



Behavioral Economics and Equity Compensation

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The parallel financial and economic crises beginning in 2008 raised a number of questions about the global financial system. Central to these questions are those about remuneration: Is the pay of financial professionals and executives too high? Is the pay structure producing the wrong behaviors and decisions? Does incentive compensation and equity compensation cause people to take too much risk? Is this economic crisis the result of incentive pay? Did equity compensation cause this, and can equity compensation fix it, or prevent it?

While economists were debating whether an economic recession had begun (in the US the recession was announced in December 2008 as having begun in December 2007 by the NBER¹), some were concluding that traditional economic theory did not explain what was happening with the economy. Much of the traditional framework of economics, securities markets characteristics, and investor behavior was seemingly inadequate for explaining the crisis.

Perhaps a milestone in this awakening was Alan Greenspan's testimony to the US Congress² on 23 October 2008. In response to a question by a Congressman about his economic ideology he said, "Yes, I've found a flaw. I don't know how significant or permanent it is. But I've been very distressed by that fact."

He also said during his testimony, "A critical pillar to market competition and free markets did break down...I still do not fully understand why it happened."

One pundit³ referred to this as "Alan Greenspan's Learning Disability" given that a few years earlier he had said:

"Human behavior is a main factor in how markets act. Indeed, sometimes markets act quickly, violently with little warning... Ultimately, history tells us that there will be a correction of some significant dimension. I have no doubt that, human nature being what it is, that it is going to happen again and again."

Or, as another⁴ had previously put it, "Alan Greenspan discovers that human beings are...irrational!"

None of this is a criticism of Alan Greenspan or a diminution of his decades of great work. It simply highlights that, given that economics is fundamentally a behavioral science, the best economists may have overlooked some fundamental behavior principles in the effort to explain how humans behave economically.

Like economists, equity compensation professionals – who are typically educated in the fields of accounting, finance,

¹ National Bureau of Economic Research, Business Cycle Dating Committee, "Determination of the December 2007 Peak in Economic Activity," <http://www.nber.org/cycles/dec2008.html>, 11 December 2008.

² Testimony of Dr. Alan Greenspan, Committee of Government Oversight and Reform, 23 October 2008.

³ *Watching the Watchers*, Russ, Lee, 29 October 2008, www.watchingthewatchers.org.

⁴ *Newsweek Online*, Gross, Daniel, 17 September 2007.

law, economics, or taxation – must turn their attention to human behavior if they wish to resolve the ongoing challenges of equity compensation and the criticisms that are increasingly pointed at equity compensation practices. Understanding human behavior that appears irrational from a classical economic standpoint, and designing equity compensation programs that recognize that irrationality is a natural part of human decision-making processes, will be the primary challenge in the new economic environment.

What's Wrong with Equity?

The use of equity compensation is rooted in the notions that it aligns employees with shareholders and is financially efficient. While there is debate about which of those is dominant in creating and perpetuating practices, both are typically cited. But the framework for evaluating efficiency and effectiveness has never been formalized and therefore such assessments tend to vary depending on the specific perspectives of the evaluator. Numerous constituencies view equity compensation as a potential problem, particularly when delivered to executives, and this perceived problem has motivated a range of equity plan “repairs” in recent years.

As institutional shareholders have voiced increasing concern with both executive pay and the dilution resulting from equity compensation, a series of “standards” have evolved in response to a series of perceived problems:

- ▶ Shareholders and proxy advisory firms have defined a range of equity usage limitations using factors such as overhang, annual run rates, and value transfer to assist in assessing equity usage appropriateness. If these limits are exceeded, a “no” vote on requests for increased shares for employee equity plans and other initiatives could result.
- ▶ Methods of promoting a longer-term view have been actively pursued due to concerns over a continued short-term focus, particularly among executives, despite the “long-term incentive” label. These include stock ownership guidelines and retention ratios, and the more

extreme version of those: “hold until retirement.”

- ▶ The perception that incentives are created by stock options to take “unnecessary and unreasonable” business risks have resulted in legislation in the US targeted at troubled financial institutions⁵, which has in turn spread to other industries⁶, regulatory bodies⁷, and nations⁸.

There is a growing understanding that companies focused on earnings performance, believing that accrual accounting results drive stock price, may manipulate equity plan design and the related reporting to optimize reported profitability. This understanding has led to the implementation of criteria for the use of performance measures in conjunction with equity plans.

These responses have accumulated over the past five to ten years, most before the current economic downturn that has exacerbated the issues. The various policies and standards often have been reactions to perceived problems rather than rationally-developed approaches to enhancing equity compensation. The fundamental framework for assessing and defining the effectiveness of equity compensation has been driven by regulations, tax, accounting, and pay competitiveness, but doesn't provide a basis for ensuring that companies and employees receive value for the equity compensation delivered. The avalanche of regulations and standards and the reaction to those has created a three-faceted outcome:

- ▶ **Shareholders are dissatisfied.** Institutional shareholders and proxy advisory firms increasingly “vote no” on new equity plans and amendments requesting additional shares. This is resulting, to a great extent, from the continued focus on the perceived cost of equity compensation as measured by dilution metrics without considering counterbalancing data that demonstrate the positive impact of employee ownership on shareholder value.
- ▶ **Companies are dissatisfied.** Escalating plan complexity and regulatory requirements have significantly increased the cost of delivering equity compensation – design,

⁵ *Troubled Asset Relief Program (TARP)*, <http://www.treas.gov/initiatives/eesa/>

⁶ *US Auto industry bailout*, <http://www.treas.gov/initiatives/eesa/>

⁷ *SEC directive for CD&A to address risk assessment issue*,

<http://www.treas.gov/initiatives/eesa/docs/Exec%20Comp%20CPP%20Interim%20Final%20Rule.pdf>

⁸ *Moneynews.com*, “France Plans Law to Limit Executive Bonuses”, 23 March 2009,

http://moneynews.newsmax.com/financenews/executive_bonuses/2009/03/23/194954.html (accessed March 25, 2009).

administration, compliance, disclosure, governance processes, and communication. The questionable return on the expenditures, exacerbated by the state of equity markets as this article goes to press, threatens the viability of equity compensation, as the cost-benefit relationship has been turned upside-down.

- ▶ **Employees are dissatisfied.** Even when equity markets produce favorable gains from employee share schemes, employees consistently make decisions that suboptimize compensation opportunity generating less pay, or none at all, from the program. Employers are increasingly concerned with the gap between how participants value their equity and its potential value relative to other forms of pay.

This is a stunning outcome from decades of work in designing, administering, regulating, and redesigning equity compensation programs.

Companies can do little in the short-term about shareholder perceptions – without adopting radical measures that may be contrary to good business strategy – but have the ability to do a great deal through plan design, communication, and administration about the ultimate cost of and benefit from equity compensation programs. This opportunity comes from a better understanding of the principles of behavioral economics which can help us understand how to better structure and position equity to achieve desired objectives by better understanding employees’ biases and perceptions of equity pay and awards. Just like decades of “conventional wisdom” from classical economics dictated economic policy that led to a significant failure, decades of equity compensation design driven by regulatory changes, survey data, and design features with no empirically-demonstrated validity should now be challenged.

As Alan Greenspan learned, we must not only recognize human behavior but also design our policies and programs around it. Whether one is considering a national tax policy, global trade policies, or a company’s share schemes, the same principles apply. Behavioral economics offers a platform for integrating the economic nature of equity compensation with the science of human decision-making in an environment of uncertainty and risk.

Principles of Classical Economics

Economics studies the allocation of scarce resources to achieve desired goals based on the assumption that people make rational, consistent, and self-interested decisions and that all parties – including employees and employers – adhere to these principles:

- ▶ **Rationality.** People determine what they want and strive to get as much of that as possible at the lowest possible cost. Rationality is often narrowly defined, emphasizing traditional economic interests and de-emphasizing the full spectrum of factors that an individual incorporates into a decision. According to this principle, employers would offer the optimum amount of equity compensation required for maximizing organizational profits and shareholder returns, and employees would systematically analyze the costs and benefits of various alternative actions available to them – such as exercising an option, holding or selling shares, and seeking preferential tax treatment.
- ▶ **Maximization.** The individual will always make decisions that result in getting more rather than less to satisfy their wants. For equity compensation, this theory says that people will always take action that result in the maximum value or payout from their equity awards without regard to offsetting risks or value from other alternatives.
- ▶ **Information.** Individuals have access to and understand all the information necessary to make well thought-out decisions. For equity compensation, this means they have complete and clear information about all aspects of their equity awards and the alternatives available for acting with respect to those awards including purchase, vesting, exercise, taxation, and/or sale.

The fundamental premises of economics raise several questions about current practices in equity compensation design. Do employers understand the optimum amount of equity compensation to offer, in the ideal forms and with the most effective terms and provisions? Do employees act in a manner that leads to their maximum contribution to the share price of the company? Do employees attempt to maximize the compensation from their equity awards? Do they have and understand the information they need to do those things? These principles have been called into question due to both the current financial and economic crises and the emerging research findings in the field of behavioral economics.

Principles of Behavioral Economics

Any equity compensation professional who has taken a university-level course in economics may recall those classical economic concepts and while they may not have referenced those in their daily work they nevertheless are subconsciously influenced by them. Less likely is that the professional was schooled in the concepts of nominal loss aversion, bounded rationality, and anchoring. Yet these latter concepts arguably are those that will be the underpinning of effective equity compensation design – and economic policy – for the next decade while the former will be left in dusty textbooks on the shelf.

There are a few key principles that underlie this alternative view of economic behavior and that don't directly reference the central concepts of classical economic theory.

First are those concepts that attempt to explain how people think about money:

- ▶ **Mental accounting.** This is mentioned first due to the obvious parallel between equity compensation and the best-known application of the behavioral principle: gambling behavior in casinos. There is extensive data on the behavior of people gambling with their money (the money brought into the casino) versus the “house money” (money won through gambling). Mental accounting is the tendency to value some dollars differently from others depending on the source of those dollars and how they will be spent. Under this principle, money is categorized and decisions about money in those categories are subject to differing criteria.
- ▶ **Hyperbolic discounting.** People have a tendency to put substantially more weight on more immediate payoffs than on future payoffs. This effect is stronger the more imminent the payoff. For example, given the choice between a smaller payout today and a larger payout a year from now, people may choose the larger payout, but given the choice between a substantially larger payout in five years they may choose the smaller payout despite that amount being far less on a present value basis.
- ▶ **Sunk cost fallacy.** People often make decisions about future financial outcomes based on irrecoverable previous costs though these “sunk costs” have no impact on the

future outcome. For example, a company continuing an ineffective program that has already required significant expenditures rather than reallocating funds to a better future use is acting on the sunk cost fallacy.

- ▶ **The endowment effect.** People tend to value what they own more than what they do not and demand a higher price to sell something than they would pay to buy it. This may explain a curious outcome of a stock option exchange program: some employees continue to hold worthless underwater options rather than exchanging them for a smaller number of new at-the-money options.

The interaction of these concepts may have a significant impact on equity compensation design. For example, restricted stock units came into vogue for a variety of technical reasons including accounting, dilution, and market volatility. Yet there is another possibility for full-value awards that has gone unexploited. With stock options, the employee must act to buy, and then sell the stock (a two-part decision with additional complexities). With RSUs, the employee already “owns” the stock at the vesting date and then must act to sell it. Implicitly, the RSU may be “worth” more than the stock underlying the option. (The ability to do a cashless exercise has mitigated some of this as employees don't typically view the exercise of an option as requiring purchase because the purchase-sale transaction is transparent.) The endowment effect should lead people to be more inclined to retain shares from RSU awards than they are to exercise stock options and retain the shares, adding another layer to the debate of whether RSUs and options are really “ownership.”

Next are those concepts that attempt to explain how people feel about money:

- ▶ **Loss aversion.** The impact of a loss is felt more heavily than an equal gain.¹⁰ This manifests itself in the “disposition effect”¹¹ of investors who tend to sell a profitable investment too soon and hold a losing investment too long. This interacts with mental accounting as people put real gains and unrealized losses in different mental “buckets” to manage the emotional impact.
- ▶ **Bounded rationality.** Contrary to classical economics' assumption of a rational “economic man” that will make

¹⁰ Kahneman, Daniel and Amos Tversky. 1979. “Prospect Theory: An Analysis of Decision under Risk”, *Econometrica*, 47, March.

¹¹ Shefrin, H. and M. Statman. 1985. “The Disposition to Sell Winners to Early and Ride Losers Too Long: Theory and Evidence,” *The Journal of Finance*, Vol. 40 No. 3.

the optimal choice regardless of complexity or associated costs, people are limited in their ability to understand and process information. This likely explains why employees make “irrational” decisions about whether to participate in a certain program: there is just too much information to process, inhibiting rational choice.

- ▶ **Bounded self-interest.** People will not always make the choice that maximizes their self-interest. Questions of fairness and other factors can play a critical role in a participant’s perceptions of the value and motivational effect of the award. In addition, in situations where the outcomes of decisions are not immediate or obvious, it may be difficult for people to determine their own best interest.
- ▶ **Bounded self-control.** Even when people have made a conscious decision that they believe to be in their long-term best interest, they may not have the self-control to take action on that decision. For example, a person might believe it is in their long-term best interest to save more, but might not be able to take the necessary steps on a daily basis.

Finally, there are concepts that explain how people make decisions about money:

- ▶ **Framing.** The way a situation is presented may be the determining factor in the outcome. People often draw conclusions based on how information is presented, making a different choice when faced with a decision requiring a “selection” (emphasizing the positive qualities) rather than one requiring a “rejection” (emphasizing the negative). Every equity compensation program asks employees to make choices and the framing of those choices may be driving employee decision behavior.
- ▶ **Anchoring.** In decision-making situations people are inclined to use a reference point as a basis for their decision. This has been shown to hold even when the reference point is known to be arbitrary. Once a person develops a reference point – a bias – based on certain information, they tend to view additional information in the context of that bias. A growing body of research supports the adage “first impressions are lasting” and the power of a “brand” in marketing strategy.

- ▶ **Inertia and the Status Quo Bias.** People are unlikely to take proactive action unless they have a compelling reason to do so. Unless there is a reason to make a change, people often prefer to leave things the way they are. This “status quo bias” forms a key principle for behaviorally-based program design: When people are inclined to take no action, ensuring that inaction results in the desired outcome can be effective.
- ▶ **Decision paralysis.** Because people tend to avoid making a proactive choice, particularly in situations of uncertainty where the outcome is not clear, this tendency may be stronger when there are more choices. A recent study indicates that a significant percentage of in-the-money options expire without being exercised.¹² While there are other factors at work in these situations, the tendency to “do nothing” when faced with a complex decision is a critical issue for program designers.
- ▶ **Regret aversion.** Related to decision paralysis is the concern that making a decision could be the wrong one. Because of loss aversion, fear of a bad decision can lead to no decision.

The academic tone of these concepts should not discourage their consideration and neither should the fact that one may find them to be “common sense” notions. If they are so common and such great sense, we would expect to see them incorporated into our collective thinking about equity plan design, and we have not seen that.

Despite the decades of work in the field, the relatively recent acceptance of behavioral economics in academic circles has not yet spread to practical application with a few exceptions discussed below. Ironically, the slow adoption of these concepts is partially explained by the concepts themselves!

Applications of Behavioral Economics

Behavioral economics applies principles of cognitive psychology to explain why principles of classic economics often fail to predict human behavior. There have been applications related to retirement and savings programs from which we may be able to learn lessons about equity compensation programs.

¹² “Bridging the Knowledge Gap”, Fidelity Stock Plan Services Stock Plan Participant Survey, 2008.

Pension Protection Act (US)

In the US, the Pension Protection Act (PPA) of 2006 was enacted into law primarily to require employers to better monitor and fund their defined benefit pension plan liability. A less prominent provision of the Act – allowing employers to automatically enroll employees in defined contribution plans – applies several of the key principles of behavioral economics. Retirement savings plans in the US, known as 401(k) plans, often have lower than expected participation rates, even when there is a substantial matching contribution by the employer. This may be attributed to:

- ▶ **Framing.** An employee must choose to receive less pay (now) by electing to have the employer withhold pay from the current paycheck for contribution to the program. Given a short-term perspective, and cash flow needs, for many this is deemed a negative.
- ▶ **Hyperbolic discounting.** Although most adults readily admit the need to save for retirement, the satisfaction of an adequate retirement income is discounted heavily given the wait of up to 40 years, relative to the satisfaction from current income.
- ▶ **Inertia.** 401(k) plans require, prior to the PPA, an employee to make an active choice by filling out a form or going to a website to permit the employer to withhold contributions.

The PPA addresses these, particularly inertia, by allowing an employer to automatically enroll employees to contribute 3% of their pay to the plan and allow employees to “opt-out” or take action to disenroll themselves. It turns inertia in favor of saving.

Does this seemingly simplistic tactic work? Data on participation and contribution rates since the enactment of PPA say it does. Previous research studies had shown that enrollment rates increase significantly when an opt-out policy is in place and that over time subsequent rates of opting out are very low.¹³

Personal Savings Account (United Kingdom)

According to the Department for Work and Pensions (DWP), “From 2012 it is planned that all eligible workers,

who are not already in a good quality workplace scheme, will be automatically enrolled into either their employers’ pension scheme or a new savings vehicle, which is currently known as a personal account scheme.” In a nod to behavioral economics, the DWP’s report states the opt-out approach will “overcome the inertia and short-termism that characterize attitudes to saving.”¹⁴

KiwiSaver (New Zealand)

In 2007 the KiwiSaver savings scheme was introduced in New Zealand. All New Zealanders aged 18 to 65 are automatically enrolled in KiwiSaver when they commence employment but can choose to opt out during the 14th through 56th day following. Participation rates have soared since the introduction of the program, with over 40% of the eligible population staying in the program and significant participation in younger age groups where savings behavior was low.

Premium Pension System (PPM) (Sweden)

Sweden’s experiment in 2000 with privatization of pensions led to some outcomes that have been questioned by some behavioral economists¹⁵ and led to changes six years later. An active education campaign by the government was designed to help citizens in their decisions to invest a portion of their premium pension among 456 investment fund choices, as well as a default fund alternative. The communication strategy apparently “worked” maybe too well as two-thirds opted out of the default fund and its riskier investments with higher fees, while the default fund’s 33% “market share” turned out to be a better investment alternative. The default was designed to take advantage of peoples’ tendencies toward inertia, indecision, and risk aversion.

These ideas are in reaction to plan design that had proven to be ineffective in getting individuals to save for their retirement. How can we apply similar concepts to equity plan design that have proven to be ineffective in getting companies to deliver and individuals to realize cost-effective compensation?

¹³ Brigitte Madrian and Dennis Shea, “The Power of Suggestion: Inertia in 401(k) Participation and Savings Behavior,” *Quarterly Journal of Economics* 116, No.4, November 2001.

¹⁴ <http://www.dwp.gov.uk/pensionsreform>

¹⁵ Thaler, Richard. “Can behavioral economics save us from ourselves?” *University of Chicago Magazine*, Vol. 97 Issue 3, February 2005. <http://magazine.uchicago.edu/0502/features/economics.shtml>.

Behavioral Challenges in Equity Compensation

There are at least two central challenges in achieving the objectives of equity compensation:

- ▶ Ensuring that employees understand the purpose of equity compensation and their role in that purpose;
- ▶ Ensuring that employees realize the full value of equity compensation awarded so that employers realize the maximum return on expenditures.

To the extent the first of these has not been achieved, the second almost certainly will not.

The Purpose of Equity Compensation

Many companies use equity in the belief that employees having a financial stake in the enterprise causes “employees to think like owners.”¹⁶ This requires that companies do more than just issue award agreements and stock certificates to employees. Employers must provide knowledge, information, ability to act (power/control), and a significant financial opportunity to realize the promise of employee ownership.¹⁷

Of course, there are many other reasons why companies choose to include equity compensation in the total compensation mix: conservation of cash, competitive norms, employee preferences, organization philosophy, and others. We cannot assume that a belief in employee ownership underlies an organization’s use of equity compensation. If that is the case, however, and if the company has provided those conditions for employees, the company has laid the groundwork for the effectiveness of equity compensation. But there is a second set of dynamics that, while somewhat controllable by the employer, are rooted in the human psychology of the employee because “the forced commitment under broad-based stock plans... can be terminated by the employee at the end of the vesting period.”¹⁸

The principles of behavioral economics provide a framework for understanding these competing dynamics

and developing effective equity programs that help achieve the employee ownership objective.

The Value of Equity Compensation

There are numerous and competing schools of thought about the “value” of equity compensation. Accounting rules dictate the reporting of a certain expense for share-based payments issued to employees.¹⁹ The current state of equity markets has highlighted the weakness of this methodology. For example, using an option pricing model, one may calculate the value of a deeply underwater stock option (e.g., one with a strike price of \$50 when the company’s stock is trading at \$5) yet the optionee likely believes that this option has no value and likely believes that it never will. However, an option granted at that \$5 strike price may have upside potential of many times the value returned by the option pricing model.

Tax regulations in most countries impose a completely different methodology, focusing on the actual amount of pay realized by the employee.²⁰ This value is hard to dispute but may represent a significant suboptimization of what the equity award could have been worth under different employee actions.

Institutional shareholders and proxy advisors employ yet another set of methodologies to calculate the cost to shareholders. These formulae often calculate the highest potential value of the instrument such as the value of a stock option not exercised until the end of a 10-year term when in fact employees may have demonstrated that they exercise far sooner than that.

These valuation methods are based on various financial theories and regulatory motives that, in turn, are rooted in classical economics. The new questioning of the validity of those economic theories raises questions about the valuation of equity. Regardless of the regulatory framework for determining what equity is really worth, employees have their own methodology and framework for this. Because the realized value of equity compensation is highly dependent

16 National Center for Employee Ownership, “Employee Ownership and Corporate Performance”, 2009.
<http://www.nceo.org/library/corppperf.html> (accessed March 25, 2009).

17 Lawler, E. E. III, 1986, *High Involvement Management*, San Francisco, Jossey- Bass.

18 Liu, Nien-Chi, Ann Lin and Chung-Hung Lin. “Why do employees hold their vested stocks while they can sell them?”
The International Journal of Human Resources Management, January 2009.

19 FAS123R, <http://www.fasb.org/pdf/fas123r.pdf>, and IFRS2,
<http://www.iasb.org/NR/rdonlyres/796E163F-33AC-4253-81E0F2F8908C8904/0/IFRS2.pdf>

20 For example, in Switzerland taxation is determined at the date of grant or vesting, depending on the Canton and based on the Black-Scholes value; in the US taxation is determined at the date of exercise and is based on actual realized gains by the optionee.

upon employee decisions, understanding the employee's framework is central to understanding how a company can maximize the return on equity compensation – how it obtains the highest employee commitment, productivity, and ownership behavior as a result of issuing equity to employees and that the employee realizes the highest possible income from the employer's expenditures.

The principles of behavioral economics provide a framework for helping employers design and adjust their programs to realize higher returns on equity compensation expenditures by delivering greater gains to employees and in turn changing the work behavior of employees, to the benefit of shareholders.

Equity Plan Design

There has been significant divergence in plan design features over the past five years. Prior to this recent period of regulatory and economic upheaval, a survey of equity plan design features would reveal that a majority of companies in the US had the same program:

- ▶ Stock options as the primary vehicle
- ▶ Option term of 10 years
- ▶ Vesting schedule of 4 years, either 25% annually or, in the technology sector 25% after one year then monthly for 3 years
- ▶ Cashless exercise program allowing the employee to elect to exercise options with no outlay of personal cash
- ▶ No post-exercise holding requirements.

These terms were typically modified only when the country into which the US had imported its US-designed plan required different provisions.

A similar survey now would show that companies have shifted their programs to use a broader range of design features and provisions:

- ▶ Stock options still the most prevalent vehicle, but with full-value grants approaching comparable prevalence
- ▶ Option term ranging from 5 to 10 years, the shorter terms for the purposes of reducing the calculated cost of the plan
- ▶ Vesting schedule of 3 to 4 years, with literally dozens of vesting schedules in use

- ▶ Continued use of cashless exercise programs with no post-exercise holding requirements.

In our experience, none of the behavioral implications of these changes were pursued in any disciplined way and in combination may have further exacerbated concerns with equity compensation. Accounting rules, tax law, shareholder requirements, and legal considerations drove the design changes. The outcome: employees have an even shorter-term view of these long-term incentives, reducing the realized value.

Is there a way to change this? We believe there is but it will require a concerted effort to balance financial and regulatory considerations with a disciplined and thoughtful evaluation of our equity programs within the context of behavioral economics. It is only in this way that the aggregated benefit of equity compensation to both employees and employer can be attained.

Behavioral Economics and Equity Compensation

Employers have struggled with several ongoing issues in attempting to effectively compensate employees with equity:

- ▶ Suboptimal stock option exercise behavior. Stock plan professionals have long observed anecdotally the tendency for some employees to make stock option exercise choices that are not financially advantageous. FAS123R and IFRS2 forced accountants to quantify and report employee behavior (time to exercise, forfeiture rates) and has driven valuation experts to study how some groups of employees differ from others in this.
- ▶ Low participation in stock purchase programs. Plan sponsors are often frustrated that the extensive work of designing, implementing, and communicating an employee stock purchase plan does not result in broader participation. This increases the per-participant cost, delivers less aggregate compensation to employees than was intended, and undermines the philosophical basis of the program. Both the purpose and the value of the program are diminished.
- ▶ Lower than expected participation in option exchange programs. Given the high cost of option exchange programs, employers often are disappointed by lower-than-expected participation rates. Guided heavily by financial models and various accounting, tax, and legal

constraints, employers may not be considering the behavioral economic factors.

- ▶ Inattention to existing vested equity awards. Equity awards may be cashed out immediately upon vesting leaving the years of upside potential and implied retention value on the table. At the other extreme, option awards have been left to expire in-the-money with no value delivered. These actions – suboptimal and irrational – dilute the company’s efforts to deliver value to employees and ultimately dilute alignment with shareholders.
- ▶ Employee choice. Recognizing that an employee population with diverse socio-demographic profile may have differing risk profiles and financial needs, a small number of companies began allowing employees some limited choices among stock options, restricted stock units, and/or cash. Given the long history of suboptimal employee choices, some of these programs had unintended outcomes for both employees and employers.

Guidance from the principles of behavioral economics offers design and implementation ideas explicitly focused on addressing these concerns – by moving from the existing state driven by financial and regulatory factors to one where employee decisions and actions are more consistent with plan intent and participant best interests.

Nudging Behavior Toward Ownership and Value

A recent idea in the field of behavioral economics is that people can, and should, be “nudged” in the decision process.²¹ Given the premise that the structure of a decision situation (the “choice architecture”) influences the outcome, nudging is encouraging one action over another without taking away the individual’s right to choose.

A simple example of nudging is the use of default options in the US PPA, Swedish PPM, and similar programs. Similarly, employers have long used a default option for the open enrollment process for healthcare coverage and other employee benefit programs. A default coverage level can be overridden by employee choice while inaction still results in coverage.

Nudging strategies may have the most potential for optimizing or at least improving decision process results when: the costs and benefits are separated in time, there is a high degree of difficulty, the decision is made infrequently, the decision provides limited feedback, or the final outcome of a decision is not clear.²² The nature of equity compensation programs includes all of these characteristics. Consider an employee stock purchase plan: the “cost” is the near term reduction in take-home pay while the benefit is speculative; equity instruments inherently have a high degree of complexity and the degree of choice (percent of salary to contribute) is difficult; feedback from the decision will not be received for several months or more; and the ultimate outcome of the decision depends on future decisions (sell or hold).

Behavioral economics principles have the potential to improve equity plan design solutions through the design, operation, and communication of plans. We will provide a few examples that comprise far from an exhaustive list of the possibilities.

Maximizing Gains From Employee Options

To ensure that employees receive the maximum compensation from stock options without subjecting them to unnecessary risks, what solutions and program features are indicated? Can both plan design and plan operation provide the behavioral support for company talent management strategy and equity effectiveness? We propose ideas that may individually or collectively address this.

- ▶ Extend vesting periods. Equity plan objectives have changed substantially since the shorter vesting schedules were introduced in cash-strapped technology firms to position vested options as a source of short-term cash flow for employees with low salaries. Instilling a longer-term view requires longer-term vesting. In the US, a 5-year cliff vesting schedule is embedded in the pension plan regulations and accepted. Why would we require less with equity? If the program is intended to provide for some earlier liquidity, design partial vesting after a few years that leaves more unvested than vested at that point: 40% after 3 years, 60% at the end of 5 years. While extending vesting periods may result in over-

²¹ Thaler, Richard H., and Cass R. Sunstein. *Nudge: Improving Decisions about Health, Wealth, and Happiness*. New Haven & London: Yale University Press, 2008.

²² Thaler, Richard H., and Cass R. Sunstein, *Nudge: Improving Decisions about Health, Wealth, and Happiness*, New Haven & London: Yale University Press, 2008.

discounting, balancing value attributed with promotion of a longer-term view is critical to demonstrating the financial advantages to the employee of that longer-term perspective.

- ▶ Time equity grants and vesting dates to salary increase and bonus actions. Is it possible to direct employees to better equity compensation decisions merely by adjusting the timing of certain events? HR and stock administration departments often argue to spread pay events over the course of the year to smooth out the administrative workload but this should not drive pay program design. Also, vesting dates need not be driven solely by grant date and can be timed to coincide with other events. The principal of nominal loss aversion explains why synchronizing pay raises and increases in savings rates increases participation.²³ Research indicates that people do exhibit longer-term thinking when elections resulting in short-term cash reductions are coupled with events that increase short-term cash flow.²⁴
- ▶ Balance the equity portfolio with a mix of options and shares with differentiated vesting schedules. Understanding employees' behavior with respect to option exercises and share sales can allow a grant pattern that encourages a longer-term view.
- ▶ Structure the default option exercise to be sell-to-cover. Emulating the PPA's auto-enrollment feature, have an "auto-elect" of sell-to-cover requiring no action by the employee and requiring additional action for them to opt-out-to-cash-out.
- ▶ Offer advance elections of liquidation choices upon option exercise. "Present-biased preferences" – the outcome of hyperbolic discounting – may underlie the high percentage of option exercises that result in equity positions completely cashed out. Some limited research indicates that asking people to make choices farther in advance results in "better" choices.²⁵
- ▶ Provide an incentive to hold after-tax shares. Offsetting the risk aversion and associated loss aversion might require an employer match of shares with additional vesting. This approach is already used by some

companies in encouraging stock retention by executives but may require some fine-tuning to apply it to a broader employee population.

- ▶ Change the basis for communicating the value of equity compensation. The fair value methodology of FAS123R and IFRS2 is not how employees assign value and, in fact, may not be the best context for employees to view such awards. More consistent with the company's focus and possibly more transparent is to reposition equity awards primarily from a projected value perspective, de-emphasizing current value and emphasizing future value assuming a range of appreciation scenarios.
- ▶ Going further, provide detailed communications on the value of long-term holding. Companies are often hesitant to show illustrations of value based on stock price projections but there are risk-free methods for providing online tools and examples to replace perceptions of intangible risk with tangible realizable potential. We know from experience that in technology companies "every engineer has a spreadsheet" modeling their equity compensation, even in companies that provide through their outsourcer web-based modeling tools. Companies have an opportunity to influence the design and interpretation of those models.
- ▶ Ensure that the equity program web page design is overseen by equity plan designers and not web designers. Research shows that the mere placement of certain "buttons" on the web page and the presentation of information influence employees' choices among alternatives. Web page and form design should be beta-tested with plan participants with the same A/B testing web designers use to encourage targeted click behavior.

Maximizing Stock Purchase Plan Participation

Though some companies have pared down the valuable features of employee stock purchase plans in the US and their non-US counterparts, many still have the lucrative 15% discount and lookback features because of the favorable cost/benefit outcome. Plan sponsors and administrators are often frustrated that more employees do not take advantage of the "obvious" pay opportunity.

²³ Benartzi et al., "Choice Architecture and Retirement Savings Plans", University of California, Los Angeles, 2008.

²⁴ Benartzi et al., "Choice Architecture and Retirement Savings Plans", University of California, Los Angeles, 2008.

²⁵ Frederick, Shane, George Loewenstein, and Ted O'Donoghue, *Time Discounting and Time Preference: A Critical Review*, "Journal of Economic Literature" 40.

Given that the primary reasons for low participation are lack of understanding, inability to contribute additional pay if some is already contributed to a retirement plan (e.g., a 401(k) in the US), and the perceived risk of investing in company stock, a multiple-tactic approach based on behavioral economic principles is indicated:

- ▶ Plan the election period to coincide with pay events that result in a pay increase. Companies can adjust the timing of their salary increase and bonus payments to coincide with stock purchase election periods. What better time to encourage investing in company stock than when employee's pay just increased? Is that new money, announced but not received, like the "house money" of the gambler? Is the choice architecture the driving force?
- ▶ Emphasize the low-risk alternative of cash-out at purchase. While contrary to the employee ownership ethic, the fact is that in the US ESPPs can provide a very expense-efficient form of compensation to employees. This is an example of where financial efficiency may override the ownership focus but then combined with other nudges, employees may be influenced to stay in the plan and realize even greater gains.
- ▶ Offset the cash-out incentive with an incentive to hold shares. To improve the ROI of equity compensation, structure an award of equity to stock purchase plan participants based on their holding shares. The perceived value may exceed the accounting expense and create an upward spiral of pay, ownership, and financial efficiency.
- ▶ Invest in communication. A few dollars per employee spent on communication that enhances participation rates can result in an immense return on those expenditures. When an employee then realizes a relatively small personal investment can generate such returns, the aggregated employer/employee cost/benefit relationship is optimized.
- ▶ Include peer influence in communication strategy. One study found that "peer effects" – consulting with a co-

worker regarding their decisions – drives the results.²⁶ Knowing that employees do consult with one another during the decision period, as consumers do with product purchase decisions, provides an opportunity to channel communications accordingly.

Communications

While many of the behavioral economics principles seem to work against the success of equity compensation programs, there are others that work to the advantage of plan sponsors if they are incorporated in the design. For example:

- ▶ The endowment effect. "Go with what you know" behavior. Investors (employee equity plan participants are investors) tend to buy and hold shares in companies that they "know" just as investors tend to own more stock of companies in their country than of companies in foreign countries.²⁷ How do we use this in employee equity compensation? Despite the warnings of investment analysts and others that employees should not over-invest in their employer's stock, and a few high-visibility disasters like Enron, this behavioral tendency can be used to the company's advantage.
- ▶ The herd mentality. People in uncertain situations tend to overweight the actions of others in their decisions. Marketing professionals have used this for decades, knowing that "opinion leaders" can influence the choices of their colleagues. A less elegant term for this is "herd mentality" in investing circles and a result of the "information cascade" among some economists.²⁸ Given the tendency for employees to ask their peers "what did you do?" there is an opportunity to ensure that the opinion leaders in the company, while refraining from giving investment advice, should be the focus of informational and educational efforts.
- ▶ Risk balancing. A recent research study in Taiwan²⁹ confirms that individual risk orientation is a significant factor in employee holding versus liquidation of equity instruments and actions are highly contingent on the degree of "psychological linkage" between employees

²⁶ Duflo, Esther and Emmanuel Saez, 2002. "The Role of Information and Social Interactions in Retirement Plan Decisions: Evidence from a Randomized Experiment," NBER working papers 8885, National Bureau of Economic Research, Inc.

²⁷ Huberman, Gur, "Familiarity Breeds Investment," *Review of Financial Studies*, Vol. 14, 2001.

²⁸ Bikchandani, Sushil, David Hirshleifer, and Ivo Welch. 1992. "A Theory of Fads, Fashion, Custom, and Cultural Change as Informational Cascades," *Journal of Political Economy*, 100 (5).

²⁹ Liu, Nien-Chi, Ann Lin and Chung-Hung Lin, "Why do employees hold their vested stocks while they can sell them?" *The International Journal of Human Resources Management*, January 2009.

and the company. This points again to communication strategy as the key to bridging perception and behavior to the mutual benefit of the employee and employer.

Taking It Global

Much of the research to date in the area of behavioral economics has occurred in context of US-based cultural norms. Like many other concepts, the ideas will be subjected to a number of cultural and behavioral differences. Cross-cultural behavioral economics is more nascent than the work in the US but there are several bodies of information that indicate two important and seemingly contradictory facts:

- ▶ Across national boundaries, human beings have similar tendencies with respect to the fundamentals of behavioral economics
- ▶ There are significant and important differences among cultures in how people behave economically.

For example, recently published research³⁰ indicates that many US-derived principles of behavioral economics are valid in the People's Republic of China yet there are important cultural differences. One factor identified in this research is the role of inflation in individuals' perception of the value of assets. Other cultural factors were identified that may lead to even greater considerations. The authors of that research did not address some issues that we believe may be governing factors in the ultimate effectiveness of equity compensation, tax and securities issues aside. Does the fact that Chinese citizens have had a shorter history of the ability to choose affect their choices and does choice architecture need to consider that? Are Chinese employees more risk averse, or less risk averse, due to continued government control of the economy?

US companies have often assumed, wrongly, that any program that is successful in the US will be equally successful in the UK. The historic connection and superficial similarities of the two populations likely fuels this perspective. Yet the economic histories of the two nations result in quite different orientations. Like the US, the UK has adopted government-sponsored programs to encourage equity compensation. Whether these regulatory

efforts address behavioral economic principles has not been tested. What should be clear, however, is that differences in taxation, economic structures and the way that history has manifested itself in the nation's financial decisions (rejection of the Euro, for example) must be considered when implementing equity compensation programs.

Notably, the Indian economy has avoided much of the global financial crisis due to a substantially different banking regulatory structure than the US. The differences go beyond regulation, however, as reflected in the comments by Deepak Parekh, the chief executive of HDFC, India's first specialized mortgage bank. "Savings are important. Joint families exist. When one son moves out, the family helps them. So you don't borrow so much from the bank."³¹ Are there deep-rooted differences among cultures regarding money that should be considered in the design of equity compensation plans?

The continuing expansion of behavioral economics research outside the US should provide even more questions, and hopefully more answers, in the coming years.

The Future of Behavioral Equity™

As global equity compensation professionals, what do we do with all of this? This chapter is an initial attempt to integrate many years of experience designing, overseeing, and administering equity compensation program with the growing body of knowledge on behavioral economics. We believe there are several lessons that can help take equity compensation to a new level of effectiveness:

- ▶ **New Evaluation.** A remuneration program intended to change behavior must never lose sight of behavioral factors. If the intent is to "attract, retain, and motivate" – the tired mantra of pay professionals – then there needs to be concrete evidence that the program is fostering each of these objectives, or the Company needs to carefully reassess the reasons for its equity practices. Companies are woefully behind in doing so relative to the extensive time and money spent on financial reporting, valuation, and other regulatory activities.
- ▶ **New Design.** The amount of effort expended on resolving global regulatory issues – country-specific disclosure, accounting, tax, securities, and labor requirements – must

³⁰ Liu, Nien-Chi, Ann Lin and Chung-Hung Lin, "Why do employees hold their vested stocks while they can sell them?" *The International Journal of Human Resources Management*, January 2009.

³¹ "How India Avoided a Crisis," *New York Times*, 19 December 2008.

be matched with a dedication to behavioral economics-focused design. Many US multinational corporations are guilty of exporting US-centric programs, but employers headquartered in all countries need to add behavioral analysis to their plan design and operation due diligence process.

- ▶ **New Communication.** The vast differences in concepts of ownership, work, and money among the world's cultures indicates that "think global act local" may need to evolve to "think global think local" for equity compensation communication and implementation. Translation of documents will need to yield to translation of design.

There is no doubt that the current economic, financial, and political crises will drive equity compensation decisions in the near future. These events are triggering new thinking about equity remuneration and just as behavioral economics is making its way into the thinking of global leaders and financial institutions, equity compensation professionals who adopt a similar perspective can emerge as leaders rather than compliance experts and administrators. We have the opportunity to explore and develop these ideas now and position them for a lead role when the economies of the world rebound, before we forget what didn't work well, after all, during the last boom times.

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