Passive Choice Frictions and the Supply and Demand of Health Insurance

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1 Gap in the Literature

The health insurance literature is a dynamic field, which has moved from testing for adverse selection, to studying heterogeneity in risk preferences, and, most recently, investigating behavioral frictions in health insurance choice (Spinnewijn, 2017). There is now widespread evidence that individuals face choice frictions when making health insurance decisions (see, e.g., reviews by Ericson and Sydnor, 2017; Chandra et al., 2019). This proposal gives a brief outline of how this evidence can be taken forward to study the implications of consumer inertia on the supply and demand of health insurance.

Choice frictions can be grouped into frictions when making active decisions and those when making passive decisions. In terms of active decisions, consumers may lack sufficient understanding of health insurance products (e.g., Abaluck and Gruber, 2011; Loewenstein et al., 2013; Handel and Kolstad, 2015; Bhargava et al., 2017) or misperceive risks (e.g., Barseghyan et al., 2013). There may also be a role for choice overload (Bhargava et al., 2017). Handel et al. (2020) find that choice quality relates to socio-demographic characteristics such as educational field and profession. In terms of passive decisions, there is substantial evidence that consumers tend not to be active decision-makers but exhibit a high degree of consumer inertia (e.g., Handel, 2013). Reasons for such inertia can be switching costs (Nosal, 2012; Miller and Yeo, 2012; Ericson, 2014; Polyakova, 2016) and inattention (Kiss, 2014; Heiss et al., 2016; Ho et al., 2017).

But what are the consequences of these (abundantly documented) choice frictions? This proposal sketches two related avenues for research on the implications of passive choice frictions.

The first proposed dimension considers the *demand* of health insurance. While health insurance decisions are typically evaluated in one-period models (e.g., Hendren et al., 2021), inertia calls for multiple-period models taking into account the persistence of plan choices. As outlined below, this can have implications for what plans are considered optimal. This research would complement recent work by Ghili et al. (forthcoming) who develop and empirically simulate a model of long-term health insurance contracts that avoid reclassification risks.

The second dimension considers how insurance *supply* responds to consumer inertia. As pointed out in Handel and Ho (2021, p. 601), there is "quite limited work that rigorously studies how insurers respond to those choice issues in pricing." As shown below, inertia may affect prices and benefits in a way that increase insurer profits. This research would contribute to Ericson (2014) and Ho et al. (2017) which both show that premiums in Medicare Part D in the US are consistent with insurers exploiting inert consumers.

2 Importance

Choice in health insurance markets can improve welfare when preferences over risk and plan attributes are heterogenous. Yet, the evidence on behavioral frictions in insurance choices calls into question whether offering choice is indeed optimal in these (highly regulated) markets. Hendren et al. (2021) attempt to answer when offering choice is optimal even if behavioral frictions are at play. The research outlined in this proposal aims to contribute to these efforts. In particular, the multi-period approach to modeling health insurance demand can help understand whether individuals indeed make choices that are inconsistent with utility maximization when inertia poses a binding constraint (e.g., due to switching costs). Moreover, understanding how supply reacts to choice frictions helps to formulate regulation that limits insurers ability to exploit such frictions in their interest.

3 Research Ideas

A Multi-Period Model of Demand for Short-Term Health Insurance

Motivated by the consumer inertia documented in several studies, the main idea is to study health insurance decisions in a multi-period model in which decisions in the present affect future periods. This could either be a deliberate choice or the consequence of frictions in subsequent periods. The following toy model shows that introducing several periods can alter the conditions for what is considered to be an optimal choice at time t.

Imagine there are two periods, $t = 1$ and $t = 2$. At $t = 1$, an individual decides between contract $\theta_l = (p_l, b_l)$ and $\theta_h = (p_h, b_h)$, where p_j and b_j denote the per period price and benefit of plan j. Let $p_l < p_h$ and $b_l < b_h$. Prices and benefits are fixed across t. Let there be two health states: healthy (λ_h) and sick (λ_s). The price has to be paid regardless of health state. When sick, the individual has medical expenses m but gets b_j as a transfer from their insurance. The probability of being sick at time t is denoted by $P(\lambda_{s,t})$. The individual has preferences $u(\cdot)$, where u is a Bernoulli utility function. For illustration, we assume that u is linear in consumption (i.e., the individual is risk neutral). Regardless of health state, the individual makes income y_t and consumes all their net income. Expected utility at t given plan choice θ_j is given by

$$u_t(\cdot|\theta_j) = y_t - p_j + P(\lambda_{s,t})(b_j - m)$$

This simple framework allows us to compare the optimal decision in two scenarios.

- First, assume that there is no consumer inertia, i.e., the individual makes separate choices in each period. Choosing θ_l is optimal as long as

  $$p_h - p_l \geq P(\lambda_{s,t})(b_h - b_l).$$

  That is, the individual optimally chooses the cheaper plan with lower benefits if the additional cost from choosing the more expensive plans exceeds the expected benefits. This depends crucially on the probability of falling sick in the current state, $P(\lambda_{s,t})$.

- Second, let there be substantial consumer inertia, so that the individual only makes a decision at time $t = 1$ and keeps this choice at $t = 2$. Here, we are agnostic whether this decision is made deliberately or due to behavioral frictions. The optimal decision now involves maximizing the discounted expected lifetime utility over periods $t = 1, 2$, where β denotes the discount factor. Given the structure that we assumed, it is now optimal to choose θ_l whenever

$$(1 + \beta)(p_h - p_l) \geq [P(\lambda_{s,t}) + \beta P(\lambda_{s,t+1})](b_h - b_l).$$

  This differs from the case of no inertia whenever $P(\lambda_{s,t}) \neq P(\lambda_{s,t+1})$. For example, for an individual that has a low probability to be sick in the current period but a high (expected) chance of falling sick in the next period, it may be optimal to choose θ_h at $t = 1$ already.

The proposed research aims to generalize this simplified framework in various dimensions, introducing (i) several periods, (ii) a probability of re-optimizing in the future, possibly triggered by some events as in Ho et al. (2017), (iii) switching costs, and (iv) active choice frictions.

Such a model could then form the basis for an empirical application investigating how observed choice quality differs from a multi-period perspective to a one-period perspective.

Supply Responses to Consumer Inertia

The previous section took plans θ_j as given. An extention to this approach and most of the existing literature is to take into account how plan offers depend on consumer inertia. While Ericson (2014) allowed insurers to introduce cheaper plans while raising prices on existing ones, the setup above includes θ_l and θ_h fixed over $t = 1, 2$.

We can use the simplified framework above for a first intuition of how inertia affects prices (or benefits). Denoting $\Delta x \equiv x_h - x_l$, the difference in the prices of the high vs. low plan that make the consumer indifferent between θ_l and θ_h is given by

$$\Delta p_{\text{inertia}} - \Delta p_{\text{no inertia}} = \frac{\beta}{1 + \beta} \Delta P(\lambda_s)\, \Delta b.$$

Hence, insurers can charge higher prices p_h relative to p_l (or offer lower b_h relative to b_l) when the probability of falling sick is increasing in age (i.e., $P(\lambda_{s,t+1}) > P(\lambda_{s,t})$). Since we held medical expenses constant, insurers make larger expected profits in case of consumer inertia. Intuitively, individuals with rising probability of sickness overinsure at $t = 1$ relative to their health risks, so that insurers make a surplus from lower risk types in $t = 1$.

The proposed research would seek to develop a framework between inertia and insurer pricing in more rigor. As pointed out in Handel and Kolstad (2022), this could build on advances in the industrial organization literature that studies pricing under behavioral frictions. Moreover, the proposed research would seek to test such a model empirically comparing observed pricing and estimates of inertia.

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