

POLICY PERSPECTIVE

The DTV Coupon Program: A Boon to Retailers, not Consumers

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On February 17, 2009 television broadcasters must switch from analog to digital transmission. Consumers who watch television via free over-the-air transmission using television sets that can receive only analog signals must obtain a piece of equipment that can convert the digital transmissions to analog. Because Congress was concerned that these people would find themselves without television come February 18, 2009, it allocated \$1.5 billions to subsidize consumers' purchase of these "converter boxes" as part of the DTV Act of 2005.¹ Every household is eligible for two \$40 coupons that can be spent on converter boxes at a number of retailers.

In principle, the coupon program reduces the cost to households of the digital transition by allowing them to spend \$40 less on a converter box than they otherwise would.² This analysis reveals, however, that coupon program has created a floor on the price of these converter boxes. Because consumers pay \$0 with the coupon for any box priced \$40 or less, retailers have little incentive to reduce the price below \$40. An analysis of converter box prices at retailers around the country suggests that the coupon program has increased the price of converter boxes by \$21 - \$34.

In other words, the coupon program has reduced price competition. The majority of the benefits of the coupon program accrue to retailers who accept the coupons, and a smaller share of the benefits accrues to consumers. The program may still be considered a

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¹ http://www.ntia.doc.gov/otiahome/dtv/NTIA_DTV_DraftRequirements_073106.htm: "Specific to this RFI, section 3005 of the Act directs NTIA to implement and administer a program through which eligible U.S. households may obtain two coupons of \$40 each to be applied towards the purchase of a digital-to-analog (DTA) converter box. The bill defines "converter box" to mean a stand-alone device used solely for digital-to-analog conversion. It does not define "eligible household." The bill authorizes NTIA to use up to \$990 million from the Fund for the Coupon Program, including \$100 million for program administration. NTIA is also authorized to expend up to \$1.5 billion for the Coupon Program, including \$160 million for administration, upon a 60-day notice and certification to the Committee on Energy and Commerce of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate that the \$990 million is insufficient to fulfill coupon requests for eligible U.S. households. This section also authorizes NTIA, beginning on October 1, 2006, to borrow not more than \$1.5 billion from the Treasury to implement the Coupon Program. NTIA, however, is required to reimburse the Treasury for this amount, without interest, as recovered analog television spectrum auction proceeds are deposited into the Fund."

² According to the U.S. GAO, manufacturers reported that the converter box could sell for about \$50, meaning that the coupon program would make the cost of the boxes to consumers quite low. *United States Government Accountability Office, "Digital Broadcast Television Transition: Several Challenges Could Arise in Administering a Subsidy Program for Dtv Equipment,"* (Washington, DC: 2005).

success if it helps raise awareness and encourages people to buy converter boxes who may not have otherwise, but it should not be considered primarily as a subsidy to consumers.

Data and Analysis

We obtained the data on DTV converter box prices through the websites of major electronics retailers, eBay, and other online sellers.³ We searched for converter boxes on each of these websites and recorded the prices of all available models in June and August 2008 for Amazon, Best Buy, Radio Shack, Target, Walmart, and Circuit City, and the online retailers tvconverterboxstore.com, Solid Signal, and cadencestore.com. We also collected data from retailers that do not accept the coupon, including fadfusion.com and several using eBay. On eBay we collected price data for several different sellers of the same model for the “buy now,” rather than auction, option. We include shipping costs for boxes available online.

The data are at the level of the converter box, and include information on the specific converter box model, the price, shipping cost (if any), the retailer, whether it is available online, and whether the retailer accepts the coupon.⁴ The dataset has 97 observations for 49 converter boxes. Table 1 shows the retailers and number of boxes from each included in the dataset.

Table 1
Retailers Included and Number of Converter Boxes from Each

Store	Number of converter boxes
Solid Signal	34
eBay (Buy It Now)	27
Amazon	9
Radio Shack	5
Best Buy	4
Target	4
tvconverterboxstore.com	4
Walmart	4
fadfusion.com	3
cadencestore.com	2
Circuit City	2

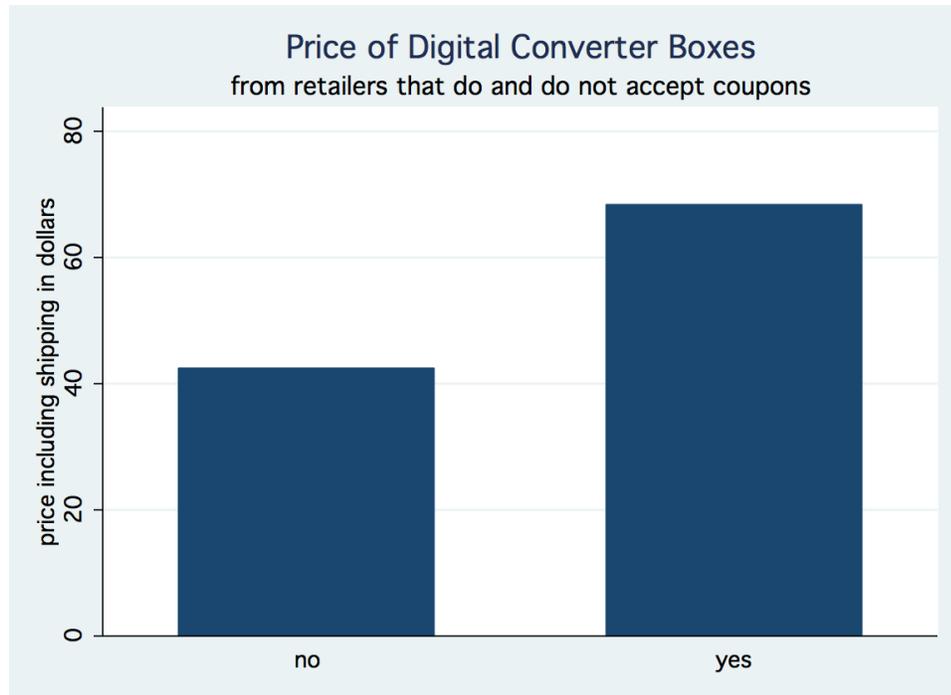
A first, rough, look hints at the results. Figure 1 shows the average price of converter boxes for which the retailer does and does not accept the coupon. The figure shows that

³ List of certified retailers available here: <https://www.dtv2009.gov/VendorSearch.aspx>.

⁴ Participation by retailers is optional, but the Department of Commerce National Telecommunications and Information Administration (NTIA) must certify retailers as eligible to participate in the program. http://www.ntia.doc.gov/ntiahome/frnotices/2007/DTVFinalRule_2g.htm

the retail price with the coupon is substantially higher than the retail price when the retailer does not accept the coupon.

Figure 1



The simple average presented in Figure 1, may, however, be misleading. While we collected data on the most basic converter boxes, they may still have differences in quality or perceived quality (e.g., different manufacturers). Similarly, prices may differ online and offline, and people may be willing to pay more to purchase from better-known retailers than from others. To control for these issues I estimate the following equation:

$$price_{ij} = \beta_0 + \beta_1(coupon_{ij}) + \beta_2(online_{ij}) + \gamma_i + \phi_j + \varepsilon_{ij}$$

where i indicates the converter box and j indicates the retailer. $Price_{ij}$ is the price of the converter box i (in dollars) from retailer j , $coupon_{ij}$ is a dummy variable indicating whether a coupon can be used for that box at that retailer, $online_{ij}$ is a dummy variable indicating whether the box is available online from that retailer, γ_i controls for box fixed effects, and ϕ_j controls for retailer fixed effects.

Table 2 shows the results of estimating this equation. Controlling only for whether the box is available online and the box fixed effects, the coupon is associated with a higher price of about \$21. Controlling for retailer effect, the coupon is associated with a higher price of \$34.

Table 2
Coupons and Converter Box Prices: Regression Results

Dependent variable: price

Mean of dependent variable: 54.46		
Accept coupon	21.42 (5.32)**	34.03 (3.15)*
Available online	4.52 (0.56)	0.40 (0.05)
Converter box dummies included	Yes	Yes
Retailer dummies included	No	Yes
R-squared	0.84	0.86
Number observations	97	97

** significant at 1% * significant at 5%

Conclusions

The converter box coupon program was intended to subsidize converter boxes for consumers who may find themselves unable to receive digital signals after the transition. By making consumers largely indifferent between \$0 and \$40, however, the program appears to have hindered price competition, allowing retailers to charge between \$21 and \$34 more than they would if the coupon program did not exist. In other words, the coupon program largely benefits retailers, not consumers.

This result does not necessarily mean that the program is wasteful. Raising awareness of the transition among people who have televisions that can receive only analog transmission is valuable. The program thus has benefits to the extent that the program helps accomplish that goal. In addition, because not all retailers accept the coupon some price competition remains, meaning that consumers do see some of the benefit.

Nevertheless, this analysis reveals that the coupon program has an unintended consequence: keeping retail prices higher than they would be otherwise. As a result, the real winners of the coupon program appear to be retailers, who can earn an extra \$21 - \$34 by accepting the coupon.