



Toledo-Lucas County Public Library: Economic Value and Return on Investment

July 26, 2012

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Economic value: Why Libraries Differ?

- Public Libraries are non-profit:
 - economic effectiveness can not be measured by profit
 - Library's impact can not be directly observed
 - value of information is hard to measure



Return on Investment: Why Libraries Differ?

- ROI: asset appreciation + dividend
- Public Library's "dividend" is "paid" in the form of free services
- market valuation of assets is unavailable, so assets appreciation is difficult to estimate
- SO, one needs to know what Library does



TLCPL: Summary

- nearly 3/4 of county residents are cardholders (320,000 out of 442,000)
- circulated 7.1 million items in 2011
- processed 1.5 mln reference requests
- facilitated 3 thousand searches over non-profit funding opportunities databases
- served 800,000 web page requests, including 135,000 unique Toledo Images in Time
- provided 900,000 logons to patrons on Library computers



TLCPL: Sources of economic value

- economic efficiency from sharing
- elimination of barriers for individuals and business to accessing information
 - free access to Library resources
 - skilled guidance to those who need it
- asset accumulation including rare and unique items



Lucas County: Snapshot

Total population in 2010	441,541
Total non-agricultural private sector	189,906
Median household income	\$39,200
Average Earnings per Job (2010)	\$47,445
Gross Domestic Product (Toledo MSA)	\$26.6 bln
Percentage below poverty (2010)	19.8%
%% of under age 18 below poverty	29.0%
Private non-farm establishments	10,115

TLCPL and Lucas County



Total cost of TLCPL services in 2011	\$35.3 mln
Total cost of TLCPL per county resident	\$79.95
Cost funded from property tax per resident	\$32
Share of property tax levy to average per capita income	less than 0.1 percent



Economic Impact of TLCPL

- Regional multiplier (using 2009 data) is 3.35
- for every \$1 productively spent at the Library, total direct and indirect effects are worth of \$3.35
- Total cost public services: \$33.5 mln
- Net increase in capital assets: \$1.8 mln
- Total net cost of TLCPL activities: \$35.3 mln
- Economic impact of TLCPL in 2011:

$$\$35.3 \text{ mln} \times 3.35 = \$118.3 \text{ mln}$$

Cost versus value

- Cost:
 - does not account for asset appreciation
 - does not depend whether the asset is useless or is in big demand
 - says nothing about the asset's replacement cost
- Value:
 - indicative of usefulness to the society
 - easy to infer for marketable goods
 - propagates through non-market interactions (side effects)





Cost versus value: the specifics of information

- Cost of a lottery ticket:
 - \$2
 - does not depend if it wins or not
- How Information affects value:
 - losing ticket has zero value; is not circulated (not demanded); has no impact for the holder
 - value of jackpot winning ticket is equivalent to jackpot-income; is circulated -- presented for payment; has impact for the holder



Value of circulation

- The challenge: no “true” market price of circulated books
- Nearest proxy: the market price of electronic books with single-use license is close to a discounted paperback version of the same book
- This would imply the value of a single book use is equal to the market price of the book -- too aggressive pricing
- More realistic : market for used books: if a new book cost \$40 and the used one is \$25, the first reader “used” ($\$40 - \$25 = \$15$) of the value of the book

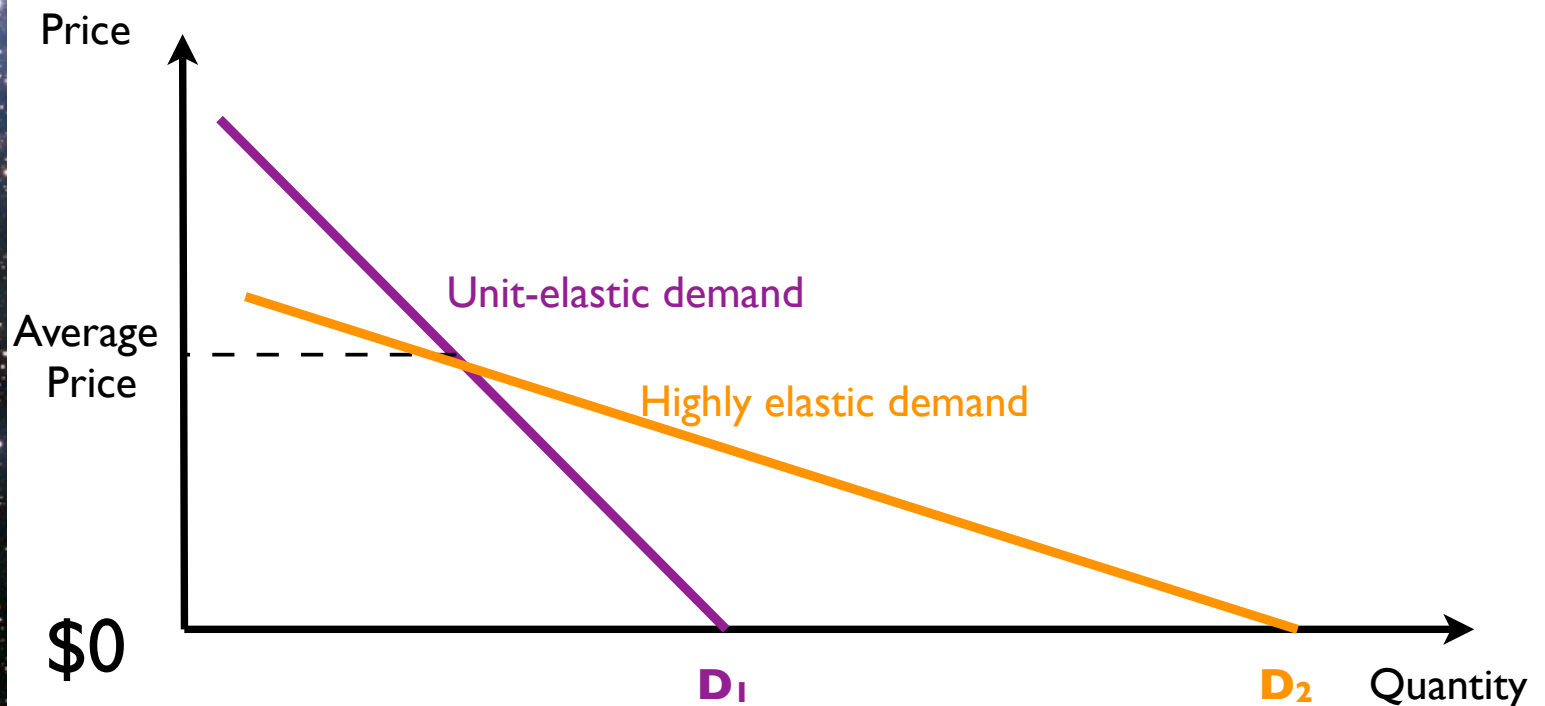
Value of circulation



- What is the value of books in the Library?
- Approach: start with cost of the books and determine how books are circulated. The book that does not circulate at all has zero value. The book that circulated a lot is more valuable than the one that has circulates occasionally

Why the price elasticity of demand is important?

more elastic demand accommodates more consumers: $D_2 > D_1$ for the same money spent (same average price per book)





The price elasticity of demand and the value of an average circulated item

- Computed using actual data on the composition of Library circulated items by value
- The average price per item in circulated is \$17.77
- The price elasticity of demand is 1.95
- The demanded value of an average item in circulation is $\$17.77 \times 1.95 = \34.65
- \$34.65 is an estimate of market value of an average circulated item



Total value of circulation

- The value of circulated item is \$34.65
- The total volume of circulation is 7.1 mln
- The total value of circulation is
 $7.1 \text{ mln} \times \$34.65 = \246.0 mln
- Apply 33.33% factor for the “value consumed”, the total economic value provided by circulation is
 $\$246.0 \text{ mln} \times 0.333 = \underline{\underline{82.0 \text{ mln}}}$



Total value of references

- The value of one reference: \$34.65 (is set to the value of one circulated book). The cost of referenced items is greater than \$200 and runs into thousands of dollars for some items.
- The total volume of referencing is 1.5 mln
- The discount factor is 50 percent (to reflect that reference items stores value better than regularly circulated items)
- The total value of referencing is
$$1.5 \text{ mln} \times \$34.65 \times 0.50 = \underline{\underline{\$26.0 \text{ mln}}}$$



Value-added (non-basic) services

- Definition: services that add value/usefulness of the Library to patrons.
- meeting space (Business:479 meetings that run for 920 hours; altogether: 3,736 programs with unknown duration)
- consultations
- computer access: 900,000 logons with about 40 min per session



Diversity of value-added services

- Business, Technology, and Science requests: 18 thousand are personal and about 2 thousand are business-related; 1 personal request benefits one person, an average business request affects 18 employees.
- Non-profit pursuits; 3,000 searches and 174 consultations
- Children needs: 2 million in circulation, steady children library activities, card membership and computer use by juvenile card-holders
- wireless connectivity: modern times amenities without modern times hassles



Value of non-basic services

- Value-added (normal profit margin if the venture was for-profit) varies from 15-20 percent to 50-100 percent by industry, location, stage of business cycle, etc.
- Apply the rate of 26 percent (which is computed as the long-run equilibrium level for the U.S. economy)
- The value of value-added services is $(\$82.0 \text{ mln} + \$26.0 \text{ mln}) \times 0.26 = \underline{\underline{\$28.1 \text{ mln}}}$



Economic value of TLCPL

- Circulation: *\$82.0 mln*
- Referencing: *\$26.0 mln*
- Value-added services: *\$28.1 mln*
- Total value: $(\$82.0 + \$26.0 + \$28.1) = \underline{\underline{\$136.1 \text{ mln}}}$



Return on investment

- ROI: $(\$136.1 - \$35.3) / \$35.3 = \underline{286\%}$
- The conclusion: for \$1 invested in the TLCPL, the community's net benefit is \$2.86.
- In comparison, ROI is
 - Cleveland Public Library (2009) = \$2.7
 - Montgomery Cnty, incl. Dayton (2006) = \$3.69*
 - Indiana Public Libraries (all state) = \$2.38
 - Carnegie Library (Pittsburgh, PA) = 3.0
 - Southwestern Ohio = \$3.8*

Note: Numbers with asterisk (*) indicate benefit-cost ratio that exaggerates ROI