Online Appendix:
Strategic Formulary Design in Medicare Part D Plans
Kurt Lavetti and Kosali Simon

Table 1—: Average Plan Generosity and Changes over Time

| | Dependent Variable: ln(OOP Cost) | | | | | |
	(1)	(2)	(3)	(4)	(5)	(6)
ln(30 Day Cost)	0.704*	0.645*	1.002*	0.715*	1.027*	0.738*
MA Plan	0.099*	0.110*	−0.013*	0.002	0.276*	0.274*
Local MA Plan	−0.044*	−0.049*	−0.203*	−0.204*	−0.202*	−0.203*
1st Quarter	−0.014*	−0.017*	−0.071*	−0.068*	−0.071*	−0.068*
2nd Quarter	−0.011*	−0.015*	−0.011*	−0.034*	−0.011*	−0.035*
3rd Quarter	−0.033*	−0.037*	−0.027*	−0.051*	−0.027*	−0.051*
Year 2009	−0.009*	−0.008*	−0.174*	−0.168*	−0.174*	−0.168*
Year 2010	−0.006*	−0.007*	−0.025*	−0.050*	−0.026*	−0.051*
Plan Monthly Premium	0.094*	0.109*	−0.181*	−0.156*	−0.181*	−0.156*
MA Plan*ln(30 Day Cost)					−0.040*	−0.038*
Constant	−0.089*	0.164*	−1.470*	0.608*	−1.650*	0.440*
N	77,549,038	77,549,038	77,549,038	77,549,038	77,549,038	77,549,038
R-Sq	0.555	0.603	0.685	0.752	0.685	0.752
Drug Class Effects	No	Yes	No	Yes	No	Yes
Weighted (Cost)	No	No	Yes	Yes	Yes	Yes

Note: * indicates significance at the 0.01 level.

Table 2—: Alternative Model Specifications

	Dependent Variable: Log OOP Cost							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
MA Switcher Surplus	−0.838*	0.179*	−0.812*	0.181*	−0.849*	0.158*	−0.822*	0.160*
	[0.015]	[0.016]	[0.015]	[0.016]	[0.016]	[0.016]	[0.016]	[0.016]
MA Switcher Surplus*MA	−0.284*	−0.286*	−0.302*	−0.293*	−0.263*	−0.268*	−0.281*	−0.275*
	[0.020]	[0.020]	[0.020]	[0.020]	[0.020]	[0.020]	[0.020]	[0.020]
MA Switcher Surplus*OE					0.130*	0.262*	0.127*	0.260*
					[0.021]	[0.020]	[0.021]	[0.020]
MA Switcher Surplus*OE*MA					−0.239*	−0.234*	−0.244*	−0.231*
					[0.021]	[0.021]	[0.021]	[0.021]
CGM Spillover Drug*MA	−0.100*	−0.116*			−0.100*	−0.116*		
	[0.007]	[0.006]			[0.007]	[0.006]		
CGM Spillover Drug	0.389*	0.119*			0.389*	0.119*		
	[0.005]	[0.006]			[0.005]	[0.006]		
Tamblyn Essential Drug			−0.127*				−0.127*	
			[0.004]				[0.004]	
Tamblyn Essential Drug*MA			−0.077*	−0.080*			−0.077*	−0.079*
			[0.006]	[0.005]			[0.006]	[0.005]
Log 30 Day Cost	0.877*	0.860*	0.888*	0.860*	0.877*	0.860*	0.888*	0.860*
	[0.004]	[0.004]	[0.004]	[0.004]	[0.004]	[0.004]	[0.004]	[0.004]
MA Plan	−0.057*	0.020	−0.118*	−0.048*	−0.060*	0.016	−0.122*	−0.051*
	[0.011]	[0.011]	[0.010]	[0.010]	[0.011]	[0.011]	[0.010]	[0.010]
OE*MA					0.052*	0.055*	0.047*	0.054*
					[0.011]	[0.011]	[0.010]	[0.010]
Part D Surplus	−0.640*	0.266*	−0.676*	0.257*	−0.640*	0.266*	−0.677*	0.257*
	[0.009]	[0.014]	[0.009]	[0.014]	[0.009]	[0.014]	[0.009]	[0.014]
Part D Surplus*MA	−0.091*	0.216*	−0.102*	0.228*	−0.090*	0.217*	−0.101*	0.229*
	[0.013]	[0.013]	[0.013]	[0.013]	[0.013]	[0.013]	[0.013]	[0.013]
N	38,322,097	38,322,097	38,322,097	38,322,097	38,322,097	38,322,097	38,322,097	38,322,097
R-Sq	0.547	0.673	0.546	0.673	0.547	0.673	0.546	0.673
Drug Class Effects	No	Yes	No	Yes	No	Yes	No	Yes

Note: All models include 5th order orthogonalized polynomial in ln(30 Day Cost), quarter-by-year effects, plan premium, and plan deductible, and are weighted by drug cost. CGM Spillover Drug refers to drugs designated by Chandra, Gruber, and McKnight (AER 2010) as those that, "if not taken, will increase the probability of an adverse health event within" a year. Tamblyn Essential Drug refers to drugs designated by Tamblyn et al (JAMA 2001) as medications that 'prevent deterioration in health or prolong life and would not likely be prescribed in the absence of a definitive diagnosis.' All Part D surplus and MA surplus variables are measured in $1,000s. Standard errors, in brackets, are clustered by plan formulary level. * indicates significance at the 0.01 level.

Table 3—: Estimates using Dependent Variable Predicted by Tier Number Only

	Dependent Variable: Tier-Predicted Log OOP Cost				
	(1)	(2)	(3)	(4)	(5)
MA Switcher Surplus	−0.431*	0.114*	−0.425*	0.109*	
	[0.015]	[0.014]	[0.015]	[0.014]	
MA Switcher Surplus*MA	−0.161*	−0.138*	−0.162*	−0.143*	−0.115*
	[0.019]	[0.018]	[0.020]	[0.019]	[0.019]
MA Switcher Surplus*OE			−0.101*	0.035	0.097*
			[0.022]	[0.021]	[0.021]
MA Switcher Surplus*OE*MA			0.040	0.056	0.036
			[0.027]	[0.026]	[0.026]
CGM Spillover Drug	0.345*	0.015*	0.344*	0.015*	
	[0.005]	[0.005]	[0.005]	[0.005]	
CGM Spillover Drug*MA	−0.013	−0.020*	−0.013	−0.020*	0.029*
	[0.007]	[0.007]	[0.007]	[0.007]	[0.006]
Tamblyn Essential Drug	−0.068*		−0.067*		
	[0.004]		[0.004]		
Tamblyn Essential Drug*MA	−0.090*	−0.090*	−0.090*	−0.091*	−0.094*
	[0.006]	[0.005]	[0.006]	[0.005]	[0.006]
Log 30 Day Cost	0.674*	0.640*	0.674*	0.640*	0.004
	[0.003]	[0.002]	[0.003]	[0.002]	[0.006]
MA Plan	−0.095*	−0.025	−0.092*	−0.023	−0.111*
	[0.012]	[0.011]	[0.011]	[0.011]	[0.010]
OE*MA			−0.064*	−0.060*	−0.070*
			[0.012]	[0.012]	[0.012]
Part D Surplus	−0.672*	0.216*	−0.671*	0.218*	
	[0.009]	[0.013]	[0.009]	[0.013]	
Part D Surplus*MA	−0.133*	0.171*	−0.135*	0.169*	0.053*
	[0.013]	[0.014]	[0.013]	[0.014]	[0.014]
N	38,322,097	38,322,097	38,322,097	38,322,097	38,322,097
R-Sq	0.426	0.593	0.427	0.593	0.720
Drug Class Effects	No	Yes	No	Yes	Yes
Drug NDC Effects	No	No	No	No	Yes

Note: All models include 5th order orthogonalized polynomial in ln(30 Day Cost), quarter-by-year effects, plan premium, and plan deductible, and are weighted by drug cost. CGM Spillover Drug refers to drugs designated by Chandra, Gruber, and McKnight (AER 2010) as those that, "if not taken, will increase the probability of an adverse health event within" a year. Tamblyn Essential refers to drugs designated by Tamblyn et al (JAMA 2001) as medications that "prevent deterioration in health or prolong life and would not likely be prescribed in the absence of a definitive diagnosis." All Part D surplus and MA surplus variables are measured in $1,000s. Standard errors, in brackets, are clustered by insurance plan. * indicates significance at the 0.01 level.

Table 4—: Heterogeneity in Spillover Effects by Formulary Tier

	(1)	(2)	(3)	(4)	(5)
	Dependent Variable: Log OOP Cost				
CGM Spillover Drug*MA*Tier 1	0.040*	0.039*	0.040*	0.039*	0.026*
	[0.010]	[0.009]	[0.010]	[0.009]	[0.007]
CGM Spillover Drug*MA*Tier 2	−0.249*	−0.251*	−0.249*	−0.251*	−0.242*
	[0.015]	[0.014]	[0.015]	[0.014]	[0.014]
CGM Spillover Drug*MA*Tier 3	−0.192*	−0.180*	−0.192*	−0.180*	−0.126*
	[0.011]	[0.010]	[0.011]	[0.010]	[0.009]
CGM Spillover Drug*MA*Tier 4	0.178*	0.132*	0.178*	0.132*	0.132*
	[0.027]	[0.028]	[0.027]	[0.028]	[0.028]
CGM Spillover Drug*MA*Tier 5	0.279*	0.173*	0.279*	0.173*	0.170*
	[0.029]	[0.028]	[0.029]	[0.028]	[0.026]
Tamblyn Essential Drug*MA*Tier 1	0.058*	0.056*	0.058*	0.056*	0.052*
	[0.008]	[0.008]	[0.008]	[0.008]	[0.008]
Tamblyn Essential Drug*MA*Tier 2	0.097*	0.086*	0.097*	0.086*	0.078*
	[0.011]	[0.010]	[0.011]	[0.010]	[0.010]
Tamblyn Essential Drug*MA*Tier 3	0.116*	0.082*	0.116*	0.082*	0.057*
	[0.011]	[0.010]	[0.011]	[0.010]	[0.010]
Tamblyn Essential Drug*MA*Tier 4	−0.105*	−0.107*	−0.105*	−0.107*	−0.124*
	[0.013]	[0.013]	[0.013]	[0.013]	[0.012]
Tamblyn Essential Drug*MA*Tier 5	−0.192*	−0.211*	−0.192*	−0.211*	−0.159*
	[0.019]	[0.019]	[0.019]	[0.019]	[0.016]
N	38,322,097	38,322,097	38,322,097	38,322,097	38,322,097
R-Sq	0.792	0.809	0.792	0.809	0.826
Drug Class Effects	No	Yes	No	Yes	Yes
Drug NDC Effects	No	No	No	No	Yes

Note: All models include a 5th order orthogonalized polynomial in ln(30 Day Cost), fixed tier effects, CGM and Tamblyn Drug effects interacted with tier effects, quarter-by-year effects, an MA dummy, plan premium, and plan deductible, and are weighted by drug cost. 'Tier 5 Plus' aggregates all drugs on tiers 5 through 7. CGM Spillover Drug refers to drugs designated by Chandra, Gruber, and McKnight (AER 2010) as those that, "if not taken, will increase the probability of an adverse health event within" a year. Tamblyn Essential Drug refers to drugs designated by Tamblyn et al (JAMA 2001) as medications that 'prevent deterioration in health or prolong life and would not likely be prescribed in the absence of a definitive diagnosis.' Standard errors, in brackets, are clustered by plan formulary level. * indicates significance at the 0.01 level.

Table 5—: Main Estimates with Linear Control for Log 30 Day Cost

	Dependent Variable: Log OOP Cost				
	(1)	(2)	(3)	(4)	(5)
MA Switcher Surplus	−0.584*	0.258*	−0.591*	0.235*	
	[0.016]	[0.016]	[0.016]	[0.016]	
MA Switcher Surplus*MA	−0.337*	−0.300*	−0.311*	−0.280*	−0.240*
	[0.020]	[0.020]	[0.021]	[0.020]	[0.019]
MA Switcher Surplus*OE			0.078*	0.278*	0.321*
			[0.022]	[0.021]	[0.020]
MA Switcher Surplus*OE*MA			−0.274*	−0.249*	−0.255*
			[0.028]	[0.027]	[0.026]
CGM Spillover Drug	0.423*	0.083*	0.423*	0.083*	
	[0.005]	[0.006]	[0.005]	[0.006]	
CGM Spillover Drug*MA	−0.100*	−0.113*	−0.100*	−0.113*	−0.057*
	[0.007]	[0.007]	[0.007]	[0.007]	[0.006]
Tamblyn Essential Drug	−0.325*		−0.325*		
	[0.004]		[0.004]		
Tamblyn Essential Drug*MA	−0.059*	−0.074*	−0.059*	−0.074*	−0.080*
	[0.006]	[0.005]	[0.006]	[0.005]	[0.005]
Log 30 Day Cost	0.668*	0.602*	0.668*	0.602*	0.187*
	[0.002]	[0.002]	[0.002]	[0.002]	[0.005]
MA Plan	−0.040*	0.057*	−0.042*	0.054*	−0.050*
	[0.011]	[0.011]	[0.011]	[0.011]	[0.010]
OE*MA			0.021	0.042*	0.040*
			[0.011]	[0.011]	[0.010]
Part D Surplus	−0.776*	0.333*	−0.776*	0.333*	
	[0.009]	[0.014]	[0.009]	[0.014]	
Part D Surplus*MA	−0.149*	0.242*	−0.149*	0.243*	0.090*
	[0.013]	[0.013]	[0.013]	[0.013]	[0.013]
N	38,322,097	38,322,097	38,322,097	38,322,097	38,322,097
R-Sq	0.511	0.666	0.511	0.666	0.764
Drug Class Effects	No	Yes	No	Yes	Yes
Drug NDC Effects	No	No	No	No	Yes

Note: All models also include quarter-by-year effects, plan premium, and plan deductible, and are weighted by drug cost. CGM Spillover Drug refers to drugs designated by Chandra, Gruber, and McKnight (AER 2010) as those that, "if not taken, will increase the probability of an adverse health event within" a year. Tamblyn Essential refers to drugs designated by Tamblyn et al (JAMA 2001) as medications that "prevent deterioration in health or prolong life and would not likely be prescribed in the absence of a definitive diagnosis." All Part D surplus and MA surplus variables are measured in $1,000s. Standard errors, in brackets, are clustered by insurance plan. * indicates significance at the 0.01 level.

Table 6—: Sensitivity of Main Parameters to Drug Cost Control Polynomial Order

	Dependent Variable: Log OOP Cost				
	Linear	Quadratic	Cubic	Quartic	Quintic
MA Switcher Surplus*MA	–0.240*	–0.240*	–0.240*	–0.240*	–0.240*
	[0.019]	[0.019]	[0.019]	[0.019]	[0.019]
MA Switcher Surplus*OE*MA	–0.255*	–0.255*	–0.255*	–0.255*	–0.253*
	[0.026]	[0.026]	[0.026]	[0.026]	[0.026]
CGM Spillover Drug*MA	–0.057*	–0.057*	–0.057*	–0.057*	–0.057*
	[0.006]	[0.006]	[0.006]	[0.006]	[0.006]
Tamblyn Essential Drug*MA	–0.080*	–0.080*	–0.080*	–0.081*	–0.081*
	[0.005]	[0.005]	[0.005]	[0.005]	[0.005]
Drug NDC Effects	Yes	Yes	Yes	Yes	Yes

Note: All models are identical to the main specification, column 5 of Table 4, except with different polynomial controls for log drug cost. CGM Spillover Drug refers to drugs designated by Chandra, Gruber, and McKnight (AER 2010) as those that, "if not taken, will increase the probability of an adverse health event within" a year. Tamblyn Essential refers to drugs designated by Tamblyn et al (JAMA 2001) as medications that "prevent deterioration in health or prolong life and would not likely be prescribed in the absence of a definitive diagnosis." All Part D surplus and MA surplus variables are measured in $1,000s. Standard errors, in brackets, are clustered by insurance plan. * indicates significance at the 0.01 level.

Table 7—: Selection Results Omitting Spillover Controls

| | Dependent Variable: Log OOP Cost | | | | |
	(1)	(2)	(3)	(4)	(5)
MA Switcher Surplus	−0.842*	0.180*	−0.852*	0.159*	
	[0.015]	[0.016]	[0.016]	[0.016]	
MA Switcher Surplus*MA	−0.286*	−0.290*	−0.265*	−0.272*	−0.240*
	[0.020]	[0.020]	[0.021]	[0.020]	[0.019]
MA Switcher Surplus*OE			0.122*	0.261*	0.322*
			[0.021]	[0.021]	[0.020]
MA Switcher Surplus*OE*MA			−0.239*	−0.232*	−0.253*
			[0.028]	[0.027]	[0.026]
Log 30 Day Cost	0.884*	0.860*	0.884*	0.860*	0.293*
	[0.004]	[0.004]	[0.004]	[0.004]	[0.007]
MA Plan	−0.150*	−0.083*	−0.153*	−0.086*	−0.136*
	[0.009]	[0.009]	[0.009]	[0.009]	[0.009]
OE*MA			0.050*	0.056*	0.044*
			[0.011]	[0.011]	[0.010]
Part D Surplus	−0.665*	0.256*	−0.666*	0.256*	
	[0.009]	[0.014]	[0.009]	[0.014]	
Part D Surplus*MA	−0.090*	0.230*	−0.090*	0.231*	0.100*
	[0.013]	[0.013]	[0.013]	[0.013]	[0.013]
N	38,322,097	38,322,097	38,322,097	38,322,097	38,322,097
R-Sq	0.544	0.673	0.544	0.673	0.764
Drug Class Effects	No	Yes	No	Yes	Yes
Drug NDC Effects	No	No	No	No	Yes

Note: All models include 5th order orthogonalized polynomial in ln(30 Day Cost), quarter-by-year effects, plan premium, and plan deductible, and are weighted by drug cost. All Part D surplus and MA surplus variables are measured in $1,000s. Standard errors, in brackets, are clustered by insurance plan. * indicates significance at the 0.01 level.

Table 8—: Spillover Results Omitting Selection Controls

	Dependent Variable: Log OOP Cost		
	(1)	(2)	(3)
CGM Spillover Drug	0.455*	0.107*	
	[0.005]	[0.006]	
CGM Spillover Drug*MA	−0.108*	−0.122*	−0.066*
	[0.007]	[0.007]	[0.006]
Tamblyn Essential Drug	−0.143*		
	[0.004]		
Tamblyn Essential Drug*MA	−0.067*	−0.078*	−0.081*
	[0.006]	[0.005]	[0.005]
Log 30 Day Cost	0.919*	0.860*	0.293*
	[0.004]	[0.004]	[0.007]
MA Plan	−0.027*	0.009	−0.068*
	[0.011]	[0.011]	[0.010]
N	38,322,097	38,322,097	38,322,097
R-Sq	0.536	0.673	0.764
Drug Class Effects	No	Yes	Yes
Drug NDC Effects	No	No	Yes

Note: All models include 5th order orthogonalized polynomial in ln(30 Day Cost), quarter-by-year effects, plan premium, and plan deductible, and are weighted by drug cost. CGM Spillover Drug refers to drugs designated by Chandra, Gruber, and McKnight (AER 2010) as those that, "if not taken, will increase the probability of an adverse health event within" a year. Tamblyn Essential refers to drugs designated by Tamblyn et al (JAMA 2001) as medications that "prevent deterioration in health or prolong life and would not likely be prescribed in the absence of a definitive diagnosis." * indicates significance at the 0.01 level.

Table 9—: Effects of Plan Market Share on Spillover Incentive

	Dependent Variable: Log OOP Cost				
	(1) All	(2) All	(3) MAPD	(4) SAPD	(5) All
CGM Spillover Drug	0.425* [0.005]	0.425* [0.005]	0.365* [0.005]	0.380* [0.004]	0.435* [0.005]
CGM Spillover Drug*MA	−0.105* [0.008]	−0.105* [0.008]			−0.097* [0.008]
CGM Spillover Drug*Market Share	−0.004* [0.001]	−0.004* [0.001]	−0.005* [0.002]	−0.004* [0.001]	−0.005* [0.001]
CGM Spillover Drug*Market Share*MA	0.002 [0.002]	0.002 [0.002]			0.001 [0.002]
Tamblyn Essential Drug	−0.151* [0.005]	−0.151* [0.005]	−0.233* [0.004]	−0.125* [0.004]	−0.153* [0.005]
Tamblyn Essential Drug*MA	−0.067* [0.006]	−0.067* [0.006]			−0.065* [0.006]
Tamblyn Essential Drug*Market Share	0.001 [0.001]	0.001 [0.001]	−0.001 [0.001]	0.001 [0.001]	0.001 [0.001]
Tamblyn Essential Drug*Market Share*MA	−0.003 [0.002]	−0.003 [0.002]			−0.003 [0.002]
Market Share	0.010* [0.002]	0.010* [0.002]	0.003 [0.002]	0.001 [0.002]	0.002 [0.002]
Market Share*MA	−0.003 [0.002]	−0.003 [0.002]			0.001 [0.002]
MA Switcher Surplus	−0.823* [0.015]	−0.831* [0.016]	−1.039* [0.012]	−0.910* [0.014]	−0.806* [0.015]
MA Switcher Surplus*MA	−0.305* [0.020]	−0.289* [0.021]			−0.295* [0.020]
MA Switcher Surplus*OE		0.103* [0.022]	−0.092* [0.019]	0.084* [0.021]	0.079* [0.021]
MA Switcher Surplus*OE*MA		−0.198* [0.029]			−0.169* [0.029]
Log 30 Day Cost	0.876* [0.004]	0.876* [0.004]	0.825* [0.005]	0.924* [0.006]	0.865* [0.004]
MA Plan	−0.026 [0.012]	−0.028 [0.012]			
OE*MA		0.040* [0.012]			0.021* [0.004]
Part D Surplus	−0.652* [0.009]	−0.652* [0.009]	−0.868* [0.011]	−0.536* [0.009]	−0.648* [0.008]
Part D Surplus*MA	−0.102* [0.013]	−0.101* [0.013]			−0.125* [0.013]
N	35,690,237	35,690,237	21,823,044	13,867,193	35,690,237
R-Sq	0.549	0.549	0.565	0.634	0.592
Plan Effects	No	No	Yes	Yes	Yes

Note: All models include 5th order orthogonalized polynomial in ln(30 Day Cost), quarter-by-year effects, plan premium, and plan deductible, and are weighted by drug cost. Columns 1, 2, and 5 include the full sample, while column 3 includes only MAPD plans and column 4 includes only SAPD plans. High Market Share is an indicator that equals 1 if a plan has market share above the national average share. CGM Spillover Drug refers to drugs designated by Chandra, Gruber, and McKnight (AER 2010) as those that, "if not taken, will increase the probability of an adverse health event within" a year. Tamblyn Essential Drug refers to drugs designated by Tamblyn et al (JAMA 2001) as medications that 'prevent deterioration in health or prolong life and would not likely be prescribed in the absence of a definitive diagnosis.' All Part D surplus and MA surplus variables are measured in $1,000s. Standard errors, in brackets, are clustered by plan formulary level. * indicates significance at the 0.01 level.

Table 10—: Effects of Selection and Management Incentives on Formulary Inclusion:
Comparison of Logit and OLS Estimates

| Dependent Variable: | Drug On Formulary | |
	Logit	OLS
MA Switcher Surplus	–0.020*	–0.033*
	[0.000]	[0.001]
MA Switcher Surplus*OE	–0.022*	–0.027*
	[0.002]	[0.002]
MA Switcher Surplus*MA	0.010*	0.009*
	[0.001]	[0.001]
MA Switcher Surplus*OE*MA	0.006*	0.004
	[0.002]	[0.002]
CGM Spillover Drug	–0.017*	–0.026*
	[0.000]	[0.000]
CGM Spillover Drug*MA	0.002*	–0.002*
	[0.000]	[0.000]
Tamblyn Essential Drug	0.001*	–0.003*
	[0.000]	[0.000]
Tamblyn Essential Drug*MA	–0.001*	–0.005*
	[0.000]	[0.000]
MA Plan	–0.042*	–0.050*
	[0.000]	[0.000]
Part D Surplus	–0.032*	–0.031*
	[0.000]	[0.000]
Part D Surplus*MA	–0.013*	–0.033*
	[0.001]	[0.001]
N	42,351,879	42,351,879
R-Sq	0.133	0.081

Note: Column one reports logit estimates of the marginal effects at means. Column two reports OLS estimates. All models include quadratic in log 30 Day Cost, quarter-by-year effects, plan premium, plan deductible, and open enrollment interacted with MA plan. CGM Spillover Drug refers to drugs designated by Chandra, Gruber, and McKnight (AER 2010) as those that, "if not taken, will increase the probability of an adverse health event within" a year. Tamblyn Essential Drug refers to drugs designated by Tamblyn et al (JAMA 2001) as medications that 'prevent deterioration in health or prolong life and would not likely be prescribed in the absence of a definitive diagnosis.' All Part D surplus and MA surplus variables are measured in $1,000s. * indicates significance at the 0.01 level.

Table 11—: Main Estimates Omitting Controls for Carey Part D Selection Incentive

| | Dependent Variable: Log OOP Cost | | | | |
	(1)	(2)	(3)	(4)	(5)
MA Switcher Surplus	−0.793*	0.143*	−0.805*	0.122*	
	[0.015]	[0.016]	[0.016]	[0.016]	
MA Switcher Surplus*MA	−0.329*	−0.298*	−0.308*	−0.281*	−0.249*
	[0.020]	[0.020]	[0.020]	[0.020]	[0.019]
MA Switcher Surplus*OE			0.149*	0.257*	0.321*
			[0.021]	[0.021]	[0.020]
MA Switcher Surplus*OE*MA			−0.253*	−0.229*	−0.252*
			[0.027]	[0.027]	[0.026]
CGM Spillover Drug	0.449*	0.106*	0.449*	0.106*	
	[0.005]	[0.006]	[0.005]	[0.006]	
CGM Spillover Drug*MA	−0.104*	−0.120*	−0.104*	−0.120*	−0.064*
	[0.007]	[0.007]	[0.007]	[0.007]	[0.006]
Tamblyn Essential Drug	−0.133*		−0.133*		
	[0.004]		[0.004]		
Tamblyn Essential Drug*MA	−0.072*	−0.078*	−0.072*	−0.078*	−0.081*
	[0.006]	[0.005]	[0.006]	[0.005]	[0.005]
Log 30 Day Cost	0.925*	0.860*	0.925*	0.860*	0.292*
	[0.004]	[0.004]	[0.004]	[0.004]	[0.007]
MA Plan	−0.011	0.024	−0.015	0.020	−0.058*
	[0.010]	[0.011]	[0.010]	[0.010]	[0.009]
OE*MA			0.049*	0.051*	0.041*
			[0.011]	[0.011]	[0.010]
N	38,322,097	38,322,097	38,322,097	38,322,097	38,322,097
R-Sq	0.540	0.673	0.540	0.673	0.764
Drug Class Effects	No	Yes	No	Yes	Yes
Drug NDC Effects	No	No	No	No	Yes

Note: All models include 5th order orthogonalized polynomial in ln(30 Day Cost), quarter-by-year effects, plan premium, and plan deductible, and are weighted by drug cost. CGM Spillover Drug refers to drugs designated by Chandra, Gruber, and McKnight (AER 2010) as those that, "if not taken, will increase the probability of an adverse health event within" a year. Tamblyn Essential refers to drugs designated by Tamblyn et al (JAMA 2001) as medications that "prevent deterioration in health or prolong life and would not likely be prescribed in the absence of a definitive diagnosis." All Part D surplus and MA surplus variables are measured in $1,000s. Standard errors, in brackets, are clustered by insurance plan. * indicates significance at the 0.01 level.

Table 12—: Main Specifications Estimated Excluding 2011 Data

	Dependent Variable: Log OOP Cost				
	(1)	(2)	(3)	(4)	(5)
MA Switcher Surplus	−0.755*	0.283*	−0.765*	0.253*	
	[0.017]	[0.016]	[0.019]	[0.017]	
MA Switcher Surplus*MA	−0.269*	−0.254*	−0.234*	−0.228*	−0.204*
	[0.022]	[0.021]	[0.024]	[0.023]	[0.023]
MA Switcher Surplus*OE			0.099*	0.278*	0.389*
			[0.030]	[0.029]	[0.029]
MA Switcher Surplus*OE*MA			−0.282*	−0.262*	−0.287*
			[0.040]	[0.039]	[0.038]
CGM Spillover Drug	0.442*	0.128*	0.442*	0.128*	
	[0.005]	[0.005]	[0.005]	[0.005]	
CGM Spillover Drug*MA	−0.097*	−0.110*	−0.096*	−0.109*	−0.063*
	[0.007]	[0.007]	[0.007]	[0.007]	[0.006]
Tamblyn Essential Drug	−0.167*		−0.167*		
	[0.004]		[0.004]		
Tamblyn Essential Drug*MA	−0.067*	−0.070*	−0.066*	−0.069*	−0.070*
	[0.006]	[0.006]	[0.006]	[0.006]	[0.006]
Log 30 Day Cost	0.868*	0.832*	0.868*	0.832*	0.270*
	[0.004]	[0.004]	[0.004]	[0.004]	[0.008]
MA Plan	−0.037*	0.040*	−0.045*	0.032*	−0.049*
	[0.011]	[0.011]	[0.011]	[0.011]	[0.010]
OE*MA			0.075*	0.079*	0.061*
			[0.015]	[0.015]	[0.014]
Part D Surplus	−0.699*	0.261*	−0.700*	0.260*	
	[0.009]	[0.014]	[0.009]	[0.014]	
Part D Surplus*MA	−0.073*	0.230*	−0.071*	0.232*	0.120*
	[0.013]	[0.014]	[0.013]	[0.014]	[0.014]
N	29,112,642	29,112,642	29,112,642	29,112,642	29,112,642
R-Sq	0.533	0.667	0.533	0.667	0.757
Drug Class Effects	No	Yes	No	Yes	Yes
Drug NDC Effects	No	No	No	No	Yes

Note: All models include 5th order orthogonalized polynomial in ln(30 Day Cost), quarter-by-year effects, plan premium, and plan deductible, and are weighted by drug cost. CGM Spillover Drug refers to drugs designated by Chandra, Gruber, and McKnight (AER 2010) as those that, "if not taken, will increase the probability of an adverse health event within" a year. Tamblyn Essential refers to drugs designated by Tamblyn et al (JAMA 2001) as medications that "prevent deterioration in health or prolong life and would not likely be prescribed in the absence of a definitive diagnosis." All Part D surplus and MA surplus variables are measured in \$1,000s. Standard errors, in brackets, are clustered by insurance plan. * indicates significance at the 0.01 level.

Table 13—: Sensitivity of Estimates to Including Zero Cost-Sharing Drugs

	Dependent Variable: Log(OOP Cost+1)				
	(1)	(2)	(3)	(4)	(5)
MA Switcher Surplus	−0.878*	0.258*	−0.890*	0.235*	
	[0.016]	[0.016]	[0.016]	[0.016]	
MA Switcher Surplus*MA	−0.372*	−0.335*	−0.355*	−0.320*	−0.288*
	[0.021]	[0.020]	[0.021]	[0.020]	[0.020]
MA Switcher Surplus*OE			0.151*	0.281*	0.320*
			[0.022]	[0.021]	[0.021]
MA Switcher Surplus*OE*MA			−0.213*	−0.216*	−0.236*
			[0.028]	[0.027]	[0.027]
CGM Spillover Drug	0.430*	0.116*	0.430*	0.116*	
	[0.006]	[0.006]	[0.006]	[0.006]	
CGM Spillover Drug*MA	−0.065*	−0.079*	−0.065*	−0.079*	−0.025*
	[0.008]	[0.008]	[0.008]	[0.008]	[0.006]
Tamblyn Essential Drug	−0.121*		−0.121*		
	[0.004]		[0.004]		
Tamblyn Essential Drug*MA	−0.067*	−0.080*	−0.066*	−0.080*	−0.085*
	[0.006]	[0.006]	[0.006]	[0.006]	[0.006]
Log 30 Day Cost	0.938*	0.918*	0.938*	0.918*	0.260*
	[0.004]	[0.004]	[0.004]	[0.004]	[0.008]
MA Plan	−0.088*	0.008	−0.094*	0.002	−0.098*
	[0.013]	[0.013]	[0.013]	[0.013]	[0.011]
OE*MA			0.081*	0.082*	0.063*
			[0.012]	[0.012]	[0.012]
Part D Surplus	−0.671*	0.430*	−0.672*	0.430*	
	[0.009]	[0.015]	[0.009]	[0.015]	
Part D Surplus*MA	−0.189*	0.205*	−0.188*	0.206*	0.054*
	[0.014]	[0.014]	[0.014]	[0.014]	[0.014]
N	41,460,892	41,460,892	41,460,892	41,460,892	41,460,892
R-Sq	0.515	0.649	0.515	0.649	0.748
Drug Class Effects	No	Yes	No	Yes	Yes
Drug NDC Effects	No	No	No	No	Yes

Note: All models include 5th order orthogonalized polynomial in ln(30 Day Cost), quarter-by-year effects, plan premium, and plan deductible, and are weighted by drug cost. CGM Spillover Drug refers to drugs designated by Chandra, Gruber, and McKnight (AER 2010) as those that, "if not taken, will increase the probability of an adverse health event within" a year. Tamblyn Essential refers to drugs designated by Tamblyn et al (JAMA 2001) as medications that "prevent deterioration in health or prolong life and would not likely be prescribed in the absence of a definitive diagnosis." All Part D surplus and MA surplus variables are measured in $1,000s. Standard errors, in brackets, are clustered by insurance plan. * indicates significance at the 0.01 level.
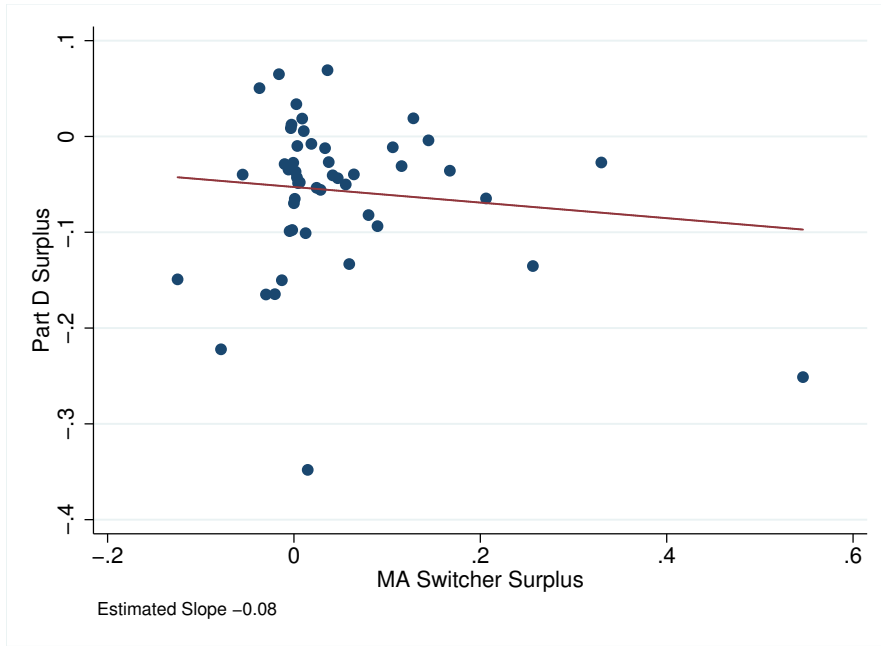
Figure 1. : Binned Scatterplot of Part D Surplus and MA Switcher Surplus

Note: Part D Surplus and MA Switcher Surplus are both measured in $1,000s.