Research on Part D

- Expensive but largely deemed successful

  - Participation rates over 90%.
  - Expanded prescription drug use and lowered out-of-pocket (OOP) drug prices.
  - Beneficiaries are generally satisfied with the program.
  - The overall cost of the program is lower than initially expected, though still high (>$39 billion per year)
    Is it worth it?

- Most remaining controversy is about whether consumer choice of private plans is beneficial.

The Early Consensus

Krugman (2006):

"The insertion of private intermediaries into the program has several unfortunate consequences. First, as millions of seniors have discovered, it makes the system extremely complex and obscure. It is virtually impossible for most people to figure out which of the many drug plans now on offer is best."

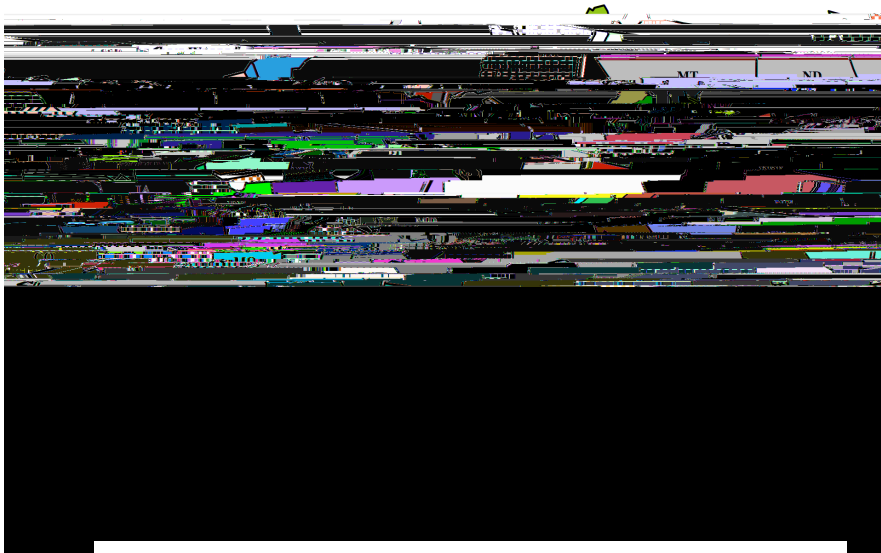— The New York Review of Books, March 23, 2006.

Part D Regions

Consumers Choose

Consumers take responsibility for choosing their desired level of coverage rather than leaving the government to o er an uniform coverage to everybody.

- Consumers have to choose among numerous competing private insurance providers.
  - The goal is to foster competition among insurers so that drugs are provided at the lowest cost possible.
  - Simultaneously, the overall cost of the program is controlled by exposing enrolles to the full incremental cost of drugs ("doughnut hole" with thresholds at \$2,250 and \$5,100 in 2006).
  - Participation in the program is induced by increasing premiums by 1% for each month's delay past initial eligibility (after turning sixty-five year old).

Choosing Among Plans

Beneficiaries may have to discern among up to 50 di erent plans.

- Each October, starting in 2005, beneficiaries have an enrollment period of six weeks to sign up for one of the plans available for the following year.

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Important Issues

Medicare Part D presents a unique opportunity to study the determinants of choices among complex options:

- Consumers face multiple common attributes characterizing insurance plans   Potential role of uncertainty and complexity.
- Consumers also face specific attributes due to plans formularies and their medical conditions   Indidividual heterogeneity.
-

A Most Important Issue

Suppose that using a cross-section of data we can determine whether individuals' out of pocket expenses in drugs exceeded those under a di erent plan than the one chosen.

- (This is a more complicated task that what it seems. Need to

Provocative Descriptive Results

- In 2006 year beneficiaries overspent $300 − $500 (with a long right tail).
- But in 2007, the OOP distribution shifts left, with substantially more beneficiaries closer to the cost-minimizing choice (mean OOP: $260).

Questions Addressed

- Do consumers' choices of Part D Plans (PDPs) improve over time? Or do poor choices persist?

- Who improved most, and how?

- Do age and cognitive limitations inhibit improvement?

- Broader question: Is choice beneficial (neoclassical economics) or does confusion reign (behavioral economics)?
  If confusion:
  - Non-beneficial products can flourish.
  - Partial economic rationale for greater regulation and government intervention, standardization of products and limited choice.
  - Concerns about health insurance, credit cards, mortgages, retirement planning, etc.
  - Economists need new models to interpret and predict consumer behavior.

The Analytical Approach

- Analyze two years of data on individuals' choices of PDPs, controlling for
  - Time-invariant individual heterogeneity.
  - Changes in health.

- Examine choice quality as measured by overspending
  - Defined as the di erence between the chosen PDP and the cheapest option available (including no insurance).
  - An important component of expected utility, particularly given the well-documented persistence of drug spending over time.
  - Adopt an *ex post* approach, which in the cross section yields results highly similar to a fully myopic *ex ante* approach.

- Focus on within-person changes from 2006 to 2007.

- Also analyze switching decisions and decisions to enroll at all.

- Focus on the non-subsidy population exclusively in this paper.

Sample and Data Construction

- Sample:
  - Individuals enrolled for all of 2006 in a PDP or MA plan sold or administered by the PBM.
  - Total of 485,696 individuals, 224,803 in PDPs.
  - In the balanced panel we have 178,449 individuals; 71,399 non-subsidy and 107,050 subsidy, from all 34 PDP regions.
- Generating OOP costs:
  - Sum of the plan's premiums (net of any premium support) and OOP Rx costs.
  - Generate this for every available PDP.
  - And cost without insurance, using $0 premium and the CVS usual and customary prices.
  - Assume an elasticity of demand for Rx of -0.54 (Shea et al. 2007).   We obtain similar results when assuming perfectly inelastic demand for Rx.

Heterogeneity by Observed Individual Characteristics

To test how improvement varied by demographics, we estimate:

$$O_i = \quad + \quad H_i + \quad_1 Z_i + \quad u_i,$$

where Z_i includes time-invariant observed characteristics of each individual.

Results:

- Change in OOP varies substantially with observed demographics.

- Greatest reduction by oldest and common conditions such as cholesterol and diabetes but average for those with Alzheimer's. Cognitive limitations overcome by support, e.g. family, health care providers, search tools.

- E ects of medical conditions persist even after controlling for levels in drug spending OOP reduction are monotonically larger with the size of 2006 overspending.

Learning and Switching

To further study the effect of switching on OOP, we estimate two models:

$$O_i = \quad + \quad H_i + \quad S07_i + \quad u_i,$$
$$O_i = \quad + \quad H_i + \quad _1 \quad S07_i + \quad \mu$$

	2006-2007 Change Allowed to Vary with:		
Switched plans	-299.31 [8.242] ***	-232.84 [7.264] ***	-232.68 [12.816] ***

Table 5. Average Marginal Effects from Probit Models of Switching

	Full Sample	Subset with Stable Health
Overspending Level in 2006 ($)		
less than 100	*Reference Category*	*Reference Category*
between 100 and 200	-0.08 [0.039] **	-0.12 [0.067] *
between 200 and 300	0.21 [0.032] ***	0.21 [0.057] ***
between 300 and 500	0.49 [0.029] ***	0.51 [0.051] ***
between 500 and 1000	0.50 [0.020] ***	0.49 [0.037] ***
between 1,000 and 2,000	0.48 [0.010] ***	0.49 [0.017] ***
more than 2000	0.43 [0.007] ***	0.45 [0.011] ***
Change in 2006 Plan's Percentile Ranking	0.79 [0.009] ***	0.85 [0.016] ***
Age in 2006		
Age 65-69	*Reference Category*	*Reference Category*
Age 70-74	0.12 [0.007] ***	0.14 [0.010] ***
Age 75-79	0.25 [0.006] ***	0.28 [0.009] ***
Age 80-84	0.33 [0.006] ***	0.36 [0.008] ***
Age 85 up	0.39 [0.005] ***	0.41 [0.008] ***
Male	-0.14 [0.005] ***	-0.15 [0.007] ***
Risk score in 2006	0.01 [0.001] ***	0.00 [0.002] *
Took medication in 2006 for		
Hypertension	-0.02 [0.006] ***	-0.01 [0.009]
Cholesterol and other cardiovascular	-0.03 [0.006] ***	-0.04 [0.008] ***
Pain	0.00 [0.006]	0.00 [0.011]
Mental health	-0.03 [0.006] ***	-0.03 [0.010] ***
Antibiotics	-0.04 [0.006] ***	-0.04 [0.009] ***
Anticoagulants	-0.04 [0.006] ***	-0.04 [0.010] ***
Thyroid	-0.06 [0.006] ***	-0.06 [0.009] ***
Diabetes	0.01 [0.006]	0.02 [0.011]
Osteoporosis	-0.02 [0.006] ***	-0.03 [0.010] ***
Alzheimer's	-0.06 [0.012] ***	-0.02 [0.021]
Change in Risk Score	0.01 [0.001] ***	0.03 [0.016]
Change in takes medication for		
Hypertension	0.00 [0.009]	0.03 [0.021]
Cholesterol and other cardiovascular	-0.02 [0.008] ***	-0.03 [0.024]
Pain	-0.01 [0.005] **	-0.01 [0.009]
Mental health	-0.10 [0.007] ***	-0.14 [0.018] ***
Antibiotics	-0.02 [0.005] ***	-0.02 [0.008] *
Anticoagulants	-0.01 [0.009]	-0.02 [0.024]
Thyroid	-0.04 [0.015] ***	-0.02 [0.030]
Diabetes	-0.01 [0.014]	0.04 [0.054]
Osteoporosis	0.00 [0.009]	0.00 [0.043]
Alzheimer's	-0.02 [0.014]	0.02 [0.060]
Observations	71,489	30,179

NOTE: Robust standard errors in brackets. *** p<0.01, **p<0.05, * p<0.1.

Participation

Panel A. Results from models identical to those in Table 2.

	Health Controls:					
Intercept	-360.54	[4.712]	***	-368.21	[4.991]	***

Panel B. Results from models identical to those in Table 3.

2006-2007 Improvement Allowed
to Vary with:

Overspending Level in 2006 ($)

less than 100						
between 100 and 200				-144.05	[42.088]	***
between 200 and 300				-250.31	[43.406]	***
between 300 and 500				-495.49	[41.375]	***
between 500 and 1000				-880.02	[41.451]	***
between 1,000 and 2,000				-1875.95	[42.404]	***
more than 2000				-4169.78	[238.207]	***

Age in 2006

Age 65-69						
Age 70-74	-50.20	[13.833]	***	-25.16	[11.621]	**
Age 75-79	-75.15	[18.765]	***	-36.93	[17.483]	**
Age 80-84	-133.86	[12.430]	***	-91.17	[10.000]	***
Age 85 up	-122.73	[11.653]	***	-96.40	[9.448]	***
Male	4.92	[13.300]		22.64	[11.546]	**
Intercept	376.40	[42.965]	***	-158.11	[8.859]	***

Summary

Among the non-subsidy sample:

- 40-54% ($300) reductions in overspending from 2006 to 2007, with 80% improving.
- Switching plans was the primary (but not the only) source of improvement:
  - Those who switched plans improved by $436 on average.
  - Those who did not switch improved by an average of $137.
- Previous overspending and future relative worsening of the current plan both substantially increased the likelihood of switching   Undermines claims of inertia.
- Decisions to enroll consistent with cost minimization.