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Search, adverse selection, and the services of financial experts

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Abstract

A financial expert holding a particular qualification may make an unobservable investment in the expert's skills. Experts making such an investment can better customize their services to clients' needs, which some clients value. Quality enhancement is more likely the more customers prefer customization, when profit margins for customization are higher, as customer search frequency and the speed of information dissemination increase, and as the expert's discount rate, the cost of the quality enhancement, and the number of experts in the market decrease. The latter result indicates expansion of the number of providers holding a particular qualification is not unambiguously desirable.

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1. Introduction

Financial consulting, financial planning, and estate planning are vitally important to the financial well being of individuals and businesses. Financial consulting, financial planning, and estate planning services may be performed by a number of professionals holding a number of different designations, including licensed attorneys, Certified Public Accountants (including those holding the Personal Financial Specialist designation), Certified Financial

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Planners (administered by the CFP Board), Chartered Financial Consultants and Chartered Life Underwriters (administered by the American College), Certified Financial Services Counselor (administered by the American Bankers' Associations), Chartered Financial Analysts (administered by the Association for Investment Management Research), individuals holding a Ph.D. in finance, economics, or related disciplines, and others. Although the diversity of regulatory authority makes it difficult to quantify the actual proportion of Gross Domestic Product devoted to such activities, the number of individuals devoting full or part time to financial consulting and planning activities indicates the importance of the profession. The 2001 Annual Report of the CFP Board indicates that there were 38,408 CFP® practitioners in the United States and 66,121 worldwide at year-end. A December 16, 2002 AMIR press release indicates that the total number of CFA charterholders was 49,026 located in over 110 countries. Koreto (2002) reports that in July 2002 there were approximately 32,000 persons holding the ChFC designation. Goodman (1996) reports that the older CLU had approximately 79,000 awardees as of that date. According to a note in the March 2003 *Partner's Report,* the AICPAs PFS designation had been awarded to approximately 3,000 individuals, although the AICPA was considering eliminating this specialty designation.

The number of persons holding these designations has grown significantly in recent years with the number of individuals holding the CFP® designation about 10% higher in the United States and 30% higher worldwide than in 1996, the number of individuals holding the CFA designation has more than tripled since 1994, the number of individuals holding the ChFC designation is up about 10% from 1996, and the number of individuals holding the PFS designation has roughly doubled since 1996. The results of Elmerick, Montalto, and Fox (2002) suggest this growth may continue because of increasing demand. They find that, other things equal, households are more likely to seek comprehensive financial planning advice whenever the householder is under age 35, which they suggest is a generational effect rather than a pure age effect. Planning use also rises with income and net worth, so as these younger households, who Elmerick et al. suggest are more amenable to planner use than previous generations, age and become more wealthy, the demand for planning services will likely increase.

Increasingly, planning services are performed on a fee-for-service basis. Pahl (1996) reports that the percentage of CFP® practitioners offering commission only services has dropped from 64% in 1987 to 19% in 1994, although a significant majority (72%) of CFP® practitioners still received some commissions. As the move to fee-for-service provision continues, the market for financial and estate planning services takes on characteristics similar to other markets for experts' services including by-the-hour legal, auditing, tax preparation, and consulting services, fee-for-service medical and dental services, and automobile and appliance repair services. The theoretical literature regarding the markets for such services, which Darby and Karni (1973) term "credence goods," is not extensive. Arrow (1963) provides a broad overview of the informational aspects of such markets. Examples of formal theoretical analyses of similar market environments include Wolinsky (1993), Nitzan and Tzur (1991), and Pitchik and Schotter (1987, 1993).

Although a large contingent of the accounting and finance literatures is applicable to improving the delivery of financial consulting and planning services, there is essentially a virtual absence of literature regarding the organizational structure of the market for such

services. Black, Ciccotello, and Skipper (2002) recognize this deficiency in the theoretical literature for personal financial planning. They argue that personal financial planning should be theoretically grounded in modern portfolio theory as applied to the overall client portfolio including human capital and liabilities as well as financial assets. They consider alternative models of the planning process including the specialist model (where the individual client contracts directly with specialty financial professionals) and the planner model (where the financial planner operates as a coordinator of other financial professionals and a liaison to the client). This study represents a contribution to the literature regarding the organizational structure of the market for planning services.

The explosion of the literature on market microstructure and recent trends in the corporate governance literature indicate that it is increasingly accepted that an understanding of the interaction between individual market participants is essential to understanding market outcomes. With the exception of real estate, the importance of search to financial markets and the market for financial services was largely unexplored until recently. Burdett and O'Hara (1987) recognized the role of search in block trading. Campbell, LaMaster, Smith, and Van Boening (1991) and Lamoureux and Schnitzlein (1997) consider the impact of bilateral search as an alternative trading mechanism on exchange and dealer markets, respectively. Williams (1995) develops a model for pricing real assets with decentralized markets, including real estate, durables, small businesses, and merger and acquisition targets. However, there have been even fewer attempts to apply search technologies in the markets for financial services. Two models that do are Posey and Yavas (1995) and Posey and Tennyson (1998) who consider the role of search in the coexistence of alternative marketing systems in insurance. Braham and Borrus (2002) suggest that search plays an important role in the market for financial planning services. A survey of financial advisers found that 23% of new clients came to the provider because of an unsatisfying experience with a previous provider. The model developed here considers the effect of search on market equilibrium in a market for financial experts' services where unobservable differences in quality may exist. That is, where consumers may face an adverse selection problem with respect to an expert's quality.

The study considers the incentives of an expert to make an unobservable investment in the expert's skill set. It thus investigates the likelihood that quality will exceed the minimum requirements for certification and licensure for a particular set of experts. A model of consumer search is used to examine the incentives of financial experts for skill acquisition. The importance of incentive structures is well recognized in the literature. In the current model, in contrast to many reputation models, financial experts can earn a positive return on the quality investment through an enlarged client base even though the markup for the higher quality services, while positive, need not exceed that for lower quality services (i.e., even though the profit margin for high quality is smaller).

As is frequently true with theoretical models of microeconomic behavior, many of the results obtained are quite intuitive. The incentive to invest in additional skills depends critically upon consumers searching for alternative providers when dissatisfied with their current provider and upon the provider receiving a positive rent to justify the cost of the quality investment. Profit margins and the distribution of consumer preferences over quality impact the likelihood that financial experts will invest in skill enhancement in predictable ways. In addition the incentives for skill enhancement increases as the expert's discount rate

decreases, the speed of information dissemination increases, the cost of the skill enhancement decreases, and the number of experts in the market decreases. The latter result, that increasing the number of providers decreases the likelihood of skill enhancement, irrespective of whether other providers pursue skill enhancement, is somewhat surprising in that an increase in the number of competitors decreases the likelihood of competition on the quality dimension. It has implications for the regulation of these types of markets, indicating that the expansion of the number of providers is not unambiguously desirable. While the model can be best interpreted as modeling competition within the market for a particular certification, it also is suggestive regarding issues of "credential competition," which I discuss in the implications section.

The study is organized as follows. Section 2 presents the assumptions underlying the model. Section 3 develops the demand and revenue functions. Section 4 presents the comparative statics results regarding the likelihood of skill enhancement by planners. Section 5 discusses the implications of the model. Section 6 summarizes and concludes the study.

2. The model

Assume that in the market there are N risk neutral firms providing planning services, M consumers (who may be risk averse) consuming these services, and nature.[1] Henceforth, I will refer to the services being provided as financial planning services to simply the exposition.[2] The market exists for ξ units of physical time, where ξ is finite, randomly chosen by nature (with $\xi > N$), and unobservable by all parties (except nature) until the last period. Each consumer has an exogenously determined identical demand of $\phi > 0$ planning episode(s) per unit of physical time, whereϕ is fixed for the duration of the market. A period is defined as a partition of physical time containing a single planning episode. The market is then operational for $T(\phi)$ periods within the ξ units of physical time.

At each period nature determines the status of the consumer, σ, which determines the appropriate class of planning services appropriate for that consumer. Given the status of the consumer, any financial planner can recommend a standardized financial plan for that customer. In addition, at time 0, financial planners can make an unobservable investment in additional planning expertise at a cost ρ. Planners who make this investment can provide a customized financial plan for consumers. Both standardized and customized plans vary with status.

The investment in additional skills is assumed to be unobservable to simulate unobservable quality differences between experts. One can think of planners capable of producing standardized plans as meeting certification or licensing requirements while those making the additional investment have made a quality enhancement observable only by experience with the planner. As suggested in the introduction, in actuality, a number of different certifying boards certify individuals who offer themselves as financial experts. There may be different signals regarding the qualifications of the expert across these designations. This study is concerned with the incentives for developing quality differentials that are not directly observable. Accordingly, it may be helpful to think of all planners in the model as holding the same professional designation. Customization and standardization are intended to serve

as plausible examples of unobservable differences in the quality of planning services. One way to think about the problem is that planners who do not make the investment in expertise receive a coarser (i.e., more discrete) signal on status than planners that do. Consequently, these planners' recommendations must be more standardized, given their observation on status, than the plans of planners receiving a more precise signal on the consumer's status. With appropriate modifications, the study applies to any unobservable quality difference between sellers along a single dimension that cannot be signaled in advance of consumption.

Customized financial plans involve additional planning techniques and involve a higher marginal cost than standardized plans, $C_{c\sigma} > C_{s\sigma}$. Standardized financial plans are assumed to be appropriate to the needs of a consumer of a given status across a large number of states of the world (i.e., they meet the consumer's needs in most cases). Customized financial plans are assumed to meet the needs of a consumer of a given status over a larger number of states of the world than standardized financial plans. Thus, customization provides a form of insurance against relatively rare combinations of events that might adversely effect a consumer's financial security.

A consumer hires a planner who assesses the consumer's status and then makes appropriate recommendations and performs appropriate services. A planner with the ability to provide customized plans ascertains whether the customer prefers this approach and provides a customized or standardized plan as the customer desires. Other planners must provide a standardized plan. The planner performs the required services and submits his bill at the end of the planning episode. The price charged, $P_{k\sigma}$, will be a function of the type of plan (standardized or customized) and the consumer's status and can only be observed after consumption of the services. Consumers might observe per hour or per service price quotes in advance, but the total episode price is known only after status has been ascertained and the plan developed. Attempts to signal provider type through per hour or per service price quotes cannot succeed because such quotes can be costlessly mimicked by standardized planners. We assume that the market for planning services is monopolistically competitive and that $P_{s\sigma} > C_{s\sigma}$ and $P_{c\sigma} > C_{c\sigma}$.[3] Note, the customized price must be strictly greater than the marginal cost of customization or the cost ρ cannot be recovered and customization will not occur. However, I do not constrain the markup for customization to be greater than that of standardization. The structure of prices is discussed further below.

Consumers have preferences over the choice between standardized and customized financial plans. Some consumers will prefer standardized plans because they are cheaper, involve less commitment of the customer's time to the planning process, or because the consumer is relatively less risk averse. Some consumers will prefer customized plans because they perform better in certain states of the world, these individuals are relatively more risk averse, or the individuals have lower time costs and are more willing to pursue the planning process. The exact nature of the derivation of consumer preferences over planning techniques is not my primary focus and I simply assume that a proportion x of consumers prefers standardization and a proportion $(1\text{-}x)$ prefers customization. To avoid the complexities introduced by creating incentives for planners to misrepresent status, I assume x is invariant in status.[4]

Consumers are initially unaware of their own status. The use of financial and/or estate planning needs occurs precisely because individuals are unable to diagnose their needs given their financial status and/or are unaware of the appropriate vehicles available to meet their

needs. We also assume that consumers cannot convincingly or will not communicate their status to other consumers when it is revealed by the planning process. Given this and prior assumptions, whether a standardized or customized plan is chosen by each firm is observable only by individuals consuming services from that firm. Firms cannot convincingly communicate to consumers in advance their ability to customize nor can consumers convincingly communicate any particular firm's ability to do so to another consumer.

The assumption that consumers cannot deduce the type of plan provided by a particular firm is made because consumers are generally heterogenous and have imperfect knowledge over others' status and over the planning techniques appropriate to a given status. For example, if one customer observes that a firm uses what appears to be a plan of above average complexity and cost for another consumer, this could signal customization but may simply signal that the consumer's status required more services than average. Consumers can determine the extent of customization after experiencing a planning episode because their own status is revealed. However, because status changes over time, consumers may be unable to convincingly convey to one another information regarding their own status. Also, they may be unwilling to do so (e.g., people may be unwilling to discuss intimately their financial status and/or estate planning arrangements with others). Thus, information asymmetry, heterogeneity, and cultural considerations limit the ability to communicate reputation in the market. Relaxing this assumption by allowing interconsumer communication would simply allow searching customers to find a preferred type of provider more quickly, complicating the analysis that follows without qualitatively affecting the impact of other variables upon the planner's quality decision. Firms cannot convincingly communicate intensity by price because the overall price of the planning episode is observed only at the end of the period when the firm submits its bill and is status dependent. "Cheap talk" by firms is also unconvincing. Hence, a firm's ability to customize can be observed only by experiencing a planning episode with that firm.

In period zero, consumers choose a planner at random and observe their initial status and the type of plan delivered. As noted above, consumers are assumed to prefer either a standardized plan or a customized plan. Without loss of generality, normalize the consuming population at 1, and let x = Pr[consumer prefers standardization] and $(1\text{-}x)$ = Pr [consumer prefers customization]. Let $\theta_{k\sigma}$ represent the consumer's willingness to pay for plan type k, $k = c,s$, when the consumer has status σ. $P_{k\sigma}$ represents the price charged for a plan of type k when status is σ. Let Γ be a function that takes on the value 1 if the degree of customization received matches that preferred by the consumer and 0 if the service received does not match the consumer's preferred type. Assume that the utility of no service is lower than that of a mismatch and, hence, the consumer always participates in the market. The consumer's utility with respect to the planning episode is:

$$U(\Gamma\theta_{k\sigma} - P_{k\sigma}) \tag{1}$$

The objective of planners is to maximize profits over the T periods that the market operates. Each planner is assumed to have a discount function, $\triangle^t \leq 1$, over profits received in period t.

By definition, consumers of status σ are willing to pay only $\theta_{k\sigma}$ for plan type k.[5] Because all consumers would assign a similar $\theta_{k\sigma}$ it is reasonable to assume that the planner could not

successfully sue to collect a fee in excess of $\theta_{k\sigma}$. Hence, I assume that the maximum price the planner can collect is $P_{s\sigma} = \theta_{s\sigma}$ for a standardized plan and $P_{c\sigma} = \theta_{c\sigma}$ for a customized plan for a given status σ. Given the assumptions regarding consumer search, it is also the minimum the planner should willingly charge. Consumers who have found a match will not leave the planner at $P_{k\sigma} = \theta_{k\sigma}$, hence a planner who charges less to matching consumers willingly forgoes revenue. Consumers who have not found a match are presumed unwilling to stay even at $P_{k\sigma} = C_{k\sigma}$ (the minimum the planner can charge without losing money). Thus, the planner gains nothing by cutting prices to consumers who will switch anyway and the planner is always ahead to charge the maximum collectable amount. Hence, the prices that prevail in this market will be $P_{k\sigma} = \theta_{k\sigma}$. The pricing assumptions are structured to effectively prevent planners from competing on the basis of price. This is appropriate because the overall price of the planning episode is not observable in advance. Hence, price cannot be used as signal nor an incentive.[6]

Let S = the number of planners who choose to offer only standardized plans and V = the number of planners who choose to acquire additional expertise and can provide a standardized or customized plan as the customer prefers after ascertaining consumer preferences over customization. The total number of providers is then

$$N = S + V \tag{2}$$

The number of providers is assumed to be finite because we wish to consider the impact of a change in the number of providers upon the likelihood of the provision of customized plans.

A planner's plan type and price can be observed only by experiencing a planning episode with the provider in question. Consequently, the consumer's maximization problem is intertemporal and his optimization problem is reduced to defining the optimal search strategy. Given the assumptions, the consumer cannot effectively search within a planning episode and is limited to between episode searching (i.e., changing planners at the time of the next planning episode). The standard theory of sequential search states that the searcher's optimal strategy is to continue to shop until he finds a provider j such that

$$U_j \geq U^* \tag{3}$$

where U^* is the reservation utility level. The individual chooses U^* so that the expected utility gain of making another observation equals or exceeds the expected utility cost of making that observation.[7]

This is equivalent, in the present context, to switching providers if the utility of the previous episode is less than the expected utility of the next episode with a new randomly chosen planner. Letting η equal the cost of search, subscript M be associated with a match (i.e., type of plan preferred), subscript NM be associated with a nonmatch, and Π_M be the probability of a type match, then, assuming the prior episode was a nonmatch, the individual searches if:

$$U(-P_{NM}) \leq \Pi_M U(\theta_M - P_M - \eta) + (1 - \Pi_M)U(-P_{NM} - \eta) \tag{4}$$

The individual is more likely to search the smaller isη. Assume, for the moment, that η is sufficiently small, zero if necessary, so that, so long as $\Pi_M > 0$, a consumer who receives

a nonmatching type of plan will switch planners in the following period. Further, consumers remember unfavorable experiences and will not return to a planner that does not provide their preferred type of plan (i.e., consumers search without replacement). This assumption is different from most standard search literature that usually assumes consumers forget. The forgetting assumption is usually made for mathematical convenience. However, it is certainly much more realistic to assume that consumers who have an unfavorable experience with a provider will not return to that provider, so long as other untried providers are available.

We wish to consider the incentives of planners to make the expenditure ρ and acquire the ability to develop customized plans for those consumers who desire such plans. Because our planners are risk neutral profit maximizing firms, we can do this by evaluating the planners decision at the $E(\sigma) = \mu$. Accordingly, the analysis is conducted using the expected profit from providing a particular type of plan.

3. Demand and profit functions

3.1. Demand functions

Because demand of an individual planner of type k is simply demand for group k divided by the number of planners N, the analysis is conducted at the group level. In the initial period, designated period 0, consumers choose randomly and, because the number of consumers has been normalized to one, the demand of standardized planners as a group is $D_S = S/N$ and the demand of planners who standardize or customize as the customer prefers (variable planners) as a group is $D_V = V/N$. In the following period, period 1, the standardized planner loses consumers preferring customization while gaining some consumers preferring customization from other standardized planners. Variable planners gain consumers preferring customization from standardized planners without losing any consumers of their own. The expected demand of the two groups in period 1 is:

$$D_S = \frac{S}{N} - \frac{(1-x)S}{N} + \frac{(1-x)S(S-1)}{N(N-1)} \tag{5}$$

$$D_V = \frac{V}{N} + \frac{(1-x)SV}{N(N-1)} \tag{6}$$

In the second period, standardized planners lose consumers preferring customization and both types gain their pro-rata share of these dissatisfied consumers who search randomly over untried providers. Period 2 expected demand of the two groups is then:

$$D_S^{t=2} = \frac{S}{N} - \frac{(1-x)S}{N} + \frac{(1-x)S(S-1)}{N(N-1)} - \frac{(1-x)S(S-1)}{N(N-1)} + \frac{(1-x)S(S-1)(S-2)}{N(N-1)(N-2)} \tag{7}$$

$$D_V^{t=2} = \frac{V}{N} + \frac{(1-x)SV}{N(N-1)} + \frac{(1-x)S(S-1)V}{N(N-1)(N-2)} \tag{8}$$

The recursive nature of the consumer's search process allows us to write expected demand for the two groups at any time $t > 0$ as:

$$D_S^{t>0} = \frac{S}{N}\left[1 - (1-x)\left(1 - \prod_{\tau=1}^{min[t,S]} \frac{(S-\tau)}{(N-\tau)}\right)\right] \tag{9}$$

$$D_V^{t>0} = \frac{V}{N}\left[1 + \sum_{t=1}^{min[T,S]}\left((1-x)\prod_{\tau=1}^{min[t,S+1]} \frac{(S+1-\tau)}{(N-\tau)}\right)\right] \tag{10}$$

However, for the purpose of analyzing the planner's choice between delivering standardized planning and acquiring the ability to customize and varying plan type in accordance with consumer preferences, it is more useful to rewrite D_V in the following manner:

$$\begin{aligned} D_V^{t>0} &= 1 - D_S^{t>0} \\ &= 1 - \frac{S}{N}\left[1 - (1-x)\left(1 - \prod_{\tau=1}^{min[t,S]} \frac{(S-\tau)}{(N-\tau)}\right)\right] \\ &= \frac{V}{N} + \frac{S}{N}\left[(1-x)\left(1 - \prod_{\tau=1}^{min[t,S]} \frac{(S-\tau)}{(N-\tau)}\right)\right] \end{aligned} \tag{11}$$

3.2. Profit functions

Using the demand functions in Eqs. (9) and (11) we can develop expected profit functions for the individual planner who adopts a standardized style of provision or a variable style of provision. Letting $\bar{\pi}_{k\mu} = P_{k\mu} - C_{k\mu}$ equal the expected per episode profit for a planner delivering plan type k, expected profit over the life of the market for the standardized planner can be written:

$$\bar{r}_S = \frac{\bar{\pi}_S}{N} + \sum_{t=1}^{T(\phi)} \frac{1}{N}\left[1 - \left[(1-x)\left(1 - \prod_{\tau=1}^{min[T,S]} \frac{(S-\tau)}{(N-\tau)}\right)\right]\bar{\pi}_S \Delta^t\right] \tag{12}$$

Note that because T is the number of periods in a fixed amount of physical time, T expands or contracts with ϕ. Expected profit over the life of the market for the variable planner can be written:

$$\begin{aligned} \bar{r}_V &= \frac{1}{N}[x\bar{\pi}_S + (1-x)\bar{\pi}_C] - \rho \\ &\quad + \sum_{t=1}^{T(\phi)} \frac{1}{N}\left[x\bar{\pi}_S + (1-x)\bar{\pi}_C + \frac{S}{V}(1-x)\left(1 - \prod_{\tau=1}^{min[T,S]} \frac{(S-\tau)}{(N-\tau)}\right)\bar{\pi}_C\right]\Delta^t \end{aligned} \tag{13}$$

where

$$\Delta^t = \frac{1}{\left(1 + \frac{\delta}{\phi}\right)^t} \tag{14}$$

where δ= the planner's rate of time preference per unit of physical time and ϕ= the number of periods per physical unit of time (i.e., the number of contacts, and hence planning episodes, per unit of time).

4. Comparative statics

Because planners choose the style of provision that maximizes their income, the planner will choose to acquire the ability to customize versus a fixed standardized style if $\bar{r}_V > \bar{r}_S$. In equilibrium, ignoring any integer problems, $\omega \equiv \bar{r}_V - \bar{r}_S = 0$, hence:

$$\begin{aligned}\omega \equiv & \sum_{t=0}^{T(\phi)} \frac{1}{N}[(x-1)\bar{\pi}_S + (1-x)\bar{\pi}_C]\Delta^t - \rho \\ & + \sum_{t=1}^{T(\phi)} \frac{S}{V(S+V)}\left[(1-x)\left(1 - \prod_{\tau=1}^{min[T,S]} \frac{(S-\tau)}{(S+V-\tau)}\right)\right]\bar{\pi}_C\Delta^t \\ & + \sum_{t=1}^{T(\phi)} \frac{V}{V(S+V)}\left[(1-x)\left(1 - \prod_{\tau=1}^{min[T,S]} \frac{(S-\tau)}{(S+V-\tau)}\right)\right]\bar{\pi}_S\Delta^t \\ = & \ 0\end{aligned} \tag{15}$$

Eq. (15) implicitly defines a function V^* for the optimal number of providers in the market with the ability to customize given the values of the other parameters of ω. Substituting V^* into ω, we have, by the implicit function rule, that the derivative of V^* with respect to any parameter of ω, γ, is:

$$\frac{\partial V^*}{\partial \gamma} = -\frac{\partial \omega/\partial \gamma}{\partial \omega/\partial V^*} \tag{16}$$

Since $\partial\ \omega/\partial\ V^* < 0$, the sign of the derivative of V^* with respect to any parameter is just the sign of $\partial\ \omega/\partial\gamma$. We are now in a position to consider the various factors affecting the planner's choice of acquiring the ability to customize.

First, $\partial V^*/\partial\ \pi_S < 0$, or as the profit margin for standardized provision increases the incentive for variable provision, as opposed to fixed standardized provision, decreases. Conversely, $\partial V^*/\partial\ \pi_C > 0$, or as the profit margin for customized provision increases the incentive for variable provision versus a fixed standardized provision increases.[8] Also, $\partial V^*/\partial\delta < 0$ and $\partial\ V^*/\partial\phi > 0$. Or, as the planner's rate of time preference increases, the deferred revenue gain from being a variable provider has relatively less value. However, the

more frequently planning episodes occur (or, in a more general sense, the faster information spreads in the community), those revenue gains accrue more quickly, effectively reducing the discount factor by increasing the number of periods per physical unit of time, and increasing the value of variable provision.[9] Finally, $\partial V^*/\partial\ \rho < 0$, or the greater the cost of acquiring the ability to customize, the less likely it is that planners will choose to make the investment that allows variable provision.

When $\bar{\pi}_S = \bar{\pi}_C > 0$, then ω can be simplified to:

$$\omega' \equiv \sum_{t=1}^{T(\phi)} \frac{1}{V}(1-x)\left(1 - \prod_{\tau=1}^{min[T,S]} \frac{(S-\tau)}{(S+V-\tau)}\right)\pi\Delta^t - \rho = 0 \tag{17}$$

From ω', again applying the implicit function rule, the influence of certain other factors becomes apparent. First, $\partial V^*/\partial$ x < 0, or as the percentage of individuals who prefer standardization increases, the attractiveness of variable provision versus a fixed standardized style decreases. Interestingly, $\partial V^*/\partial\ S < 0$, or as the number of planners providing a fixed standardized style increases (holding the number of variable planners constant) the advantages of variable provision decrease. This result stems from the fact that the more fixed types there are in the market the longer the gains from the variable provision style are delayed. It simply takes longer for all consumers who prefer customization to find the variable providers. Also, $\partial\omega/\partial\ V^* < 0$, or as the number of variable providers increases (decreases), the revenue from a fixed standardized style becomes larger (smaller) than the revenue from a variable style and the incentive for variable provision decreases (increases). Effectively, the increase in the planner's consumer base that results from variable provision gets spread among an increased (decreased) number of providers. Hence, increasing the number of providers in a market, irrespective of the style of provision they choose, decreases the likelihood that planners will choose variable provision.[10] This result has important public policy implications because it suggests that increasing the number of providers in a regulated market for services of this type is not unambiguously desirable. The providers entering the market may be less responsive to consumers' tastes and less willing to make unobservable investments in quality.

One can also model the situation in which both standardized and customized fixed providers as well as variable providers are present in the market. The result is an additional term in the demand and revenue functions for each of the three types and the choice regarding style of service provision involves choosing variable provision if $\bar{r}_V > \bar{r}_C$ and $\bar{r}_V > \bar{r}_S$. Because in equilibrium $\bar{r}_C = \bar{r}_S$, one can solve the problem, but the equilibrium definition and first order conditions are considerably more complex than those presented here. The only qualitative difference is that, in general, incentives for variable provision are greatest when the expected profit margins on the two fixed styles of provision are equal and positive (i.e., $\bar{\pi}_S = \bar{\pi}_C > 0$) and the proportion of individuals who prefer each type of provision is relatively equal (i.e., $x = (1\text{-}x) = 0.5$).[11] Other first order conditions are identical to those in the standardized/variable provision case.

One ready generalization of the model involves the case where some consumers do not search, perhaps because there are switching costs. If the switching costs are continuously distributed over different consumers, one could define a function representing the percentage

Table 1
Summary of Comparative Statics

Factor	Incentive for Standardized Provision (i.e. base quality level)	Incentive for Variable Provision (i.e. enhance quality level)
profit margin for standardized provision-π_s	increases	decreases
profit margin for customized provisions-π_c	decreases	increases
planner's rate of time preference-δ	increases	decreases
frequency of planning episodes (or speed of information dissemination)-ϕ	decreases	increases
cost of quality enhancement-ρ	increases	decreases
proportion of customers who search-λ	decreases	increases
If $\pi_s = \pi_c$, the following comparative statics also hold:		
the percentage of individuals preferring standardization-x	increases	decreases
number of standardized planners-S	increases	decreases
number of variable planners-V	increases	decreases

of nonmatching consumers who search in any period. This could be modeled here by simply including a parameter, $0 < \lambda < 1$, interpreted here as the proportion of consumers who search. We can then write:

$$D_S^{t>0} = \frac{S}{N}\left[1 - \lambda(1-x)\left(1 - \prod_{\tau=1}^{\min[t,S]} \frac{(S-\tau)}{(N-\tau)}\right)\right] \tag{18}$$

$$D_V^{t>0} = \frac{V}{N}\left[1 + \lambda \prod_{t=1}^{\min[T,S]}\left((1-x) \prod_{\tau=1}^{\min[t(S+1)]} \frac{(S+1-\tau)}{(N-\tau)}\right)\right] \tag{19}$$

Clearly, as the proportion of searchers falls (i.e., $\lambda \rightarrow 0$) the market share and, hence, revenue losses to fixed style planners and the market share and revenue gains to variable planners would be reduced, making variable provision less attractive.[12] The comparative statics derived in this section are summarized in Table 1.

5. Implications

The ability to be a variable provider represents true quality enhancement since consumers with any type of preference over customization versus standardization receive their preferred type of plan. Thus, anything decreasing the likelihood of variable provision represents lower overall market quality. Most of the comparative statics derived in the preceding section regarding variable provision are quite intuitive. As the profit margin of standardization

(customization) or the proportion of the population preferring standardization (customization) increases the incentive to become a variable provider decreases (increases). The benefit to variable provision is a larger client base, which is acquired over time. Thus, the more impatient the provider or the more slowly the provider's client panel grows, either because of low frequency of planning episodes or because some customers do not search when dissatisfied, the less likely is variable provision. The more costly the investment in expertise is, the less likely is variable provision.

The most interesting comparative statics are related to the number of providers. The results suggest that adding providers, no matter whether they choose to become standardized or variable providers, decreases the likelihood of variable provision. Thus, increasing the number of providers when demand is fixed, as it is here, unambiguously decreases the incentive to provide higher quality. Additional high quality providers are direct competitors to existing high quality providers. Additional low quality providers slow the rate at which high quality providers' client bases grow. The implication of this is that a particular certification should not necessarily judge its success by the growth in the number of certificate holders. Growth in providers in response to growth in customer demand is clearly appropriate. But growth in providers over a fixed demand lowers quality incentives throughout the certification. A much better measure of quality within certification would be the growth rate of each provider's client panel or, perhaps as a noisy proxy of this, growth in per provider revenue. A decrease in consumer switch rates between providers could be another measure of increasing quality but could simply signal increasingly complacent rather than satisfied customers. Unsatisfied customers who do not search would actually indicate lower market quality.

The model can also speak to "credential competition." Assume that there are two certifications, A and B. So long as there are some members of both certifications capable of variable provision and some members capable of only standardized provision and consumers understand this, the model will operate in exactly the same manner. In this case the certification itself does not serve as signal. Even if the rate of variable provision is higher under one certification than the other, the credence good nature of the planning episode prevents this information from being credibly communicated throughout the consuming community except over time. Claims by members of certification A or certification B to be of higher quality would be "cheap talk" and not credible to consumers. Ultimately, if certification A has a higher variable provision rate than certification B, its share of the market will ultimately grow as its larger proportion of variable providers accumulate larger client panels. However, claims of short-run growth in the number of providers would not be conclusive in favor of one certification or the other and would decrease the incentive for quality enhancement by individual providers of both certifications if it outstrips growth in demand. On the other hand, if client panels of providers holding one certification are growing relatively more rapidly than the client panels of another certification, this is evidence that consumers are receiving the product they desire from providers of that certification and hence that it might be viewed as "higher quality."

If income is a proxy for the size of the client panel and, hence, for quality then it is clear that certification enhances quality versus no certification. Chu (2003) reports the results of a 2002 study that found that planners earning the CFP® designation on average increased their

gross annual income from $60,000 to $100,000, or about 67%. She also reports the results of a 1999 survey indicating that planners with either the CLU or ChFC designation or both earn as much as 60% more than those without those designations. Thus, certification clearly is a signal to the market. However, she also reports Bureau of Labor Statistics figures that indicate that the top 10% of planners earned $145,600 or more. This suggests a significant level of variation in planner income, even among those possessing certifications, consistent with the unobservable quality differences modeled here.

6. Conclusions

Theoretical analysis of markets for credence goods like financial consulting, financial planning, and estate-planning services has been relatively limited. Given the importance of such markets and the obvious information asymmetries that plague them, it should be clear that an understanding of their market structure is important to economic efficiency and the financial well being of the consumers being served. This study contributes to that understanding by examining how consumer search affects financial experts' incentives for unobservable quality enhancements.

This study has explored the factors which influence the likelihood of an expert, otherwise indistinguishable from other similar experts (e.g., an expert holding a particular qualification), choosing to acquire the ability to provide higher quality (e.g., customized) services and vary the quality of service (e.g., standardized vs. customized) in accordance with consumer preferences. The incidence of variable quality provision depends critically upon consumers searching for alternative providers when dissatisfied with their current provider and upon the expert receiving a positive rent to justify the cost of skill enhancement. Profit margins of particular styles of provision and the distribution of consumer preferences across style of provision impact the likelihood that experts will make the investment in an enhanced skill set. The incentives for enhanced quality increase as the expert's discount rate decreases, the speed of information dissemination increases, the cost of the skill enhancement decreases, and the number of providers in the market decreases. The latter result, that increasing the number of providers decreases the likelihood of quality enhancement is somewhat surprising. It has implications for the regulation of these types of markets, indiciating that the expansion of the number of providers holding a particular certification or qualification is not unambiguously desirable.

The results suggest directions for future empirical research regarding these markets. So long as there is consumer heterogeneity (in preferences or other characteristics), experts with different skill sets can survive through a matching of skill sets with consumer types. However, determining whether a market is being well served involves identifying whether dissatisfied consumers search for a new provider, identifying what components of the experience with the previous provider led the consumer to search, and identifying what characteristics lead particular providers to amass larger client panels than their apparently identical competitors. If dissatisfied customers don't search, then there is no incentive for costly quality enhancement within a certification or qualification. Identifying why customers search and what leads them to stop searching (i.e., what makes them satisfied with their

experience) allows the identification of the distribution of consumer preferences over aspects of the services provided. Research identifying the factors influencing consumer satisfaction and willingness to search will allow certifying authorities to identify the characteristics that consumers regard as desirable in providers and, in addition, will allow providers with a particular certification to enhance the quality of their product above and beyond that provided by the certification.

Notes

1. Many financial planning firms are one-person shops. The term "firm" here is intended to be flexible and can include single-proprietorships, partnerships, and corporate organizational forms. The important consideration is that the firm is deemed to be risk neutral. This allows the analysis to be done in terms of profit maximization. Allowing firms to be risk averse (as we might expect a one-person firm to be) is unlikely to substantially change the comparative statics derived from the analysis but would substantially complicate their derivation.
2. As suggested in the introduction, the model can be adapted to apply to a number of similar markets for financial experts' services including any by the hour legal, accounting, consulting, or estate planning services. It also generalizes to fee-for-service medical or dental services, or automobile or appliance repair services where total price is not negotiated in advance.
3. The market for professional services is frequently modeled as monopolistically competitive. See the discussion in Phelps (1992), pp. 193–204, for example.
4. Ciccotello and Wood (2001) find relatively less variation in planning suggestions by both web based and human planners whenever the planning situation is relatively simpler, which could suggest customization would have less value for clients with a "simpler" status. As suggested, I abstract from this possibility and assume customization adds value irrespective of client status.
5. Note consumers are willing to pay $\theta \mathrm{ko}_{k\&}$ for a plan even though their utility from the plan is negative. This specification, where utility is separable in plan type and price, permits the consumer to recognize that the planner's services have value even though the utility the consumer derives is low.
6. See Nitzan and Tzur (1991) and the reputation model of Wolinsky (1993) for similar models where price competition is precluded because prices are unobservable.
7. See, e.g., DeGroot (1970) or Lippman and McCall (1976).
8. Cases in which some sellers insist on customization irrespective of consumer preference (i.e., all three types operate) are considerably more complex as is indicated below.
9. See Faulhaber and Yao (1989) for a similar result, where increased information increases the margins of reputable firms leading to an increase in the number of such firms.
10. This result is similar to the result of Pauly and Satterthwaite (1981) who found that as the number of doctors in a market increases, the monopoly power of physicians

increases because of decreased consumer search opportunities. Hung (1994) also finds a similar result. Hung finds that where consumers have varying tastes for particular brands, entry can have an increasing monopoly effect, with higher prices resulting.

11. The latter results were verified by simulation rather than actual solution of the first order conditions.
12. For an alternative perspective where firms deliberately create switching costs to exploit captive customers, see Zephirin (1994). In Zephirin's model, financial institutions increase service for depositors with good reputations which create switching costs that allow lower interest payments.

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