When and How to Delegate? A Life Cycle Analysis of Financial Advice

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Abstract

Using a theoretical life cycle model, we evaluate how much workers benefit from having the option to hire a financial advisor when it is costly for employees to rebalance their own financial portfolios. Results indicate that having access to a financial advisor at the start of one's career can be quite beneficial increasing certainty equivalent consumptions by 1.1%. If delegation to an advisor is available only a decade after entering the labor market, the benefit of delegation is cut by half, and it falls further if delegation is available only later in life (at age 60). We also examine whether simpler target date funds and fixed weight portfolios benefit consumers, compared to the outcomes with customized financial advice. We find that the simpler portfolio products would need to be provided at zero cost, in order to benefit consumers as much as having access to a financial advisor.

Keywords: Portfolio inertia, life cycle saving, household finance, human capital, financial advice
JEL classifications: G11, D14, D91

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We examine how and when delegating one's investment decisions to a financial advisor can enhance consumer wellbeing, taking into account the fact that workers need to spend their time to manage their own portfolio. When workers manage their own money, this reduces their opportunity to undertake on-the-job learning. In turn, self-management of personal investments reduces future labor market earnings. We first investigate how introducing an investment delegation option at different points in workers' careers can change results. Young investors have small investable asset but they have longest horizon to benefit from sound financial advice. Thus, it is not clear *ex ante* whether younger investors benefit more from having a delegation option. We also compare these outcomes with what would obtain if the worker instead adopted simple rule-based investment portfolios such as conventional Target Date Funds (TDF) with age-linked investment glide paths. We explore welfare gains of a few portfolios rules with fixed asset allocations. Our goal is to quantify the benefits of having access to personalized financial advice versus portfolios managed according to simple rules, at different stages over the life cycle.

Our baseline model is reflecting widely observed portfolio management patterns of individual investors, namely *portfolio inertia*. A great deal of empirical research shows that most workers are inactive investors: that is, they tend to "set and forget" their investment portfolios. For instance, Ameriks and Zeldes (2004) showed that over a 12-year period, three-quarters of the retirement account holders they examined never altered their retirement asset allocations at all; similarly, Agnew, Balduzzi, and Sunden (2003) reported that almost 90 percent of retirement account holders never altered their portfolios. Such inertia also applies to non-retirement accounts, in that a majority of equity owners exhibited portfolio inertia in the Panel Study of Income Dynamics (PSID) data (Bilias, Georgarakos, and Haliassos 2010). A prominent

explanation for why investors display such inertia is the fact that financial management requires people to pay substantial amount of monetary or non-monetary transaction costs. In this paper, we build a baseline model of investor inertia based on the time cost they need to incur when self-managing their portfolios (Kim, Maurer, and Mitchell 2016).

A Life Cycle Model of Rational Investor Inertia

At the outset, it is imperative to describe a baseline model of rational inertia used for evaluating financial advice over the life cycle. In this section, we present a brief summary of the life cycle model elaborated in Kim, Maurer and Mitchell (2016).[1]

Time cost of financial management: We posit individual investors are not financial experts and need to incur time cost (or mental resources) when managing their financial portfolio. Time costs become particularly important when individuals gain job-specific human capital on their jobs via learning by doing (Arrow 1962; Becker 1964). In this case, devoting time to investment management comes at the cost of reducing peoples' future labor earnings.

Inertia vs. active management: We consider portfolio inertia as one of investment management methods. If an investor chooses *portfolio inertia* in period t, he keeps his current stock balance for the next period and the next period's stock balance is only influenced by the stock market return. By choosing portfolio inertia, he incurs no time cost for managing financial asset that he would otherwise devote to analyzing new information to implement a portfolio reshuffling. By electing *active portfolio management*, he might optimally determine a new mix of equity and bond but in turn, needs to incur time cost. This time cost will be deducted from his available time for working, and he may lose an opportunity to accumulate more job specific skills. We

[1] This section is summarizing a model developed in Kim, Maurer and Mitchell (2016) which the readers can refer to for a more thorough discussion of the model specifications.

formulate life-time discounted utility for each portfolio management method and assume the investor optimally chooses a portfolio management method with higher value function.[2] Thus, central to the rational inertia model are two competing costs: opportunity cost for human capital accumulation and suboptimal portfolio allocation for a long time.

Preferences: The consumer has a time-separable power utility function defined over a composite good consisting of current consumption (C_t) and time devoted to leisure (L_t), which is given by $U_t(C_t, L_t) = \frac{1}{1-\gamma}(C_t L_t^{\alpha})^{1-\gamma}$ Here $\alpha > 0$ captures the investor's preference for leisure relative to consumption and the parameter γ measures relative risk aversion.

Labor Earnings*:* Yearly labor income (E_t) is determined by the individual's job-specific human capital level (H_t), wage shock (Y_t), and labor supply (l_t):

$$E_t = (1 - h_t)(1 - \tau_t) l_t H_t Y_t U_t,$$

where h_t and τ_t represent housing expenditures and labor income tax, respectively. U_t is a temporary idiosyncratic shock in the labor market. After the (exogenous) age-65 retirement age $(t = 45)$, the individual stops working $(l_t = 0)$ and receives a lifelong pension benefit equal to a fraction of his final labor earnings.

We have calibrated this model for the United States using information on labor income patterns, mortality, retirement benefits, and capital market parameters (see Kim, Maurer and Mitchell 2016). A set of calibrated parameters are presented in the Appendix Table. Consistent with most prior life cycle models (e.g., Cocco, Gomes, and Maenhout, 2005), our baseline model matches well with empirically observed pattern of labor earnings, consumptions, stock balance, wealth accumulation/decumulation profiles (Figure 1).

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[2] There can be behavioral reasons for why investors are inactive in managing their portfolio. For example, investors may have emotional hurdle to actively managing their financial asset. Although this line of reasons can be informative, we focus on the rational optimization framework to provide quantitatively more accurate evaluations of having financial advice over the life cycle.

[Figure 1 here]

When Does Financial Delegation Make Sense?

We model the main benefit of having the option to delegate one's investment decisions to a financial advisor as one's saved time for accumulating more job-specific skills or human capital (Kim, Maurer, and Mitchell, 2016). When an individual uses an advisor, he must pay a fee for the customized advice. By contrast if he self-manages his portfolio, this takes time which reduces his opportunity to invest in job-related human capital that can enhance his future earnings. Evidently, the attractiveness of delegating to an advisor varies over the life cycle in a complex manner. For example, younger workers have longer time horizons over which to reap the benefit of financial advice. But they also have little money to manage, hiring a financial advisor might add little value.

If a worker handles his own portfolio himself (*self management*), he incurs time costs which can cut into both leisure and work time. The individual seeking to limit such time costs could simply maintain his current portfolio allocation (*inertia*). Alternatively, he could engage a financial advisor (*delegation*) to do the job in exchange for a fixed plus a variable management fee. To evaluate *when* access to financial advice can be most beneficial, we introduce the delegation option to different points over the life cycle. Prior to the introduction of the advice, investors are assumed to either do nothing (i.e., engage in portfolio inertia), or self-manage the account (and thus incurring the time cost), whichever is optimal. After access to the advisor is introduced, this remains an option for the rest of his life.

We assume that financial advisors charge an annual management fee which is a percentage of total asset under management (AUM), along with a minimum fixed fee. According to documents filed by Registered Investment Advisors (RIAs) reporting to the US Securities and

Exchange Commission, we have determined that the average annual percentage fee was 1.41 percent of AUM in 2014. The baseline minimum fixed fee was $2,100 for an investor with a minimum balance of $150,000 (≈$2,100/1.41%).

Table 1 summarizes how making financial advice available at different ages shapes several key outcome variables, including welfare gains (i.e., the certainty equivalent amount of consumptions), wealth, labor earnings, consumption, labor supply, and leisure time. Four introduction dates are considered for the delegation option, namely ages 20, 30, 45, and 60. What we see is, first, that consumers are always better off when given access to a financial advisor (row a). Second, these gains decline with the age when the delegation option is made available. That is, workers can expect a 1.07 percent improvement in lifetime welfare when they have an opportunity to delegate their financial decisions to an advisor from the start of their working lives, at age 20. By contrast, a 10-year delay in the introduction of the delegation option cuts the gains by almost half. When the delegation option is introduced just prior to retirement, at age 60, the lifetime welfare gain is tiny, only 0.02 percent.

[Table 1 here]

Third, we find that early exposure to financial advisors generates substantial additional lifetime wealth (row b). If workers have access to investment delegations from age 20 onward, their average wealth is 20 percent higher than the no-delegation case. If the delegation is available 10 years later, wealth accumulation rises by less, just 14 percent. And for even later ages, the impact on wealth is smaller still. And fourth, delegation also changes income and consumption patterns, as reported in rows (c) and (d) of Table 1. Delegation allows workers to provide more labor supply by saving their time (row e). Again, we see that making advice accessible early in the work career enhances outcomes the most. We also highlight the interesting pattern that emerges when we compare the result from introducing delegation at age 45 versus

age 60. When financial advice is made available only from age 60, people enjoy slightly more consumption compared to when it is introduced at age 45 (2.2% vs 2.1%) as well as more income (1.29% vs. 1.25%), but less leisure (6.1% vs. 6.75%). The smaller leisure levels produce less measured life satisfaction (0.02% vs. 0.19% in welfare terms) compared to the benchmark case.

In sum, our results indicate that it is better for investors to have an early opportunity to hire financial advisors, since access to financial management early in life can produce important improvements in wealth and wellbeing. If financial advisory services are only introduced when people are in their 60s, welfare increases by only small amount (0.02%).

Comparison: Customized Financial Advice vs. Simplified Investment Portfolios

In our benchmark model of investor inertia (Kim, Maurer and Mitchell, 2016), the benefit of hiring a financial advisor is due to the time saved in financial management. In return, an investor will need to pay fees comprised of a minimum fixed and a variable fee based on total assets under management. To judge how sensitive peoples' welfare gains are to such costs, we next consider varying fee levels. This question is timely because we observe an emerging industry of low-cost financial advice providers based on modern portfolio theory and sophisticated computer programs, sometimes called "robo-advisors." These represent a relatively new phenomenon in the financial advice industry, and they involve the provision of online automated investment services with virtually no human contact (Reklaitis, 2015). Compared to human advisors, robo-advisors have a cost advantage since their investment suggestions are pre-programmed based on clients' characteristics and conditions (e.g., risk aversion, background risk, current asset mix). In what follows, we model robo-advisors as investment advice providers charging a lower minimum fixed fee (i.e., requiring a lower minimum balance) than do human

advisors. In return, they provide recommended asset mixes derived from solving clients' dynamic portfolio choice problems.

To evaluate results conservatively, we assume that robo-advisors charge an annual management fee of 1.41% of AUM, just as do the human advisors, but they levy a lower minimum fixed fee.[3] Table 2 reports results for workers having access to robo-advisers from age 20. When there is no minimum annual fee, we see that the young worker's lifetime consumption is higher by 1.3 percentage points, or around 19 percent above the levels with customized but more expensive human financial advisors. As the minimum annual fee rises, this decreases client welfare gains. In other words, robo-advisors have a substantial advantage when busy investors seek to delegate financial management.

[Table 2 here]

In Table 3 we compare investor wellbeing when "plain-vanilla" investment portfolios are offered in lieu of customized financial advice. The first row (*a*) assumes that the investor must hold 60 percent of his assets in equity, while the second (*b*) assumes the equity fraction is 60 percent prior to retirement, and 20 percent afterwards. The third row (*c*) assumes that the equity share equals 100 minus the investor's age, while the final row (*d*) assumes that the glide path has the equity share falls to zero as of age 80. The latter two examples are akin to the prominent portfolio rule of conventional Target Date Funds, which have become extremely popular in the marketplace over the last two decades.[4] None of these plain vanilla portfolios takes account of differences in investors' background risk or job-specific earnings patterns. These rules ignore the

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[3] In practice, robo-advisors can charge even less; see https://investorjunkie.com/42668/true-costs-robo-advisors/

[4] Not all TDFs implement same gliding path of equity allocation. Some TDFs use glide path targeted towards the retirement year (called as "to" glide path), and others keep lowering the equity allocation through the retirement years (called as "through" glide path). The latter group of TDFs have more equity exposures in general (Yang and Lutton, 2014).

fact that investors' decision regarding portfolio allocation and the characteristics of their other sources of investable assets are tightly connected. For example, investors whose labor earnings are quite volatile would prefer investment profiles with a lower equity share to hedge against their labor income risk.

[Table 3 here]

The outcomes reported speak to the question of how plain-vanilla portfolios akin to those seen in the marketplace affect lifetime wellbeing, across different management fee levels. Column (1) assumes an annual management fee of 0.84 percent of AUM, same as the average fee for TDFs (Yang and Lutton, 2014). Columns (2-4) show results for successively lower AUM fees. Results show that consumers do benefit from these plain-vanilla portfolios, as compared to the baseline model with no access to delegation options. Nevertheless, the gains are only 30-43 percent of the robo-advisor case. In Columns (2)-(3), we show how lower fees increase consumers' levels of wellbeing, and the final column reports results for a zero management fee. Generally speaking, plain vanilla investment accounts and zero management fees generate similar (though still lower) welfare gains as compared to robo-advisors. TDFs do not perform better because the equity investment rules depend only on the clients' ages, and they ignore clients' particular circumstances such as human capital risk, wealth level, and time cost of portfolio management. Overall, Table 3 suggest a customized delegation option such as a robo-advisor could be more desirable than a simple rule-based equity share account standardized for all.

Additional Considerations

Thus far we have noted that having a delegation option tends to increase consumer wellbeing. Nevertheless, this can also give rise to a principal-agent problem, due to information asymmetry and possible conflicts of interest between advisors and investors. For example,

financial advisors might attempt to maximize their compensation at the expense of investors' gain. In this paper, our model considers 'ideal' financial advisors without such agency issues. It might be possible that a sophisticated robo-advisor mitigates this problem, but this issue in a life cycle model calls for additional research beyond the scope of the present paper.

Another question is what an optimal default option would be for inactive investors, taking into account additional decisions including how much clients should contribute to and withdraw from their retirement accounts. This consideration can become an important issue in retirement plans, and automatic default options would appropriately explore optimal contribution and withdrawal patterns over the life cycle, in addition to the portfolio management.

We have also assumed here that there are no communications problems between financial advisors and investors. Nevertheless, fee communications are often shrouded (Anagol and Kim 2012) when investors lack knowledge or have limited time to evaluate information presented. Understanding how financial advisor disclosures shape investor behaviors is likely to have rich policy implications for regulating the financial advisory industry.

Conclusions and Discussion

We have quantitatively analyzed the impact of having a delegation option at different points over the life cycle. We show that having access to a delegation option in one's early career can have a substantially positive impact on investors' lifetime welfare. Access to advice at age 60 is less beneficial in the context of our model. And finally, although TDFs are widely used, they appear to deliver lower gains compared to having a financial advisor customize portfolios to investors' specific financial and economic circumstances. Clearly, however, these conclusions about investment advice and portfolio management depend on the costs of each, as well as the benefits.

Table 1: Impact of Introducing a Delegation Option at Alternative Ages: Investor Gains in Wellbeing

	(1) Age=20	(2) Age=30	(3) Age=45	(4) Age = 60
(a) Welfare Gain	1.07	0.51	0.19	0.02
(b) Wealth	20.03	14.42	9.05	7.95
(c) Earnings	5.08	2.95	1.25	1.29
(d) Consumption	6.05	3.86	2.10	2.20
(e) Labor supply	7.53	4.62	2.19	2.14
(f) Leisure	7.28	7.18	6.75	6.10

Notes:
This table displays the impact of having access to a financial advisor to whom investment decisions can be delegated, at different points in the life cycle. The model with investor inertia in Kim, Maurer and Mitchell (2016) is the benchmark case. The table describes the worker's welfare gains and average changes in key variables under the delegation option alternative, versus the benchmark without a delegation option. All numbers are in percentage points (%).

Table 2: **Welfare Consequences of Financial Advice Provision for Alternative Minimum Fees**

	(1) No minimum fee	(2) Minimum fee= $700	(3) Minimum fee= $1,400
Welfare Gain	1.30	1.11	1.08

Notes:
This table displays the impact of having access to a financial advisor charging alternative minimum fixed fees. In each case, the annual variable fee is assumed to be an annual 1.41% of AUM. The model with investor inertia in Kim, Maurer and Mitchell (2016) is the benchmark case. The table describes the worker's welfare under the delegation option alternative, versus the benchmark without a delegation option. All numbers are in percentage points (%).

Table 3: Impact of Introducing Plain-Vanilla Portfolios in Lieu of Investor Inertia: How the Change in Investor Wellbeing Compares to Benchmark, for Alternative Management Fees and Equity Glide Paths

Investment Glide Path	(1) Mgmt fee=0.84%	(2) Mgmt fee=0.5%	(3) Mgmt fee=0.2%	(4) Mgmt fee=0%
(a) 60%	0.52	0.63	0.88	1.10
(b) 60% → 20%	0.49	0.59	0.84	1.06
(c) 100-age	0.38	0.56	0.81	0.94
(d) 80-age	0.56	0.69	0.98	1.20

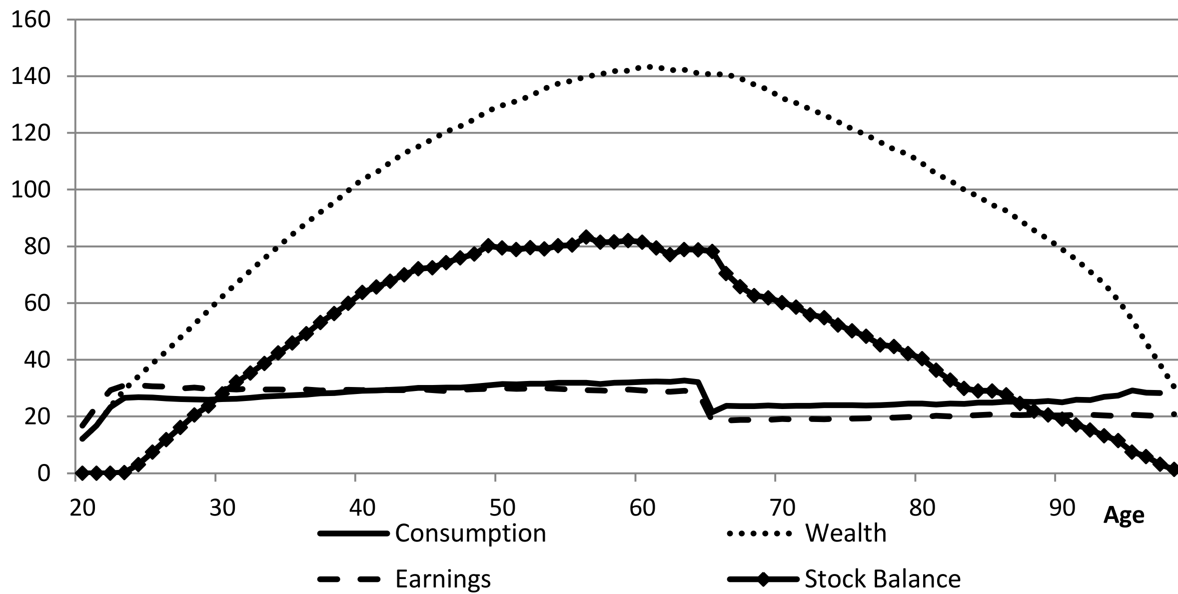
Notes:
This table displays the impact of having access to alternative equity paths over the life cycle, versus the benchmark model with investor inertia as in Kim, Maurer and Mitchell (2016). Each column shows results for different management fees for the glide path products. All numbers are in percentage points (%).The row labeled *60%* indicates results for the case where 60% of savings are always invested in stocks. The row labeled *60%→ 20%* indicates results for the case where the investor's equity fraction is 60% prior to retirement, and then falls to 20% thereafter. The row labeled *100-age* indicates results for the case where the fraction of savings invested in equity is 100 minus the investor's age (a prominent rule of TDF). The row labeled *80-age* indicates results for the case where the glide path varies with age but the minimum percent invested in equity is zero.

Appendix Table: Summary of calibrated parameters for the baseline model

Parameter	Baseline value
Working periods	45
Retirement periods	35
Time discounting	0.96
Risk aversion	3
Leisure preference	1.0
Std. dev. of permanent wage shock	0.0710
Std. dev. of human capital shock	0.0434
Std. dev. of transitory wage shock (pre-retirement)	0.1726
Std. dev. of transitory earnings shock (post-retirement)	0.28
Risk premium	0.04
Std. dev. of stock return	0.205
Risk free rate	1.01
Delegation annual fee: variable rate	1. 41% per annum
Delegation annual fee: fixed fee (1.41% of min. req'd balance of $150,000)	$2,115

Notes:
This table summarizes parameter values for the benchmark case in Kim, Maurer and Mitchell (2016).

Figure 1: Life cycle profiles of key variables from a baseline model.



This figure is from Kim, Maurer and Mitchell (2016). It shows average life cycle profiles of key variables when only active management or inertia are available, generated from 2,000 independent simulations based on the baseline specification. All dollar amounts are in $1,000s deflated to year 2012.

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