# ONLINE APPENDIX

## Price setting in online markets: Basic facts, international comparisons, and cross-border integration

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# APPENDIX A: 2011 THAILAND FLOODS

Our price comparison website provides a wealth of information about weekly price quotes for goods sold online. To explore how quickly firms adjust prices in response to shocks, we use a natural experiment that significantly affected prices and availability of hard drives: the 2011 flooding in Thailand.

The floods in Thailand started in late July 2011. By mid-October, they reached the capital, Bangkok. The floods did not recede until January 2012. As of December 2011, the World Bank had estimated US$ 45 billion in damages for the Thai economy, mostly due to disruptions in manufacturing (US$ 32 billion). More than 90% of all losses were borne by private owners.[1]

As Thailand hosts major hard-drive producers, the floods took their toll on hard-drives production and prices. For example, Western Digital (WD), the leading manufacturer, had over 60% of its capacity in the affected region. Appendix Figure A1 shows the extent of damages to a WD factory that produces hard drives. Western Digital's Thailand Plant suspended operation on October 21, 2011. Nidec, which produces 75% of hard drive motors—an essential part of hard drives—also had to shut down.[2] This natural disaster created a major shortage of hard drives on the market.

We use our data to study the effects of the flood on prices and availability of hard drives. First, for each good-seller-country price line, we calculate weekly changes in the price. Second, we calculate the average (log) price change for each manufacturer, country, and week. We consider two groups of manufacturers: i) WD and ii) other major brands (Fujitsu, Seagate, Samsung, Toshiba, and Hitachi). While other major brands had significant presence in Thailand, their direct loss due to the flood was less dramatic than WD's. Third, we cumulate weekly average price change starting in July 2011 to show the combined effect of price changes over time. The cumulative change is normalized to start at zero in July 2011. Finally, for each week, country, and group of manufacturers, we calculate the number of price quotes. This number combines the number of hard-drive models and the number of sellers.[3] Appendix Figure A2 shows the time series of weekly price changes, cumulative price change (since July 2011), and the number of price quotes.

While there was a significant inventory of hard drives before the flood, the flood led to a dramatic increase in the price of hard drives. The top panel of Appendix Figure A2 shows that the price of hard drives increased significantly within a week after the floods affected production facilities of WD and other major producers. The cumulative increase in the price of WD hard drives reached nearly 40 percent by the end of November 2011 (see the middle row). Prices for hard drives from other manufacturers also increased quickly and considerably—although the increase was smaller than the increase for WD hard drives—as there is some substitutability across hard drives, and other manufacturers were less affected by the flood. Shortly after the floods, the number of price quotes on our price comparison website declined by more than 50 percent. These dynamics are consistent with rapidly declining inventories of hard drives. The patterns are similar for the U.S. and Canada.

In summary, our findings suggest that price quotes are updated reasonably quickly on the price comparison website. Thus, our price data are suitable for the analysis of pass-through, etc., in the context of exchange rate fluctuations.

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[1]Source:
http://www.worldbank.or.th/WBSITE/EXTERNAL/COUNTRIES/EASTASIAPACIFICEXT/THAILANDEXTN/0,,contentMDK:23067443~pagePK:141137~piPK:141127~theSitePK:333296,00.html

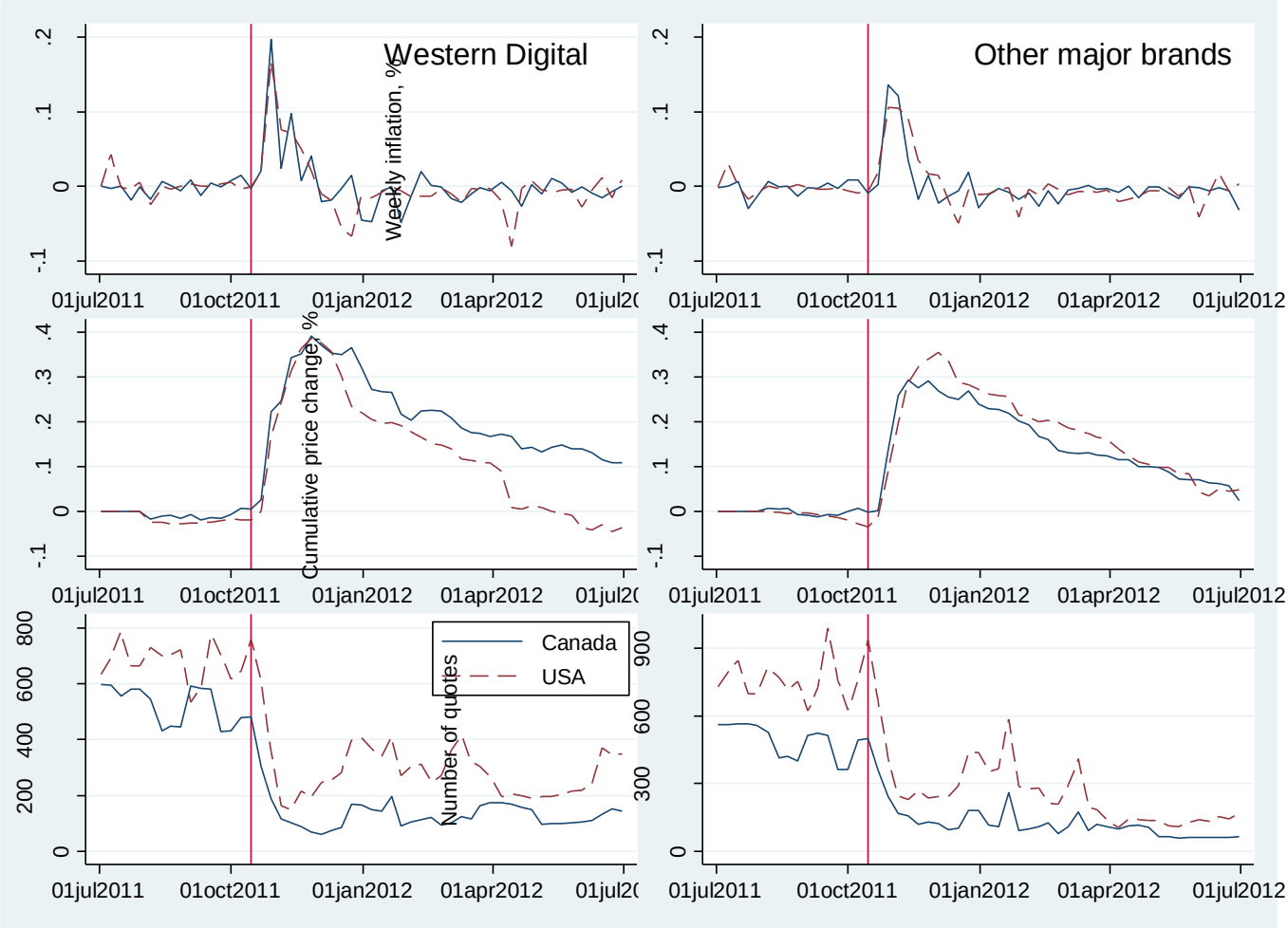
[2]Source:
http://www.pcworld.com/businesscenter/article/242913/thai_floods_hit_q4_hard_drive_production_says_research_firm.html

[3] Results are similar if we use the number of sellers, the number of quotes per seller, or the number of quotes per good.

**Appendix Figure A1. Flooded Western Digital facility in Thailand, 2011**


Source: New York Times, Nov. 6, 2011

**Appendix Figure A2. Price change and the number of sellers**




Notes: The vertical line shows the time when WD closed its production facility in Thailand. The left column shows results for Western Digital (WD). The right column shows results for *Other major brands*, which includes Fujitsu, Seagate, Samsung, Toshiba, and Hitachi. The top row shows the time series of weekly average price changes for each group of manufacturers. The middle row shows the cumulative change in the price of hard drives using weekly average price changes shown in the top row. The bottom row shows the number of price quotes on a given week for a given manufacturer in a given country.

# APPENDIX B: UNIT ROOT AND COINTEGRATION IN CROSS-COUNTRY PRICE DIFFERENTIALS

The main specification (1)-(2) in the paper assumes that price differentials $D_{it} \equiv \log(P_{it}^{US}/P_{it}^{CA})$ are non-stationary and co-integrated with the nominal exchange rate $EX_t$. This assumption motivates the error-correction specification where we estimate pass-through from a cointegration vector and the speed of price adjustment from how quickly price differentials return to equilibrium levels given by the cointegration vector.

Testing for unit roots and cointegration in the context of panel data, where shocks are correlated cross-sectionally presents special challenges as the standard panel-data unit root tests, assume that cross-sections are independent. This assumption is clearly violated in our case. Furthermore, standard panel-data unit root tests may be not particularly informative in practice because the null hypothesis is too restrictive: e.g., the null of *all* cross-sections have a unit root vs. the alternative that some cross sections do not have a unit root. To address this challenge, we use the insight of Bai and Ng (2004) to develop a procedure for a joint test of unit root and cointegration in panel data where dependence in the cross-section is allowed.

In a nutshell, the Bai-Ng approach amounts to extracting common factors $\boldsymbol{F}_t$ from $D_{it}$ and then testing if $\boldsymbol{F}_t$ have unit roots. That is, the considered data generating process is given by $D_{it} = \Lambda_i \boldsymbol{F}_t + u_{it}$, where $\Lambda_i$ is a vector of loadings on $\boldsymbol{F}_t$. By construction, $\boldsymbol{F}_t$ are the common components across $D_{it}$, which is akin to cointegration. If $f_t$, a part of $\boldsymbol{F}_t$, has a unit root, then $D_{it}$ have a common stochastic trend $f_t$ (and thus $D_{it}$ are not stationary), and $D_{it}$ are cointegrated with $f_t$. While Bai and Ng (2004) do not give a structural interpretation to extracted $\boldsymbol{F}_t$, we have a natural candidate for $\boldsymbol{F}_t$: the nominal exchange rate $EX_t$.

To implement the Bai-Ng approach, we proceed as follows. First, we extract the common component in $D_{it}$. While Bai and Ng (2004) use the covariance matrix of first differences of $D_{it}$ to extract $\Delta f_t$ (using principal component analysis) and then cumulate the series to $f_t = \sum_{s=0}^{t} \Delta f_s$, we use the approach suggested in Pesaran (2006, 2007). That is, we project $D_{it}$ on the full set of weekly dummies and estimate $\overline{D}_t = N^{-1} \sum_{i=1}^{N} D_{it}$, which provides us with a measure for $f_t$. The key advantage of the Pesaran approach to extracting a common factor is that it does not require us to have non-missing series for $D_{it}$ for all cross-sections. In other words, one may have a sample of goods where spells of $D_{it}$ do not necessarily overlap. This is useful in our case because there is a significant turnover of goods in the sample and few goods are sold continuously between 2008 and 2013. Note that we can identify $f_t$ only up to a scale, but this is not material as the space spanned by $f_t$ is the same irrespective of the scaling coefficient.

Second, we test if $\overline{D}_t$ and $EX_t$ have unit roots. Note that although $\overline{D}_t$ is estimated, Bai and Ng (2004) show that one can ignore sampling uncertainty in the estimate when the number of cross-sections is large, which is true in our case.

Third, conditional on having unit roots in both series, we test if $\overline{D}_t$ and $EX_t$ are cointegrated. If true (i.e., $\overline{D}_t - \phi EX_t$ is stationary for some $\phi$), then one may interpret the common component $\overline{D}_t$ as a proxy for $EX_t$ as the difference between the two in the cointegration vector is stationary. In other words, if $\overline{D}_t$ is the common stochastic trend in $D_{it}$, then $EX_t$ captures the same stochastic trend.

The extracted common component $\overline{D}_t$ and $EX_t$ are highly correlated ($\rho = 0.77$) and track each other closely (Appendix Figure B1). Both series exhibit behavior typical for series with stochastic trends. Consistent with the visual inspection of the data, Appendix Table B1 shows that the extracted common component $\overline{D}_t$ has a unit root. So does the nominal exchange rate $EX_t$. The last row in the

table documents that $\overline{D}_t$ and $EX_t$ are cointegrated: the residual in the estimated cointegration vector, which is estimated by the OLS, is stationary as we can reject the null of a unit root in the residual at 1% level.

We conclude that our error-correction specification (1)-(2) is appropriate in our context.

**References:**


Bai, Jushan, and Serena Ng, 2004. "A PANIC Attack on Unit Roots and Cointegration," *Econometrica* 72(4), 1127-1177.

Pesaran, M. Hashem, 2006. "Estimation and Inference in Large Heterogeneous Panels with a Multifactor Error Structure," *Econometrica* 74(4), 967-1012.

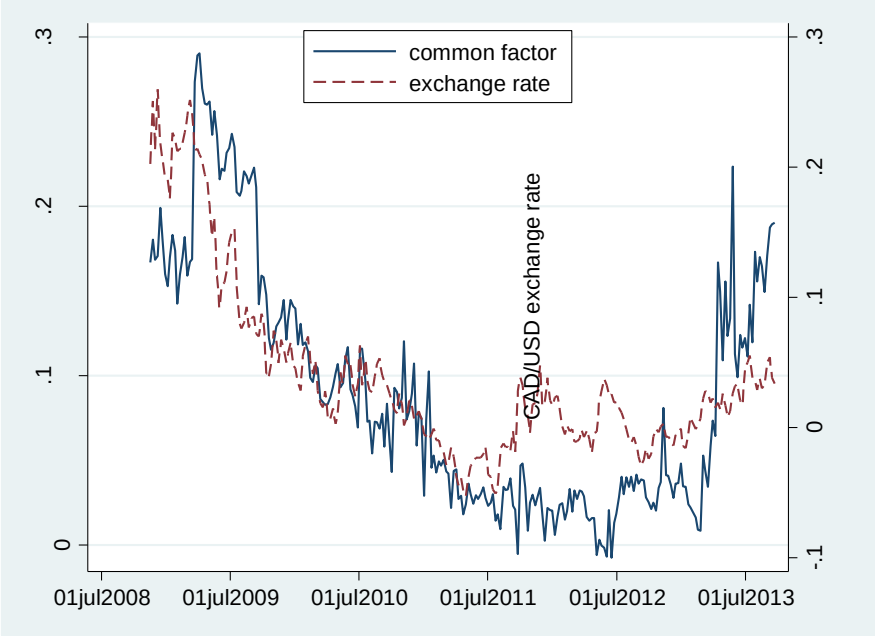
Pesaran, M. Hashem, 2007. "A simple panel unit root test in the presence of cross-section dependence," *Journal of Applied Econometrics* 22(2), 265-312.


**Appendix Table B1. Phillips-Perron test for unit root**

| Variable | Test statistic | p-value |
|---|---|---|
| Common component, $\overline{D}_t$ | -6.470 | 0.398 |
| CAD/USD exchange rate (log), $EX_t$ | -5.584 | 0.142 |
| Residual of the estimated cointegration vector: $\overline{D}_t - 0.805EX_t$ | -28.160 | 0.004 |

Notes: The null hypothesis of the test is that a series has a unit root. The number of lags in the test is set at 12.

**Appendix Figure B1. Common component in price differentials and the nominal exchange rate.**




Notes: The figure plots time series for the common component $\overline{D}_t$ (left axis) and the CAD/USD exchange rate (log; right axis).

# APPENDIX C: MONTE CARLO EXPERIMENT

This appendix examines the potential role of measurement errors in affecting our estimates of pass-through and the speed of price adjustment.

Suppose that the data-generating process is described by the following system of equations:

$$EX_t = EX_{t-1} + u_t, \quad \text{(C.1)}$$

$$\Delta P_{it} = \beta(P_{t-1} - \alpha EX_{t-1}) + b_1 \Delta EX_{t-1} + b_2 \Delta P_{i,t-1} + e_{it}, \quad \text{(C.2)}$$

where *i* and *t* index goods and time, respectively, $EX_t$ is the exchange rate, $P_{it}$ is the relative price of good $i$ in country A relative to country B, and $u_t$ and $e_{it}$ are uncorrelated at all leads and lags. Coefficient $\alpha$ measures the long-term pass-through of the exchange rate. Coefficient $\beta$ measures the speed of adjustment.

We estimate $\alpha$ and $\beta$ using a two-step procedure. In the first step, we estimate $\alpha$ as a part of the cointegration vector:

$$P_{it} = \alpha EX_t + \epsilon_{it}. \quad \text{(C.3)}$$

The error in this regression $\epsilon_{it}$ is interpreted as the deviation from equilibrium. In the second step, we estimate $\beta$ using the following specification

$$\Delta P_{it} = \beta \hat{\epsilon}_{it} + b_1 \Delta EX_{t-1} + b_2 \Delta P_{i,t-1} + error. \quad \text{(C.4)}$$

Although $\hat{\epsilon}_{it}$ is a generated regressor, econometric theory shows that one can use standard inference for $\beta$ in regression (4) because the estimate of $\alpha$ is superconsistent.

To assess the quantitative importance of measurement errors for the estimates of $\beta$ and $\alpha$, we run the following Monte Carlo experiment. We calibrate parameters of DGP in equations (C.1)-(C.2) to match estimates in the data. Specifically, our empirical estimates are such that $b_1 = -0.189$, $b_2 = 0.104$, $\alpha = 0.7$, $\beta = -0.162$. The root mean squared error in regression (C.3) is 0.014, so we set $\sigma_u = 0.014$. The root mean squared error in regression (C.4) is 0.0867, so we set $\sigma_e = 0.085$.

To model idiosyncratic shocks, we assume that the observed relative price is equal to the true relative price plus measurement error (idiosyncratic shock):

$$P_{it}^* = P_{it} + \eta_{it}, \quad \text{(C.5)}$$

where the measurement error is classical. To calibrate the size of measurement error, we use validation data generously provided by Alberto Cavallo. Specifically, we calculate the standard deviation of the log difference between the price reported on the price comparison website and the price reported on the seller website. To scale the size of the measurement error, we calculate the standard deviation of log prices for goods in our validation sample. The ratio of these two standard deviations is 0.0838. The standard deviation of log relative prices in our data is 0.163. Thus, we calibrate the size of measurement error at $\sigma_\eta = 0.163 * 0.0838 = 0.0137$. In simulations, we also explore larger values of $\sigma_\eta$.

In our simulations, we set sample size to $N = 20{,}000$ and $T = \{100{,}250{,}400\}$. With $T = 250$, the sample size mimics what we have in the data. For each parameterization, we generate 500 histories (the burn-in period is set to $T$), estimate system (C.3)-(C.4), and report results in Appendix Table C1.

We find that the estimate of $\alpha$ is insensitive to the size of the measurement error as the error only appears on the left hand side of equation (C.3). While the size of the error can influence the estimate of $\beta$, the size of the bias in the base case is small: the estimate of $\beta$ decreases from -0.162 to -0.166. If we double the size of the error, the estimate decreases further to -0.167, but the difference continues to be small. It takes implausibly large measurement errors to tangibly move the estimate of $\beta$.

We conclude that idiosyncratic shocks such as measurement errors are unlikely to determine the fast speed of price convergence in online markets.

**Appendix Table C1. Bias in the estimated pass-through and the speed of price adjustment**

| Size of measurement error $\eta$ | T=100 | | | | T=250 | | | | T=400 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $\hat{\alpha}$ | | $\hat{\beta}$ | | $\hat{\alpha}$ | | $\hat{\beta}$ | | $\hat{\alpha}$ | | $\hat{\beta}$ | |
| | mean | st.dev. | mean | st.dev. | mean | st.dev. | mean | st.dev. | mean | st.dev. | mean | st.dev. |
| 0 (no error) | 0.632 | 0.071 | -0.162 | 0.00045 | 0.669 | 0.039 | -0.162 | 0.00028 | 0.681 | 0.025 | -0.162 | 0.00022 |
| $\sigma_\eta$ | 0.638 | 0.066 | -0.166 | 0.00044 | 0.676 | 0.028 | -0.166 | 0.00029 | 0.681 | 0.025 | -0.166 | 0.00022 |
| $2\sigma_\eta$ | 0.633 | 0.072 | -0.170 | 0.00046 | 0.672 | 0.032 | -0.170 | 0.00029 | 0.681 | 0.025 | -0.170 | 0.00023 |
| $3\sigma_\eta$ | 0.638 | 0.073 | -0.174 | 0.00048 | 0.673 | 0.030 | -0.174 | 0.00031 | 0.681 | 0.025 | -0.174 | 0.00023 |
| $4\sigma_\eta$ | 0.634 | 0.087 | -0.178 | 0.00047 | 0.672 | 0.032 | -0.178 | 0.00030 | 0.681 | 0.025 | -0.178 | 0.00024 |
| $5\sigma_\eta$ | 0.632 | 0.071 | -0.182 | 0.00051 | 0.673 | 0.030 | -0.178 | 0.00030 | 0.681 | 0.025 | -0.182 | 0.00025 |
| $6\sigma_\eta$ | 0.638 | 0.066 | -0.186 | 0.00050 | 0.672 | 0.032 | -0.186 | 0.00031 | 0.681 | 0.026 | -0.186 | 0.00025 |
| $7\sigma_\eta$ | 0.632 | 0.071 | -0.190 | 0.00053 | 0.673 | 0.030 | -0.190 | 0.00033 | 0.681 | 0.025 | -0.190 | 0.00026 |
| $8\sigma_\eta$ | 0.638 | 0.065 | -0.193 | 0.00053 | 0.672 | 0.031 | -0.193 | 0.00032 | 0.681 | 0.027 | -0.194 | 0.00026 |
| $9\sigma_\eta$ | 0.632 | 0.071 | -0.198 | 0.00054 | 0.673 | 0.029 | -0.198 | 0.00034 | 0.681 | 0.025 | -0.198 | 0.00027 |
| $10\sigma_\eta$ | 0.638 | 0.066 | -0.201 | 0.00055 | 0.672 | 0.032 | -0.201 | 0.00034 | 0.681 | 0.027 | -0.201 | 0.00027 |

# APPENDIX D: DATA DESCRIPTION

In this appendix, we provide additional details about the properties of our dataset. We highlight five aspects of the data. First, our data are dominated by "online-only" sellers. Second, most price quotes are supplied by large stores. Third, we describe the business model of the price comparison platform. Fourth, we discuss how we validate the quality of our data. Fifth, we clarify criteria for selecting product categories.

**Types of sellers:** Appendix Table D1 presents shares for three types of sellers: online-offline sellers (e.g., Walmart, Dell); online-only sellers (e.g., Amazon.com); and marketplace sellers (e.g., Amazon marketplace or Ebay). To classify the sellers into these groups, we *manually* examined every store in the list of stores in our sample and determined into which group each store belongs. In some cases, we could not establish the nature of the sellers because they were merged with other sellers, or they exited the market. Most likely, not-classified type sellers are marketplace-type, but we cannot confirm this. Appendix Figure D1 shows the dynamics of the shares.

The dominant seller type is online-only, and the share of online-only sellers has been increasing over time with the rise of Amazon and similar sellers (see Figure 1 below). Online-offline sellers are common in Canada but less so in the U.S., and marketplace-type sellers have only a modest share in our sample.

The low share of marketplace sellers reflects the fact that we filter out observations that sell goods that are refurbished or used. We exclude used/refurbished goods because then the issues of quality comparison become acute, and we may be comparing "apples" and "oranges". Many marketplace sellers (esp. on eBay) sell used goods, and so they get excluded. We also filter out observations that i) do not provide price quote on the price comparison website and instead post "see website" or ii) specify that the good is not currently available (e.g., out of stock or needs a pre-order). Finally, we filter out price spells with less than four observations because we use pricings moments such as the frequency of price changes, and four observations is the minimum to calculate such statistics. Again, this filter removes many marketplace sellers because they often appear only for one week or a few weeks.

**Size distribution:** Online retail has many stores that sell only a handful of goods; however, the market is dominated by large stores. The top 5 percent of sellers by size account for 90 percent of price quotes in our data (see Figure 2 for the distribution). This outsized importance of large sellers is also evident in other data for e-commerce. For example, Gorodnichenko, Sheremirov and Talavera (2014) use a representative sample of goods listed on a leading PCW/shopping platform (these data are not scraped; the dataset is provided by the platform directly and thus the quality of the data is extremely high) and document that large online stores (sell more than 100 goods) account for 80 percent of clicks (a proxy for quantities sold) in the U.S. and U.K. Thus, the focus on large sellers may be desirable as it covers price quotes that are most relevant for consumers.

**Business model:** To provide a sense of where price comparison websites stand relative to each other, we use reports compiled by CPC Strategy, an e-commerce consultancy and market research firm. The time series shown in Appendix Figure D3 document that Google Shopping had no cost of listing or per click until 2012. In contrast, our price comparison website (one of the listed platforms) and other main competitors were charging a fee per click consistently in our sample period so that the quality of price quotes was likely to be higher than the quality on Google Shopping. Indeed, incorrect/missing listings not only fail to bring revenue to a seller but also have a direct cost to the seller. Our price comparison website consistently charged between $0.35 and $1.15 per click depending on the product category (the website does not charge per listing during the sample period). Thus, there is great pressure to list only current, competitive prices on the price comparison website. In our sample period, the platform did not charge regular customers (that is, merchants with an e-commerce website) per listing. To serve small-scale sellers, our shopping

platform introduced a "storefront" program to target marketplace-type customers. Sellers in this program pay no listing fee for the first 100 products listed and a $0.25 service fee on all items afterward. In addition to the listing fee, sellers in this program pay a commission of $1.50 + 9% of the purchase price.

Appendix Figure D4 documents that while Google Shopping is the dominant platform now, other platforms continue to generate significant revenue and traffic. Their conversation rates are somewhat lower than Google's, but the magnitudes are quite close.

**Validation:** To validate the quality of our data, we group categories of goods in our sample of quotes from the price comparison website (PCW) to match category-level consumer price indices (CPI) constructed by the Bureau of Labor Statistics (BLS). Specifically, we make the following groupings:

- *Television* uses CPI sub-index "RA01 Televisions" for the BLS series and covers the following categories on PCW: Plasma/LCD TV.
- *Photographic equipment* uses CPI sub-index "R18 Cameras or other photographic equipment, excluding film" for the BLS series and covers the following categories on PCW: SLR lenses, 35mm SLR lens accessories, camcorders, camcorder accessories, camcorder batteries power, digital cameras, dedicated flashes, tripods, bags/cases.
- *Computer and periphery* uses CPI sub-index "EE01 Personal computers and peripheral equipment" for the BLS series and covers the following categories on PCW: desktop, hard drives, hubs, keyboards, laptops, laptop memory, modems, motherboards, network adapters, power supplies, processors-retail-box, scanners, UPSs, webcams.
- *Software* uses CPI sub-index "EE02 Computer software and accessories" for the BLS series and covers the following categories on PCW: anti-virus software, database management software, engineering/home design software, financial/legal software, flash memory, graphics/publishing software, miscellaneous programming software, office suites software, security software, storage media, system utilities, windows operating system, computer games.
- *Calculators* uses CPI sub-index "E15 Calculators, typewriters, or other information-processing equipment" for the BLS series and covers the following categories on PCW: calculators.
- *Audio equipment* uses CPI sub-index "RA051 Audio Components, Radios, Tape Recorders/Players, and Other Equipment" for the BLS series and covers the following categories on PCW: headphones, microphones-headsets, mp3-players, speakers.

Appendix Figure D5 shows that price indices constructed on our data follow price indices published by the BLS closely. Thus, while there are certainly potential errors in our data and some moments may be affected, results based on aggregate moments of the data (e.g., pass-through) are unlikely to be materially affected by such errors.

**Selection of goods and categories:** We used the following criteria to choose categories in 2008 when we started the project. First, the four main categories of goods in our sample were the most popular ones at the time. According to the estimates of the U.S. Census Bureau[1], 30% of revenue in e-commerce retail in 2008-2009 was generated by categories we cover (computer hardware, computer software, electronics and appliances, office equipment, and supplies). Second, we wanted to cover goods where having sellers in the U.S. and Canada was common. For some categories such as clothes, furniture, etc., it is a tangible restriction because many of these goods are local (e.g., flip-flops for Californians) and are branded or sold exclusively in one country. Third, we had

[1] http://www.census.gov/econ/estats/2013/all2013tables.html, Historical Table 5.

to select categories where goods have an identifier akin to the universal product code (UPC) because we need to link goods over time and across countries. For some categories (e.g., furniture, toys, food), this restriction was a barrier in earlier years because the coding was missing or not sufficiently detailed to ensure that good ID is unique. For example, a bed may have MPN (manufacturer product number) of "613", but this number can be used for other goods by another manufacturer. Fourth, we did not want to cover books, CDs, and DVDs because these goods are unusual in many respects: the market is dominated by Amazon, and prices tend to be extremely sticky.

As of 2008, our platform had fewer categories than it has now. The platform shifted some subcategories over time. To ensure consistency of our data, we collected the same set of product categories as we had in 2008.

While the selection of categories is not random, we believe it represents a large fraction of retail e-commerce. As we already mentioned, these goods accounted for a third of retail e-commerce in 2008-2009. The share declined to 20% in 2013 as other categories of good penetrated e-commerce. Gorodnichenko, Sheremirov, and Talavera (2014) also document that these goods are very popular in terms of the number of goods sold and the number of clicks.

As we discuss in the paper, we apply several filters to improve the quality of the data used in estimation of pass-through and the speed of price adjustment. The distribution of pricing moments is similar across the full and estimation samples (Appendix Table D3). We also find that the distribution of prices for goods selected into the estimation sample is similar to the distribution of prices for the full sample (Appendix Figure D6). Thus, draws into the estimation sample appear to be distributed in a balanced fashion.

**Appendix Table D1. Composition of stores.**

| Seller type | Canada | USA | Pooled |
|---|---|---|---|
| Offline-online | 11.53 | 3.21 | 7.00 |
| Online only | 78.05 | 76.21 | 77.05 |
| Marketplace | - | 1.52 | 0.83 |
| Not classified | 10.42 | 19.06 | 15.13 |
| Total | 100.00 | 100.00 | 100.00 |

**Appendix Table D2. Largest sellers in the sample.**

| | U.S. | | Canada | |
|---|---|---|---|---|
| | Name | Goods/week | Name | Goods/week |
| 1 | TheNerds.net | 5,754 | Agile Electronics | 22,698 |
| 2 | Rakuten.com | 5,595 | PC-Canada | 7,053 |
| 3 | NextWarehouse.com | 5,208 | Cendirect.com | 5,612 |
| 4 | SeaBoom.com | 4,429 | OnHop | 5,317 |
| 5 | TechLoops.com | 4,218 | Mostly Digital | 5,131 |
| 6 | CompSource Inc. | 3,018 | FrontierPC.com | 4,656 |
| 7 | LACC.com | 3,016 | Ashlin.ca | 4,426 |
| 8 | ValleySeek Store | 3,012 | DirectDial Canada | 3,888 |
| 9 | PROVANTAGE | 2,657 | Computer Valley | 3,632 |
| 10 | TigerDirect | 1,903 | Comtron | 3,457 |
| 11 | TechOnWeb.com | 1,900 | B&H Photo Video | 3,267 |
| 12 | Dell | 1,730 | Newegg.ca | 2,916 |
| 13 | PCNation.com | 1,636 | Can Leaf Mart | 2,641 |
| 14 | PC Connection | 1,555 | 100DIRECT | 2,638 |
| 15 | Datavision | 1,443 | Shark Systems | 2,538 |
| 16 | TheTwisterGroup.com | 1,392 | TigerDirect.ca | 2,375 |
| 17 | HardwareNation.com | 1,184 | Dell E&A | 1,497 |
| 18 | Amazon.com | 1,026 | Amazon.ca | 1,287 |
| 19 | CtiStore | 920 | Canada Computers | 1,027 |
| 20 | CompUSA | 793 | Expansys CA | 970 |
| 21 | CostCentral.com | 782 | SoftwareMedia | 876 |
| 22 | B&H Photo-Video | 744 | newoemtoners.com | 752 |
| 23 | Mwave.com | 712 | beDirecT | 717 |
| 24 | iUnitek | 710 | PCCZone | 700 |
| 25 | Kingston | 683 | SIG Electronics | 682 |
| 26 | Memory4Less.com | 631 | LuComputers | 633 |
| 27 | pcRUSH.com | 581 | IT Yuda | 278 |
| 28 | J&R | 568 | iBuyOfficeSupply.ca | 273 |
| 29 | Newegg.com | 555 | Computer Systems Centre | 239 |
| 30 | California Computer | 548 | SonicElectronix | 198 |
| 31 | SoftwareMedia.com | 538 | Dytronix | 163 |
| 32 | ServerSupply.com | 516 | Dell.ca | 160 |
| 33 | Amazon.com Marketplace | 498 | BuyOnlineNow.ca | 143 |
| 34 | Unistorage | 410 | Scionex Systems | 140 |
| 35 | Directron | 400 | Lenovo | 137 |
| 36 | VioSoftware.com | 392 | RoyalDiscount | 132 |
| 37 | Gemini Computers | 390 | Canon Canada | 127 |
| 38 | CDW.com | 367 | KooyaComputers.ca | 111 |
| 39 | OutletPC.com | 347 | MDG Computers Canada Inc. | 91 |
| 40 | Compuvest | 337 | ITFactory.ca | 91 |

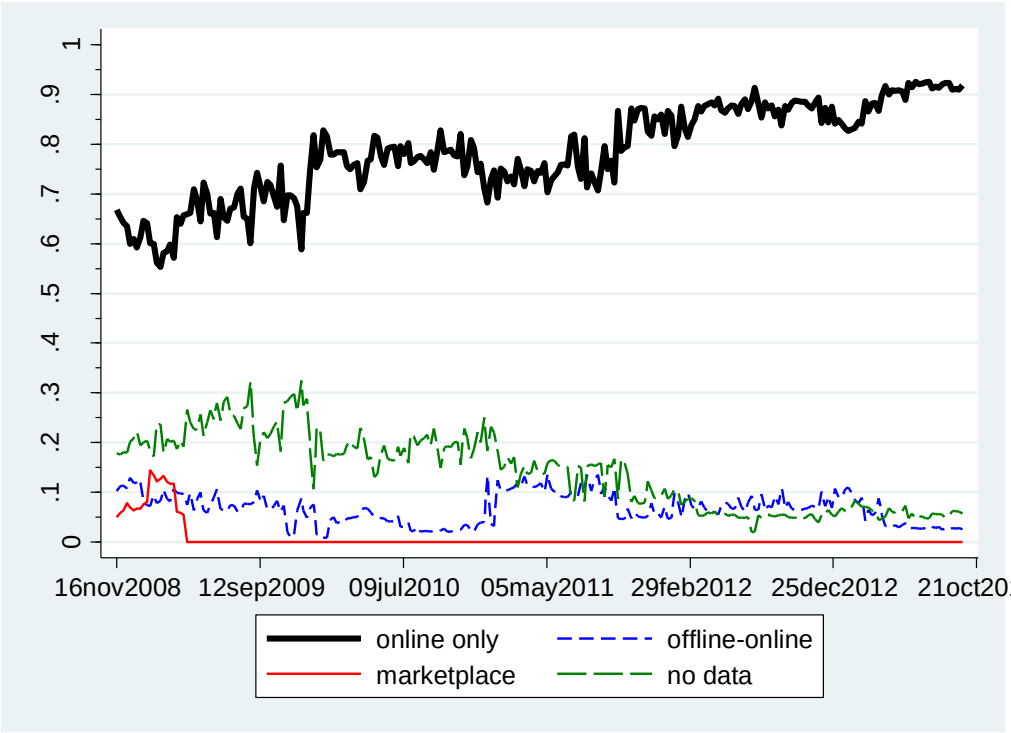
Notes: The table provide median (across weeks) number of goods by seller for largest sellers on the price comparison website.

**Appendix Table D3. Pricing moments for the full and estimation sample.**

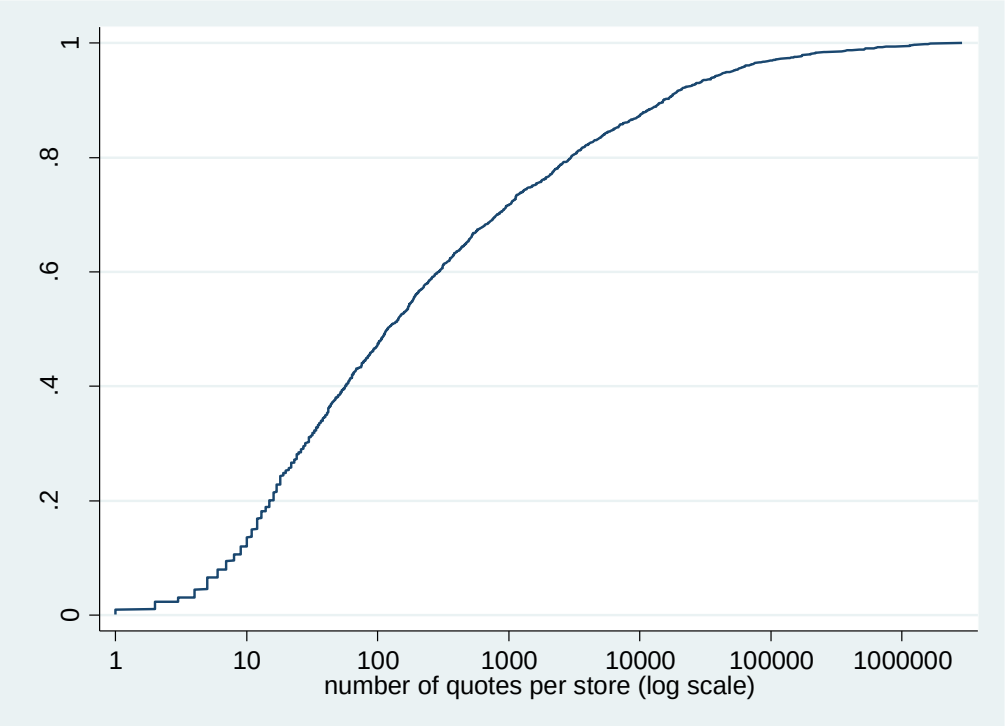
| Moment | U.S.A. | | Canada | |
|---|---|---|---|---|
| | Estimation sample | Full sample | Estimation sample | Full sample |
| | (1) | (2) | (3) | (4) |
| Mean price | 5.30 | 5.20 | 5.21 | 5.14 |
| Average cross-sectional st.dev. log price | 0.16 | 0.16 | 0.12 | 0.12 |
| Average freq. of price changes | 0.22 | 0.23 | 0.38 | 0.39 |
| Average absolute size of price change | 0.07 | 0.06 | 0.05 | 0.05 |
| Average turnover of sellers | 0.90 | 0.90 | 0.91 | 0.89 |
| Average seller rating | 4.46 | 4.47 | 4.30 | 4.28 |
| Number of sellers | 5.40 | 5.84 | 3.29 | 4.02 |

Notes: The table reports pricing moments for the full sample and the estimation sample (i.e., data after applying filters).

**Appendix Figure D1. Dynamics of the types of sellers.**



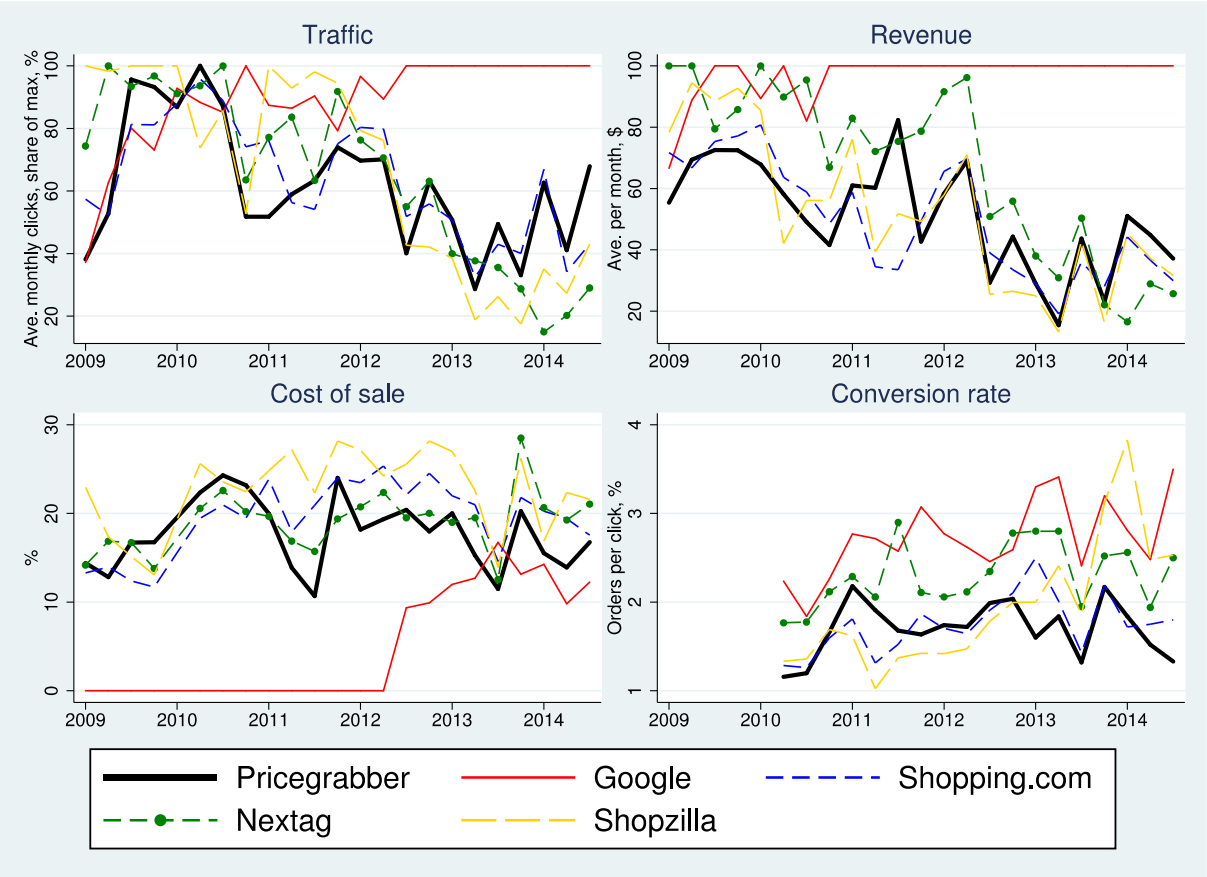

**Appendix Figure D2. Distribution of quotes by store size.**



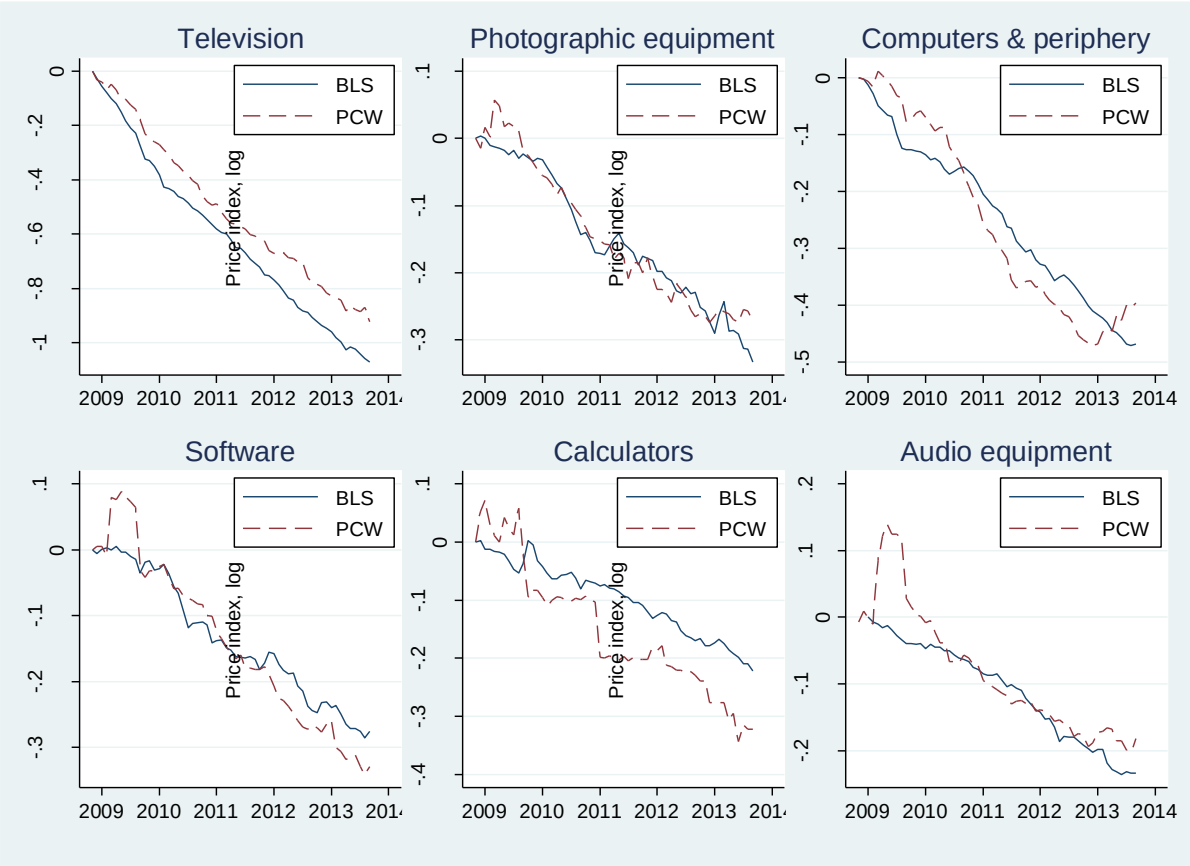

Notes: The figure shows cumulative distribution for the number of price quotes by store size, which is measures the number of quotes per store. The horizontal axis is on log scale.

**Appendix Figure D3. Cost of sales by price comparison website.**


**Appendix Figure D4. Comparison of price comparison websites**

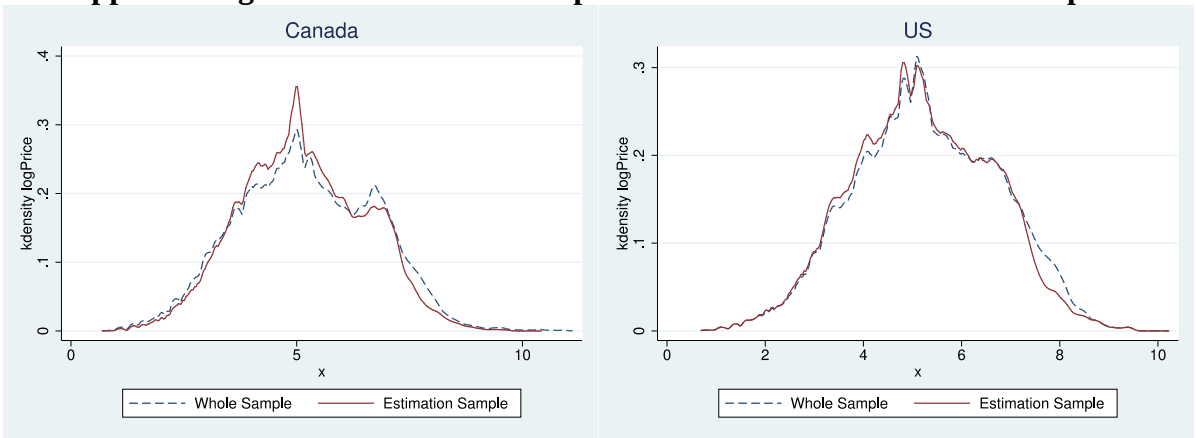


**Appendix Figure D5. Cost of sales by price comparison website.**




Notes: The figure plots time series of (log) price indices for selected categories of goods. The blue, solid line shows series from the Consumer Price Index (CPI) by Bureau of Labor Statistics (BLS). The red, dashed line show series constructed from price quotes on the price comparison website (PCW). Each series is normalized to zero at the start of the sample.

**Appendix Figure D6. Distribution of prices in the full and estimation samples.**




Notes: The figures show kernel densities for the distribution of prices (Epanechnikov kernel with optimal width). Log price is on the horizontal axis.

# APPENDIX E: APPLE PRODUCTS

In a prominent study, Cavallo et al. (2014) examine properties of online prices for four major sellers. While three sellers are in fashion/clothing industry, one of the sellers is Apple, which has a coverage of goods similar to what we have in our data. Cavallo et al. (2014) scrape price quotes directly from the websites of the manufacturers (in contrast, we scrape price quotes from a price comparison website). Recently, Cavallo et al. (2014) made their data publicly available. Fortunately, their dataset has a description of products so that we can merge the two datasets and, hence, shed additional light on properties of online prices and reconcile some differences in the results. First, we use this alternative source of information from Cavallo et al. to validate the quality of our data. Second, we explore differences (if any) in the behaviour of prices of "generic" and "branded" goods.

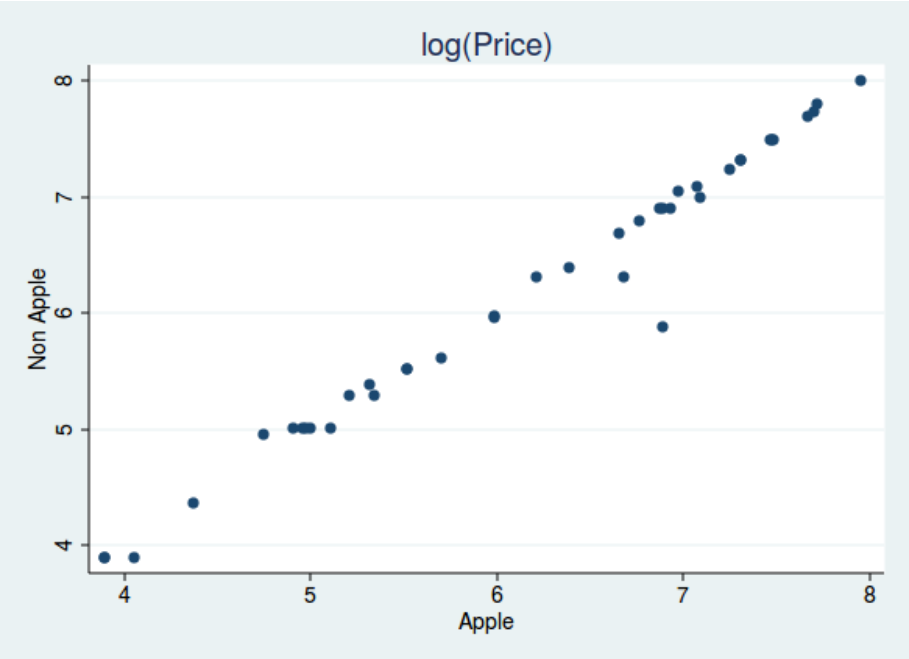
Using the description of goods and manufacture product numbers (MPNs), we identify exact matches in the Cavallo et al. data and our data. For example, MPN "MA623" and other information indicate that the product is "Apple iPod touch". Likewise, MPN "M9179L" and other information indicate that the product is "Cinema HD Display LCD Monitor, M9179". We matched 40 products exactly. The types of goods matched across the two dataset is fairly broad and ranges from iPods to monitors to iMacs to batteries. For each matched pair, we calculate the average price over the period where our data overlap with the Cavallo et al. data. Appendix Figure E1 shows that the correlation between the level of prices across the datasets is extremely high ($\rho = 0.98$). Because price data are consistent across the two datasets, we conclude that the quality of our data is reasonably high.

While the average prices are very similar across goods, the dynamics of price adjustment is different. Prices on Apple store tend to be much more inflexible than prices on the price comparison website. Appendix Figure E2 plots price paths for Mac Mini Core i7 2.0GHz (MPN MC936) sold on Apple store and via the price comparison website. The price on the Apple store website was fixed for over a year (from mid 2011 to mid 2012), while price quotes on the price comparison website had a series of price cuts so that the duration of price spells is considerably shorter in our data than in the price data scraped from the Apple store website. However, even these more flexible prices are fairly rigid when compared to similar but "generic" products.

Using data from the price comparison website, we calculate basic pricing moments for identified Apple products and non-Apple products sold in the same product category. For example, prices for Apple's iPods are compared to prices of other MP3 players. Appendix Table E1 documents that Apple prices tend to be stickier, have fewer sales, and show much less cross-sectional price dispersion. As a result, one may expect that adjustment of prices may be more incomplete and sluggish for Apple product than for non-Apple products.

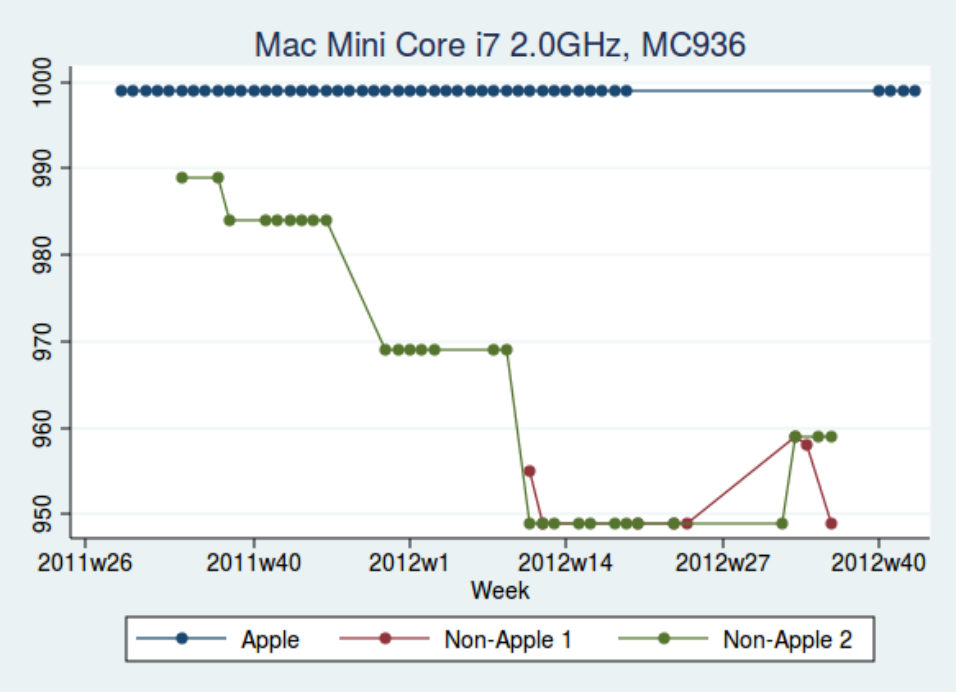
This conjecture is confirmed in Appendix Table E2. The estimated pass-through for Apple products is close to 0.2, while the non-Apple counterpart is between 0.7 and 0.8. Likewise, the speed of price adjustment is smaller for Apple products than for non-Apple products, although the difference is not as large as one observes for pass-through. We conclude that differences between results in Cavallo et al. (2014) and our results are likely to arise from differences in the coverage of goods (specifically, "branded" vs "generic") and our focus on online-only sellers (rather than on online-offline sellers).

**Appendix Figure E1. Comparison of average prices in Cavallo et al. (2014) and price comparison website.**




Notes: The horizontal axis shows the average price on the Apple store. The vertical axis shows the average price on the price comparison website. Each point corresponds to a unique product manufactured by Apple.

**Appendix Figure E2. Price paths for a selected product**




Notes: The figure plots time series of prices for Apple's Mac Mini Core i7 2.0Ghz (MPN MC936). Prices are scraped from Apple store and from a price comparison website. The horizontal axis shows calendar time (weeks). The vertical axis shows the price in US dollars.

## Appendix Table E1. Selected pricing moments for Apple and non-Apple products

| | Non-Apple products | | Apple products | |
|---|---|---|---|---|
| | mean | st.dev. | mean | st.dev. |
| Price changes | | | | |
| Frequency, per week | 0.341 | (0.143) | 0.147 | (0.100) |
| Median abs. size | 0.057 | (0.043) | 0.065 | (0.068) |
| Sales | | | | |
| Frequency | 0.028 | (0.032) | 0.008 | (0.018) |
| Mean abs. size | 0.045 | (0.066) | 0.066 | (0.066) |
| Cross-sectional distribution of prices | | | | |
| St.dev. log(Price) | 0.061 | (0.072) | 0.029 | (0.050) |
| IQR log(Price) | 0.078 | (0.120) | 0.036 | (0.089) |
| Number of goods | 8,692 | | 117 | |

Notes: moments are calculated on data from the price comparison website.

## Appendix Table E2. Price adjustment for Apple and non-Apple products.

| | Non-Apple products | | | Apple products | | |
|---|---|---|---|---|---|---|
| | No Fixed effects | Type Fixed effects | Good Fixed effects | No Fixed effects | Type Fixed effects | Good Fixed effects |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| **Panel A: Pass-through** | | | | | | |
| Mean Price | 0.778 | 0.775 | 0.722 | 0.277 | 0.243 | 0.223 |
| | (0.052) | (0.051) | (0.047) | (0.111) | (0.124) | (0.061) |
| Median Price | 0.791 | 0.788 | 0.727 | 0.274 | 0.233 | 0.187 |
| | (0.055) | (0.053) | (0.049) | (0.106) | (0.119) | (0.066) |
| Minimum Price | 0.777 | 0.774 | 0.609 | 0.334 | 0.290 | 0.353 |
| | (0.042) | (0.038) | (0.038) | (0.119) | (0.146) | (0.073) |
| N obs | 314,076 | | | 2,462 | | |
| **Panel B: Speed of Adjustment** | | | | | | |
| Mean Price | -0.066 | -0.066 | -0.179 | -0.089 | -0.091 | -0.185 |
| | (0.004) | (0.004) | (0.008) | (0.020) | (0.020) | (0.046) |
| Median Price | -0.074 | -0.074 | -0.187 | -0.090 | -0.091 | -0.192 |
| | (0.004) | (0.004) | (0.007) | (0.020) | (0.020) | (0.045) |
| Minimum Price | -0.056 | -0.057 | -0.177 | -0.107 | -0.109 | -0.234 |
| | (0.004) | (0.004) | (0.006) | (0.029) | (0.029) | (0.051) |
| N obs | 236,561 | | | 1,789 | | |

Notes: *Non-Apple products* includes only goods in the categories where *Apple products* are present (desktops, flat panel LCD monitors, hard-drives, laptops, mp3 players). Panel A reports the estimated pass-through, $\alpha$ in specification (1). Panel B reports the estimated speed of adjustment, $\beta$ in specification (2). Driscoll and Kraay (1998) standard errors are in parentheses. See the note for Table 4 for more details.

# APPENDIX F: ADDITIONAL TABLES

**Appendix Table F1. Descriptive statistics for gross prices that include taxes and shipping costs.**

| | Mean | St.Dev. | Median | P25 | P75 | N |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| **Panel A: Mean prices** | | | | | | |
| Relative exchange rate | 0.067 | 0.190 | 0.051 | -0.027 | 0.144 | 996,033 |
| Real exchange rate | 0.067 | 0.191 | 0.053 | -0.026 | 0.147 | 996,033 |
| **Panel B: Median prices** | | | | | | |
| Relative exchange rate | 0.071 | 0.191 | 0.054 | -0.022 | 0.147 | 996,125 |
| Real exchange rate | 0.072 | 0.192 | 0.056 | -0.021 | 0.151 | 996,125 |
| **Panel C: Minimum prices** | | | | | | |
| Relative exchange rate | 0.117 | 0.243 | 0.082 | -0.008 | 0.230 | 996,146 |
| Real exchange rate | 0.118 | 0.243 | 0.082 | -0.008 | 0.231 | 996,146 |

Notes: Relative exchange rate is calculated as $\log(P_{it}^{CA}/P_{it}^{US})$ where *i* and *t* index goods and weeks, respectively, $P^{CA}$ is the price in Canada, and $P^{US}$ is the price in the U.S. The real exchange rate is calculated as $\log\left(EX_t{}^{-1} \times P_{it}^{CA}/P_{it}^{US}\right)$ where $EX_t$ is the nominal CAD/USD exchange rate. P25 and P75 in columns (4) and (5) show 25$^{th}$ and 75$^{th}$ percentile of the statistics indicated in the first column. The sample of goods is the same as in Table 2. See text for further details.

## Appendix Table F2. Pass-through and the speed of price adjustment for gross and net prices.

| | Panel A: Pass-through | | | |
|---|---|---|---|---|
| | Gross Prices | | Net Prices | |
| | Good Fixed effects | N | Good Fixed effects | N |
| | (1) | (2) | (3) | (4) |
| Mean Price | 0.195 | 996,033 | 0.227 | 996,056 |
| | (0.097) | | (0.105) | |
| Median Price | 0.200 | 996,125 | 0.240 | 996,038 |
| | (0.086) | | (0.094) | |
| Minimum Price | 0.249 | 996,146 | 0.276 | 996,165 |
| | (0.113) | | (0.102) | |

| | Panel B: Speed of Adjustment | | | |
|---|---|---|---|---|
| | Gross Prices | | Net Prices | |
| | Good Fixed effects | N | Good Fixed effects | N |
| | (1) | (2) | (3) | (4) |
| Mean Price | -0.270 | 815,279 | -0.258 | 815,519 |
| | (0.018) | | (0.017) | |
| Median Price | -0.290 | 814,640 | -0.278 | 814,567 |
| | (0.017) | | (0.016) | |
| Minimum Price | -0.305 | 813,822 | -0.292 | 814,399 |
| | (0.023) | | (0.021) | |

Notes: The table presents estimates of pass-through and the speed of price adjustment for gross prices (net price + shipping/handling costs) in column (1). The specification reported in the table corresponds to column (3) in Table 4. Column (3) presents results for net prices where the estimation sample of goods is identical to the sample in column (1). All data are at weekly frequency. Driscoll and Kraay (1998) standard errors are in parentheses.

## Appendix Table F3. Pass-through and the speed of price adjustment for gross and net prices, monthly frequency.

| | Panel A: Pass-through | | | |
|---|---|---|---|---|
| | Gross Prices | | Net Prices | |
| | Good Fixed effects | N | Good Fixed effects | N |
| | (1) | (2) | (3) | (4) |
| Mean Price | 0.386 | 277,914 | 0.419 | 277,921 |
| | (0.140) | | (0.148) | |
| Median Price | 0.390 | 277,916 | 0.429 | 277,915 |
| | (0.127) | | (0.137) | |
| Minimum Price | 0.637 | 277,936 | 0.652 | 277,923 |
| | (0.196) | | (0.186) | |

| | Panel B: Speed of Adjustment | | | |
|---|---|---|---|---|
| | Gross Prices | | Net Prices | |
| | Good Fixed effects | N | Good Fixed effects | N |
| | (1) | (2) | (3) | (4) |
| Mean Price | -0.389 | 219,989 | -0.376 | 220,091 |
| | (0.034) | | (0.033) | |
| Median Price | -0.429 | 219,909 | -0.416 | 219,929 |
| | (0.034) | | (0.033) | |
| Minimum Price | -0.446 | 219,501 | -0.438 | 219,503 |
| | (0.044) | | (0.043) | |

Notes: The table replicates results of Appendx Table F2 on data aggregated to monthly frequency (instead of weekly). See notes to Appendix Table F2 for more details.

## Appendix Table F4. Pass-through and the speed of price adjustment, net prices, monthly frequency.

| | No Fixed effects | Type Fixed effects | Good Fixed effects | N |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| **Panel A: Pass-through** | | | | |
| Mean Price | 0.894 | 0.791 | 0.723 | 486,456 |
| | (0.150) | (0.132) | (0.116) | |
| Median Price | 0.869 | 0.767 | 0.707 | 486,461 |
| | (0.151) | (0.135) | (0.123) | |
| Minimum Price | 0.762 | 0.672 | 0.648 | 486,475 |
| | (0.087) | (0.062) | (0.055) | |
| **Panel B: Speed of Adjustment** | | | | |
| Mean Price | -0.099 | -0.111 | -0.264 | 390,145 |
| | (0.011) | (0.011) | (0.013) | |
| Median Price | -0.115 | -0.128 | -0.288 | 389,967 |
| | (0.011) | (0.011) | (0.015) | |
| Minimum Price | -0.114 | -0.130 | -0.292 | 389,506 |
| | (0.008) | (0.008) | (0.017) | |

Notes: The table replicates the results of **Error! Reference source not found.** on data aggregated to monthly frequency (instead of weekly). See notes to Table 4 for more details.

## Appendix Table F5. Pass-through and the speed of price adjustment, large stores (top 10 percent).

| | No Fixed effects | Type Fixed effects | Good Fixed effects | N |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| **Panel A: Pass-through** | | | | |
| Mean Price | 0.989 | 0.829 | 0.712 | 1,406,723 |
| | (0.096) | (0.082) | (0.074) | |
| Median Price | 0.953 | 0.787 | 0.682 | 1,406,756 |
| | (0.099) | (0.085) | (0.079) | |
| Minimum Price | 0.870 | 0.660 | 0.588 | 1,406,814 |
| | (0.072) | (0.045) | (0.041) | |
| **Panel B: Speed of Adjustment** | | | | |
| Mean Price | -0.077 | -0.087 | -0.191 | 1,079,612 |
| | (0.005) | (0.006) | (0.011) | |
| Median Price | -0.085 | -0.095 | -0.203 | 1,079,471 |
| | (0.005) | (0.005) | (0.010) | |
| Minimum Price | -0.083 | -0.092 | -0.195 | 1,079,293 |
| | (0.006) | (0.006) | (0.010) | |

Notes: The table replicates the results of **Error! Reference source not found.** on data constrained to stores with the largest number of goods per store (top 10 percent). See notes to **Error! Reference source not found.** for more details.

## Appendix Table F6. Pass-through and the speed of price adjustment by type of store.

| | Online-only stores | | | Online-offline stores | | |
|---|---|---|---|---|---|---|
| | No Fixed effects | Type Fixed effects | Good Fixed effects | No Fixed effects | Type Fixed effects | Good Fixed effects |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Mean Price | 0.769 | 0.662 | 0.594 | 0.949 | 0.900 | 0.853 |
| | (0.091) | (0.086) | (0.080) | (0.084) | (0.051) | (0.044) |
| Median Price | 0.793 | 0.684 | 0.624 | 0.956 | 0.908 | 0.863 |
| | (0.093) | (0.087) | (0.083) | (0.084) | (0.051) | (0.044) |
| Minimum Price | 0.608 | 0.474 | 0.441 | 1.075 | 1.022 | 0.977 |
| | (0.071) | (0.061) | (0.058) | (0.077) | (0.052) | (0.050) |
| N obs | | 1,566,189 | | | 48,320 | |
| Mean Price | -0.056 | -0.063 | -0.147 | -0.034 | -0.050 | -0.163 |
| | (0.004) | (0.005) | (0.006) | (0.010) | (0.011) | (0.020) |
| Median Price | -0.064 | -0.072 | -0.160 | -0.035 | -0.051 | -0.167 |
| | (0.004) | (0.004) | (0.006) | (0.010) | (0.011) | (0.021) |
| Minimum Price | -0.059 | -0.068 | -0.152 | -0.060 | -0.084 | -0.246 |
| | (0.004) | (0.004) | (0.005) | (0.017) | (0.019) | (0.039) |
| N obs | | 1,228,732 | | | 15,267 | |

Notes: The table replicates the results of **Error! Reference source not found.** on data constrained to stores that sell only online (columns 1-3) and that sell both online and offline (columns 4-6). See notes to **Error! Reference source not found.** for more details.

## Appendix Table F7. Pass-through and the speed of price adjustment, regular prices.

| | No Fixed effects | Type Fixed effects | Good Fixed effects | N |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| **Panel A: Pass-through** | | | | |
| Mean Price | 0.887 | 0.751 | 0.663 | 1,725,138 |
| | (0.103) | (0.092) | (0.083) | |
| Median Price | 0.872 | 0.738 | 0.658 | 1,725,184 |
| | (0.104) | (0.093) | (0.087) | |
| Minimum Price | 0.793 | 0.661 | 0.618 | 1,725,211 |
| | (0.067) | (0.047) | (0.044) | |
| **Panel B: Speed of Adjustment** | | | | |
| Mean Price | -0.064 | -0.072 | -0.155 | 1,386,187 |
| | (0.004) | (0.004) | (0.008) | |
| Median Price | -0.074 | -0.083 | -0.171 | 1,385,728 |
| | (0.004) | (0.004) | (0.008) | |
| Minimum Price | -0.070 | -0.078 | -0.161 | 1,385,782 |
| | (0.003) | (0.003) | (0.007) | |

Notes: The table replicates the results of **Error! Reference source not found.** on regular prices that exclude sales. Sales are identified with filters as in Nakamura and Steinsson (2008). See notes to **Error! Reference source not found.** for more details.

# APPENDIX G: DESCRIPTIVE STATISTICS BY PRODUCT CATEGORY

**Appendix Table G1. Descriptive statistics for standard deviation log(Price).**

| Category | Canada | | | US | | |
|---|---|---|---|---|---|---|
| | Mean | SD | N | Mean | SD | N |
| 35mm SLR lens accessories | 0.184 | 0.111 | 21 | 0.103 | 0.059 | 21 |
| AV accessories | 0.110 | 0.051 | 2,838 | 0.207 | 0.060 | 2,726 |
| Antivirus software | 0.187 | 0.095 | 20 | 0.183 | 0.139 | 20 |
| Audio cables | 0.275 | 0.178 | 100 | 0.364 | 0.189 | 100 |
| Audio video utilities | 0.149 | 0.114 | 73 | 0.094 | 0.062 | 72 |
| Bags cases | 0.158 | 0.091 | 91 | 0.147 | 0.129 | 82 |
| Binoculars | 0.256 | 0.116 | 35 | 0.169 | 0.098 | 34 |
| Calculators | 0.163 | 0.113 | 61 | 0.167 | 0.095 | 61 |
| Camcorder accessories | 0.220 | 0.122 | 24 | 0.130 | 0.073 | 24 |
| Camcorder batteries power | 0.282 | 0.154 | 25 | 0.193 | 0.128 | 25 |
| Camcorders | 0.125 | 0.090 | 227 | 0.087 | 0.054 | 225 |
| Cases | 0.106 | 0.068 | 344 | 0.135 | 0.066 | 340 |
| Cash registers pos equipment | 0.085 | 0.052 | 214 | 0.087 | 0.082 | 212 |
| Computer games | 0.489 | 0.316 | 47 | 0.261 | 0.201 | 32 |
| Database management sofware | 0.116 | 0.054 | 56 | 0.057 | 0.070 | 56 |
| Dedicated flashes | 0.169 | 0.108 | 23 | 0.079 | 0.026 | 22 |
| Desktop computers | 0.047 | 0.023 | 497 | 0.047 | 0.019 | 487 |
| Digital cameras | 0.109 | 0.084 | 538 | 0.081 | 0.040 | 532 |
| Engineering and home design software | 0.187 | 0.163 | 9 | 0.103 | 0.063 | 8 |
| Financial and legal software | 0.218 | 0.263 | 10 | 0.177 | 0.172 | 9 |
| Flash memory | 0.180 | 0.093 | 966 | 0.249 | 0.144 | 949 |
| Flat panel and LCD monitors | 0.080 | 0.074 | 757 | 0.070 | 0.028 | 753 |
| GPS | 0.116 | 0.072 | 156 | 0.129 | 0.073 | 156 |
| Graphics and publishing software | 0.122 | 0.097 | 606 | 0.120 | 0.096 | 581 |
| Hard drives | 0.110 | 0.071 | 1,629 | 0.143 | 0.085 | 1,622 |
| Headphones | 0.200 | 0.135 | 263 | 0.203 | 0.180 | 258 |
| Hubs | 0.094 | 0.078 | 715 | 0.129 | 0.081 | 714 |
| Keyboards | 0.121 | 0.069 | 526 | 0.159 | 0.084 | 522 |
| Laptop memory | 0.145 | 0.071 | 2,422 | 0.174 | 0.112 | 2,378 |
| Laptops | 0.052 | 0.026 | 549 | 0.043 | 0.019 | 547 |
| Microphones and headsets | 0.162 | 0.071 | 73 | 0.215 | 0.137 | 73 |
| Miscellaneous programming software | 0.171 | 0.125 | 99 | 0.074 | 0.084 | 97 |
| Modems | 0.159 | 0.170 | 89 | 0.183 | 0.148 | 89 |
| Motherboards | 0.093 | 0.081 | 648 | 0.091 | 0.073 | 642 |
| Mp3 players | 0.143 | 0.089 | 131 | 0.139 | 0.104 | 128 |
| Network adapters | 0.121 | 0.119 | 240 | 0.217 | 0.158 | 240 |
| Office suites software | 0.187 | 0.129 | 76 | 0.143 | 0.121 | 72 |
| Plasma and LCD televisions | 0.108 | 0.068 | 164 | 0.088 | 0.034 | 158 |
| Portable device accessories | 0.195 | 0.127 | 262 | 0.237 | 0.173 | 248 |
| Power supplies | 0.101 | 0.065 | 423 | 0.124 | 0.070 | 417 |
| Processors in retail box | 0.063 | 0.049 | 520 | 0.129 | 0.087 | 516 |
| Projection screens | 0.166 | 0.037 | 3,402 | 0.185 | 0.044 | 3,401 |
| Projectors | 0.086 | 0.070 | 604 | 0.086 | 0.053 | 599 |
| SLR lenses | 0.096 | 0.055 | 180 | 0.067 | 0.041 | 178 |
| Scanners | 0.067 | 0.044 | 614 | 0.082 | 0.052 | 614 |
| Security software | 0.093 | 0.079 | 117 | 0.160 | 0.089 | 115 |
| Speakers | 0.133 | 0.085 | 166 | 0.154 | 0.094 | 163 |
| Storage media | 0.172 | 0.124 | 806 | 0.258 | 0.171 | 799 |
| System utilities software | 0.110 | 0.101 | 49 | 0.111 | 0.081 | 23 |
| TV accessories and mounts | 0.143 | 0.103 | 92 | 0.152 | 0.088 | 89 |
| Tripods | 0.202 | 0.077 | 33 | 0.113 | 0.079 | 29 |
| UPSS | 0.067 | 0.039 | 661 | 0.101 | 0.051 | 658 |
| Video cables | 0.232 | 0.145 | 677 | 0.348 | 0.194 | 673 |
| Webcams | 0.151 | 0.099 | 72 | 0.146 | 0.087 | 68 |
| Windows operating system software | 0.135 | 0.132 | 153 | 0.101 | 0.090 | 153 |

## Appendix Table G2. Descriptive statistics for median log(Price).

| Category | Canada | | | US | | |
|---|---|---|---|---|---|---|
| | Mean | SD | N | Mean | SD | N |
| 35mm SLR lens accessories | 4.742 | 0.841 | 21 | 4.555 | 0.958 | 21 |
| AV accessories | 5.571 | 1.067 | 2,838 | 5.557 | 1.101 | 2,838 |
| Antivirus software | 4.531 | 1.125 | 20 | 4.410 | 1.085 | 20 |
| Audio cables | 2.960 | 0.845 | 100 | 3.020 | 0.747 | 100 |
| Audio video utilities | 5.069 | 0.789 | 73 | 4.984 | 0.798 | 73 |
| Bags cases | 4.528 | 0.994 | 91 | 4.383 | 0.979 | 91 |
| Binoculars | 4.767 | 0.678 | 35 | 4.741 | 0.649 | 35 |
| Calculators | 3.677 | 0.968 | 61 | 3.324 | 0.986 | 61 |
| Camcorder accessories | 4.656 | 0.770 | 24 | 4.493 | 0.838 | 24 |
| Camcorder batteries power | 4.494 | 0.371 | 25 | 4.210 | 0.349 | 25 |
| Camcorders | 5.859 | 0.832 | 227 | 5.749 | 0.814 | 227 |
| Cases | 4.952 | 0.856 | 344 | 4.849 | 0.858 | 344 |
| Cash registers pos equipment | 5.182 | 0.682 | 214 | 5.161 | 0.674 | 214 |
| Computer games | 2.930 | 0.801 | 47 | 2.688 | 1.058 | 47 |
| Database management sofware | 6.811 | 1.706 | 56 | 6.672 | 1.720 | 56 |
| Dedicated flashes | 5.546 | 0.723 | 23 | 5.388 | 0.675 | 23 |
| Desktop computers | 6.802 | 0.524 | 497 | 6.712 | 0.492 | 497 |
| Digital cameras | 5.503 | 0.674 | 538 | 5.385 | 0.659 | 538 |
| Engineering and home design software | 5.405 | 1.461 | 9 | 5.436 | 1.307 | 9 |
| Financial and legal software | 5.174 | 1.048 | 10 | 5.034 | 1.041 | 10 |
| Flash memory | 3.677 | 0.873 | 966 | 3.643 | 0.835 | 966 |
| Flat panel and LCD monitors | 5.974 | 0.839 | 757 | 5.887 | 0.832 | 757 |
| GPS | 5.386 | 0.623 | 156 | 5.266 | 0.644 | 156 |
| Graphics and publishing software | 5.903 | 1.017 | 606 | 5.802 | 0.981 | 606 |
| Hard drives | 5.223 | 0.749 | 1,629 | 5.147 | 0.685 | 1,629 |
| Headphones | 4.054 | 0.964 | 263 | 3.791 | 1.067 | 263 |
| Hubs | 6.357 | 1.697 | 715 | 6.236 | 1.678 | 715 |
| Keyboards | 4.173 | 0.698 | 526 | 4.087 | 0.697 | 526 |
| Laptop memory | 4.481 | 0.900 | 2,422 | 4.366 | 0.845 | 2,422 |
| Laptops | 6.803 | 0.617 | 549 | 6.729 | 0.581 | 549 |
| Microphones and headsets | 3.908 | 0.885 | 73 | 3.724 | 0.887 | 73 |
| Miscellaneous programming software | 7.027 | 1.154 | 99 | 6.826 | 1.167 | 99 |
| Modems | 4.198 | 1.319 | 89 | 4.160 | 1.223 | 89 |
| Motherboards | 5.163 | 0.671 | 648 | 5.106 | 0.677 | 648 |
| Mp3 players | 4.402 | 0.769 | 131 | 4.363 | 0.756 | 131 |
| Network adapters | 5.045 | 1.302 | 240 | 4.892 | 1.244 | 240 |
| Office suites software | 5.450 | 0.640 | 76 | 5.262 | 0.632 | 76 |
| Plasma and LCD televisions | 6.695 | 0.764 | 164 | 6.585 | 0.720 | 164 |
| Portable device accessories | 3.547 | 0.982 | 262 | 3.564 | 0.916 | 262 |
| Power supplies | 4.899 | 0.859 | 423 | 4.804 | 0.820 | 423 |
| Processors in retail box | 6.141 | 0.911 | 520 | 5.946 | 0.818 | 520 |
| Projection screens | 6.718 | 0.663 | 3,402 | 6.739 | 0.655 | 3,402 |
| Projectors | 6.946 | 0.720 | 604 | 6.847 | 0.715 | 604 |
| SLR lenses | 6.634 | 0.806 | 180 | 6.521 | 0.823 | 180 |
| Scanners | 5.741 | 0.887 | 614 | 5.651 | 0.870 | 614 |
| Security software | 3.962 | 1.167 | 117 | 3.880 | 1.056 | 117 |
| Speakers | 4.265 | 0.881 | 166 | 4.172 | 0.873 | 166 |
| Storage media | 3.643 | 1.093 | 806 | 3.419 | 1.138 | 806 |
| System utilities software | 5.893 | 1.763 | 49 | 5.834 | 1.798 | 49 |
| TV accessories and mounts | 5.027 | 0.772 | 92 | 4.877 | 0.722 | 92 |
| Tripods | 5.143 | 1.005 | 33 | 4.999 | 1.011 | 33 |
| UPSS | 6.137 | 1.141 | 661 | 6.021 | 1.147 | 661 |
| Video cables | 3.129 | 0.866 | 677 | 3.091 | 0.776 | 677 |
| Webcams | 4.117 | 0.674 | 72 | 4.010 | 0.671 | 72 |
| Windows operating system software | 6.095 | 1.094 | 153 | 5.967 | 1.108 | 153 |

## Appendix Table G3. Descriptive statistics for frequency of price chance, per week.

| Category | Canada | | | US | | |
|---|---|---|---|---|---|---|
| | Mean | SD | N | Mean | SD | N |
| 35mm SLR lens accessories | 0.266 | 0.214 | 21 | 0.111 | 0.070 | 21 |
| AV accessories | 0.363 | 0.093 | 2,838 | 0.042 | 0.089 | 2,838 |
| Antivirus software | 0.294 | 0.184 | 20 | 0.171 | 0.108 | 20 |
| Audio cables | 0.206 | 0.103 | 100 | 0.135 | 0.052 | 100 |
| Audio video utilities | 0.321 | 0.160 | 73 | 0.193 | 0.110 | 73 |
| Bags cases | 0.290 | 0.291 | 91 | 0.124 | 0.097 | 91 |
| Binoculars | 0.564 | 0.215 | 35 | 0.139 | 0.049 | 35 |
| Calculators | 0.236 | 0.086 | 61 | 0.101 | 0.053 | 61 |
| Camcorder accessories | 0.353 | 0.234 | 24 | 0.169 | 0.113 | 24 |
| Camcorder batteries power | 0.309 | 0.177 | 25 | 0.192 | 0.078 | 25 |
| Camcorders | 0.342 | 0.203 | 227 | 0.291 | 0.154 | 227 |
| Cases | 0.322 | 0.152 | 344 | 0.212 | 0.093 | 344 |
| Cash registers pos equipment | 0.563 | 0.110 | 214 | 0.107 | 0.045 | 214 |
| Computer games | 0.268 | 0.164 | 47 | 0.150 | 0.091 | 47 |
| Database management sofware | 0.216 | 0.194 | 56 | 0.158 | 0.094 | 56 |
| Dedicated flashes | 0.262 | 0.212 | 23 | 0.128 | 0.067 | 23 |
| Desktop computers | 0.333 | 0.141 | 497 | 0.454 | 0.142 | 497 |
| Digital cameras | 0.280 | 0.167 | 538 | 0.307 | 0.132 | 538 |
| Engineering and home design software | 0.384 | 0.277 | 9 | 0.180 | 0.093 | 9 |
| Financial and legal software | 0.145 | 0.078 | 10 | 0.196 | 0.133 | 10 |
| Flash memory | 0.342 | 0.158 | 966 | 0.252 | 0.115 | 966 |
| Flat panel and LCD monitors | 0.419 | 0.159 | 757 | 0.304 | 0.114 | 757 |
| GPS | 0.332 | 0.170 | 156 | 0.161 | 0.078 | 156 |
| Graphics and publishing software | 0.371 | 0.170 | 606 | 0.197 | 0.098 | 606 |
| Hard drives | 0.418 | 0.179 | 1,629 | 0.301 | 0.094 | 1,629 |
| Headphones | 0.237 | 0.180 | 263 | 0.119 | 0.082 | 263 |
| Hubs | 0.380 | 0.201 | 715 | 0.245 | 0.085 | 715 |
| Keyboards | 0.378 | 0.186 | 526 | 0.197 | 0.076 | 526 |
| Laptop memory | 0.500 | 0.186 | 2,422 | 0.357 | 0.118 | 2,422 |
| Laptops | 0.362 | 0.135 | 549 | 0.405 | 0.149 | 549 |
| Microphones and headsets | 0.281 | 0.128 | 73 | 0.167 | 0.069 | 73 |
| Miscellaneous programming software | 0.289 | 0.202 | 99 | 0.240 | 0.143 | 99 |
| Modems | 0.376 | 0.186 | 89 | 0.205 | 0.080 | 89 |
| Motherboards | 0.353 | 0.169 | 648 | 0.265 | 0.098 | 648 |
| Mp3 players | 0.403 | 0.216 | 131 | 0.138 | 0.068 | 131 |
| Network adapters | 0.372 | 0.175 | 240 | 0.248 | 0.095 | 240 |
| Office suites software | 0.208 | 0.113 | 76 | 0.214 | 0.105 | 76 |
| Plasma and LCD televisions | 0.287 | 0.205 | 164 | 0.288 | 0.146 | 164 |
| Portable device accessories | 0.291 | 0.159 | 262 | 0.153 | 0.089 | 262 |
| Power supplies | 0.325 | 0.157 | 423 | 0.216 | 0.084 | 423 |
| Processors in retail box | 0.331 | 0.147 | 520 | 0.253 | 0.089 | 520 |
| Projection screens | 0.373 | 0.071 | 3,402 | 0.012 | 0.037 | 3,402 |
| Projectors | 0.317 | 0.185 | 604 | 0.262 | 0.110 | 604 |
| SLR lenses | 0.362 | 0.228 | 180 | 0.158 | 0.066 | 180 |
| Scanners | 0.514 | 0.175 | 614 | 0.173 | 0.099 | 614 |
| Security software | 0.311 | 0.114 | 117 | 0.126 | 0.095 | 117 |
| Speakers | 0.308 | 0.153 | 166 | 0.199 | 0.080 | 166 |
| Storage media | 0.241 | 0.137 | 806 | 0.166 | 0.084 | 806 |
| System utilities software | 0.148 | 0.159 | 49 | 0.092 | 0.123 | 49 |
| TV accessories and mounts | 0.413 | 0.246 | 92 | 0.135 | 0.080 | 92 |
| Tripods | 0.356 | 0.121 | 33 | 0.129 | 0.116 | 33 |
| UPSS | 0.356 | 0.149 | 661 | 0.245 | 0.070 | 661 |
| Video cables | 0.198 | 0.130 | 677 | 0.176 | 0.067 | 677 |
| Webcams | 0.316 | 0.148 | 72 | 0.237 | 0.087 | 72 |
| Windows operating system software | 0.290 | 0.169 | 153 | 0.221 | 0.096 | 153 |

## Appendix Table G4. Descriptive statistics for median abs(dlog(Price)).

| Category | Canada | | | US | | |
|---|---|---|---|---|---|---|
| | Mean | SD | N | Mean | SD | N |
| 35mm SLR lens accessories | 0.018 | 0.038 | 21 | 0.052 | 0.030 | 20 |
| AV accessories | 0.010 | 0.018 | 2,838 | 0.045 | 0.084 | 721 |
| Antivirus software | 0.071 | 0.095 | 20 | 0.033 | 0.020 | 20 |
| Audio cables | 0.062 | 0.070 | 100 | 0.056 | 0.102 | 100 |
| Audio video utilities | 0.032 | 0.051 | 73 | 0.032 | 0.023 | 73 |
| Bags cases | 0.034 | 0.053 | 91 | 0.051 | 0.047 | 88 |
| Binoculars | 0.012 | 0.006 | 35 | 0.069 | 0.046 | 35 |
| Calculators | 0.059 | 0.059 | 61 | 0.080 | 0.098 | 61 |
| Camcorder accessories | 0.019 | 0.022 | 24 | 0.050 | 0.043 | 24 |
| Camcorder batteries power | 0.013 | 0.008 | 25 | 0.042 | 0.020 | 25 |
| Camcorders | 0.039 | 0.035 | 227 | 0.059 | 0.041 | 226 |
| Cases | 0.044 | 0.056 | 344 | 0.036 | 0.024 | 342 |
| Cash registers pos equipment | 0.014 | 0.004 | 214 | 0.025 | 0.024 | 212 |
| Computer games | 0.098 | 0.088 | 47 | 0.141 | 0.120 | 45 |
| Database management sofware | 0.027 | 0.018 | 56 | 0.028 | 0.018 | 56 |
| Dedicated flashes | 0.019 | 0.019 | 23 | 0.038 | 0.034 | 22 |
| Desktop computers | 0.019 | 0.022 | 497 | 0.017 | 0.009 | 497 |
| Digital cameras | 0.052 | 0.040 | 538 | 0.058 | 0.038 | 538 |
| Engineering and home design software | 0.032 | 0.019 | 9 | 0.086 | 0.135 | 9 |
| Financial and legal software | 0.138 | 0.305 | 10 | 0.063 | 0.066 | 10 |
| Flash memory | 0.047 | 0.054 | 966 | 0.053 | 0.044 | 963 |
| Flat panel and LCD monitors | 0.021 | 0.015 | 757 | 0.022 | 0.020 | 757 |
| GPS | 0.035 | 0.036 | 156 | 0.055 | 0.037 | 156 |
| Graphics and publishing software | 0.019 | 0.020 | 606 | 0.024 | 0.028 | 587 |
| Hard drives | 0.031 | 0.030 | 1,629 | 0.039 | 0.022 | 1,627 |
| Headphones | 0.117 | 0.134 | 263 | 0.080 | 0.085 | 261 |
| Hubs | 0.037 | 0.065 | 715 | 0.025 | 0.020 | 715 |
| Keyboards | 0.037 | 0.043 | 526 | 0.040 | 0.030 | 526 |
| Laptop memory | 0.034 | 0.028 | 2,422 | 0.049 | 0.026 | 2,422 |
| Laptops | 0.019 | 0.015 | 549 | 0.017 | 0.014 | 549 |
| Microphones and headsets | 0.051 | 0.051 | 73 | 0.051 | 0.044 | 73 |
| Miscellaneous programming software | 0.023 | 0.019 | 99 | 0.020 | 0.013 | 98 |
| Modems | 0.040 | 0.045 | 89 | 0.033 | 0.024 | 89 |
| Motherboards | 0.035 | 0.047 | 648 | 0.026 | 0.021 | 648 |
| Mp3 players | 0.030 | 0.052 | 131 | 0.047 | 0.031 | 127 |
| Network adapters | 0.031 | 0.039 | 240 | 0.032 | 0.033 | 240 |
| Office suites software | 0.033 | 0.025 | 76 | 0.036 | 0.033 | 74 |
| Plasma and LCD televisions | 0.059 | 0.047 | 164 | 0.034 | 0.024 | 164 |
| Portable device accessories | 0.050 | 0.057 | 262 | 0.062 | 0.069 | 255 |
| Power supplies | 0.042 | 0.033 | 423 | 0.036 | 0.033 | 420 |
| Processors in retail box | 0.022 | 0.022 | 520 | 0.033 | 0.051 | 520 |
| Projection screens | 0.007 | 0.006 | 3,402 | 0.095 | 0.142 | 969 |
| Projectors | 0.025 | 0.032 | 604 | 0.019 | 0.017 | 603 |
| SLR lenses | 0.016 | 0.008 | 180 | 0.046 | 0.033 | 179 |
| Scanners | 0.019 | 0.016 | 614 | 0.019 | 0.014 | 608 |
| Security software | 0.014 | 0.012 | 117 | 0.079 | 0.050 | 115 |
| Speakers | 0.042 | 0.038 | 166 | 0.050 | 0.036 | 165 |
| Storage media | 0.065 | 0.076 | 806 | 0.055 | 0.053 | 802 |
| System utilities software | 0.019 | 0.017 | 49 | 0.019 | 0.015 | 39 |
| TV accessories and mounts | 0.043 | 0.089 | 92 | 0.044 | 0.039 | 91 |
| Tripods | 0.020 | 0.033 | 33 | 0.076 | 0.064 | 31 |
| UPSS | 0.020 | 0.018 | 661 | 0.020 | 0.015 | 661 |
| Video cables | 0.075 | 0.073 | 677 | 0.044 | 0.033 | 677 |
| Webcams | 0.046 | 0.040 | 72 | 0.051 | 0.032 | 71 |
| Windows operating system software | 0.029 | 0.038 | 153 | 0.032 | 0.060 | 153 |

## Appendix Table G5. Descriptive statistics for synchronization of price changes.

| Category | Canada | | | US | | |
|---|---|---|---|---|---|---|
| | Mean | SD | N | Mean | SD | N |
| 35mm SLR lens accessories | 0.044 | 0.152 | 21 | 0.070 | 0.089 | 19 |
| AV accessories | 0.077 | 0.128 | 2,838 | 0.117 | 0.100 | 660 |
| Antivirus software | 0.335 | 0.253 | 20 | 0.192 | 0.069 | 20 |
| Audio cables | 0.172 | 0.122 | 100 | 0.090 | 0.075 | 100 |
| Audio video utilities | 0.238 | 0.171 | 73 | 0.131 | 0.089 | 72 |
| Bags cases | 0.069 | 0.102 | 91 | 0.097 | 0.103 | 79 |
| Binoculars | 0.014 | 0.045 | 35 | 0.071 | 0.086 | 34 |
| Calculators | 0.154 | 0.140 | 61 | 0.054 | 0.063 | 60 |
| Camcorder accessories | 0.078 | 0.100 | 24 | 0.123 | 0.084 | 24 |
| Camcorder batteries power | 0.081 | 0.109 | 25 | 0.140 | 0.083 | 25 |
| Camcorders | 0.163 | 0.156 | 227 | 0.235 | 0.149 | 223 |
| Cases | 0.276 | 0.207 | 344 | 0.167 | 0.092 | 338 |
| Cash registers pos equipment | 0.494 | 0.180 | 214 | 0.071 | 0.062 | 210 |
| Computer games | 0.195 | 0.203 | 47 | 0.094 | 0.083 | 26 |
| Database management sofware | 0.250 | 0.247 | 56 | 0.142 | 0.123 | 56 |
| Dedicated flashes | 0.060 | 0.105 | 23 | 0.104 | 0.055 | 20 |
| Desktop computers | 0.273 | 0.139 | 497 | 0.335 | 0.132 | 485 |
| Digital cameras | 0.155 | 0.130 | 538 | 0.245 | 0.136 | 529 |
| Engineering and home design software | 0.288 | 0.319 | 9 | 0.120 | 0.091 | 8 |
| Financial and legal software | 0.113 | 0.100 | 10 | 0.180 | 0.108 | 9 |
| Flash memory | 0.277 | 0.179 | 966 | 0.194 | 0.104 | 939 |
| Flat panel and LCD monitors | 0.292 | 0.185 | 757 | 0.232 | 0.105 | 751 |
| GPS | 0.347 | 0.221 | 156 | 0.127 | 0.099 | 154 |
| Graphics and publishing software | 0.326 | 0.205 | 606 | 0.148 | 0.084 | 565 |
| Hard drives | 0.332 | 0.173 | 1,629 | 0.237 | 0.093 | 1,620 |
| Headphones | 0.130 | 0.164 | 263 | 0.099 | 0.113 | 252 |
| Hubs | 0.302 | 0.241 | 715 | 0.182 | 0.082 | 713 |
| Keyboards | 0.287 | 0.214 | 526 | 0.156 | 0.079 | 521 |
| Laptop memory | 0.424 | 0.185 | 2,422 | 0.296 | 0.127 | 2,373 |
| Laptops | 0.269 | 0.134 | 549 | 0.298 | 0.124 | 546 |
| Microphones and headsets | 0.242 | 0.158 | 73 | 0.118 | 0.058 | 73 |
| Miscellaneous programming software | 0.239 | 0.235 | 99 | 0.211 | 0.145 | 95 |
| Modems | 0.294 | 0.235 | 89 | 0.146 | 0.076 | 89 |
| Motherboards | 0.310 | 0.210 | 648 | 0.196 | 0.099 | 641 |
| Mp3 players | 0.215 | 0.182 | 131 | 0.110 | 0.072 | 125 |
| Network adapters | 0.347 | 0.213 | 240 | 0.177 | 0.079 | 238 |
| Office suites software | 0.181 | 0.162 | 76 | 0.178 | 0.098 | 72 |
| Plasma and LCD televisions | 0.190 | 0.201 | 164 | 0.174 | 0.135 | 158 |
| Portable device accessories | 0.192 | 0.188 | 262 | 0.115 | 0.077 | 244 |
| Power supplies | 0.269 | 0.203 | 423 | 0.167 | 0.097 | 412 |
| Processors in retail box | 0.274 | 0.186 | 520 | 0.183 | 0.083 | 513 |
| Projection screens | 0.049 | 0.061 | 3,402 | 0.021 | 0.057 | 967 |
| Projectors | 0.245 | 0.208 | 604 | 0.199 | 0.098 | 596 |
| SLR lenses | 0.072 | 0.145 | 180 | 0.135 | 0.091 | 176 |
| Scanners | 0.457 | 0.210 | 614 | 0.126 | 0.082 | 608 |
| Security software | 0.170 | 0.161 | 117 | 0.173 | 0.097 | 114 |
| Speakers | 0.234 | 0.176 | 166 | 0.162 | 0.095 | 162 |
| Storage media | 0.227 | 0.144 | 806 | 0.120 | 0.078 | 792 |
| System utilities software | 0.097 | 0.175 | 49 | 0.075 | 0.092 | 23 |
| TV accessories and mounts | 0.248 | 0.230 | 92 | 0.095 | 0.071 | 86 |
| Tripods | 0.043 | 0.068 | 33 | 0.078 | 0.072 | 28 |
| UPSS | 0.332 | 0.190 | 661 | 0.188 | 0.063 | 656 |
| Video cables | 0.117 | 0.132 | 677 | 0.112 | 0.067 | 670 |
| Webcams | 0.196 | 0.152 | 72 | 0.206 | 0.089 | 68 |
| Windows operating system software | 0.237 | 0.177 | 153 | 0.176 | 0.096 | 153 |

## Appendix Table G6. Descriptive statistics for number of sellers.

| Category | Canada | | | US | | |
|---|---|---|---|---|---|---|
| | Mean | SD | N | Mean | SD | N |
| 35mm SLR lens accessories | 1.473 | 0.291 | 21 | 1.909 | 0.899 | 21 |
| AV accessories | 1.694 | 0.391 | 2,838 | 2.130 | 0.998 | 2,838 |
| Antivirus software | 1.895 | 1.450 | 20 | 3.832 | 2.191 | 20 |
| Audio cables | 2.007 | 0.724 | 100 | 2.470 | 0.759 | 100 |
| Audio video utilities | 2.190 | 1.058 | 73 | 3.424 | 1.893 | 73 |
| Bags cases | 1.570 | 0.498 | 91 | 2.347 | 1.369 | 91 |
| Binoculars | 1.428 | 0.812 | 35 | 2.176 | 0.942 | 35 |
| Calculators | 1.793 | 0.938 | 61 | 2.769 | 1.148 | 61 |
| Camcorder accessories | 1.925 | 0.909 | 24 | 2.264 | 0.819 | 24 |
| Camcorder batteries power | 2.189 | 0.893 | 25 | 2.778 | 0.862 | 25 |
| Camcorders | 2.520 | 1.275 | 227 | 3.109 | 2.100 | 227 |
| Cases | 2.426 | 1.296 | 344 | 3.470 | 1.352 | 344 |
| Cash registers pos equipment | 1.564 | 0.331 | 214 | 3.195 | 0.978 | 214 |
| Computer games | 1.513 | 0.650 | 47 | 1.919 | 1.261 | 47 |
| Database management sofware | 2.182 | 1.653 | 56 | 2.594 | 1.237 | 56 |
| Dedicated flashes | 1.820 | 0.628 | 23 | 2.664 | 1.383 | 23 |
| Desktop computers | 3.250 | 1.273 | 497 | 3.844 | 1.350 | 497 |
| Digital cameras | 2.506 | 1.184 | 538 | 3.349 | 1.984 | 538 |
| Engineering and home design software | 3.116 | 2.528 | 9 | 3.034 | 1.735 | 9 |
| Financial and legal software | 2.826 | 1.752 | 10 | 3.401 | 1.865 | 10 |
| Flash memory | 2.632 | 1.196 | 966 | 3.137 | 1.300 | 966 |
| Flat panel and LCD monitors | 2.975 | 1.514 | 757 | 4.022 | 1.342 | 757 |
| GPS | 2.883 | 1.484 | 156 | 4.392 | 2.152 | 156 |
| Graphics and publishing software | 2.985 | 1.629 | 606 | 4.519 | 2.743 | 606 |
| Hard drives | 3.010 | 1.268 | 1,629 | 4.837 | 2.425 | 1,629 |
| Headphones | 1.913 | 1.075 | 263 | 2.967 | 1.343 | 263 |
| Hubs | 2.406 | 1.082 | 715 | 5.985 | 2.819 | 715 |
| Keyboards | 2.493 | 1.302 | 526 | 3.755 | 1.415 | 526 |
| Laptop memory | 3.074 | 1.071 | 2,422 | 3.019 | 1.343 | 2,422 |
| Laptops | 3.512 | 1.218 | 549 | 4.277 | 1.721 | 549 |
| Microphones and headsets | 3.006 | 1.908 | 73 | 3.529 | 1.212 | 73 |
| Miscellaneous programming software | 2.617 | 2.100 | 99 | 3.885 | 3.296 | 99 |
| Modems | 2.316 | 1.246 | 89 | 3.440 | 1.274 | 89 |
| Motherboards | 2.959 | 1.480 | 648 | 3.241 | 1.244 | 648 |
| Mp3 players | 2.062 | 0.936 | 131 | 3.250 | 1.402 | 131 |
| Network adapters | 2.831 | 1.058 | 240 | 4.705 | 2.350 | 240 |
| Office suites software | 2.552 | 1.868 | 76 | 4.029 | 2.625 | 76 |
| Plasma and LCD televisions | 2.123 | 1.161 | 164 | 2.667 | 1.019 | 164 |
| Portable device accessories | 2.072 | 0.890 | 262 | 3.141 | 1.392 | 262 |
| Power supplies | 2.526 | 1.256 | 423 | 3.160 | 1.412 | 423 |
| Processors in retail box | 2.707 | 1.258 | 520 | 3.875 | 1.750 | 520 |
| Projection screens | 1.674 | 0.192 | 3,402 | 2.027 | 0.536 | 3,402 |
| Projectors | 2.918 | 1.444 | 604 | 4.381 | 2.043 | 604 |
| SLR lenses | 1.598 | 0.430 | 180 | 2.960 | 1.459 | 180 |
| Scanners | 2.126 | 1.106 | 614 | 4.397 | 1.923 | 614 |
| Security software | 1.555 | 0.687 | 117 | 2.458 | 1.646 | 117 |
| Speakers | 2.953 | 1.776 | 166 | 3.287 | 1.324 | 166 |
| Storage media | 2.625 | 0.997 | 806 | 4.344 | 2.322 | 806 |
| System utilities software | 1.431 | 0.736 | 49 | 1.640 | 1.288 | 49 |
| TV accessories and mounts | 1.920 | 0.943 | 92 | 3.586 | 2.016 | 92 |
| Tripods | 1.800 | 0.569 | 33 | 1.720 | 0.695 | 33 |
| UPSS | 2.949 | 1.306 | 661 | 4.901 | 1.890 | 661 |
| Video cables | 2.202 | 0.826 | 677 | 3.560 | 1.123 | 677 |
| Webcams | 2.371 | 1.406 | 72 | 4.000 | 1.732 | 72 |
| Windows operating system software | 2.160 | 1.158 | 153 | 3.445 | 1.888 | 153 |

## Appendix Table G7. Descriptive statistics for stability of sellers.

| Category | Canada | | | US | | |
|---|---|---|---|---|---|---|
| | Mean | SD | N | Mean | SD | N |
| 35mm SLR lens accessories | 0.948 | 0.021 | 21 | 0.882 | 0.055 | 21 |
| AV accessories | 0.950 | 0.035 | 2,838 | 0.928 | 0.033 | 2,838 |
| Antivirus software | 0.912 | 0.053 | 20 | 0.923 | 0.046 | 20 |
| Audio cables | 0.916 | 0.047 | 100 | 0.914 | 0.039 | 100 |
| Audio video utilities | 0.894 | 0.054 | 73 | 0.887 | 0.062 | 73 |
| Bags cases | 0.944 | 0.037 | 91 | 0.914 | 0.051 | 91 |
| Binoculars | 0.964 | 0.034 | 35 | 0.872 | 0.066 | 35 |
| Calculators | 0.906 | 0.048 | 61 | 0.934 | 0.037 | 61 |
| Camcorder accessories | 0.926 | 0.046 | 24 | 0.887 | 0.058 | 24 |
| Camcorder batteries power | 0.911 | 0.043 | 25 | 0.856 | 0.041 | 25 |
| Camcorders | 0.896 | 0.056 | 227 | 0.857 | 0.064 | 227 |
| Cases | 0.896 | 0.061 | 344 | 0.886 | 0.044 | 344 |
| Cash registers pos equipment | 0.893 | 0.041 | 214 | 0.928 | 0.035 | 214 |
| Computer games | 0.947 | 0.049 | 47 | 0.940 | 0.061 | 47 |
| Database management sofware | 0.915 | 0.067 | 56 | 0.928 | 0.055 | 56 |
| Dedicated flashes | 0.924 | 0.035 | 23 | 0.868 | 0.061 | 23 |
| Desktop computers | 0.860 | 0.057 | 497 | 0.856 | 0.058 | 497 |
| Digital cameras | 0.895 | 0.061 | 538 | 0.854 | 0.066 | 538 |
| Engineering and home design software | 0.906 | 0.091 | 9 | 0.867 | 0.069 | 9 |
| Financial and legal software | 0.908 | 0.058 | 10 | 0.881 | 0.087 | 10 |
| Flash memory | 0.864 | 0.059 | 966 | 0.891 | 0.045 | 966 |
| Flat panel and LCD monitors | 0.871 | 0.058 | 757 | 0.871 | 0.047 | 757 |
| GPS | 0.884 | 0.066 | 156 | 0.857 | 0.054 | 156 |
| Graphics and publishing software | 0.885 | 0.063 | 606 | 0.905 | 0.052 | 606 |
| Hard drives | 0.857 | 0.061 | 1,629 | 0.848 | 0.050 | 1,629 |
| Headphones | 0.924 | 0.064 | 263 | 0.883 | 0.056 | 263 |
| Hubs | 0.889 | 0.072 | 715 | 0.887 | 0.039 | 715 |
| Keyboards | 0.888 | 0.054 | 526 | 0.890 | 0.045 | 526 |
| Laptop memory | 0.850 | 0.050 | 2,422 | 0.863 | 0.056 | 2,422 |
| Laptops | 0.848 | 0.062 | 549 | 0.846 | 0.062 | 549 |
| Microphones and headsets | 0.876 | 0.061 | 73 | 0.884 | 0.042 | 73 |
| Miscellaneous programming software | 0.898 | 0.074 | 99 | 0.899 | 0.059 | 99 |
| Modems | 0.896 | 0.062 | 89 | 0.880 | 0.044 | 89 |
| Motherboards | 0.873 | 0.065 | 648 | 0.875 | 0.052 | 648 |
| Mp3 players | 0.914 | 0.061 | 131 | 0.888 | 0.046 | 131 |
| Network adapters | 0.873 | 0.052 | 240 | 0.878 | 0.036 | 240 |
| Office suites software | 0.912 | 0.050 | 76 | 0.908 | 0.054 | 76 |
| Plasma and LCD televisions | 0.902 | 0.060 | 164 | 0.869 | 0.058 | 164 |
| Portable device accessories | 0.905 | 0.057 | 262 | 0.906 | 0.051 | 262 |
| Power supplies | 0.889 | 0.054 | 423 | 0.891 | 0.047 | 423 |
| Processors in retail box | 0.889 | 0.052 | 520 | 0.869 | 0.044 | 520 |
| Projection screens | 0.966 | 0.029 | 3,402 | 0.894 | 0.035 | 3,402 |
| Projectors | 0.879 | 0.064 | 604 | 0.875 | 0.043 | 604 |
| SLR lenses | 0.943 | 0.032 | 180 | 0.837 | 0.047 | 180 |
| Scanners | 0.880 | 0.047 | 614 | 0.904 | 0.039 | 614 |
| Security software | 0.925 | 0.055 | 117 | 0.951 | 0.041 | 117 |
| Speakers | 0.882 | 0.058 | 166 | 0.874 | 0.047 | 166 |
| Storage media | 0.872 | 0.049 | 806 | 0.900 | 0.042 | 806 |
| System utilities software | 0.942 | 0.056 | 49 | 0.963 | 0.059 | 49 |
| TV accessories and mounts | 0.926 | 0.056 | 92 | 0.897 | 0.047 | 92 |
| Tripods | 0.936 | 0.055 | 33 | 0.885 | 0.062 | 33 |
| UPSS | 0.881 | 0.049 | 661 | 0.878 | 0.037 | 661 |
| Video cables | 0.911 | 0.049 | 677 | 0.918 | 0.032 | 677 |
| Webcams | 0.905 | 0.056 | 72 | 0.882 | 0.053 | 72 |
| Windows operating system software | 0.892 | 0.062 | 153 | 0.907 | 0.038 | 153 |

## Appendix Table G8. Descriptive statistics for the frequency of sales, per week.

| Category | Canada | | | US | | |
|---|---|---|---|---|---|---|
| | Mean | SD | N | Mean | SD | N |
| 35mm SLR lens accessories | 0.037 | 0.042 | 21 | 0.011 | 0.019 | 21 |
| AV accessories | 0.021 | 0.018 | 2,838 | 0.007 | 0.026 | 2,838 |
| Antivirus software | 0.020 | 0.017 | 20 | 0.019 | 0.031 | 20 |
| Audio cables | 0.029 | 0.027 | 100 | 0.014 | 0.020 | 100 |
| Audio video utilities | 0.034 | 0.034 | 73 | 0.045 | 0.052 | 73 |
| Bags cases | 0.020 | 0.027 | 91 | 0.025 | 0.042 | 91 |
| Binoculars | 0.038 | 0.026 | 35 | 0.017 | 0.030 | 35 |
| Calculators | 0.029 | 0.028 | 61 | 0.029 | 0.040 | 61 |
| Camcorder accessories | 0.021 | 0.015 | 24 | 0.022 | 0.030 | 24 |
| Camcorder batteries power | 0.028 | 0.018 | 25 | 0.031 | 0.031 | 25 |
| Camcorders | 0.045 | 0.042 | 227 | 0.046 | 0.052 | 227 |
| Cases | 0.043 | 0.042 | 344 | 0.029 | 0.029 | 344 |
| Cash registers pos equipment | 0.042 | 0.021 | 214 | 0.018 | 0.029 | 214 |
| Computer games | 0.049 | 0.038 | 47 | 0.042 | 0.060 | 47 |
| Database management sofware | 0.017 | 0.025 | 56 | 0.018 | 0.036 | 56 |
| Dedicated flashes | 0.029 | 0.015 | 23 | 0.012 | 0.025 | 23 |
| Desktop computers | 0.029 | 0.030 | 497 | 0.029 | 0.026 | 497 |
| Digital cameras | 0.059 | 0.054 | 538 | 0.050 | 0.046 | 538 |
| Engineering and home design software | 0.034 | 0.033 | 9 | 0.060 | 0.100 | 9 |
| Financial and legal software | 0.010 | 0.017 | 10 | 0.015 | 0.020 | 10 |
| Flash memory | 0.033 | 0.033 | 966 | 0.024 | 0.029 | 966 |
| Flat panel and LCD monitors | 0.026 | 0.021 | 757 | 0.030 | 0.030 | 757 |
| GPS | 0.049 | 0.041 | 156 | 0.027 | 0.034 | 156 |
| Graphics and publishing software | 0.026 | 0.028 | 606 | 0.027 | 0.037 | 606 |
| Hard drives | 0.030 | 0.030 | 1,629 | 0.028 | 0.025 | 1,629 |
| Headphones | 0.068 | 0.071 | 263 | 0.031 | 0.042 | 263 |
| Hubs | 0.025 | 0.028 | 715 | 0.033 | 0.027 | 715 |
| Keyboards | 0.044 | 0.035 | 526 | 0.032 | 0.031 | 526 |
| Laptop memory | 0.036 | 0.025 | 2,422 | 0.020 | 0.021 | 2,422 |
| Laptops | 0.030 | 0.028 | 549 | 0.024 | 0.025 | 549 |
| Microphones and headsets | 0.054 | 0.048 | 73 | 0.043 | 0.032 | 73 |
| Miscellaneous programming software | 0.023 | 0.026 | 99 | 0.025 | 0.025 | 99 |
| Modems | 0.032 | 0.025 | 89 | 0.023 | 0.027 | 89 |
| Motherboards | 0.038 | 0.040 | 648 | 0.028 | 0.032 | 648 |
| Mp3 players | 0.031 | 0.037 | 131 | 0.036 | 0.036 | 131 |
| Network adapters | 0.029 | 0.024 | 240 | 0.027 | 0.023 | 240 |
| Office suites software | 0.024 | 0.030 | 76 | 0.026 | 0.023 | 76 |
| Plasma and LCD televisions | 0.050 | 0.062 | 164 | 0.028 | 0.039 | 164 |
| Portable device accessories | 0.028 | 0.032 | 262 | 0.029 | 0.034 | 262 |
| Power supplies | 0.043 | 0.035 | 423 | 0.031 | 0.034 | 423 |
| Processors in retail box | 0.029 | 0.025 | 520 | 0.026 | 0.025 | 520 |
| Projection screens | 0.001 | 0.007 | 3,402 | 0.005 | 0.026 | 3,402 |
| Projectors | 0.024 | 0.025 | 604 | 0.023 | 0.022 | 604 |
| SLR lenses | 0.035 | 0.023 | 180 | 0.016 | 0.020 | 180 |
| Scanners | 0.029 | 0.021 | 614 | 0.021 | 0.025 | 614 |
| Security software | 0.013 | 0.023 | 117 | 0.061 | 0.038 | 117 |
| Speakers | 0.048 | 0.045 | 166 | 0.038 | 0.038 | 166 |
| Storage media | 0.024 | 0.028 | 806 | 0.034 | 0.030 | 806 |
| System utilities software | 0.014 | 0.025 | 49 | 0.018 | 0.033 | 49 |
| TV accessories and mounts | 0.049 | 0.060 | 92 | 0.029 | 0.030 | 92 |
| Tripods | 0.023 | 0.016 | 33 | 0.015 | 0.026 | 33 |
| UPSS | 0.026 | 0.021 | 661 | 0.028 | 0.022 | 661 |
| Video cables | 0.028 | 0.038 | 677 | 0.020 | 0.026 | 677 |
| Webcams | 0.051 | 0.042 | 72 | 0.058 | 0.046 | 72 |
| Windows operating system software | 0.026 | 0.026 | 153 | 0.027 | 0.028 | 153 |

## Appendix Table G9. Descriptive statistics for mean size of sales.

| Category | Canada | | | US | | |
|---|---|---|---|---|---|---|
| | Mean | SD | N | Mean | SD | N |
| 35mm SLR lens accessories | 0.032 | 0.046 | 18 | 0.071 | 0.057 | 6 |
| AV accessories | 0.028 | 0.063 | 2,059 | 0.077 | 0.092 | 370 |
| Antivirus software | 0.057 | 0.046 | 13 | 0.108 | 0.137 | 12 |
| Audio cables | 0.159 | 0.175 | 74 | 0.128 | 0.155 | 49 |
| Audio video utilities | 0.056 | 0.061 | 53 | 0.057 | 0.045 | 55 |
| Bags cases | 0.077 | 0.121 | 58 | 0.088 | 0.069 | 37 |
| Binoculars | 0.028 | 0.028 | 32 | 0.080 | 0.072 | 12 |
| Calculators | 0.136 | 0.127 | 39 | 0.064 | 0.069 | 32 |
| Camcorder accessories | 0.051 | 0.069 | 21 | 0.077 | 0.071 | 10 |
| Camcorder batteries power | 0.082 | 0.123 | 25 | 0.124 | 0.134 | 16 |
| Camcorders | 0.103 | 0.088 | 184 | 0.092 | 0.055 | 158 |
| Cases | 0.084 | 0.095 | 273 | 0.069 | 0.050 | 241 |
| Cash registers pos equipment | 0.023 | 0.011 | 210 | 0.069 | 0.089 | 100 |
| Computer games | 0.276 | 0.261 | 39 | 0.120 | 0.114 | 21 |
| Database management sofware | 0.068 | 0.094 | 23 | 0.079 | 0.105 | 23 |
| Dedicated flashes | 0.045 | 0.053 | 20 | 0.089 | 0.056 | 7 |
| Desktop computers | 0.043 | 0.054 | 342 | 0.042 | 0.047 | 378 |
| Digital cameras | 0.112 | 0.089 | 422 | 0.086 | 0.064 | 426 |
| Engineering and home design software | 0.050 | 0.054 | 6 | 0.041 | 0.015 | 6 |
| Financial and legal software | 0.027 | 0.001 | 3 | 0.033 | 0.021 | 5 |
| Flash memory | 0.095 | 0.107 | 755 | 0.095 | 0.108 | 650 |
| Flat panel and LCD monitors | 0.045 | 0.045 | 627 | 0.048 | 0.043 | 601 |
| GPS | 0.108 | 0.101 | 130 | 0.095 | 0.068 | 93 |
| Graphics and publishing software | 0.047 | 0.071 | 449 | 0.056 | 0.057 | 420 |
| Hard drives | 0.085 | 0.098 | 1,271 | 0.063 | 0.060 | 1,328 |
| Headphones | 0.200 | 0.203 | 212 | 0.123 | 0.146 | 146 |
| Hubs | 0.070 | 0.120 | 491 | 0.062 | 0.064 | 604 |
| Keyboards | 0.091 | 0.127 | 447 | 0.075 | 0.065 | 363 |
| Laptop memory | 0.042 | 0.052 | 2,123 | 0.071 | 0.082 | 1,621 |
| Laptops | 0.048 | 0.073 | 415 | 0.040 | 0.053 | 396 |
| Microphones and headsets | 0.112 | 0.100 | 67 | 0.087 | 0.109 | 59 |
| Miscellaneous programming software | 0.043 | 0.041 | 62 | 0.051 | 0.046 | 67 |
| Modems | 0.074 | 0.114 | 72 | 0.093 | 0.112 | 61 |
| Motherboards | 0.059 | 0.075 | 503 | 0.046 | 0.043 | 423 |
| Mp3 players | 0.091 | 0.098 | 103 | 0.074 | 0.077 | 89 |
| Network adapters | 0.079 | 0.130 | 209 | 0.086 | 0.097 | 202 |
| Office suites software | 0.102 | 0.170 | 44 | 0.095 | 0.108 | 57 |
| Plasma and LCD televisions | 0.089 | 0.068 | 103 | 0.067 | 0.062 | 94 |
| Portable device accessories | 0.134 | 0.159 | 167 | 0.107 | 0.145 | 148 |
| Power supplies | 0.084 | 0.081 | 358 | 0.067 | 0.060 | 294 |
| Processors in retail box | 0.069 | 0.113 | 399 | 0.063 | 0.086 | 390 |
| Projection screens | 0.040 | 0.098 | 169 | 0.188 | 0.299 | 177 |
| Projectors | 0.046 | 0.045 | 441 | 0.055 | 0.069 | 459 |
| SLR lenses | 0.031 | 0.027 | 170 | 0.066 | 0.058 | 106 |
| Scanners | 0.034 | 0.047 | 555 | 0.046 | 0.054 | 367 |
| Security software | 0.062 | 0.100 | 40 | 0.111 | 0.059 | 99 |
| Speakers | 0.104 | 0.091 | 140 | 0.081 | 0.056 | 119 |
| Storage media | 0.114 | 0.156 | 571 | 0.089 | 0.099 | 622 |
| System utilities software | 0.082 | 0.124 | 14 | 0.081 | 0.061 | 13 |
| TV accessories and mounts | 0.071 | 0.115 | 79 | 0.078 | 0.060 | 62 |
| Tripods | 0.058 | 0.057 | 33 | 0.066 | 0.024 | 12 |
| UPSS | 0.049 | 0.068 | 564 | 0.053 | 0.064 | 568 |
| Video cables | 0.154 | 0.208 | 392 | 0.100 | 0.118 | 397 |
| Webcams | 0.113 | 0.083 | 59 | 0.092 | 0.073 | 60 |
| Windows operating system software | 0.065 | 0.094 | 110 | 0.085 | 0.133 | 109 |

## Appendix Table G10. Descriptive statistics for the frequency of convenient prices.

| Category | Canada | | | US | | |
|---|---|---|---|---|---|---|
| | Mean | SD | N | Mean | SD | N |
| 35mm SLR lens accessories | 0.291 | 0.292 | 21 | 0.350 | 0.346 | 21 |
| AV accessories | 0.118 | 0.153 | 2,838 | 0.078 | 0.183 | 2,838 |
| Antivirus software | 0.190 | 0.171 | 20 | 0.210 | 0.170 | 20 |
| Audio cables | 0.066 | 0.097 | 100 | 0.085 | 0.122 | 100 |
| Audio video utilities | 0.368 | 0.255 | 73 | 0.380 | 0.258 | 73 |
| Bags cases | 0.184 | 0.227 | 91 | 0.211 | 0.244 | 91 |
| Binoculars | 0.334 | 0.245 | 35 | 0.366 | 0.249 | 35 |
| Calculators | 0.141 | 0.176 | 61 | 0.112 | 0.124 | 61 |
| Camcorder accessories | 0.230 | 0.167 | 24 | 0.278 | 0.227 | 24 |
| Camcorder batteries power | 0.309 | 0.241 | 25 | 0.183 | 0.124 | 25 |
| Camcorders | 0.400 | 0.235 | 227 | 0.504 | 0.278 | 227 |
| Cases | 0.284 | 0.192 | 344 | 0.211 | 0.181 | 344 |
| Cash registers pos equipment | 0.130 | 0.082 | 214 | 0.152 | 0.134 | 214 |
| Computer games | 0.108 | 0.134 | 47 | 0.193 | 0.254 | 47 |
| Database management sofware | 0.232 | 0.178 | 56 | 0.251 | 0.178 | 56 |
| Dedicated flashes | 0.393 | 0.280 | 23 | 0.484 | 0.271 | 23 |
| Desktop computers | 0.155 | 0.114 | 497 | 0.180 | 0.112 | 497 |
| Digital cameras | 0.411 | 0.235 | 538 | 0.456 | 0.252 | 538 |
| Engineering and home design software | 0.224 | 0.163 | 9 | 0.286 | 0.171 | 9 |
| Financial and legal software | 0.429 | 0.309 | 10 | 0.445 | 0.270 | 10 |
| Flash memory | 0.145 | 0.149 | 966 | 0.139 | 0.129 | 966 |
| Flat panel and LCD monitors | 0.216 | 0.142 | 757 | 0.203 | 0.143 | 757 |
| GPS | 0.405 | 0.234 | 156 | 0.441 | 0.208 | 156 |
| Graphics and publishing software | 0.286 | 0.183 | 606 | 0.331 | 0.219 | 606 |
| Hard drives | 0.270 | 0.177 | 1,629 | 0.234 | 0.147 | 1,629 |
| Headphones | 0.393 | 0.315 | 263 | 0.341 | 0.334 | 263 |
| Hubs | 0.193 | 0.151 | 715 | 0.188 | 0.111 | 715 |
| Keyboards | 0.176 | 0.146 | 526 | 0.167 | 0.150 | 526 |
| Laptop memory | 0.156 | 0.104 | 2,422 | 0.141 | 0.105 | 2,422 |
| Laptops | 0.193 | 0.145 | 549 | 0.271 | 0.154 | 549 |
| Microphones and headsets | 0.185 | 0.178 | 73 | 0.199 | 0.192 | 73 |
| Miscellaneous programming software | 0.251 | 0.191 | 99 | 0.326 | 0.206 | 99 |
| Modems | 0.162 | 0.129 | 89 | 0.137 | 0.139 | 89 |
| Motherboards | 0.302 | 0.199 | 648 | 0.190 | 0.139 | 648 |
| Mp3 players | 0.356 | 0.271 | 131 | 0.280 | 0.245 | 131 |
| Network adapters | 0.155 | 0.110 | 240 | 0.152 | 0.103 | 240 |
| Office suites software | 0.290 | 0.156 | 76 | 0.254 | 0.169 | 76 |
| Plasma and LCD televisions | 0.677 | 0.320 | 164 | 0.375 | 0.237 | 164 |
| Portable device accessories | 0.158 | 0.182 | 262 | 0.171 | 0.219 | 262 |
| Power supplies | 0.238 | 0.160 | 423 | 0.204 | 0.174 | 423 |
| Processors in retail box | 0.194 | 0.145 | 520 | 0.194 | 0.131 | 520 |
| Projection screens | 0.140 | 0.171 | 3,402 | 0.166 | 0.245 | 3,402 |
| Projectors | 0.263 | 0.202 | 604 | 0.369 | 0.168 | 604 |
| SLR lenses | 0.336 | 0.216 | 180 | 0.649 | 0.213 | 180 |
| Scanners | 0.173 | 0.113 | 614 | 0.192 | 0.133 | 614 |
| Security software | 0.127 | 0.143 | 117 | 0.130 | 0.145 | 117 |
| Speakers | 0.217 | 0.177 | 166 | 0.254 | 0.221 | 166 |
| Storage media | 0.107 | 0.107 | 806 | 0.106 | 0.109 | 806 |
| System utilities software | 0.332 | 0.323 | 49 | 0.264 | 0.332 | 49 |
| TV accessories and mounts | 0.294 | 0.286 | 92 | 0.334 | 0.252 | 92 |
| Tripods | 0.249 | 0.224 | 33 | 0.446 | 0.325 | 33 |
| UPSS | 0.193 | 0.120 | 661 | 0.174 | 0.086 | 661 |
| Video cables | 0.109 | 0.151 | 677 | 0.090 | 0.116 | 677 |
| Webcams | 0.212 | 0.163 | 72 | 0.179 | 0.155 | 72 |
| Windows operating system software | 0.298 | 0.204 | 153 | 0.296 | 0.185 | 153 |