

# DISCUSSION PAPERS IN ECONOMICS

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Modeling and Estimating Preferences Over  
Treatment Programs for Depression

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Modeling the effectiveness, money costs, time costs, use of psychotherapy, and side effects of antidepressants. After the individuals choose their preferred alternative, they are asked whether the chosen treatment option is preferred to remaining depressed. Each respondent is presented with 10 pairs. The data is used to estimate 3 random-utility models. Preliminary results show that the value of consuming market goods is less when one is depressed. The willingness-to-pay,  $WTP$ , to eliminate one's depression and willingness to pay to avoid sexual and weight-gain side effects can be high but varies across individuals as a function of observable characteristics. (3) At sufficiently high costs of side effects, some individuals will prefer to remain depressed.

**8** If you had to choose, would you prefer Alternative A or Alternative B?

	<u>Alternative A</u>	<u>Alternative B</u>
Effectiveness	Not Depressed	Not Depressed
Hours of psychotherapy per month	6 hours	4 hours
Use of anti-depressants	Yes	Yes
Your monthly cost for treatment	\$300	\$300

stated-preference

revealed preference













## 2.1 Summary Statistics

	Frequency	Percentage
<b>Eliminated Depression</b>	114	61%
<b>Had Lower Weight Gain Side Effect</b>	262	70%
<b>No Orgasm Side Effect Does Not Occur</b>	149	65%
<b>No Sex Side Effect Does Not Occur</b>	123	51%
<b>Involved Therapy<sup>a</sup></b>	121	62%
<b>Use of Anti-Depressants<sup>a</sup></b>	47	40%

<sup>a</sup>both therapy and anti-depressants treatment program could include

Category	Choice	Percentage	Description
Depression Symptoms	257	81%	Choose Not Depressed over Current Depression
	29	6%	Choose Current depression over Not Depressed
	134	28%	Choose Some Depressive Symptoms over Current Depression
	31	4%	Choose Current Depression over Some Depressive Symptoms



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### 3.2 Model 2: Allowing the Value of Goods to Depend on Emotional state

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Parameter		Estimate	Est./s.e.	Prob.
MU of Income= - (money cost parameter)	$\alpha_m$	2.21	2.5500	0.0054
Reduction in MU of Income if Depressed	$\alpha_{m1}$	-0.36	-4.5300	0.0000
Reduction in MU of Income if Depressive Symptoms	$\alpha_{m2}$	-0.08	-1.9200	0.0274
MU of Time= - (time cost parameter)	$\alpha_t$	0.04	0.7580	0.2242
Reduction in MU of Time if Depressed	$\alpha_{t1}$	0.00	0.0000	0.9999
Reduction in MU of Time if Depressive Symptoms	$\alpha_{t2}$	0.00	0.0000	0.9999
Depression parameter	$\beta$	1.50	0.1987	0.0000

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Income	WTP	WTA
\$30,000	\$1,128	\$1,351
\$55,000	\$1,471	\$1,763
\$90,000	\$1,853	\$2,351

	Average	Std Dev	Min	Max
WTP	\$1,458	\$422	\$783	\$2,780
WTA	\$1,747	\$506	\$939	\$3,330

### 3.3 Model 3: Preference Heterogeneity

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## 4 Extensions

## References













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## 6 Appendix 2

Effectiveness Attribute		
Level	Frequency	Percent

Therapy Hours Attribute		
Level	Frequency	Percentand

Sex Drive Side Effect Attribute		
Level	Frequency	Percent

Weight Gain Side Effect Attribute		
Level	Frequency	Percent

	<b>Not Depressed</b>	<b>Therapy Hours</b>	<b>Cost</b>	<b>Anti-Depressants</b>	<b>No Orgasm</b>	<b>No Sex Drive</b>	<b>Weight Gain</b>
<b>Not Depressed</b>	1.00	0.18	0.23	0.07	0.20	0.27	-0.09
<b>Therapy Hours</b>	0.18	1.00	-0.02	-0.09	-0.24	0.09	-0.44
<b>Cost</b>	0.23	-0.02	1.00	-0.12	-0.09	-0.35	-0.32
<b>Anti-Depressants</b>	0.07	-0.09	-0.12	1.00	0.05	0.30	0.14
<b>No Orgasm</b>	0.20	-0.24	-0.09	0.05	1.00	0.00	-0.11
<b>No Sex Drive</b>	0.27	0.09	-0.35	0.30	0.00	1.00	0.02
<b>Weight Gain</b>	-0.09	-0.44	-0.32	0.14	-0.11	0.02	1.00