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The Demand for Medicare Part D Prescription Drug Coverage

Evidence from Four Waves of the Retirement Perspectives Survey

Florian Heiss, Daniel McFadden, and Joachim Winter

5.1 Introduction

Most developed countries have mixed “universal coverage” health care systems with mandated health insurance financed from some combination of consumer, employer, and government sources. The United States is the only developed country without universal coverage; about 18 percent of the nonelderly population are currently without health insurance (Gruber 2008). The elderly are universally covered under the Medicare program, but historically Medicare did not cover prescription drugs. Before 2006, roughly 25 percent of the elderly population (age sixty-five and above) had little or no insurance coverage for their prescription drugs, and 10 percent had annual pharmacy bills exceeding \$5,600 (Winter et al. 2006). According to data from the U.S. Bureau of the Census (Current Population Survey, 2006, Annual Social and Economic Supplement), median per capita income in this population was \$15,700 in 2005, and 29 percent of this population had incomes below \$10,000. Uninsured prescription drug costs were thus a heavy

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burden on unhealthy elderly. This was a major public concern prior to the introduction of Medicare Part D in 2006.

Medicare Part D provides the Medicare-eligible population with universal access to standardized, heavily subsidized prescription drug coverage through government-approved plans sponsored by private insurance companies and health maintenance organizations (HMOs). In addition to providing access to affordable drug coverage to all Medicare beneficiaries (in particular to the chronically ill), a second policy goal was to create a “competitive, transparent marketplace offering a wide array of benefits” (Bach and McClellan 2005, 2733). Overall, the introduction of Medicare Part D has been viewed as a success story (Heiss, McFadden, and Winter 2006, 2010; Goldman and Joyce 2008; Duggan, Healy, and Morton 2008). High enrollment rates have been achieved—in the first year of Medicare Part D, more than 90 percent of the eligible population had prescription drug coverage, either from a Medicare Part D plan or from some other source with comparable coverage (Heiss, McFadden, and Winter 2006). Consumers face a broad menu of plans to choose from, and premiums are at levels lower than anticipated by policymakers and sponsors.

The institutional design of Medicare Part D exemplifies the current trend toward “consumer-directed health care” as it relies on consumer behavior and competition among insurers to attain satisfactory market outcomes with limited government regulation. Policymakers around the world, and particularly in the United States, are increasingly stressing the role of consumer choice and provider competition in the provision of public services.¹ In the case of Medicare Part D, and arguably also in other similar programs, giving consumers more choice also means confronting them with difficult decisions (McFadden, Winter, and Heiss 2008; Kling et al. 2008; Abaluck and Gruber 2009).

The argument for creating markets in which consumers choose among private providers of services depends on consumers’ ability to make informed choices. Making optimal, or even just reasonable, decisions in the Part D market is difficult for seniors. They face uncertainty with respect to their future health status and drug costs, a rather complicated benefit schedule with a coverage gap and other peculiar institutional features of the Part D program (to be discussed in detail later), and a large number of available plans with features that vary along several dimensions. The complexity of Medicare Part D was a great source of concern before its introduction (see Heiss, McFadden, and Winter 2006). How seniors decide whether to enroll in Medicare Part D, and what plans they select, is therefore not only of

1. The debate about the effect of high-deductible plans has drawn heavily on a landmark study conducted by the RAND Corporation in the 1970s and 1980s, the Health Insurance Experiment; see Newhouse (2004). Buntin et al. (2006) and Goodman (2006) provide additional discussion of consumer-directed health care.

crucial importance for the success of this particular program, but also for public policies that stress consumer choice more generally.

In this chapter, we study individual decisions made in the initial enrollment period for the Medicare Part D program. In the week before enrollment began in November 2005, we conducted a survey of Americans aged sixty-five and above, termed the Retirement Perspectives Survey (RPS), to study information, perceptions, and preferences regarding prescription drug use, cost, and insurance. After the initial enrollment period closed on May 15, 2006, we reinterviewed the same respondents to elicit their actual Medicare Part D decisions for 2006. Third and fourth waves of our survey were conducted in March/April 2007 and in March/April 2009. Data from RPS-2009 are analyzed in this chapter for the first time.² In most of our analysis, we concentrate on “active deciders,” the eligible individuals in our sample who did not have prescription drug coverage in November 2005 that was automatically converted to Part D coverage or equivalent in 2006 (e.g., automatic coverage through their current or former employer’s health program, the Veterans Administration, or Medicaid). Our aim is to understand whether choices were related to the salient features of the program and the economic incentives they generated. We look at whether active deciders enrolled in Part D or not, at subsequent switching, and at the choice of plans. We stress the role of 2005 prescription drug use, health risks, and subjective factors in the demand for prescription drug insurance. We generally find that seniors’ choices respond to the incentives provided by their own health and by the market environment.

The remainder of this chapter is structured as follows. In section 5.2, we review the Medicare Part D program and some of the research on individual decisions that has emerged since its introduction. We describe the Retirement Perspectives Survey project in section 5.3. Our empirical results are reported in section 5.4. In section 5.5, we summarize our findings and discuss avenues for future research.

5.2 A Brief Review of the Medicare Part D Program and Related Research

The Centers for Medicare and Medicaid Services (CMS) within the U.S. Department of Health and Human Services administer health insurance coverage for older Americans via the Medicare program. The Medicare Modernization Act of 2003 (MMA) was enacted to extend coverage for prescription drugs to the Medicare population. Beginning in 2006, the new Medicare Part D benefit reduced the financial burden of prescription drug

2. In what follows, the three waves of the Retirement Perspectives Survey are referred to as RPS-2005, RPS-2006, RPS-2007, and RPS-2009, respectively.

spending for beneficiaries, especially those with low incomes or extraordinarily high (“catastrophic”) out-of-pocket drug expenses. The CMS administers this program, subsidizing outpatient prescription drug coverage offered by private sponsors of drug plans that give beneficiaries access to a standard prescription drug benefit. In the following, we describe those features of Medicare Part D that are relevant for our subsequent analysis of consumer behavior in this market. More details on the Medicare Part D prescription drug benefit can be found on the CMS website and in Bach and McClellan (2005).

Critical parameters in determining Standard plan benefits are the plan formulary, the beneficiary’s annual pharmacy bill for drugs in the plan formulary, the beneficiary’s true out-of-pocket (TrOOP) payments for these covered drugs and threshold for catastrophic coverage, and the average monthly premium. In the benefits formula, expenditures for drugs not in the plan formulary are not counted in the pharmacy bill or in TrOOP payments. Part D premiums are also excluded from TrOOP payments. The Standard Medicare Part D plan had the following benefit schedule in 2006:

- The beneficiary has an annual deductible of \$250.
- The beneficiary pays 25 percent of drug costs above \$250 and up to \$2,250. The TrOOP payment is then \$750 for a beneficiary whose pharmacy bill has reached \$2,250.
- The beneficiary pays 100 percent of drug costs above \$2,250 and up to a TrOOP payment of \$3,600; this is referred to as the *coverage gap* or *doughnut hole*. The TrOOP threshold of \$3,600 is attained at a drug bill of \$5,100.
- The beneficiary pays 5 percent of drug costs above a drug cost threshold of \$5,100 at which the TrOOP threshold level is achieved; this is referred to as *catastrophic* coverage.

Standard plan coverage in 2007, 2008, and 2009 has the same structure, with parameters being adjusted annually to reflect market base premiums and inflation in drug prices. The combined effect of three annual adjustments can be seen in figure 5.1, which depicts the benefit schedules for 2006 and 2009.

Heiss, McFadden, and Winter (2010) provide a calculation of the actuarial value of Standard Plan benefits, based on a projection by CMS in 2005, the year prior to the introduction of Part D, of the distribution of 2006 drug costs for the full Medicare-eligible population. This calculation shows that the 2006 expected drug cost in this population was \$245.03 per month. If enrollment in the Part D Standard Plan had been universal, the expected benefit would have been \$128.02 per month, or \$91.13 net of the monthly average premium of \$37 anticipated in 2005, and the expected TrOOP cost would have been \$117.01 per month. The actual monthly average premium of \$32.20 in 2006 was lower than anticipated; this may have been the result

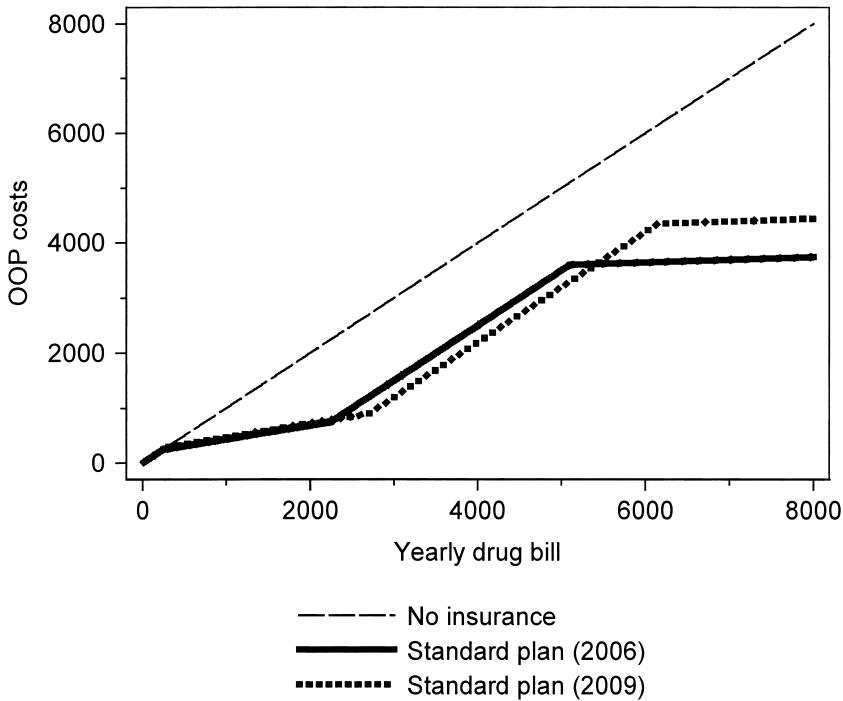


Fig. 5.1 Benefit schedule of the Medicare Part D Standard Plan

Source: CMS data.

of lower drug costs arising from pharmacy benefit management and drug price negotiations by sponsors. Monthly premiums vary with plan sponsor and area, but a national average premium determined by CMS (and used in determining its subsidy) is a publicly available indicator of plan cost to beneficiaries.

The Medicare Part D plans sponsored by private insurance firms may differ from the Standard Plan in their premiums and other plan features, provided that their benefits for any drug cost are on average at least as high as those of the Standard Plan. Enhancements may include coverage for the deductible and for the gap in the Standard Plan. The CMS classifies the stand-alone prescription plans that are available under Medicare Part D in four categories (see Bach and McClellan 2006, 2313). The “standard benefit” is a plan with the statutorily defined coverage, deductible, gap, and cost sharing. An “actuarially equivalent” plan is one that has the same deductible and gap as the Standard Plan, but has different cost sharing (such as copayment tiers for preferred drugs and generic drugs rather than a percentage copayment). Actuarial equivalence to the Standard Plan may be achieved through restrictions in plan formularies, but all approved plans must have

formularies that include at least two drugs in each therapeutic category. A “basic alternative” plan is actuarially equivalent to the statutorily defined benefit, but both the deductible and cost sharing can be altered. (Most of these plans have no deductible.) Finally, an “enhanced alternative” plan exceeds the defined standard coverage—for example, by offering coverage in the gap for generic drugs only, or both generic and branded drugs.

One important feature of Medicare Part D is the penalty for late enrollment. Individuals who enroll after May 15, 2006 and do not have creditable coverage from another source face a late enrollment penalty fee of 1 percent a month for every month that they wait to join. The penalty is computed based on the average monthly premium of Part D standard plans in a given year. This rule was put in place to reduce adverse selection. As the analysis of an intertemporal discrete choice model by Heiss, McFadden, and Winter (2010, 2009) shows, the late-enrollment penalty provides a strong monetary incentive for eligible consumers to enroll in 2006 (or more generally, when they first become eligible for Medicare) rather than wait to join only later, should health problems develop and drug costs rise.

The evolution of plan supply in this market is of interest in its own right. Official CMS data allow us to classify all Part D plans that have been offered from 2006 through 2009 into four types (defined differently from the official classification discussed earlier): Standard Plans, plans without deductible (but with a coverage gap), and enhanced plans with gap coverage, either only for generics or for both brand-name drugs and generics. Figure 5.2 shows that while average premiums of plans without gap coverage have remained relatively stable, premiums for plans with gap coverage have increased substantially. The market for the most generous plans with coverage for at least some brand-name drugs in the gap has all but collapsed within the first three years. By 2007, almost half of such plans that had been offered in 2006 had disappeared and the remaining half had dramatically higher average premiums. In 2008, no such plan was offered, and in 2009 there is only one. A plausible interpretation is that sponsors have underestimated the costs of providing a generous plan; for example, due to adverse selection. This issue is investigated further in ongoing parallel research (Heiss, McFadden, and Winter 2009).

The new Medicare Part D prescription drug benefit has received considerable attention in the literature. We do not attempt to provide a comprehensive review of the literature but refer the reader to the paper by Duggan, Healy, and Morton (2008) for a discussion of the Part D drug benefit and the research programs it has generated. In the remainder of this section, we review selected recent papers directly related to the present chapter.

Levy and Weir (2008, 2010) use data from the 2004 and 2006 waves of the Health and Retirement Study (HRS) to estimate the extent of adverse selection into Part D and the impact of Part D on medication use and out-of-pocket spending. They conclude that there was substantial selection into

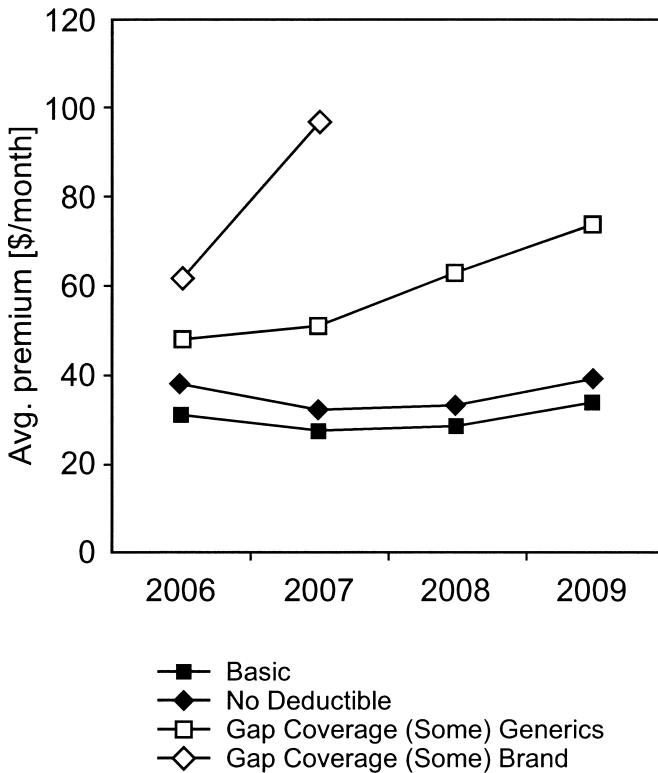


Fig. 5.2 Average premiums of Medicare Part D plans, by type

Source: CMS data (2005–2009 Excel files containing the characteristics of Medicare Part D stand-alone prescription drug plans).

Part D. Among Medicare beneficiaries with no drug coverage in 2004, those with high use and/or spending in 2004 were most likely to be enrolled in Part D in 2006. Many of those who remained without coverage in 2006 reported that they did not use prescription drugs, and the majority had relatively low out-of-pocket spending. In line with the findings by Heiss, McFadden, and Winter (2010), Levy and Weir (2010) conclude that Medicare beneficiaries seem to have been able to make economically rational decisions about Part D enrollment (not necessarily plan choice) despite the complexity of the program. Further, Levy and Weir report that the use of prescription drugs did not change dramatically in response to Medicare Part D. Neither does Part D appear to have reduced the extent of cost-related noncompliance among those who previously had no drug coverage. Levy and Weir conclude that the Part D program has experienced adverse selection but not moral hazard.

Lichtenberg and Sun (2007) also investigate the effect of Medicare Part D on prescription drug use and out-of-pocket costs of eligible seniors. Using

data on prescription filled by a large retail pharmacy chain during the period September 2004 to December 2006, they estimate that Medicare Part D reduced user cost among the elderly by 18.4 percent, increased their use of prescription drugs by about 12.8 percent, and increased total U.S. usage by 4.5 percent in 2006. Lichtenberg and Sun estimate that every seven prescriptions paid for by the government crowded out five other prescriptions and resulted in only two additional prescriptions used. Yin et al. (2008) also conclude that the Medicare Part D prescription benefit resulted in modest increases in average drug utilization and decreases in average out-of-pocket expenditures among Part D beneficiaries. Using data from a random sample of pharmacy customers who were beneficiaries of the program after the enrollment deadline, they estimate that the drug benefit saved beneficiaries about nine dollars a month and gave them an extra fourteen days of pills, on average.

Two recent studies investigate the enrollment and plan choices of Medicare Part D-eligible individuals in more detail. Abaluck and Gruber (2009) evaluate the choices of elders across the wide array of Part D options using a data set of prescription drug claims matched to information on the characteristics of choice sets. They document that the vast majority of elders are choosing plans that are not on the “efficient portfolio” of plan choice in the sense that an alternative plan would have offered better risk protection at a lower cost. Their analysis suggests that individuals place much more weight on current plan premiums than on expected out-of-pocket costs. Further, individuals appear to place almost no value on variance reduction.

Kling et al. (2008) investigate suboptimal plan choice from another viewpoint; their analysis is motivated by recent models of individual misperception of prices. They present results from a randomized experiment conducted in the open-enrollment period at the end of 2006, which gave individuals an opportunity to switch plans. One group of seniors enrolled in Medicare drug plans was presented personalized information on the potential cost savings from changing to the lowest cost plan while another group received information about how to access the Medicare website, where this same information was available. The intervention group plan-switching rate was 28 percent, while the comparison group rate was 17 percent. Average predicted costs for 2007 were lower for the intervention group as a whole and lower for those potentially affected by the intervention.

Also related to the issue of whether consumers can make well-informed choices among a large number of plans available to them, Lucarelli, Prince, and Simon (2008) study the welfare impacts of limiting the number of Part D plans based on a joint estimation of plan supply and demand. They assess the effects on equilibrium premiums and welfare of reducing product differentiation and of reducing the maximum number of plans each firm can offer. Lucarelli and colleagues find that implied search costs would have to be at least two-thirds of the average monthly premium in order to

justify a regulation that allows only two plans per firm. This number would be substantially lower if the limitation in the number of plans were to be coupled with a decrease in product differentiation (e.g., by removing plans that provide coverage in the gap).

5.3 The Retirement Perspectives Survey, 2005 to 2009

The Retirement Perspectives Survey is a research project conducted by the authors to study the feasibility of using Internet survey designs in elderly populations, and using treatments embedded in surveys to detect and mitigate survey response errors. Beginning in 2005, the continuing methodological research objectives have been combined with a substantive focus on consumer choices and experience in the Medicare Part D prescription drug program. Results from the first three waves of the Retirement Perspectives Study have been reported in a series of papers (Winter et al. 2006; Heiss, McFadden, and Winter 2006, 2009, 2010, McFadden, Winter, and Heiss 2008).

The four waves of the Retirement Perspectives Survey in 2005, 2006, 2007, and 2009 used a panel of individuals maintained by Knowledge Networks (KN), a commercial survey firm. The members of the KN Panel are enrolled using random-digit-dialing sampling to obtain a pool that is representative of the U.S. noninstitutionalized population in terms of demographics and socioeconomic status. Participants are provided with web TV hardware to respond to periodic survey elicitations with content from both commercial and academic clients. The KN Panel members are compensated for participation. The RPS respondents are somewhat younger, more educated, healthier, and computer-literate than the underlying population. For example, about half the panel members use the Internet, compared with about a third in the corresponding population. Sample weighting is used to adjust for attrition in the recruitment and retention process, and for nonresponse to specific surveys. For a detailed discussion of representativeness of the RPS sample and weighting procedures, we refer to Heiss, McFadden, and Winter (2010).

The first wave of our study, RPS-2005, was conducted in November 2005, just before the initial enrollment period for the new Medicare Part D prescription drug benefit began. This survey focused on prescription drug use and intentions to enroll in the new Medicare Part D program. Additional questions concerned long-term care, and a sequence of questions was designed to obtain simple measures of respondents' risk attitudes. In May 2006, after the initial enrollment period had ended, we administered the second wave (RPS-2006). For this survey, we recontacted the Medicare eligible respondents of RPS-2005 and elicited their prescription drug insurance status as well as their Part D decisions, including plan choice. The RPS-2007 and RPS-2009 were conducted in March/April 2007 and

February/March 2009, respectively; their samples consisted of reinterviewed respondents of earlier RPS waves plus refreshment cases. The four RPS interviews required between twenty-five and forty minutes for completion, with variations due to variations in the length of the questionnaire. Most socioeconomic and demographic variables were provided by Knowledge Networks as background on panel members, and were not requested again in the RPS questionnaires.

In table 5.1, we report sample sizes and participation rates for the various RPS waves and segments. Participation rates from the KN panel were generally rather high. For the first wave (RPS-2005), we contacted almost 6,000 KN Panel members aged fifty and older, and 80.6 percent of those invited to participate completed the questionnaire. For RPS-2006, we contacted only KN members who had completed RPS-2005 and were aged sixty-three years or older at the time of the interview (or in a few cases were younger but already on Medicare). The participation rate was again rather high at 82.3 percent. For RPS-2007 two groups were contacted: reinterviews of earlier RPS respondents (i.e., those who had completed either RPS-2005 only or both RPS-2005 and RPS-2006), and a refreshment sample of KN Panel members who had not participated in any prior RPS wave. The participation rate among these groups was the highest for those who had completed both RPS-2005 and RPS-2006 (89.6 percent), and slightly below the other rates for those who had completed RPS-2005 but missed RPS-2006 (76.6 percent). The participation rate for the refreshment sample was 81.5 percent and thus well in line with that in the comparable RPS-2005 sample.

For RPS-2009 we again contacted all previous RPS respondents and a refreshment sample. Since individuals remain on the KN Panel only for a limited time, the number of earlier RPS respondents that were successfully recontacted was relatively small. As consequence, only a fraction of respondents who were interviewed for RPS-2005 also completed all three subsequent interviews. Of the 2,119 RPS-2005 respondents aged sixty-four and older at the time of that interview, 710 (or 33.5 percent) completed all three subsequent interviews; 702 (or 33.1 percent) participated in 2006 and 2007, but not in 2009; 232 (11.0 percent) did not participate in any subsequent interview; and the remaining respondents have holes in their participation pattern over time. Response rates in 2009 were substantially lower than in earlier years, even in the refresher sample, which may indicate that public interest in Medicare Part D has declined relative to earlier years.

These numbers highlight the fact that Internet panels such as the KN Panel are not ideally suited for conducting panel studies over longer time periods since they are not built and administered with the aim of retaining respondents for periods of several years. In private correspondence, KN indicated that among those respondents who were still active in the KN Panel, participation rates achieved for the RPS interviews were higher than those typically observed in other studies that use the KN Panel. The KN

Table 5.1 Sample selection criteria and response rates for the four RPS waves

Age selection rule	RPS-2005		RPS-2006		RPS-2007		RPS-2009	
	50+	63+ ^a	64+		64+		64+	
			Subsamples		Subsamples		Subsamples	
	Yes ^b	No	Yes	No	Yes	No	Yes	No
Completed RPS-2005								
Completed RPS-2006								
Completed RPS-2007								
KN members contacted	5,879	2,598	1,704	217	3,171	127	789	364
Completed interviews	4,738	2,137	1,526	165	2,711	77	534	207
Response rate ^c	80.6%	82.3%	89.6%	76.0%	85.5%	60.6%	67.7%	56.9%
				81.6%		68.0%		65.9%

^aIn addition, RPS-2005 respondents younger than sixty-three years were contacted for RPS-2006 if they said that they are on Medicare.

^bCompletion of RPS-2005 was required for this subsample.

^cThe response rate is defined as the number of completed interviews as a proportion of the number of KN Panel members contacted.

attributed this to the highly topical subject of the RPS study. However, high participation rates conditional on still being in the panel cannot compensate for attrition from the panel. Attrition that is selective with respect to observed or unobserved variables would exacerbate these problems.

Table 5.2 contains a comparison of the distributions of key demographic characteristics in the Health and Retirement Study (HRS) 2006 and our analysis samples. For the three interviews in which we observe Medicare Part D enrollment and plan choices (i.e., the 2006, 2007, and 2009 interviews), we define the analysis samples as containing all RPS respondents aged sixty-five or older at the time of the 2006 interview (or at the time of their first interview if they entered the sample in 2007 or 2009 as members of the refreshment sample).³ Despite the rather complicated structure of the overall RPS panel, the three analysis samples line up well with the HRS sample in terms of these key demographic characteristics; application of the sample weights supplied by Knowledge Networks tends to reduce any differences further. In our subsequent multivariate analysis, we do not use weights; see McFadden et al. (2006) for a discussion.

In our empirical analysis of enrollment decisions and plan choice, we consider the following groups of explanatory variables: socioeconomic characteristics supplied by Knowledge Networks as background variables (age, sex, race, education, and income); measures of current self-rated health status (SRHS) and drug use; and measures of decision-making competence, planning horizon, and attitudes toward risk. We describe these explanatory variables in the remainder of this section. Descriptive statistics are reported in the next section. The dependent variables are also described in section 5.4.

Age, sex, race, and education are naturally defined. The only income variable that is available as part of the KN background variables is total (gross) household income. The KN background data do not contain a measure of wealth.

Current health status is measured using the standard question on self-rated health status as used in the HRS and many other surveys: “How would you describe your current health?” with five response options (excellent, very good, good, fair, poor).

Our measure of current drug use⁴ is based on the question, “How many different prescription drugs did you use last year in total (not counting multiple refills)?” We also asked respondents whether they expect their drug use to change: “How do you think the number of prescription drugs that you

3. We excluded a small number of observations from the analysis samples that had inconsistencies in key demographic variables.

4. In this chapter, the terms “current drug use” and “drug use in the previous year” are used interchangeably. When we consider enrollment in Medicare Part D for a given year, “current drug use” refers to drug use in the year when the enrollment decision was made (i.e., the “previous year”).

Table 5.2 Socioeconomic characteristics, HRS 2006 vs. RPS 2006/2007/2009

	HRS 2006		RPS-2006		RPS-2007		RPS-2009	
	Unweighted (%)	Weighted (%)	Unweighted (%)	Weighted (%)	Unweighted (%)	Weighted (%)	Unweighted (%)	Weighted (%)
Gender								
Female	57.3	56.8	55.8	57.2	55.2	57.2	55.0	56.2
Male	42.7	43.2	44.2	42.8	44.8	42.8	45.0	43.8
Race								
White	83.5	89.3	87.6	83.3	87.0	82.4	84.0	81.5
Nonwhite	16.5	10.7	12.4	16.7	13.0	17.6	16.0	18.5
Age								
61-70	35.8	33.7	39.3	35.9	40.5	36.4	41.6	36.2
71-80	40.3	41.6	46.9	47.9	45.5	45.9	46.1	45.0
81-90	20.4	22.0	12.9	15.1	13.2	16.8	11.5	17.5
>90	3.5	2.7	0.9	1.1	0.9	0.9	0.8	1.2
Education								
Less than HS	31.5	28.3	12.9	26.1	13.1	23.1	12.6	22.4
High school	32.6	33.4	41.5	36.5	39.0	37.3	36.4	37.1
More than HS	36.0	38.4	45.6	37.5	47.9	39.6	51.0	40.5
Income								
<\$20K	33.2	31.2	23.4	28.9	21.9	26.2	14.6	21.9
\$20K-\$60K	46.2	46.9	58.2	52.6	57.9	53.0	54.8	53.3
>\$60K	20.6	21.9	18.4	18.5	20.2	20.8	30.6	24.8
SRHS								
Excellent	8.5	9.1	6.1	5.6	5.1	4.6	5.3	5.2
Very good	26.3	27.5	32.2	27.8	30.4	27.9	31.1	27.6
Good	31.6	32.4	39.5	41.8	39.9	41.4	41.0	42.1
Fair	23.3	22.2	18.1	19.8	19.9	20.8	18.3	20.9
Poor	10.3	8.8	4.0	4.9	4.4	5.2	4.1	4.1
Number of observations	11,399		1,666		2,463		1,552	

Notes: The HRS comparison sample consists of respondents aged sixty-five or older at the time of the HRS 2006 interview. The RPS analysis samples consist of respondents aged sixty-five or older at the time of the RPS-2006 interview (or for panel refreshers, at the time of their first RPS interview). A few respondents with inconsistent demographic information were also excluded from the analysis sample.

take on a regular basis will change over the next few years?” Three response options were provided (more, fewer, no change). In earlier RPS waves, we included a probabilistic measure of the subjective expectations with respect to drug use; this measure is not analyzed in this chapter. The RPS-2005, 2007, and 2009 questionnaires contained a series of questions that allows us to impute the respondent’s total drug expenditure (evaluated at average pharmacy over-the-counter prices); we do not use this measure in the current version of this chapter (see Winter et al. [2006], and Heiss, McFadden, and Winter [2010], for detailed discussions).

In various RPS waves, we experimented with alternative measures of decision-making competence and preference variables. In the present chapter, we use the “Decision Making Competence” (DMC) scale developed by Bruine de Bruin, Parker, and Fischhoff (2007); an abbreviated version of that instrument was contained in the RPS-2007 questionnaire. For our subsequent analysis, we generated a median-split dummy from the raw DMC measure.

We also use simple measures of the respondent’s planning horizon and risk attitudes that were contained in RPS-2009 as explanatory variables. The question on the planning horizon was taken from HRS: “What is your most important period for planning saving and spending?” This question had closed response options (the next few months; the next year; the next few years; the next five to ten years; more than ten years). We construct a dummy variable for responses that imply a planning horizon of more than one year.

The questions on risk attitudes were taken from the German Socio-Economic Panel; they have been used successfully to predict risk-related behavior in various domains (Dohmen et al. 2010). The first question is: “How do you see yourself: Are you generally a person who is fully prepared to take risks or do you try to avoid taking risks?” This question is followed by a series of similar domain-specific questions; in RPS-2009 we used the questions, “How prepared are you to take risks while driving?”, “. . . in financial matters?”, and “. . . with your health?” All four questions had closed response options on an 11-point scale with extremes labeled as “fully prepared to take risks” and “risk averse.” For each measure, we construct a dummy variable for respondents who are prepared to take risks (i.e., who checked a response above the neutral response on the 11-point scale).

5.4 Analysis of Consumers’ Medicare Part D Decisions

We begin by reviewing the sources of prescription drug coverage of the RPS respondents in 2006, 2007, and 2009. As noted before, the analysis sample contains respondents aged sixty-five and older who are eligible for Medicare Part D; however, not all eligible individuals had to make an active enrollment decision because of existing coverage from other sources that is comparable to the Medicare Part D standard plan (or better).

In each of the three RPS questionnaires fielded in 2006, 2007, and 2009, we asked a direct question on the source of prescription drug insurance with closed-form response options. While such a question has some potential for producing misclassified responses, our analysis of coverage in 2006 (see Heiss, McFadden, and Winter 2006) showed that RPS responses line up well with official enrollment figures provided by CMS. The top panel of table 5.3 replicates these figures; the bottom panels report comparable figures for 2007 and 2009. About 6 percent of eligible respondents remained without coverage in 2006; the numbers did not change much in 2007 and 2009. Note

Table 5.3 Prescription drug insurance status, drug use, and self-rated health

	No coverage	Automatic	Private	Part D	Total	Missing
Source of coverage in 2006						
Observations	94	827	299	349	1,569	97
Row percent	6.0	52.7	19.1	22.2	100.0	
Number of different prescription drugs taken in 2005 (column percent)						
No drugs	38.3	10.5	12.0	9.7	12.3	
1 or 2 drugs	34.0	24.4	30.4	29.2	27.2	
3 or more drugs	27.7	65.1	57.5	61.0	60.5	
Self-reported health status in 2006 (column percent)						
Excellent	14.9	5.4	5.7	5.7	6.1	
Very good or good	69.2	71.2	72.2	73.6	71.8	
Poor or fair	16.0	23.3	22.1	20.6	22.0	
Source of coverage in 2007						
Observations	128	970	707	510	2,315	148
Row percent	5.5	41.9	30.5	22.0	100.0	
Number of different prescription drugs taken in 2006 (column percent)						
No drugs	30.5	6.6	8.2	6.7	8.4	
1 or 2 drugs	36.7	22.5	25.6	22.0	24.1	
3 or more drugs	32.8	70.9	66.2	71.4	67.5	
Self-reported health status in 2007 (column percent)						
Excellent	12.5	5.4	4.7	3.9	5.2	
Very good or good	68.8	70.5	69.2	72.0	70.3	
Poor or fair	18.8	24.2	26.2	24.1	24.4	
Source of coverage in 2009						
Observations	90	599	481	313	1,483	69
Row percent	6.1	40.4	32.4	21.1	100.0	
Number of different prescription drugs taken in 2008 (column percent)						
No drugs	40.0	9.0	9.8	9.0	11.1	
1 or 2 drugs	26.7	21.0	24.3	20.8	22.4	
3 or more drugs	33.3	70.0	65.9	70.3	66.5	
Self-reported health status in 2009 (column percent)						
Excellent	8.9	5.4	4.8	5.1	5.3	
Very good or good	72.2	71.6	70.3	78.0	72.5	
Poor or fair	18.9	23.1	25.0	16.9	22.1	

Notes: “Private” includes prescription drug coverage as part of a Medicare Advantage program. “Part D” includes only Part D stand-alone plans.

Table 5.4 Means of covariates used in reduced-form regressions

	RPS-2006		RPS-2007		RPS-2009	
	Obs	Mean	Obs	Mean	Obs	Mean
Female	1,666	0.56	2,463	0.55	1,552	0.55
Nonwhite	1,666	0.12	2,463	0.13	1,552	0.16
Education: Less than high school	1,666	0.13	2,463	0.13	1,552	0.13
Education: More than high school	1,666	0.46	2,463	0.48	1,552	0.51
Age 70 and younger	1,666	0.47	2,463	0.46	1,552	0.46
Age 81 and older	1,666	0.14	2,463	0.14	1,552	0.12
Income <\$20K	1,666	0.23	2,463	0.22	1,552	0.15
Income >\$60K	1,666	0.18	2,463	0.20	1,552	0.31
SRHS excellent	1,666	0.22	2,463	0.24	1,552	0.22
SRHS poor or fair	1,666	0.06	2,463	0.05	1,552	0.05
1 or 2 drugs	1,666	0.27	2,463	0.25	1,552	0.22
3 or more drugs	1,666	0.60	2,463	0.66	1,552	0.66
Expects to use more drugs			2,431	0.15	1,538	0.16
DMC scale above median			2,362	0.50		
Planning horizon longer than one year					1,521	0.50
Prepared to take risks (general)					1,539	0.64
Prepared to take risks (health)					1,539	0.27
Prepared to take risks (financial)					1,542	0.42

Notes: All variables are defined as dummy variables.

also that the rates of item nonresponse on this key question were low in all three surveys (6 percent or less).

Table 5.3 also confirms our earlier finding of a strong association of prescription drug coverage and measures of current health. In all three RPS waves, respondents who take three or more prescription drugs on a regular basis are much more likely to have stand-alone Part D coverage than those who take fewer drugs. Similarly, respondents whose self-rated health is “excellent” are less likely to have stand-alone coverage. (We confirm these associations in multivariate regressions reported following). Finally, while table 5.3 shows some stability in responses over time, there are also some variations. For instance, the fractions of “automatic” and “private” coverage change from 2006 to 2007 but are similar in 2007 and 2009. The fractions of “no coverage” and “stand-alone Part D coverage” do not change over time.

Table 5.4 reports descriptive statistics for our explanatory variables. We have converted all variables into dummy variables; the left out categories are naturally defined. We chose to do this to ease interpretation of the regression results; we report the coefficients of logistic regressions as log-odds ratios. Also, the information loss from converting the age variable into a three-category measure turned out to be small, and the only other continuous variable, household income, may suffer from measurement error so that

Table 5.5 Logit regressions—prescription drug coverage from any source (all respondents)

Mean of dependent variable	RPS-2006	RPS-2007		RPS-2009	
	0.940	0.945	0.946	0.939	0.942
Female	0.5984**	0.9473	0.9595	1.1919	1.0972
Nonwhite	1.9583	2.3541**	2.4266**	1.8430	2.0211
Education: Less than high school	0.4654**	0.8546	0.9618	0.7101	0.776
Education: More than high school	1.1794	1.1494	1.145	0.8949	0.8862
Age 70 and younger	0.6480*	0.7182	0.6453*	0.5761**	0.6047*
Age 81 and older	1.2025	0.5948*	0.5610*	0.5440*	0.5368*
Income <\$20K	1.4487	0.8838	0.8846	0.9630	1.0291
Income >\$60K	2.0077*	1.7923*	1.8392*	2.0905**	1.9667**
SRHS excellent	0.9375	0.7776	0.831	0.8151	0.7129
SRHS poor or fair	0.5148*	0.5806*	0.5453*	1.0218	0.8206
1 or 2 drugs	2.8892***	2.8905***	2.9519***	3.8979***	3.7165***
3 or more drugs	8.3483***	10.110***	10.478***	10.812***	9.8519***
Expects to use more drugs			1.3576		1.3745
DMC scale above median			1.2753		
Planning horizon longer than one year					1.4572
Prepared to take risks (general)					0.9339
Prepared to take risks (health)					0.9005
Prepared to take risks (financial)					1.1251
Constant	6.4693***	4.4951***	3.8892***	3.7363***	3.4718***
Observations	1,569	2,315	2,204	1,483	1,425

Notes: All variables are defined as dummy variables. Coefficients are reported as odds ratios.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

using a median split is a conservative approach. As can be seen from table 5.4, rates of item nonresponse are small for the covariates, even for the subjective measures.

In table 5.5, we begin our analysis with a reduced-form regression of whether an eligible respondent has prescription drug coverage from any source. The dependent variable is based on the direct question described earlier. We report a baseline specification with socioeconomic and health variables for 2006, 2007, and 2009; for 2007 and 2009 we also report specifications that add our measure of an expected increase in drug use (which, as we hasten to add, may be endogenous) and either the decision-making

Table 5.6 Logit regressions—Part D prescription drug coverage (active deciders)

Mean of dependent variable	RPS-2006		RPS-2007		RPS-2009	
	0.788	0.799	0.802	0.777	0.788	
Female	0.7423	1.2741	1.3556	1.6853*	1.8143*	
Nonwhite	1.2946	1.1643	1.2841	0.8646	1.0234	
Education: Less than high school	0.4725**	0.7163	0.8406	0.8054	0.8570	
Education: More than high school	1.1958	0.9256	0.9069	0.8332	0.7979	
Age 70 and younger	0.4930**	0.7624	0.6657	0.6053	0.6031	
Age 81 and older	1.0496	0.5449*	0.5399*	0.6577	0.7404	
Income <\$20K	1.6273	0.8746	0.8741	0.8810	0.9351	
Income >\$60K	1.5748	1.3768	1.4373	1.4639	1.2535	
SRHS excellent	0.7197	0.6815	0.7585	0.5608	0.5774	
SRHS poor or fair	0.5034	0.4723*	0.4514*	1.3835	1.1077	
1 or 2 drugs	3.3766***	2.7943***	2.7018***	3.7034***	3.5037***	
3 or more drugs	9.1045***	10.981***	10.774***	11.823***	11.699***	
Expects to use more drugs				1.8346*	1.4768	
DMC scale above median			1.3002			
Planning horizon longer than one year					2.4231***	
Prepared to take risks (general)					1.0581	
Prepared to take risks (health)					1.0209	
Prepared to take risks (financial)					1.0261	
Constant	1.5404	1.0856	0.8869	0.7989	0.467	
Observations	443	638	605	403	387	

Notes: All variables are defined as dummy variables. Coefficients are reported as odds ratios.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

measure based on the DMC scale (2007 only) or the planning horizon and risk attitude measures (2009 only). The most striking result is that the number of drugs used in the previous year has the strongest effect as a predictor of drug coverage. Some socioeconomic variables are significant; the result that nonwhites were more likely to have coverage in 2007 is curious. Less surprising is the result that high-income respondents are more likely to have coverage—many of them have existing coverage via their (current or former) employer's health insurance.

The structure of table 5.6 is identical to that of table 5.5. The sample is

restricted to “active deciders” (i.e., respondents without prior coverage from another source), and the dependent variable is whether they have a stand-alone Part D plan or remain without coverage. Most of these active deciders will have made their enrollment decision during the initial enrollment period in 2005/06; the reason why we report results also for 2007 and 2009 is that we want to test whether the additional “soft” variables obtained in those years have predictive power. As in table 5.5, current drug use remains a strong predictor of Part D coverage among the active deciders. Socioeconomic variables have little predictive power (as we reported in Heiss, McFadden, and Winter [2010]). Expecting to use more drugs has some predictive power in 2007; the planning horizon variable is significant and relatively strong in 2009. Measures of risk attitudes and decision-making competence are not significant in these regressions. This is somewhat surprising since these measures had predictive power for economic decisions in other studies; one reason for the lack of significance may be the relatively small sample of active deciders. In any case, these results confirm what we and others have found in other studies: current drug use is the strongest predictor of Medicare Part D enrollment among active deciders.

Also for active deciders, we looked at potential determinants of plan switching. This was first possible at the end of 2006 for 2007. Table 5.7 therefore reports results from RPS-2007 and 2009. The dependent variable is based on a direct question of whether the respondent was enrolled in the same stand-alone Part D plan in the previous year. The fraction of switchers was slightly below 14 percent in 2006 (for 2007) and close to 18 percent in 2008 (for 2009). The regressions show no variable with strong effects other than being nonwhite in the 2009 data. At this level of analysis, we cannot explain plan switching well with a small set of sociodemographic and health variables. The additional “soft” variables obtained in 2007 and 2009 also show no clear pattern.

Finally, we investigate plan type choice. Specifically, the dependent variable in the following set of regressions is whether a prescription drug plan has coverage in the gap (in most cases, this will be for generic drugs). We constructed this variable using the responses to a direct question that was asked to all respondents with prescription drug coverage from any source. Table 5.8, panel A, reports results for all these respondents, panel B only for active deciders. When we look at all respondents with coverage, the coefficients of the income variables suggest that the probability of having gap coverage increases with income. Using (more) drugs also increases the probability of having gap coverage. Females are less likely to have gap coverage, and nonwhites are more likely. These findings are in line with the fact that many of those with “automatic” enrollment (say, via their employer’s health insurance) have gap coverage. When we look only at the active deciders, the coefficients of the income variable change—in this sample, respondents with lower incomes are more likely to have gap coverage (even though we control

Table 5.7 Logit regressions—Part D plan switching (active deciders)

Mean of dependent variable	RPS 2007		RPS 2009	
	0.134	0.139	0.176	0.177
Female	0.9653	0.964	0.7462	0.7289
Nonwhite	0.6612	0.6299	5.6205***	5.6288***
Education: Less than high school	1.0573	0.8166	0.5216	0.352
Education: More than high school	1.7903*	1.9129*	1.6731	1.7942
Age 70 and younger	1.3526	1.3948	0.6827	
Age 81 and older	0.7543	0.6261	0.6609	0.928
Income <\$20K	0.5608	0.5865	0.9666	1.0872
Income >\$60K	0.7111	0.6777	1.1222	1.1166
SRHS excellent	1.0965	1.1787	0.6608	0.7002
SRHS poor or fair	2.5675	2.5594	0.2448	0.2541
1 or 2 drugs	1.0739	1.1181	6.6095*	5.4491*
3 or more drugs	2.0942	1.8233	5.1503*	5.0242*
Expects to use more drugs		0.3094**		0.6447
DMC scale above median		1.1352		
Planning horizon longer than one year				1.184
Prepared to take risks (general)				0.3183*
Prepared to take risks (health)				1.9755
Prepared to take risks (financial)				1.4737
Constant	0.0699***	0.0864***	0.0433***	0.0472***
Observations	418	395	250	243

Notes: All variables are defined as dummy variables. Coefficients are reported as odds ratios.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

for current drug use). As before, our measures of decision-making competence, planning horizon, and risk attitudes are not statistically significant as predictors of having gap coverage.

5.5 Conclusions

In this chapter, we investigated how older Americans made their decisions in the enrollment periods for the first four years of the new Medicare Part D prescription drug benefit. We analyzed data from four waves of the Retirement Perspectives Survey (RPS), which we designed specifically to obtain information on older Americans' health status and expenditures, their preferences, and their prescription drug insurance choices before and after the introduction of Medicare Part D. The main purpose of our analysis was to understand how consumers react to the economic incentives embedded in Medicare Part D. This is an important research question that goes far beyond the more pressing public policy issue of how successful the program was in terms of its stated goals. It is our view that understanding

Table 5.8 **Logit regressions—gap coverage**

<i>A All respondents with coverage from any source</i>				
Mean of dependent variable	RPS-2007		RPS-2009	
	0.488	0.490	0.451	0.454
Female	0.7252***	0.7303***	0.7724**	0.7201***
Nonwhite	1.3710**	1.3555**	2.0925***	2.0367***
Education: Less than high school	1.0955	1.0831	0.9665	0.9835
Education: More than high school	1.1938*	1.2226**	0.8756	0.915
Age 70 and younger	0.9639	0.9419	0.931	0.9215
Age 81 and older	0.7334**	0.7269**	1.148	1.1382
Income <\$20K	0.7466***	0.7752**	0.9331	0.9487
Income >\$60K	1.3480***	1.3479**	1.3808**	1.3555**
SRHS excellent	0.8367*	0.8605	0.9532	0.974
SRHS poor or fair	0.8296	0.8566	1.4683	1.4628
1 or 2 drugs	1.5620**	1.4120*	1.4679*	1.4927*
3 or more drugs	1.5502**	1.3919*	1.5461**	1.5438**
Expects to use more drugs		0.7493**		1.0118
DMC scale above median		0.916		
Planning horizon longer than one year				1.0325
Prepared to take risks (general)				0.9144
Prepared to take risks (health)				0.8631
Prepared to take risks (financial)				0.9012
Constant	0.7399	0.88	0.5662**	0.6587
Observations	2,190	2,087	1,387	1,337
<i>B Active deciders</i>				
Mean of dependent variable	0.125	0.124	0.107	0.108
Female	1.0534	1.0457	1.5672	1.5956
Nonwhite	1.834	1.5598	5.2845***	5.6204***
Education: Less than high school	1.5386	1.5436	0.2610*	0.1645**
Education: More than high school	1.0135	0.8863	0.3157***	0.3297***
Age 70 and younger	0.9987	0.9325	0.6866	0.764
Age 81 and older	0.8468	0.7497	1.8317	1.8744
Income <\$20K	1.9645**	2.1019***	3.5823***	3.6767***
Income >\$60K	1.2013	1.4106	1.4012	1.2763
SRHS excellent	0.7032	0.7854	0.6358	0.577
SRHS poor or fair	0.4223	0.4543	3.2805*	3.8187*
1 or 2 drugs	4.1067**	4.0492**	2.9162	2.3096
3 or more drugs	3.7745**	3.4656**	2.9982*	2.7202
Expects to use more drugs		0.5825		1.0072
DMC scale above median		0.8221		
Planning horizon longer than one year				0.8805
Prepared to take risks (general)				1.0065
Prepared to take risks (health)				1.0999
Prepared to take risks (financial)				0.6532
Constant	0.0319***	0.0414***	0.0339***	0.0440***
Observations	638	605	403	387

Notes: All variables are defined as dummy variables. Coefficients are reported as odds ratios.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

whether and how consumers react to economic incentives in complex health insurance markets is an important part of the process of optimally designing social insurance programs such as Medicare Part D. This chapter can be interpreted as a first step in that direction.

Specifically, we asked whether eligible consumers without prescription drug coverage from other sources enrolled in Medicare Part D. Given the structure of the program, expected drug costs for the first year should be by far the most important determinant of those decisions. Our analysis confirmed this: enrollment seems to be driven strongly by the number of drugs used on a regular basis in 2005 (which should be a good predictor of 2006 drug use) and very little by other variables. This result is important since the introduction of Medicare Part D allows us to observe individual risk before any insurance decision: moral hazard cannot have affected drug use of those without coverage prior to the introduction of Medicare Part D. Our data therefore confirm (adverse) selection into this insurance program. In earlier research, we found a similar result when we used an imputed measure of drug costs rather than the number of drugs (Heiss, McFadden, and Winter 2010). This chapter adds to our earlier work by using data from the RPS waves 2007 and 2009, which also contained measures of decision-making competence, planning horizon, and risk attitudes. When we added those measures to our reduced-form regressions, they had little additional predictive power, however.

The overall conclusion from the empirical analysis presented in this chapter is that consumers respond to the *immediate* incentives that are induced by their current health status and drug expenditures combined with the salient, widely publicized features of the Medicare Part D program. To the extent that our measures approximate subjective factors well, they seem to have little effect. This result is, however, subject to further scrutiny.

We end by mentioning directions for future research on Medicare Part D and on consumer-directed health care, and on insurance markets more generally. One issue that deserves more attention is whether consumers' decisions are rational. We did not consider this issue in this chapter but refer to our earlier results (Heiss, McFadden, and Winter 2010) and ongoing research (Heiss, McFadden, and Winter 2009). The latter paper takes into account the intertemporal aspects of the enrollment decision that arise because of the late enrollment penalty (and that may be exacerbated by psychological switching costs). In that paper, we model enrollment and plan choice in stylized environment as a discrete dynamic decision process and confront the predictions from our behavioral model with data on individual enrollment and plan choice from the first three years of Medicare Part D. We view that more structural approach as complementary to the reduced-form analysis presented in this chapter.

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Comment Amy Finkelstein

This is an excellent installment in a fruitful and fascinating line of ongoing work by this research team on the Medicare Part D program. This research program is motivated by two important and complementary goals. The first is evaluating the impact of the introduction of Medicare Part D. This was arguably the largest single expansion in social insurance in the United States since 1965. It is therefore an extremely important program to understand in its own right. The second goal, however, goes beyond this important policy evaluation to use the introduction of Medicare Part D as a tool for gaining insight more generally in consumer responsiveness to the economic incentives in social insurance programs. I am going to confine my comments to the second goal, but of course the importance of the application makes the analysis and results all the more interesting.

The current chapter examines the determinants of individual enrollment decisions and plan choices. It examines in particular the role of past drug use, self-rated health, and measures of the individual's time horizon (discount rate), risk attitudes, and decision-making competence. The main findings are twofold. First, prior drug use is a strong (positive) predictor of both whether the individual enrolls and the comprehensiveness of the plan chosen. Second, the other factors examined do not seem to have much explanatory power.

These results are fascinating for several reasons. The first finding—regarding the positive correlation between prior drug use and plan enrollment and comprehensiveness—provides clear evidence of a role for private information about risk type in influencing insurance decisions. Because adverse selection offers a canonical economic rationale for the existence of social