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New Estimates of Cross-National Health Expenditures
*
Income and Price Elasticities

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Abstract

This article re-examines cross-national health expenditure relationships, and shows that omitting price terms will bias calculated income elasticities upward. Using health services purchasing power parity indices to control for price, the best income elasticity estimates for 1980, 1985, 1990, 1993, and 1996 are between 1.4 and 1.5. The best price elasticity estimates are between -0.6 and –0.7. A cross-country comparison validates the premise that through the 1980s into the mid 1990s, national health services, national health insurance systems, or mixed insurance systems exerted more control on spending per capita than did traditional sickness insurance systems.

JEL classification: I1

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Introduction

Cross-national income-health expenditure relationships have exhibited elasticities that have generally equaled or exceeded +1. There has been a considerable discussion as to how these relationships, typically characterized as demand relationships, should be measured, interpreted, or used to describe and evaluate national health care systems.

One particular problem concerns the role of health care prices. This article borrows a parallel specification analysis from the housing literature, showing that omission of price terms will tend to bias calculated income elasticities upward, away from +1. It takes advantage of the OECD computerized data archive – in particular the health services purchasing power parity price indices that are available at intermittent intervals. These improved data provide improved estimates of both income and price demand elasticities. The best income elasticity estimate for the years 1980, 1985, 1990, 1993, and 1996 is 1.40. The best price elasticity estimate is -0.63. Both estimates are fairly robust to alternative specifications.

The article reviews the potential estimation biases due to the omission of price terms, and then presents an estimation procedure to address the problem. The empirical section establishes the positive relationship between per capita income and health services price, and then estimates income and price elasticities. It finishes by characterizing and comparing countries in terms of the impacts of the various types of state control on health demand.

Estimation of Elasticities

A growing literature on the health sector of the economy has addressed the relationship between health expenditures and consumer income. Cross-national studies have typically found income elasticities exceeding +1.0. In a study of 13 developed countries Newhouse (1977) estimated expenditure elasticities varying from 1.15 to 1.31. Parkin and colleagues (1987) refined some of the estimates, and addressed questions regarding the appropriate means (exchange rate v. purchasing power parity) to compare expenditures across countries. Gerdtham et al. (1992) provides some of the most sophisticated work. Both the Parkin and the Gerdtham studies present cross-national income elasticities exceeding 1.0.

The cross-national health care literature encounters a problem earlier faced by housing demand researchers, measuring the price of the services and then modeling the price explicitly. Omitting a price term will bias estimated income elasticities, depending on the price elasticity of demand. Only in the fortuitous case of a unitary price elasticity will the bias disappear, since expenditures are then invariant to the price level.

In the urban housing literature, theory indicates that as income rises, demanders seek more housing, and to get more housing they must go further from the city center. The increased travel distance is capitalized into cheaper land (hence cheaper housing), leading to a negative correlation between income and housing price. If the housing demand price elasticity is between 0 and –1.0 (estimates supported by the literature), then regressing housing expenditures on income will likely lead to downward biased income elasticity estimates. Polinsky and Ellwood (1979) conduct simulations of numerous misspecifications. Goodman and Kawai (1982) show how omitting price terms can reduce estimated income elasticities by as much as 10 percent.

The health literature arrives at its correlation of price and income differently. Models by Kravis and Lipsey (1983) and by Bhagwati (1984), as discussed in Gerdtham and Jönsson (1991a), suggest that rich countries will have higher overall price levels since the relative prices of (non-traded) services are higher. Kravis and Lipsey relate the higher service prices to productivity differentials among countries with the higher rates of productivity for traded goods pushing up wages (competitively) in the non-traded goods sector.[1] Bhagwati relates the higher service prices to the more capital-intensive factor endowments in the higher income countries.

Unlike the housing literature, both of the health service price models suggest *positive* correlations between service prices and income. As a particularly large non-traded component of the overall price index, health care price would be expected to be a key factor in the overall service portion of a national price index. Again, if the price elasticity of health care demand is between 0 and –1.0, then regressing health care expenditures on income will likely bias income elasticity estimates upward.

Econometric Considerations

Following Polinsky and Ellwood (1979), consider a set of consumers across countries whose health demand is a function solely of income, the price of health care, and the price of "other goods." This function is generally depicted in log-linear form (Gerdtham et al. 1991b),

$$ln\ q_h = \boldsymbol{b}_0 + \boldsymbol{b}_1\ ln\ y + \boldsymbol{b}_2\ ln\ p_h + \boldsymbol{b}_3\ ln\ p_o + u, \qquad (1)$$

where q_h is quantity of health services, y is an appropriate income per capita measure, p_h is the price of health services, and p_o is the price of all other goods. Since the variables are in log form, $\boldsymbol{b}_1$ and $\boldsymbol{b}_2$ are the true income and price elasticities. Demand homogeneity implies that:

$$\boldsymbol{b}_1 + \boldsymbol{b}_2 + \boldsymbol{b}_3 = 0. \qquad (2)$$

This constraint can be used to eliminate $\boldsymbol{b}_3$. Adding $ln\ p_h$ to both sides puts the equation into expenditure terms, where $ln\ e_h = ln\ p_h + ln\ q_h$. Subtracting $ln\ p_o$ from both sides yields:

1. This conjecture relates back to Baumol (1967), who sought to explain the problem of increasing costs, and prices, of a wide variety of labor-intensive services.

$$ln\ (e_h/p_o) = b_0 + b_1\ ln\ (y/p_o) + (1 + b_2)\ ln\ (p_h/p_o) + u. \quad (3)$$

This formulation suggests two potential problems in estimating b_1 and b_2. The first problem is the common omission of price terms. If $ln\ (p_h/p_o)$ is omitted, and it is related to the included $ln\ (y/p_o)$, then as argued above, coefficient b_1 will be biased upward. The second involves potential misspecification of the price term, which must be related to the prices of *other* goods; misspecified equations might use either health price alone, or a ratio of health price to the entire price level.

Data

This study uses the OECD Health Database, 1999 Edition, compiling data for 24 OECD countries for 1980, 1985, 1990, 1993, and 1996. Purchasing power parity price indices for health care expenditures, formulated by the OECD, are available for those years only. All price indices are normalized to 1995 dollars.[2]

From equation (3), I calculate ratio p_h/p_o, requiring separate price indices for health care and for other goods. The aggregate price index P is comprised of elements p_o and p_h, such that:

$$P = s_h\, p_h + s_o\, p_o, \quad (4)$$

where s_h is the health share in the economy, and s_o is the share of other goods. Then:

$$p_o = (P - s_h\, p_h)/s_o \quad (5)$$

Due to missing observations on the health price variable p_h, ten observations must be omitted. Accordingly, 110 observations over five years are used.

Earlier attempts to measure health prices sought relate the purchasing power parity index to the

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2. Data come from the OECD National Accounts. Purchasing power parities (PPPs) are the rates of currency conversion that equalize the purchasing power of different currencies across a range of goods and services. Price indices used are derived from the Elteto-Koves-Szulc aggregation method. This

exchange rate, as do Gerdtham and Jönsson (1991a). Yet, dividing one by the other (both measured in national currency units per dollar) yields a dimensionless number, giving some indication of long-term competitiveness but little about short-term prices.[3]

An alternative possibility would be to construct indices of nontraded to traded goods. Since health care is a major nontraded good, a higher ratio of non-traded to traded goods in a national economy might indicate a higher price level for nontraded goods (and hence health care). Discussions with international trade specialists suggest that such databases are not easily constructed or interpreted, however, so that this alternative is not currently feasible.[4]

The final set of variables to be used involves the level of health system control in the country. Gordon (1988) provides the following taxonomy of health benefit systems.

1. *Traditional sickness insurance (SICK)* was fundamentally a private insurance market approach with a state subsidy. Countries in the sample included Austria, Belgium, France, the Netherlands, and Germany.
2. *National health insurance (NHI)* involved a national-level health insurance system. Countries in the sample included Canada, Finland, Norway, Spain, and Sweden.
3. *National health services (NHS)* had the state providing the health care. Countries in the sample included Denmark, Greece, Italy, New Zealand, and the United Kingdom.
4. *Mixed systems (MIXED)* contained elements of both. Countries in the sample included Australia, Ireland, Japan, Switzerland, and the United States.

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formula can be found in Drechsler (1973).

3. I am grateful to Jay Levin for this insight.

4. J. David Richardson writes by e-mail that "there is no consensus on defining, much less measuring, NTable [nontradeable] sectors." The lack of consensus suggests serious potential problems in

Iceland (mixed), Luxembourg (sickness fund), Portugal, and Turkey (both national health ser-vices) were not in Gordon's taxonomy but they were classified through information from the *1997 Social Security Statistics Throughout the World* (1997).

(Table 1 – Mean Expenditures, Income, and Price)

Table 1 provides a brief summary of the variables used in equation (3), stratified by level of health system control. NHI and NHS countries had generally lower per capita incomes than those with mixed or sickness insurance systems. Compared to countries with sickness insurance, NHI countries had 86.9% of the adjusted income, and 83.3% of the adjusted expenditures per capita. Relative health care prices were about 2.1% higher. NHS countries had 69.4% of the income of sickness insurance countries; expenditures per capita were only 57.7% as high.

Results

One of the key features of the analysis involves the relationship between health price and income. Earlier analyses are equivocal. Gerdtham and Jönsson (1991a) find little relationship between per capita income and relative health price for 1985. My re-examination for the five years suggests otherwise. Separate correlations by year (available on request) are positive.[5]

(Table 2 – Relations of Health Prices to Income)

Regression analyses in Table 2 confirm the positive relationship. The simplest relation-ship (column 1) is a regression of $ln\ (p_h/p_o)$ against $ln\ (y/p_o)$, yielding an elasticity of 0.3997. Adding year dummies (column 2) reduces the elasticity to 0.1771; however, the positive coef-ficients on the dummy

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calculating indices.

5. Refinements in OECD's calculations of the purchasing power indices since Gerdtham and Jönsson's work may explain this difference in findings.

variables indicates the upward drift of health care prices relative to other goods. Including dummy variables for level of health system control (column 3) shows that, all else equal, (p_h/p_o) was about 5.2% higher for NHI, about 8.9% higher for NHS, and 10.2% higher for MIXED, all in comparison to countries with sickness insurance.[6] The final elasticity of relative price with respect to income is 0.2122, a significant magnitude suggesting that omitting a price term in demand or expenditure regressions may bias income elasticities upward.

(Table 3 – Impact of Including Price in Cross-Section Regressions)

Table 3 reveals the predicted price impacts on income elasticities. For each year, inclu-ding the price term leads to a downward adjustment in the income elasticity. The five income elasticities (without price terms) for 1980, 1985, 1990, 1993, and 1996 are 1.26, 1.75, 1.45, 1.48, and 1.21 respectively, with a mean of 1.43. Including the price terms reduces these elasticities to 1.13, 1.71, 1.37, 1.37, and 1.19, respectively, with a mean of 1.35. The price elasticities are plau-sible and useful. Point estimates are –0.67, -0.68, -0.46, -0.45 and –0.74, with a mean of -0.60.

(Table 4 – Pooled-Demand Regressions)

Table 4 extends the analysis to pool the five years, with appropriate dummy variables. The first column (without price terms) indicates an income elasticity of 1.50. Column 2 includes the price term, and the income elasticity falls to 1.45. The calculated price elasticity is –0.87.

Columns 3 and 4 include both the year dummies, and the governmental control variables (which function as fixed effects for the individual countries). In column 4, the income elasticity is 1.40, and the price elasticity is –0.63. The negative year dummies suggest that demand and expenditures were lower

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6. Following Halvorsen and Palmquist, in a semi-log regression, the appropriate impact of a dummy variable coefficient ***b*** is *g = exp (**b**) - 1*, where 100*g* is the percentage impact. If ***b*** is small, *g* » ***b***, but

(relative to the index year of 1980) than might have been expected based solely on the income and price. The control variables have only modest impacts in this

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for larger values ($|b| > 0.1$), the approximation breaks down.

formulation. They are statistically insignificant, both individually and as a group.

One might conjecture, however, that the impacts of health system control are more complicated than can be captured by dummy variables alone since the control mechanisms may influence income and price effects. The column 5 regression supplements the three dummy variables with 6 interactive variables, multiplying health system type by the price and the income terms. The group of 6 additional variables is statistically significant at the 1% level ($F_{6, 94} = 4.34$; the critical value is 3.00). Moreover, the economic interpretations are quite instructive, because the income and the price elasticities vary by health system type.

Summing the index value and the interactive terms, income elasticities vary from 0.50 for the sickness fund countries to 1.56 for NHS. Similarly, price elasticities vary from –0.35 for the sickness fund countries to –0.80 for the NHS countries. The significance of the interaction terms, and the magnitudes of the differences in elasticities suggest that substantial information is lost when elasticities are constrained to be constant across types of health care systems.

The findings of higher income elasticities for NHS and NHI (1.56 and 1.51 respectively) than for MIXED and sickness insurance (1.17 and 0.50 respectively) also provide insights into the debate as to whether health care is a necessity, with an elasticity less than 1.00, or a luxury, with an elasticity greater than 1.00 (see Olsen 1993). Referring back to Table 1, note that NHS and NHI countries had incomes per capita of 30.6% and 13.1% lower than sickness insurance countries. In this context, the larger income elasticities suggest that health care may be a luxury at lower income levels, and becomes less of a luxury (with the elasticities falling toward or below 1.0) at higher income levels.

The interactive variables also indicate that even with incomes and prices held constant, systems with some elements of control have had reduced expenditures and demand relative to traditional sickness insurance. Evaluating Table 4, column 5 at mean log incomes and prices, one sees the following demand reductions compared to the sickness insurance:

National health insurance – 12.4% lower.
National health service – 13.5% lower.
Mixed system – 9.6% lower.

These impacts are substantially larger than those measured by the simple health system dummy variables from column 4.

It is worthwhile to investigate the possibility of heteroskedastic error terms related to in-come per capita or health system type. I follow Davidian and Carroll (1987) in creating a gener-alized least squares (GLS) model to estimate the error term jointly with the demand equation. The Davidian-Carroll generalized least squares (GLS) method jointly estimates error term u and the primary regression, with the estimated (squared) values of the error term serving (in recipro-cal form) as weights for the next iteration of the primary regression. The application may use:

$$| u | = \delta_0 + \delta_1 \ln (y/p_o) + \delta_2 [\ln (y/p_o)]^2 + \delta_3 [\ln (y/p_o)]^3 + \sum_{k=1}^{3} \eta_k C_k \qquad (6)$$

or:

$$u^2 = \delta'_0 + \delta'_1 \ln (y/p_o) + \delta'_2 [\ln (y/p_o)]^2 + \delta'_3 [\ln (y/p_o)]^3 + \sum_{k=1}^{3} \eta'_k C_k \qquad (7)$$

where C_k represents health system type.

Formulation (7) was used, squaring the predicted value, and inverting it to weight the primary regression (formulation 8 provided similar results). The system was reiterated until parameter values of both regressions converged (on the fifth iteration). The procedure provides efficient estimates of both the primary regression and the error term.[7]

(Table 5 – Heteroskedasticity Corrected Regressions)

The heteroskedasticity-corrected estimates provide slight changes. In Table 5, column 1 (without interactive terms) the income elasticity of 1.37 is slightly lower than previously estimated and the price elasticity of –0.77 is slightly higher. Column 2 provides the estimates using the interactions between the types of health care systems, and the price and income terms. Again, the income and price elasticities vary by type of health care system. As above, I calculate the following demand reductions compared to the traditional sickness insurance:

National health insurance – 11.4% lower.
National health service – 15.0% lower.
Mixed system – 12.0% lower.

All three alternatives to traditional sickness insurance tend to reduce demand, with the greatest impact, as before, by national health services. Once again the impacts are substantially larger than those measured by the simple health system dummy variables (Table 5, column 1).

Discussion and Conclusions

This article has sought to address several issues regarding income-expenditure relationships across countries. It has updated estimates with recently available data, it has provided plausible price elasticities using theoretically appropriate methods, and it has investigated impacts of various health benefit systems on aggregate expenditures.

The findings can be summarized as follows.

1. Health care demand is income-elastic, with the best estimate of about 1.40, and price-

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7. An alternative heteroskedasticity estimate provided by White's well-known method (White, 1980) is conditional on the initial parameter estimates of the primary regression. The Davidian-Carroll method

inelastic, although the price elasticity of approximately –0.64 is substantial at national levels.

2. Health prices are correlated with income. Omitting the price term biases income elasticities upward, both in cross-section and in pooled estimates. To the extent that higher prices reflect higher quality, I have controlled for quality differences in estimating health care use; otherwise, higher expenditures may indicate higher quality.

3. National health services, national health insurance system, or even mixed public-private systems, reduce use and expenditures significantly compared to traditional sickness insurance regimes. These findings are revealed more clearly when system dummy variables are interacted with price and income terms.

4. The higher income elasticities for the generally lower income NHI and NHS countries are consistent with interpretations of health care as a luxury good at lower incomes, becoming more of a necessity at higher incomes.

All of these findings must be tempered by the acknowledgement that nonmonetary costs, including waiting times for some treatments (and the inability to get some treatments at all) are not included in these calculations. Imputing money values to the (presumably) greater waiting time costs in more controlled systems would increase "full expenditures" in those countries where access to health care is more controlled by non-price means. Estimation of such money values, however, is not feasible with the present database.

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estimates both the primary regression and the error variance jointly.

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Table 1: Mean Expenditures, Income, and Price

	Sickness	NHI	NHS	Mixed
N	30	25	30	25
Absolute Levels				
Adjusted Expenditures (logs)	7.317	7.135	6.767	7.359
Adjusted Income (logs)	9.849	9.709	9.484	9.835
Adjusted Price (logs)	-0.669	-0.647	-0.619	-0.524
Relative to Sickness (Fraction)				
Adjusted Expenditures	1.000	0.833	0.577	1.043
Adjusted Income	1.000	0.869	0.694	0.986
Adjusted Price	1.000	1.021	1.051	1.155

Table 2: Relations of Health Prices to Income

Dependent Variable: Relative Health Price

	(1)	(2)	(3)
Constant	**-4.5005**	**-2.7492**	**-3.1317**
	0.7657	0.5552	0.6479
Adj. Per Capita Income	**0.3997**	**0.1771**	**0.2122**
	0.0788	0.0580	0.0668
1985 Year Dummy		**0.3209**	**0.3110**
		0.0588	0.0588
1990 Year Dummy		**0.5939**	**0.5742**
		0.0589	0.0598
1993 Year Dummy		**0.3869**	**0.3673**
		0.0589	0.0598
1996 Year Dummy		**0.6361**	**0.6117**
		0.0620	0.0637
NHI system			**0.0510**
			0.0498
NHS system			**0.0855**
			0.0534
MIXED system			**0.0975**
			0.0492
Mean sq. error	0.2704	0.1820	0.1806
R^2	0.1925	0.6476	0.6629
Adj R^2	0.1850	0.6307	0.6362

Coefficients in **bold type**
Standard errors in roman type

Table 3: Impact of Including Price in Cross-Section Regressions

Dependent Variable: Adjusted Per Capita Health Expenditures

	(1980)		(1985)		(1990)		(1993)		(1996)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Constant	**-5.1307**	**-3.5276**	**-9.8970**	**-9.2323**	**-7.0104**	**-5.9512**	**-7.1514**	**-5.7255**	**-4.5351**	**-4.2886**
	1.5458	1.6499	1.1864	1.2541	0.9093	0.8835	1.1236	1.0546	1.7185	1.7045
Adj. Per Capita Income	**1.2611**	**1.1295**	**1.7524**	**1.7076**	**1.4542**	**1.3692**	**1.4762**	**1.3659**	**1.2064**	**1.1909**
	0.1619	0.1640	0.1239	0.1253	0.0932	0.0872	0.1152	0.1037	0.1733	0.1712
Relative Health Price		**0.3278**		**0.3216**		**0.5376**		**0.5518**		**0.2594**
		0.1706		0.2311		0.1940		0.1768		0.2035
Mean sq. error	0.1585	0.1459	0.2038	0.1992	0.1577	0.1381	0.1776	0.1503	0.1696	0.1672
R^2	0.8018	0.8432	0.9091	0.9175	0.9171	0.9393	0.8818	0.9193	0.6976	0.7203
Adj R^2	0.7886	0.8208	0.9045	0.9088	0.9133	0.9335	0.8764	0.9116	0.6832	0.6924
N	17	17	22	22	24	24	24	24	23	23
Income Elasticity	1.2611	1.1295	1.7524	1.7076	1.4542	1.3692	1.4762	1.3659	1.2064	1.1909
Price Elasticity		-0.6722		-0.6784		-0.4624		-0.4482		-0.7406

Coefficients in **bold type**

Standard errors in roman type

Table 4: Pooled Demand Regressions

<u>Dependent Variable:</u> Adjusted Per Capita Health Expenditures

	(1)	(2)	(3)	(4)	(5)
Constant	**-7.4722**	**-6.8926**	**-6.3739**	**-6.0396**	**2.9282**
	0.5103	0.5779	0.5683	0.6710	2.1537
Adj. Per Capita Income	**1.5037**	**1.4522**	**1.4326**	**1.3976**	**0.5001**
	0.0525	0.0576	0.0557	0.0654	0.2112
Relative Health Price		**0.1288**	**0.3720**	**0.3713**	**0.6480**
		0.0632	0.0903	0.0929	0.1906
1985 Year Dummy			**-0.1907**	**-0.1837**	**-0.1547**
			0.0614	0.0620	0.0599
1990 Year Dummy			**-0.2665**	**-0.2556**	**-0.1698**
			0.0762	0.0772	0.0781
1993 Year Dummy			**-0.1160**	**-0.1054**	**-0.0280**
			0.0645	0.0654	0.0654
1996 Year Dummy			**-0.2708**	**-0.2557**	**-0.1641**
			0.0810	0.0822	0.0852
NHI system				**0.0062**	**-10.1963**
				0.0467	2.6804
NHS system				**-0.0402**	**-10.7050**
				0.0505	2.3023
MIXED system				**0.0249**	**-6.7484**
				0.0468	2.5104
Price * NHI system					**-0.4271**
					0.1930
Price * NHS system					**-0.4487**
					0.2052
Price * MIXED system					**-0.1790**
					0.2078
Income * NHI system					**1.0088**
					0.2654
Income * NHS system					**1.0585**
					0.2261
Income * MIXED system					**0.6729**
					0.2463

Mean sq. error	0.1802	0.1776	0.1676	0.1686		0.1539
R^2	0.8836	0.8880	0.9040	0.9057		0.9262
Adj R^2	0.8826	0.8859	0.8984	0.8972		0.9144
					SIC	
Income Elasticity	1.5037	1.4522	1.4326	1.3976	K	0.5001
					NHI	1.5089
					NHS	1.5586
					MIX	1.1730
					SIC	
Price Elasticity		-0.8712	-0.6280	-0.6287	K	-0.3520
					NHI	-0.7791
					NHS	-0.8006
					MIX	-0.5310
System Impacts						
NHI				1.0062		0.8758
NHS				0.9606		0.8652
Mixed				1.0252		0.9038
Sickness				1.0000		1.0000

Coefficients in **bold type**
Standard errors in roman type

Table 5: Heteroskedasticity Corrected Regressions

Dependent Variable: Adjusted Per Capita Health Expenditures

	(1)	(2)
Constant	**-5.9774**	**2.3891**
	0.7694	1.9107
Adj. Per Capita Income	**1.3741**	**0.5055**
	0.0780	0.1880
Relative Health Price	**0.2278**	**0.4994**
	0.0638	0.1623
1985 Year Dummy	**-0.0499**	**-0.0505**
	0.0425	0.0494
1990 Year Dummy	**-0.1079**	**-0.0519**
	0.0570	0.0669
1993 Year Dummy	**0.0260**	**0.0688**
	0.0476	0.0559
1996 Year Dummy	**-0.1149**	**-0.0487**
	0.0623	0.0738
NHI system	**-0.0164**	**-9.5483**
	0.0338	2.2387
NHS system	**-0.0690**	**-8.0881**
	0.0406	2.3074
MIXED system	**-0.0632**	**-7.7497**
	0.0387	2.5803
Price * NHI system		**-0.3690**
		0.1533
Price * NHS system		**-0.3515**
		0.1872
Price * MIXED system		**-0.0897**
		0.1962
Income * NHI system		**0.9469**
		0.2214
Income * NHS system		**0.7935**
		0.2288
Income * MIXED system		**0.7789**

			0.2545
Mean sq. error	0.1226		0.1280
Income Elasticity	1.3741	SICK	0.5055
		NHI	1.4524
		NHS	1.2990
		MIX	1.2843
Price Elasticity	-0.7722	SICK	-0.5006
		NHI	-0.8696
		NHS	-0.8521
		MIX	-0.5903
<u>System Impacts</u>			
NHI	0.9837		0.8856
NHS	0.9334		0.8498
Mixed	0.9387		0.8796
Sickness	1.0000		1.0000

Coefficients in **bold type**
Standard errors in roman type