. This is of vital importance to an understanding of the effect of work-family benefits on firms' income given that the cost to the company of an unused service is expected to be small. Hence, a company whose culture discourages the use of work-family programs can profitably offer a wide variety of programs, knowing that few employees will use those programs to avoid the risk of being labeled as disloyal or non-career oriented (Ferber and O'Farrell, 1991).

Table 1 contains the descriptive statistics of the variables used in the analysis. It is useful to compare this sample of firms to the experience of workers in all firms, since the companies represented in the *Working Mother* survey are in the forefront of implementing these work-family programs. For instance, the average firm in our sample provides subsidized onsite child care for 63 children, with 43% of employees eligible for this benefit. Subsidized onsite child care is far more prevalent in our survey than in the economy as a whole, where only 8% of full-time employees are eligible for such childcare. Adoption assistance is also more common in the *Working Mother* sample than in the population overall, with 64% of workers in the sample eligible for such a benefit as compared with 11% of employees economy-wide (Bureau of Labor Statistics, 1997a).

Table 1 - Descriptive Statistics

Variable Name	Definition	Mean (Standard Deviation)	Median
Profit Rate	Operating income before depreciation as a fraction of sales.	0.203 (0.117)	0.183
Profits	Operating income before depreciation (in millions).	2521.07 (3693.61)	1057.19
Sales	Net sales (in millions).	14112.19 (22966.68)	6369.14
Capital Intensity	Value of plants, property and equipment as a fraction of sales.	0.361 (0.375)	0.284
Paid sick days--family	Number of paid days specifically for workers to use when a family member is sick.	7.60 (14.85)	2
Additional maternity leave	Number of weeks beyond 12 that firm offers for maternity leave.	14.27 (25.06)	6
Adoption assistance	Amount of financial assistance, in real terms, which the firm provides to workers adopting children.	1065.49 (951.92)	1349.32
Child care	Number of children in a subsidized onsite facility.	62.93 (220.79)	0
Work at home	Percent of work force that works at home.	0.0121 (0.0754)	0
Job share	Percent of work force that job share.	0.0108 (0.0906)	0
Flex-time	Percent of work force that work flex-time.	0.1009 (0.2431)	0
Compressed week	Percent of work force that work a compressed workweek.	0.0064 (0.0298)	0
Part-time	Percent of work force that work part-time.	0.0063 (0.0447)	0

This table is based on 245 observations.

We next examine the extent to which employees use alternative work schedules such as working at home, job sharing, flex-time, compressed workweeks and part-time work. Although media coverage of such programs has been extensive, the typical firm in this survey has no employees using these alternative schedules. The most popular of the alternative scheduling programs is flex-time, with an average firm participatory rate of 10% of the work force. The compressed workweek and part-time scheduling are the least common, with a usage by approximately 0.6% of the work force.

The average extent of participation, however, masks the nonuniform distribution of the use of these programs across firms. The large standard deviations of some of the benefits (e.g. adoption assistance, subsidized onsite child care, paid sick days) emphasize the sizeable degree of variability between firms. Since mean values are sensitive to extreme values, median values are also presented. Though the firms in this survey have the greatest number of programs in the country[1], in the majority of them only a few employees participate in these programs. For instance, 31 out of 51 firms sampled in 1995 offered some flex-time benefits. For these 31 firms, on the whole, 37% of employees reported taking advantage of this benefit, but in 8 firms, over 75% of the work force reported working flexible hours.

Empirical Results

Table 2 reports results from two different fixed effects models. In Model 1, the work-family benefits were entered as dummy variables equaling "1" if the firm had any participation in that program and "0" otherwise. One interpretation is that work-family benefits have a positive impact on income through a labor market reputation effect. This implies that the very presence, rather than the actual use, of such programs attracts better employees and decreases worker stress, thereby increasing productivity. Model 2 specifies the extent to which each program is used or offered. This model recognizes that a firm may formally offer a program, yet subtly discourage its use. Ideally, we would have measures of program participation for all work-family benefits in our study. Data limitations, however, allow us to test the hypothesis that work-family benefits must actually be used by employees to improve their work performance only for a selected subset of benefits. We actually have data on program usage for the following variables: subsidized onsite child care, working at home, job sharing, flex-time, compressed workweeks and part-time work. For the remaining benefits (paid sick days, maternity leave and adoption assistance) we can only observe the generosity of the firm's benefit. Although not a perfect proxy for usage (since a firm could offer very generous benefits and still discourage their use), we feel that measuring the number of allowable days of sick and maternity leave and the amount of adoption assistance available does provide some sense of whether higher levels of benefits affect productivity.

[1] Across all medium and large private establishments in 1995, only 2% of employees were eligible for any type of flexible workplace arrangement (Bureau of Labor Statistics, 1997a), as compared to 54% of employees in the sample.

Table 2 - Estimation Results - Fixed Effects Model

	Model 1: Availability	Model 2: Participation
Constant	0.208 **	0.243 **
	(0.034)	(0.034)
Capital Intensity	-0.015	-0.075
	(0.080)	(0.085)
Year = 1991	-0.034 **	-0.034 **
	(0.015)	(0.011)
Year = 1992	-0.035 **	-0.033 **
	(0.012)	(0.010)
Year = 1993	-0.026 **	-0.016 *
	(0.009)	(0.009)
Year = 1994	-0.003	-0.008
	(0.010)	(0.009)
Paid sick days--family	0.025 **	0.0001
	(0.008)	(0.0002)
Additional maternity leave	-0.004	-0.0004
	(0.012)	(0.0003)
Adoption assistance	0.020	0.0000096*
	(0.013)	(0.0000054)
Child care	-0.001	-0.00004 **
	(0.008)	(0.00002)
Work at home	0.011	0.565 **
	(0.012)	(0.229)
Job share	-0.019 *	-0.188 **
	(0.011)	(0.093)

Since regression analysis can establish correlation but not causality, we cannot rule out that it is high profits which is leading firms to establish such work-family programs. However, we doubt that this is the case since, as our results show, certain types of work-family benefits are associated with lower profits. We are also aware that there are important non-observable influences on profit rates (such as demand factors and managerial effectiveness) since our independent variables only explain 27-28% of the variation in profit rates (R-squared is

Table 2 - Estimation Results - Fixed Effects Model (continued)

Flex-time	-0.015 (0.011)	-0.014 (0.016)
Compressed week	0.020 (0.013)	0.126 (0.098)
Part-time	0.013 (0.015)	-0.023 (0.069)
F-test for all work-family benefits (p-value)[a]	2.15 (0.0296)	1.87 (0.0620)
R-squared	0.2822	0.2704

[a] This is an F-test with 9 and 136 degrees of freedom to test the null hypothesis that the coefficients on all work-family benefits are all equal to zero.

Dependent variable: Profit Rate
All variables are unstandardized
Standard Errors in Parentheses
* Significant at the 10% level
** Significant at the 5% level

.2822 in Model 1 and .2744 in Model 2).

In both Models 1 and 2, the dummy variables denoting years indicate whether profit rates for all firms were significantly different in a particular year than they were in 1995 (the year for which a dummy variable was omitted). Significant and negative coefficients for 1991, 1992, and 1993 reveal that profits were lower in these years, a result of the economy-wide recession. The insignificant coefficients for year 1994 indicate that profit rates in that year were not significantly different than they were in 1995.

Model 1 suggests that, in general, work-family programs have a positive effect on profit rates[5] (with an F-value of 2.15 corresponding to a p-value of 0.0296). This lends support to the efficiency compensation theory which states that by providing above-market compensation packages, employers are able to reduce turnover, absenteeism and tardiness and increase productivity, and thereby increase the profitability of the firm. Model 1 further indicates that, collectively, work-family benefits are under-provided by firms in our sample. The coefficient on a benefit, often called the marginal effect, indicates the degree

[5] A plot of residuals against the fitted value of the dependent variable from the fixed effects regressions does not indicate the presence of heteroskedasticity, meaning that the variation in profit rates does not differ significantly by observable characteristics of the firm. The presence of heteroskedasticity would have rendered the usual tests of statistical significance, such as the t-statistic, invalid.

to which the profit rate would rise if the benefit were increased by one unit. A positive marginal effect implies that profits could be increased further by expanding that benefit.

In examining the individual covariates in Model 1, however, not all programs have a positive, uniform impact on profits. Two programs, in particular, are shown in this model to affect productivity. First, offering workers the option of taking time off when a family member is sick affects profits positively. Secondly, offering job sharing has a negative impact on profits (with a marginally significant coefficient). The coefficient on family sick days seems to be in contrast to a previous finding (Johnson and Provan, 1995) that taking sick leave to care for dependent children does not enhance productivity. There are two possible explanations for this disparity. First, it may be that offering sick leave could allow a firm to pay lower wages if workers view this benefit as providing a compensating differential. In addition, if few employees actually use this benefit, higher profits may result. A second, compatible explanation is that employees' productivity is not enhanced directly by the taking of the sick leave itself (as Model 2 will show). Rather, productivity is affected indirectly by reduced stress and greater job contentment flowing from the knowledge that the option of taking sick leave to care for ill children is available when necessary. The negative coefficient on job sharing probably reflects diseconomies of scale when two workers are doing a job usually performed by one.

Model 2 shows the impact on firms' profits of both the degree of participation in work-family programs and the generosity of benefits. An F-test confirms that there is a marginally significant effect (with a p-value of 0.0625) of work-family benefits on a firm's profitability. Some individual benefits stand out in terms of their potential impact on profits. For example, an increase of $1,000 in adoption benefits received increases the profit rate by one additional percent. For the average firm with sales of $14 billion, this translates into $140 million in additional profits. This effect seems to us to be very large considering that most workers do not avail themselves of this benefit. It is possible that adoption benefits are acting as a proxy for other, unobservable firm and management attributes that increase productivity. For instance, the offering of these benefits may reflect a positive attitude of management regarding accommodation of the needs of working parents.

The collective results, however, obscure important individual differences. Note that not all work-family benefits are cost-effective for the firm. Subsidizing onsite child care, for example, results in a significant loss of profits to the firm, indicating that any productivity gain received through this program is more than offset by the high cost of providing such a benefit. Clearly, this suggests that, within the *Working Mother* sample of firms, subsidized onsite child care is an overprovided benefit.

The fact that alternative scheduling programs can have dramatically different effects on productivity can be seen from the positive and significant coefficient associated with the percentage of employees working at home, in contrast to the negative and significant coefficient associated with the percentage of employees participating in job sharing. If the proportion of employees working from home increases by one percentage

point, the firm's profit rate increases by an additional six-tenths of one percent. For the average firm in the sample, this results in a rise in profits of $84 million. The size of the impact is rather dramatic, and the sign of the coefficient is consistent with the efficiency compensation theory. Perhaps, people who work from home realize that they are fortunate to be able to do this and therefore work harder to avoid losing this job. This attitude would also result in lower turnover and absenteeism for people who work from home. Additionally, employees who work from home may work longer hours because they do not have to commute to their place of employment, and are constantly available for work. The results imply that the firms sampled can profitably expand this benefit, as it is currently under-provided.

In contrast, opportunities for job sharing appear over-used and firms could increase their profits by scaling back in this regard. If the proportion of employees that job share increases by one percentage point, then the firm's profit rate declines by two-tenths of one percent, resulting in a loss of profits of $28 million for the average firm in the sample. It is possible that job sharing is unprofitable because having two people working at one job may increase costs such as medical insurance premiums or may increase time spent on unproductive activities such as writing memos, meeting, or discussing how work will be divided. Some benefits such as flex-time, compressed workweeks and part-time work, however, appear to be used at the optimum level as they do not significantly increase or decrease the profit of the firms.

Discussion

This article focuses on the corporate financial impact of a subset of benefits called work-family programs. To our knowledge, the marginal effect of various work-family benefits on profits of firms across industries has not been studied, thus making it difficult for firms to assess whether they are providing the right benefits at the correct levels to maximize profitability.

The impetus for the study came from a number of factors indicating that a careful analysis, rather than casual empiricism, was needed to understand this issue. First, demographic changes in the work force led to mounting pressure on firms to provide these work-family benefits and firms responded by increasing the availability of such programs. Second, evidence links work-family stress to lower job productivity. Third, previous survey evidence points to the effectiveness of these programs. Both managers and employees believe that these work-family benefits improve productivity

To analyze which work-family programs affect firms' profits and to determine the extent of this effect, two variants of a reduced form model are estimated, using a fixed effects model. If the efficiency compensation theory is valid, and higher compensation increases worker productivity, we would expect to see a positive effect of work-family benefits on a firm's profits. Furthermore, if a particular work-family benefit has a positive impact on profits, then increasing the scope or generosity of that benefit will increase the firm's bottom line. We would therefore say that this benefit is under-provided. On the other hand, if the work-family

programs do not enhance worker efficiency, or the marginal costs exceed the additional revenue generated at the current benefit level, we would expect to see a negative effect of such benefits on firm's profits. In either case, the benefit is over-provided and firms would increase profits by scaling back or, in certain cases, eliminating the benefit.

The first model we estimate takes into account only the absence or presence of the program; it does not consider the extent of usage of each program. The rationale behind this model is that the very presence of such programs can increase profits either by enhancing the reputation of the firm in the labor market and improving the quality of new hires, or by actually increasing worker productivity by reducing stress and/or raising job contentment. The second model takes into account the extent of usage of each program. Clearly, the second model implicitly recognizes the fact that a firm's offering of a program is not synonymous with its actual use. The results of both models need to be seen together since positive effects on profits can be due not only to actual usage, but can also be the result of various positive effects (examples of which were mentioned above) attributable to the mere presence of a program.

Results from both models show that not all programs have the same, or even a positive, impact on profits. Depending on the direction of impact, we may draw inferences about the optimal level of benefits provided. For example, our results show that a sick leave option has a significant positive effect on profits, while the actual exercising of the sick leave option does not affect profits. A plausible explanation is that it is not the actual availing of sick leave that seems to be significant, but rather the knowledge of its availability that may increase productivity in various ways — through increased job contentment, reduced worker stress or enhanced labor market reputation.

The results also show that all forms of alternative scheduling do not have the same effect on profits. For example, firms enjoy a significant positive benefit if more employees work from home, and yet increased job sharing has a significant negative impact on profits. The difference between the two is, in fact, fairly dramatic and indicates that whereas the firm should expand one form of scheduling to maximize profits, it should scale back the other. Other forms of alternative schedules, such as flex-time, compressed workweeks and part-time work, have no significant impact on the firm's profits. Similarly, while an increase in adoption benefits raises the profit rate of the firm, subsidizing more dependents in onsite child care actually reduces the company's profits, indicating that the costs of this benefit cannot be justified in terms of potential productivity gains, at least as measured here.

The results of this study are significant since they indicate that although addressing the needs of today's work force through the implementation of work-family programs can be profitable for firms, some programs are more beneficial than others, and some actually lead to losses. A firm therefore needs to have more information on the magnitude and direction of the impact of these programs on its profits. This information is crucial not only for choosing the particular benefits it wishes to offer, but also for deciding the degree to which each benefit should be

made available or its use be encouraged. Even though further research is needed, our study points to certain programs which managers might find particularly attractive. For example, offering paid sick days if family members are ill increases profits just by virtue of its being offered. On the other hand, allowing employees to work at home does not have a significant impact on profits unless it is widely used. Job sharing, however, seems to reduce profitability. Again, further research is needed to determine whether job-share programs should be avoided or whether they can be modified to mitigate their negative impact on profits.

This study has several limitations. First, we do not have a random sample of companies, but rather a sample of firms with the most extensive work-family programs in the country. Thus, though useful in analyzing the impact of such programs on a selected group of firms, clearly, our work cannot be generalized to all firms. Additionally, there may be other work-family benefits not included in the data. This opens up a rich possibility for future research should a comprehensive data set of all types of firms covering the widest possible range of benefits be available. An additional direction for future research involves further investigation of those programs found by our study to reduce profitability. Firms are likely to be interested in ascertaining whether programs such as job sharing and subsidized onsite child care could be modified to reduce their negative impact on profits. This could help management reconcile possible conflicts between the goals of increasing profits and of demonstrating greater concern for workers' welfare by means of work-family programs.

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