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A Note on the Neglect of New Goods Bias

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A major problem with the current CPI methodology is the fixity of the basket of goods that is being priced during any 5 year period. Another way of stating the problem is that the current methodology neglects new goods.

Most new goods start off with a relatively high price and a low volume of sales. Over time, the price goes down and the volume goes up. The new good is often introduced into the CPI basket at the mature stage of the product cycle when its volume is high and price is low. The tardiness in introducing the new good into the basket will tend to impart an upward bias in the CPI.

The above point can be illustrated using the information in the attached article from the San Franscisco Chronicle, June 10, 1985, page 20 on average prices and sales of backyard earth satellite dishes in the U.S. from 1980 through 1984. The data are (approximately) summarized in the following table.

Year	Price	Quantity	Value in Millions	t
1980	$40,000	4,000	160	1
1981	20,000	20,000	400	2
1982	10,000	60,000	600	3
1983	5,000	225,000	1,125	4
1984	2,000	450,000	900	5

Let us denote the price and quantities which appear in the above table by p_2^t and q_2^t for $t = 1,2,\ldots, 5$. Let us further suppose that satellite dishes are eventually placed in a certain category of consumer goods in 1984. To make things simple, suppose that from 1980 to 1984, there was only one good in this category and its price in year t was p_1^t and the

quantity sold was q_1^t. To make things even simpler, let us assume that

$$(1) \qquad p_1^t \equiv 1, \; q_1^t = q \qquad \text{for } t = 1, \ldots, 5.$$

so that any price index for this category of goods (excluding the dishes) would show a constant CPI subindex equal to 1 over the 5 years.

Now let us compute a Laspeyres Chain index for dishes and the other good over the period. For any period t, the price level in period t relative to the previous period is given by the usual formula:

$$(2) \qquad L_t \equiv \Sigma_{i=1}^{2} \; p_i^t q_i^{t-1} / \Sigma_{i=1}^{2} p_i^{t-1} q_i^{t-1} \; .$$

Doing the relevant algebra, we find that the Laspeyres links L_t defined by (2) are

$L_1 = (80+q)/(160+q)$
$L_2 = (200+q)/(400+q)$
$L_3 = (300+q)/(600+q)$
$L_4 = (450+q)/(1125+q)$.

If we further suppose that the q_1 value is \$10,000 million, so that in 1984, the value of earth satellite dishes sold is equal to 9% of the "old" goods, then we find that the links L_t are:

Year	Link L_t	True (Cumulative) CPI	Measured CPI
1980	-	1.00	1.00
1981	1.00	1.00	1.00
1982	.98	.98	1.00
1983	.97	.95	1.00
1984	.94	.90	1.00

We see that the neglect of satellite dishes in the early years of their commercial introduction leads to an upward bias in the traditional, fixed

basket CPI for "household electronic equipment" of about 10% over 5 years or about 2% a year. This is a substantial bias.

We do not know how universal this bias is, i.e., we do not really know how many new goods are being introduced into each component of the CPI. In some components like vegetables, we would expect the number of new goods to be very small indeed. However, I think that it is possible that the overall upward bias due to the neglect of new goods in the CPI in Canada might be of the order of ½% to 1%.

It seems to me that it would be useful to attempt to do some rough calculations similar to the above for major new products that have been introduced into the Canadian market in the past 10 years. Some examples worthy of study might be: video recorders, microwave ovens, oven toasters, etc.

Sky's the Limit On Home Sales of Satellite Dishes

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San Francisco Chronicle

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BY JOHN ECKHOUSE

One of the first things Angelo Campana did while recuperating from heart surgery was to purchase a satellite earth station for the backyard of his San Francisco home.

"I got tired of looking at the limited stuff on the idiot box and wanted to be able to see more channels, more sports," he said. "I would not have bought it if I had not had the illness, but now that I have it I wouldn't part with it."

Steve Mclaughlin plunked down $4000 to buy a 12-foot satellite dish after giving up hope that cable television would ever be available in his Hillsborough neighborhood.

"I'm heavily involved in sports and with this device I watched the uncut versions of the Olympics last year and the live broadcast of the French Open last week," he said. "This is the thing of the future and it's absolutely worth the price."

Backyard earth stations can receive more than 120 different channels of television entertainment bounced off the 15 satellites parked in orbit 22,300 miles above the equator. Programming includes commercial-free feeds from the major networks, foreign broadcasts and even pay-TV channels such as those offering first-run movies.

Overwhelming Choice

"Our customers are overwhelmed by how much they can choose from, more than any cable company provides," said Roger Stover, vice president of Coit Communications Inc. The Redwood-based company, affiliated with the carpet and drapery cleaning firm of the same name, claims to be the largest of a dozen retailers selling satellite earth stations in the Bay Area.

As the earth stations get smaller and less expensive, sales are soaring.

Sales soared from 4000 dishes in 1980 to 450,000 last year, according to John Blundell, a marketing manager at Luxor North America Inc. The number of dishes in U.S. backyards climbed past the 1 million mark sometime in April.

The earth station business is perhaps the fastest-growing consumer electronics industry in the last two years.

The dishes have come a long way since their first introduction to the public on the cover of the 1979 Neiman-Marcus Christmas catalog. The 15-foot diameter dish featured there cost $36,500, while a 4½-foot earth station costs less than $1000 today.

"It's not a playground for the rich anymore," said Steven Rosenberg, media analyst at Paul Kagan & Associates in Carmel. Though originally popular with rural residents or wealthy people plagued by poor TV reception, the earth stations now are selling well in metropolitan areas.

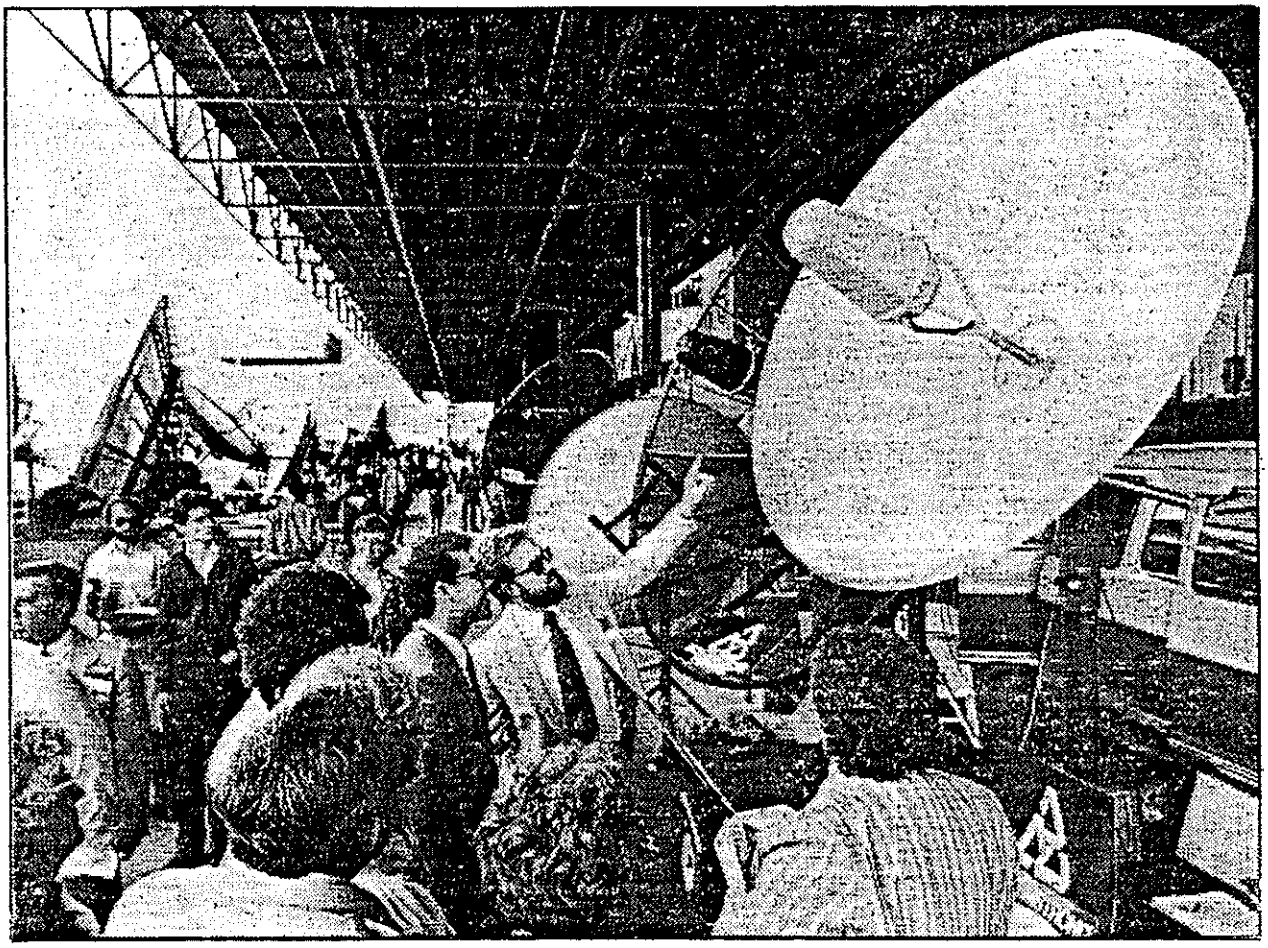
Coit sells dishes ranging from 6 feet to 12 feet in diameter at prices of $1195 to $4500. The price includes necessary electronic accessories such as a device to convert the frequency of the satellite signal to one appropriate for the television receiver, but installation costs $250 to $900 extra.

Weightier Competition

Half of all earth stations still are sold by small dealers working out of their homes, but the growth of the market has attracted more and weightier competition.

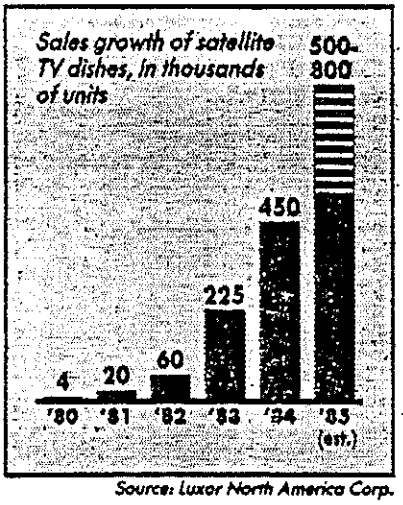
The amount of space occupied by dish companies exhibiting at the Consumer Electronics Show last week in Chicago increased more than 10 times from the year before. Major consumer electronic powerhouses such as Panasonic and Kenwood just entered the market and Radio Shack and Sears recently announced plans to sell home earth stations.

Consumers need to learn a little about the technology before pur-



Satellite earth stations on display at Consumer Electronics Show last week in Chicago.

EARTH STATIONS IN BACKYARDS



Source: Luxor North America Corp.

chase. Microwave signals bounced off the satellites are aimed at the center of the United States, but actually cover the entire continent from coast to coast and Canada to Central America. Not every dish can receive all the signals, however.

"Microwave is like rain: If you want to catch more, you use a bigger bucket," said Ken Yonce, a sales executive with Bowman Industries. His Downey (Los Angeles County) company sells a 4½-foot dish that he acknowledges can only receive 24 channels.

Industry officials say a 6-foot antenna may be satisfactory in the central part of the United States, where the signals are strongest, but a 12-foot dish is needed for the coastal areas and a 25-foot earth station is required in Mexico.

Skilled Installation

Most people will need to hire someone to install their equipment, for it takes skill to point the dish at precisely the right angle to receive signals from the satellites that are located a few degrees apart in the sky. Many people purchase remote-controlled motor drives that use a computer program to move automatically from one satellite to another with the push of a button.

Other potential drawbacks to home earth stations are restrictive municipal zoning laws and the decision by some programmers to scramble their signals.

Hillsborough now requires a homeowner to obtain approval from neighbors and its architecture review board before installing an earth station. San Francisco permits satellite dishes on a home's roof, but not in the backyard. More than 300 other cities and counties have established zoning requirements covering earth stations.

But help for the satellite industry may be on the horizon. The Federal Communications Commission voted unanimously in March to issue new regulations later this year that would overrule local zoning ordinances aimed at banning satellite dishes.

The federal government is coming to the aid of the satellite industry in another arena as well. After Home Box Office announced plans to scramble the signal of its HBO and Cinemax movie channels to prevent free reception by people it calls satellite "pirates," some members of Congress introduced legislation calling for a two-year moratorium on that kind of encryption.

"A lot of us in Congress are ready to take action," said Rep. Charles Rose, D-N.C., a co-sponsor of the bill. "You ought to be able in a reasonable way to negotiate with the companies to receive the scrambled signal."

Perhaps worried by the proposed law, Home Box Office last month reversed its earlier plan and now says it will decode and sell its movie channels to owners of backyard dishes.

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Japanese 'lag behind British' with new products

By Ian Rodger in London

BRITISH manufacturers appear to be marketing more up-to-date products than their Japanese competitors, according to a survey of 176 senior executives in five leading industrial countries.

In another reversal from accepted ideas about national tendencies, most of the 35 Japanese executives interviewed were keen that basic research activities be maintained in the universities, whereas most of the 141 European and U.S. executives wanted universities to shift their emphasis to applied research.

The executives, drawn from the chemical, home appliance, machine tool, telecommunications and medical equipment sectors, were participating in a survey of attitudes to new technology carried out by Mori during the spring and summer for PA Technology, a UK management consulting group.

The British emphasis on new products, which may reflect the attempts of many manufacturers to catch up with foreign competitors, emerged when the executives were asked what portion of their companies' revenues came from products not being marketed three years ago. In the telecommunications sector, the British won 47 per cent of their revenues from new products, the Japanese only 23 per cent.

The same trend was true in all sectors. For example, the British proportion of revenue from new domestic appliances was 39 per cent, compared with 12 per cent for Japanese manufacturers.

The West Germans and Benelux telecommunications and domestic appliance companies also tended to get more of their revenue from new products than the Japanese.

Most of the other survey results show the Japanese standing apart, as usual, from their Western competitors. Perhaps the most disturbing example is that the Japanese, widely known for profiting from the basic research of others, strongly support the idea that their universities should concentrate on basic research. When the executives were asked their view of a move by universities away from fundamental research and towards more applied research, 60 per cent of the Japanese said it would be a bad thing. On the other hand, 65 per cent of the British, 64 per cent of the West Germans and 56 per cent of the Americans said this would be a good thing.

This article indicates that in telecommunications, the proportion of new products is substantial.