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An EU Sky Trust: Distributional Analysis for Hungary

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Abstract
We analyze the effects of EU adoption of a Sky Trust (Barnes and Breslow 2003) on the income distribution of Hungary, a lower-middle income EU member. We use plausible parameters for an EU carbon charge and revenue recycling system, input-output data to track the effect of a carbon charge on commodity prices, and household consumption survey data to examine the effect on expenditure by decile. We find that the carbon-charge revenue collection is nearly flat with respect to income. Combined with Sky Trust revenue recycling, the net effect on income distribution is moderately progressive. For a Sky Trust structure that would significantly increase the likelihood of the EU meeting Stern Review and IPCC greenhouse gas reduction targets, households in the top decile of the Hungarian income distribution would see incomes fall by 859 USD, or 4.4 percent. Households in the lowest decile of the Hungarian income distribution would see household budgets rise by 498 USD, or 11.4 percent. At the median household income, the effect is small but positive.

Keywords: Sky Trust, carbon charge, pollution charge, climate change, greenhouse gas, global warming, incentive-based environmental regulation, green tax, revenue recycling, common-pool resource, energy policy, Hungary, European Union, tradable emission permits, incidence, progressivity, regressivity

JEL codes: H23, Q25

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Introduction: The Promise and Incidence of the Sky Trust

The international policy response to global warming is likely to involve incentive-based pollution control strategies, such as the establishment of carbon fees or carbon permits. Incentive-based pollution control has established a track record of efficiently reducing airborne emissions in specific national implementations, e.g., the introduction of tradable sulfur-dioxide emission permits in the U.S. under the Clean Air Act of 1990. Moreover, the complexity of managing carbon-emission reduction across hundreds of polities and billions of carbon users requires a transparent, implementable policy. Charging a fee for the introduction of fossil fuels into the national economy creates a manageable, well-defined gateway where the root source of greenhouse gas emissions can be priced to reflect more fully their social cost.

A difficulty with carbon charges, as with many consumption taxes, is that they tend to be regressive. In many industrialized countries, across the income distribution carbon use increases less than proportionately with consumption which, in turn, increases less than proportionately with income. Carbon charges that will actually reduce carbon emissions are likely to be quite substantial. With reasonably competitive markets and low elasticity of consumer demand, the cost of carbon charges is largely built into the final price consumers pay for products. With carbon intensity by income as described above, the incidence of carbon charges is regressive.

The Sky Trust proposed by Barnes and Breslow (2003) provides a straightforward way to offset the regressiveness of carbon charges while enjoying their efficiency advantages in reducing greenhouse gas emissions . The Sky Trust would recycle the revenues collected in the charge system on an equal per-capita basis. Barnes and Breslow highlight three main advantages to the Sky Trust:

1. The fee system achieves the efficiency of incentive-based regulation;
2. The trust establishes the carbon-absorptive capacity of the atmosphere as a commons, natural wealth held collectively and equally, and implements the polluter-pays principle, in contrast to alternative property assignment, e.g., assigning the right to pollute to current polluters (“grandfathering”); and
3. The progressive per capita distribution offsets the regressivity of fee collection on the revenue side.

Barnes and Breslow compute a distributional analysis for a U.S. Sky Trust with plausible parameters. They find significant regressivity on the pay-in side which is more than fully offset by progressivity on the pay-out side. In net, households in the lowest decile of the U.S. income distribution would see incomes rise by 354 USD, or 5.1 percent. Households in the top decile of the U.S. income distribution would see incomes fall by 1,378 USD, or -0.9 percent (Barnes and Breslow 2003).

Brenner, Riddle, and Boyce (2005) undertake a distributional analysis for a Sky Trust in China. Among the interesting findings for the Chinese Sky Trust are: (1) the progressivity of the revenue collection as well as the revenue recycling; and (2) the enormous difference between rural and urban incidence. In rural China 60 to 90 percent of household energy consumption comes from biomass. Also, cash incomes and expenditure in rural China are extremely low. Both of these factors make the incidence of the carbon charge progressive with respect to income. The net effect of the Sky Trust on rural poverty is fairly dramatic; rural poverty falls more than 4 percentage points, from 19.1 to 14.9 percent (Brenner *et al.*).

In this note, we analyze the distributional implications for the Republic of Hungary of European Union (EU) adoption of a Sky Trust. Hungary joined the European Union in May 2004 with nine other accession states. Although Hungary is among the most prosperous of the accession states, its 2005 per-capita income of 17,200 USD (PPP) was only 60 percent of overall EU per capita income (OECD 2006). Hungary thus represents a small, open-economy, energy-importing middle-income country. Its rank in the lower-middle strata of both the European Union and the OECD make it a useful test case for Sky Trust analysis.

First we propose reasonable parameters for an EU Sky Trust. Next, we estimate the effect on consumer prices of adoption of the Sky Trust. Then, we compute for Hungary the incidence across the income distribution of the two components of the Sky Trust, pay-in for carbon use and pay-out on a per household basis, and its net incidence across the income distribution.

The EU Sky Trust: One Carbon Price, Many Sky Trusts

We suppose the adoption by the EU of a single rate for the introduction carbon fuels with national administration, that is, the collection of fees and recycling of revenue, carried out at the national level. In principle, there is no minimum size or population threshold for a Sky Trust region. However, small-scale Sky Trusts may raise the specter of reduced competitiveness for the participating regions because the cost of energy will be higher. Because Hungary is a small, open economy, an exclusively Hungarian Sky Trust would face severe constraints with respect to changing the relative prices of imports and domestically-produced carbon-based goods. Previous analysis of Sky Trust incidence has examined the effects in large economies with relatively low import penetration, namely the United States (Barnes and Breslow) and China (Brenner *et al.*). By positing EU-wide adoption of a single per-unit carbon charge, we sidestep the problem of import-constrained domestic prices.

Hungary is a small country, and with the exception of 10 percent of its energy consumption provided by a single nuclear power plant, Hungary meets almost all of its energy requirement with imported fossil fuels (Hungarian Ministry for Environment 2001). Reductions in its annual emissions of 56.8 million tons of carbon dioxide emissions will have little effect on global greenhouse gas concentrations. After the late-1989 transition from state socialism to a predominantly market economy, the national economy contracted sharply for several years with many firm closures in heavy industry, leaving Hungary currently 20 percent below its 1990 emission level (OECD 2006), the basis of its Kyoto Protocol target. Although Hungary has no obligation under the Kyoto Protocol to reduce carbon emissions further, its emissions have risen since the late 1990's. Also, Hungary has one of the least carbon-efficient economies in the OECD. Hungary, the Czech Republic, Poland, and Slovakia have the worst performance in the EU in terms of carbon dioxide emissions per GDP. In any case, stricter carbon control measures by the European Union will likely be necessary to achieve the Intergovernmental Panel on Climate Change or Stern Review targets for climate stabilization in the mid-21st century.

Most significantly for the realism of our analysis, the posited framework is consistent with the administrative structure of the EU. The EU is reasonably likely to establish a unified approach to greenhouse-gas reduction, but implementation will almost certainly occur at the country level. We could also consider the possibility that there will be supplementary payments to poorer EU members to compensate for the hardship of meeting emissions targets.

We consider a Sky Trust with a 200 USD per metric ton of carbon (or 54.5 USD per mT of CO_2) charge for the introduction of fossil fuels into each national economy. The charge would be applied at the pipehead, the mine entrance, the border, or the port with intra-EU invoicing to offset taxes applied to transshipments. The U.S. Congressional Budget Office (2000) reports that for the entire U.S. economy, there would be only 2,000 collection points. Assuming a similar number for the European Union, the carbon-charge system could be relatively cheap to administer. Another indicator of the likely low cost of collection is that in the U.S., current federal costs for petroleum taxes and excise duties range from 0.12 to 0.25 percent of revenue (Brenner *et al.*).

The charge of 200 USD/ton carbon is based on the midpoint of estimates in Barnes and Breslow based on reasonable assumptions about the price elasticity of demand for embedded carbon of the charge required to get the U.S. to meet its proposed obligation under the Kyoto Protocol. There is substantial variation across the studies in the level of the carbon charge, in part because there is substantial disagreement about the level of charges necessary to meet various carbon-reduction targets. For example, Parry (2002) claims that the United States can meet its initial Kyoto target (a reduction of emissions to 7 percent below 1990 levels by 2010) with carbon charges between 50 USD and 150 USD per ton. A survey of 11 studies quoted in Barnes and Breslow, report a range from 20 USD to 400 USD per ton. Barnes and Breslow use alternative values of 83 USD , 191 USD, and 296 USD for their analysis, with the middle figure as the basis of the more detailed simulations.

Carbon Charges Passing Through

We assume competitive markets so that the charge is entirely passed through to consumers. For computational ease, we do not consider changes in demand induced by the carbon charge, and in particular, we ignore differences in carbon-demand elasticity across the income distribution. Although the assumption of no consumption response may seem odd for an analysis of a tax that is intended and expected to alter consumer behavior, it follows common practice (Metcalf 1999, Barnes and Breslow 2003, and Brenner *et al*. 2006). In any case, the assumption: (1) may result in overestimation of the overall revenue from the carbon charge because the tax base will be smaller if the elasticity is non-zero; (2) yields results equivalent to applying a higher per-unit charge with negative demand elasticity; and (3) may result in overestimation of the regressivity of the carbon charge because poor households appear to substitute more from high-priced to low-priced goods.

The introduction of a carbon charge will increase prices in the economy, beginning with the price of carbon. Commodity-specific price increases can be estimated using input-output tables to track fuels from their source industry, through processing in intermediate industries to the final consumption goods in which the fuel is embedded. In our analysis, we rely on the input-output data from Metcalf (1999), which are based on the production technology of the U.S. economy, as a reasonable proxy for the computation of carbon content in final goods in the EU. To the extent that EU production is somewhat less energy-intensive that is U.S. production (OECD 2006), we may overestimate the effect on final-good prices of an increase in energy prices.

Tabulations of a household expenditure survey are used to identify the typical household consumption bundle by decile. We combine the commodity-specific price increases induced by carbon charges with commodity-specific consumption data by deciles of household income. For the distributional analysis we estimate the increased cost of the total consumption bundle by income deciles. Progressivity, or regressivity, depends on the extent to which carbon consumption increases less or more than proportionately with income. Following Brenner *et al.* (2005), we deduct 1 percent in estimated administrative cost, and distribute the entire remaining fund on an equal basis. We then aggregate the remaining carbon-charge revenue and examine the effect of distributing all of the revenue on an equal basis. The Sky Trust pay-out should in principle deliver equal per-person benefits, but because of economies of scale in households, the most egalitarian payout is not necessarily equal per capita. In the United States, high income households on average have more members than do poor households and hence per-capita payout would skew the per-household payout slightly upward. In any case, we lack household composition data by expenditure decile for Hungary. Whether the payout is per-capita as in Barnes and Breslow or per-household as in our simulation for Hungary, the pay-out of the Sky Trust is clearly progressive and will at least partly offset any regressivity in the pay-in.

Data and Methods

The commodity-specific price-increase estimates are taken from Metcalf's analysis of the U.S. economy. Consumption bundles by income decile are published by the Hungarian Central Statistical Office and are based on a household survey employing expenditure diaries.

The commodity categories in the published Hungarian data imperfectly match the commodity categories in Metcalf (1999). In Table 1, we group Metcalf's commodity categories to match the categories of the published Hungarian data as closely as possible. Column 1 of Table 1 reprints in normal type the commodity categories and and Column 2 the estimated price increases of Metcalf Table 3. The bold-faced rows in Column 1 of Table 1 collapses Metcalf's categories to match the published Hungarian consumption data. In the boldfaced rows of Column 2, we take simple averages of all the Metcalf-estimated price increase within the collapsed groups.[1] Because Metcalf hypothesizes a 40 USD/ton carbon charge in 1994 dollars and our analysis calls for a 200 USD per ton carbon charge in current dollars, we multiply the price increases by a factor of 3.68, which accounts for both inflation and the higher charge. The implied price increases are reported in Column 3.

Column 4 reports the share that the commodity group represents in the budget of the average Hungarian household. Column 5 reports the implied increase in expenditure, as a share of total expenditure for the average Hungarian household, induced by the 200 USD/ton carbon charge.

[1] For example, we constitute the "Clothing" category, which appears in the Hungarian data, from "Clothing and shoes," "Clothing services," "Jewelry and watches," and "Toilet articles and preparations" in Metcalf Table 3. The price increases for these four categories of 0.8%, 0.5%, 0.7%, and 0.8% are averaged to 0.70%, reported in Column 2 for the overall "Clothing" category. Perhaps the most egregious of these square-peg-round-hole matchings is the category "Transportation and communication." The former is strongly affected by the carbon tax while the latter is minimally affected.

Results

Following the method developed in Metcalf (1999) and extrapolating from the analysis of pass-through to consumer prices in the CBO (2000) report, we estimate that the 200 USD/ton charge would cause an overall one-time increase in consumer prices of 11 percent. Price increases are, not surprisingly, heavily concentrated in fuel-intensive areas of the economy.

The top panel of Table 2 shows the consumption bundle of Hungarian households, by decile of expenditure. Table 2 refers entirely to expenditure rather than income. An advantage of this focus is that a snapshot of annual expenditure may be a better proxy for permanent income than is a snapshot of annual income. A significant drawback of measuring expenditure rather than income is that expenditure omits savings, a category that is likely skewed towards the richest range of the income distribution. The use of expenditure in lieu of income may understate both the regressivity of the carbon charge and the progressivity of the Sky Trust dividend.

Consumption patterns across the Hungarian income distribution follow expected patterns of consumption of necessities and luxuries across income deciles. For example, while total expenditure increases by a factor of 4.5, from 1,646 USD/year in the lowest decile to 7,388 USD/year in the top decile, food expenditure increases only 2.5 times. In the most fuel-intensive category, maintenance of dwellings, expenditure increases three times from the lowest to highest income deciles. Spending on every category is higher in the richer deciles; rich households spend more in absolute terms on carbon-intensive and less carbon-intensive categories.

The middle panel of Table 2 shows the implied increase in expenditure by commodity category and decile caused by the introduction of a carbon charge. The categories with substantial carbon-charge effects are maintenance of dwellings and transportation and communication, both of which are both large expenditure categories and fuel-intensive, and food, which is simply a large expenditure category. Expenditure on maintenance of dwellings increases by 40 percent with the introduction of the carbon tax.

The bottom panel of Table 2 summarizes the effect of the Sky Trust on household budgets. As in the United States (Barnes and Breslow 2003), and unlike China (Brenner et al 2007), the carbon charge itself has a somewhat regressive incidence in Hungary. With a charge of 507 USD, representing somewhat more than two tons of carbon consumption, the carbon charge absorbs almost 12 percent of the household budget in the poorest decile. Even at the seventh decile, the carbon charge is still above 11 percent of expenditure. Although the absolute charge increases to almost 1,900 USD, the share drops to 9.5 percent of expenditure in the richest decile. The decline in share occurs primarily in the eighth, ninth, and tenth deciles. The pattern implies that carbon use increases more or less proportionately with income through the poorer seventy percent of the income distribution. Only among the richest third of households does the proportion of spending in the less carbon-intensive categories increase sharply.

Because the Sky Trust carbon charge represents a significant share household income, 11 percent for the median household, the 1,005 USD/year Sky Trust dividend, which represents an equal distribution to all households of the Sky Trust revenue less the cost of administration, also has a substantial impact on household budgets. At the median, the Sky Trust dividend returns a sum to households equal to about 12 percent of household expenditure. For the poor tenth of households, the Sky Trust dividend increases the household budget by almost one quarter.

The last two lines of Table 2 report the net incidence of the Sky Trust for Hungary. The richest households make a net payment of 859 USD per year, which represents a 4.4 percent decrease in the available budget. For the poorest households, the Sky Trust has a substantial net positive effect, increasing household budgets by more than 11 percent. At the median, the Sky Trust has a modest positive effect on the household budget, with a net return of between 40 and 95 USD per year, representing a positive transfer of slightly less than one percent of expenditure. With a positive impacts through the sixth decile, we observe that the majority of Hungarian households are net beneficiaries.

Discussion

An important problem for Sky Trust analysis is that this type of incidence analysis may miss variation in the impact within income deciles. For example, in the United States the rural poor may drive long distances and may be particularly affected by carbon charges. In the United States there may also be sharp regional differences in incidence based on climate (reliance on air conditioning in the Sunbelt and reliance on heating fuels in the north). Not all people with the same income will pay equally into the Sky Trust, and some of the variation within income tranches may be for reasons that are at least partly beyond individual control, e.g., region of residence or residential heat source.

Policy analyses of previous Sky Trust proposals have been national in scope, and large countries have been the object of study (Barnes and Breslow 2003 and Brenner *et al.* 2005). Our analysis examines an EU-wide Sky Trust with national administration. An important direction for further research on Sky Trusts in small countries would direct attention to drags on competitiveness.

Although we offer these several notes of caution with respect to interpreting the incidence estimates, the implied effect of the EU Sky Trust on the income distribution is quite favorable for the prospect of policy adoption. As a matter of political popularity, the Sky Trust for Hungary generates a positive net benefit for at least 60 percent of the population, which should position it favorably for adoption. As a matter of equity, the Sky Trust both implements the polluter-pay principle and reduces inequality in an era of growing inequality. As a matter of economic efficiency, the Sky Trust can play an important role in creating incentives for efficiency in the carbon-inefficient former State Socialist economies.

References

Peter Barnes and Marc Breslow "The Sky Trust: The Battle for Atmospheric Scarcity Rent" in *Natural Assets: Democratizing Environmental Ownership*. Edited by James K. Boyce and Barry G. Shelley. Island Press, 2003.

Mark Brenner, Matthew Riddle, and James K. Boyce. "A Chinese Sky Trust? Distributional Impacts of Carbon Charges and Revenue Recycling in China." Political Economy Research Institute Working Paper. June 2005.

Congressional Budget Office. Who Gains and Who Pays under Carbon-Allowance Trading? The Distributional Effects of Alternative Policy Designs. June 2000.

Hungarian Ministry for Environment. *Main Environmental Indicators of Hungary*, 2001.

Gilbert E. Metcalf. "A Distributional Analysis of Green Tax Reforms." *National Tax Journal* LII(4). December 1999.

Ian W. H. Parry. "Are Tradable Emissions Permits a Good Idea?" Resources for the Future Issues Brief 02-33, 2002.

Organization for Economic Cooperation and Development (OECD). *OECD in Figures 2006-2007*. 2006

Table 1: Percent price increases induced by carbon charge, by consumption category

Categories	*Price Increase by Carbon Charge 40 USD/ton (1994 dollars)*	*200 USD/ton (2006 dollars)*	*Average Budget Share*	*Implied Expenditure Increase*
Food off-premise	0.9%			
Food on-premise	0.5%			
Food furnished employees	1.0%			
Food	**0.80%**	**2.94%**	**22.8%**	**0.67%**
Tobacco products	0.4%			
Alcohol off-premise	0.8%			
Alcohol on-premise	0.5%			
Beverages, tobacco	**0.57%**	**2.08%**	**4.9%**	**0.10%**
Clothing and shoes	0.8%			
Clothing services	0.5%			
Jewelry and watches	0.7%			
Toilet articles and preparations	0.8%			
Clothing	**0.70%**	**2.57%**	**4.8%**	**0.12%**
Tenant-occupied nonfarm dwellings—rent	0.2%			
Other rented lodging	0.5%			
Investment on housing	**0.35%**	**1.29%**	**5.3%**	**0.07%**
New and used motor vehicles	0.8%			
Tires, tubes, accessories, and other parts	0.9%			
Repair, greasing, washing, parking, storage, ren	0.5%			
Gasoline and oil	11.6%			
Bridge, tunnel, ferry, and road tolls	0.6%			
Auto insurance	0.3%			
Mass transit systems	1.9%			
Taxicab, railway, bus, and other travel expense	1.9%			
Airline fares	1.9%			
Telephone and telegraph	0.3%			
Transportation, communication	**2.07%**	**7.61%**	**20.6%**	**1.57%**
Electricity	12.0%			
Natural gas	19.6%			
Water and other sanitary services	0.6%			
Fuel oil and coal	12.1%			
Maintenance of dwellings	**11.08%**	**40.71%**	**19.1%**	**7.78%**
Medical care	0.5%			
Barbershops, beauty parlors, health clubs	0.5%			
Domestic service, other household operation	1.0%			
Business services	0.3%			
Expense of handling life insurance	0.3%			
Health, personal care	**0.52%**	**1.91%**	**6.1%**	**0.12%**
Furniture and durable household equipment	0.8%			
Nondurable household supplies and equipment	0.0%			
Housekeeping, household equipment & app	**0.40%**	**1.47%**	**5.0%**	**0.07%**
Books and maps	0.7%			
Magazines, newspapers, other nondurable toys,	0.8%			
Recreation and sports equipment	0.7%			
Other recreation services	0.5%			
Pari-mutuel net receipts	0.5%			
Culture, recreation, entertainment	**0.64%**	**2.35%**	**8.1%**	**0.19%**
Higher education	0.5%			
Nursery, elementary, and secondary education	0.5%			
Other education services	0.5%			
Religious and welfare activities	0.5%			
Other expenditure	**0.50%**	**1.84%**	**3.3%**	**0.06%**

Notes
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Table 2: The Sky Trust in Hungary

Top Panel: Household Expenditure by Consumption Category and Household Decile

In 2006 USD

	Deciles of Household Expenditure									
Consumption Categories	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
Food	$1,327	$1,596	$1,790	$1,930	$2,086	$2,168	$2,298	$2,437	$2,732	$3,259
Beverages, tobacco	$289	$347	$350	$400	$441	$430	$472	$507	$586	$814
Clothing	$228	$296	$346	$366	$368	$387	$421	$536	$602	$1,033
Maintenance of dwellings	$974	$1,246	$1,462	$1,517	$1,671	$1,784	$1,943	$2,115	$2,383	$3,069
Housekeeping, household equipment &	$189	$255	$306	$345	$412	$422	$488	$588	$732	$974
Health, personal care	$220	$313	$377	$446	$548	$568	$663	$719	$837	$1,104
Transportation, communication	$599	$1,080	$1,163	$1,383	$1,542	$1,559	$1,949	$2,334	$3,080	$4,919
Culture, recreation, entertainment	$258	$359	$460	$480	$601	$632	$669	$913	$1,182	$2,131
Other expenditure	$72	$136	$195	$227	$206	$250	$282	$362	$536	$881
Investment on housing	$214	$237	$511	$269	$296	$396	$411	$595	$639	$1,435
Total Expenditure	$4,371	$5,865	$6,960	$7,362	$8,171	$8,596	$9,596	$11,106	$13,309	$19,618

Middle Panel: Sky Trust Carbon Charge by Consumption Category and Household Decile

Consumption Categories										
Food	$39	$47	$53	$57	$61	$64	$68	$72	$80	$96
Beverages, tobacco	$6	$7	$7	$8	$9	$9	$10	$11	$12	$17
Clothing	$6	$8	$9	$9	$9	$10	$11	$14	$15	$27
Maintenance of dwellings	$397	$507	$595	$617	$680	$726	$791	$861	$970	$1,249
Housekeeping, household equipment &	$3	$4	$4	$5	$6	$6	$7	$9	$11	$14
Health, personal care	$4	$6	$7	$9	$10	$11	$13	$14	$16	$21
Transportation, communication	$46	$82	$88	$105	$117	$119	$148	$178	$234	$374
Culture, recreation, entertainment	$6	$8	$11	$11	$14	$15	$16	$21	$28	$50
Other expenditure	$1	$3	$4	$4	$4	$5	$5	$7	$10	$16
Investment on housing	$3	$3	$7	$3	$4	$5	$5	$8	$8	$18

Lower Panel: Summary of Sky Trust Incidence

Total Sky Trust Carbon Charge	-$507	-$672	-$779	-$826	-$912	-$964	-$1,068	-$1,185	-$1,377	-$1,865
Share of pre-Sky Trust expenditure	-11.6%	-11.5%	-11.2%	-11.2%	-11.2%	-11.2%	-11.1%	-10.7%	-10.3%	-9.5%
Sky Trust Dividend	$1,005	$1,005	$1,005	$1,005	$1,005	$1,005	$1,005	$1,005	$1,005	$1,005
Share of pre-Sky Trust expenditure	23.0%	17.1%	14.4%	13.7%	12.3%	11.7%	10.5%	9.1%	7.6%	5.1%
Sky Trust Net Effect	$498	$334	$227	$179	$93	$41	-$63	-$180	-$372	-$859
Share of pre-Sky Trust expenditure	11.4%	5.7%	3.3%	2.4%	1.1%	0.5%	-0.7%	-1.6%	-2.8%	-4.4%

Notes

Sources: Top Panel is from Hungarian Central Statistical Office 1996 Household Budget Survey with conversion from 1996 to 2006 prices with Hungarian CPI and to USD at 190 HUF/USD. Middle and Lower Panels based on authors' calcuations.