



Software Services



Measuring Constant Quality Industry
Output

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- What does the BLS Prepackaged Software index measure?
 - What doesn't it measure?

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- Who uses the BLS Prepackaged Software Index?
 - And why?

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- What are the deficiencies of this index?
 - What is being done to improve this index?

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- What does BLS Prepackaged Software index measure?
 - What doesn't it measure?

PPI Software Coverage

- Design, development, marketing and production of system, application, utility and entertainment software
- Not limited to 'shrink-wrapped' software

PPI Software Coverage

- Software provided to:
 - Original Equipment Manufacturers
 - Retailers
 - Distributors
 - Businesses

PPI Software Coverage

- Software for use on:
 - Personal Computers
 - Client Computers
 - Servers
 - Mainframes

PPI Software Coverage

- Types of Licenses:
 - Stand alone licenses
 - Suite licenses
 - Upgrade licenses
 - Maintenance agreements
 - Enterprise agreements

PPI Software Coverage

- Types of Licenses:
 - Single User license
 - Multi-user license
 - Client access license

 - Perpetual license
 - Subscription license

PPI Software Coverage

- Types of Products:
 - Systems software
 - Application software
 - Games
 - Database software
 - Training and installation services
 - Resales of Peripheral Equipment priced as “Other Receipts”

PPI Software Coverage

- Does not cover custom software
- Does not cover own-account software

PPI Software Coverage

- Does not capture software produced by new companies
- U.S. software producers only

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- Who uses the BLS Prepackaged Software Index?
 - And why?

Users of BLS Software Index

- U.S. users
 - Bureau of Economic Analysis
 - Federal Reserve Board
 - BLS Productivity Office
 - Private researchers
 - Private industry

Users of BLS Software Index

- World-wide users
 - European Union statistical agencies
 - Statistical agencies from various other countries
 - Private researchers
 - Private industry

BLS Software Index

- Software publishing index is expensive to maintain because
 - Extensive sampling of companies
 - Extensive statistical agency resources
 - Constant influx of new companies
 - Constant development of new products
 - Continual evolution of pricing mechanisms

BLS Software Index

- Global economy
 - Price behavior same world wide
 - Same products sold world wide
 - Same pricing mechanisms world wide
 - Large software publishers operate world wide

Users of BLS Software Index

- What index level to use?
 - Industry
 - Primary products
 - Application software
 - Application software sold as a suite
 - Application software sold separately

Users of BLS Software Index

- Industry Index
 - SIC 7372 (NAICS 511210)
 - Includes games and resales of equipment
 - Comprehensive coverage representing all revenue of software publishers

Users of BLS Software Index

- Primary Products Index
 - Excludes resales of equipment
 - Comprehensive coverage of all software products
 - Application software
 - Operating system software
 - Database software
 - Games

Users of BLS Software Index

- Application Software Index
 - Excludes games and resales of equipment
 - Excludes operating systems and database software

Users of BLS Software Index

- Application Software Sold as a Suite
- Application Software (Non Suite)
 - Excludes games and resales of equipment
 - Excludes operating systems and database software

Users of BLS Software Index

- Proposed New Structure
 - 2002 Economic Census
 - Developed by joint agency task force responsible for NAICS and new NAPCS (North American Product Classification System)

Users of BLS Software Index

- Proposed New Structure
 - Personal Computer Software
 - Enterprise Software
 - Mainframe Software
 - Systems Management Software
 - Other services

Users of BLS Software Index

- Advantages of Proposed New Structure
 - National Income Accounts
 - PCE
 - Investment
 - More comprehensive structure
 - 2002 Economic Census weights

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- What are the deficiencies of this index?
 - What is being done to improve this index?

BLS Software Index

- Problems using index –
 - Current structure
 - No single index for all software except games
 - Unpublished indices because of large producer dominance
 - Out of date structure

BLS Software Index

- Problems using index –
 - Proposed new structure
 - Lose data continuity with proposed new structure – indices not continuous
 - Same software found in more than one index

BLS Software Index

- Problems with data –
 - No good frame source for sampling
 - No access to U.S. business register
 - No comprehensive source of frame data that matches industry definition
 - Industry members change rapidly
 - No up to date sampling weights

BLS Software Index

- Problems with data –
 - Rapidly changing products
 - Existing reporters change their products
 - New products from lines not already priced
 - Missing data from new companies in the industry

BLS Software Index

- Problems with data –
 - Direct comparison
 - ‘Link to show no change’ is only current quality adjustment methodology

BLS Software Index

- Problems with data –
 - Reporter burden concerns limit the extent and variety of product selections
 - How to incorporate newly developed pricing strategies?

BLS Software Index

- Improvements to the index –
 - Developing strategy to price new enterprise agreements over time in the index

BLS Software Index

- Improvements to the index –
 - Not using retail data for sample reselection or augmentation

BLS Software Index

- Improvements to the index –
 - Annual reselection for currently reporting companies

BLS Software Index

- Improvements to the index –
 - Annual sample augmentation to add new companies and new products

BLS Software Index

- Improvements to the index –
 - Direct contact with reporters
 - Telephone conversations
 - Monthly
 - Annually
 - In person visits

BLS Software Index

- Improvements to the index –
 - Reweighting and resampling of reporters and products in the industry
 - Incorporating new proposed index structure
 - Reselection of item data based on proposed new structure

BLS Software Index

- Improvements to the index –
 - Attempting alternative quality adjustment methodology
 - Only applicable to Suites
 - Use data from stand alone application to adjust for suite changes

BLS Software Index

- Improvements to the index –
 - Attempting alternative quality adjustment methodology

Office 2003	Word	Excel	Outlook	Powerpoint	Access	Publisher	Contact Manager	Info Path
Professional Enterprise	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Professional	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Small Business	Yes	Yes	Yes	Yes	No	Yes	Yes	No
Standard	Yes	Yes	Yes	Yes	No	No	No	No
Basic	Yes	Yes	Yes	No	No	No	No	No

BLS Software Index

- Improvements to the index –
 - Attempting alternative quality adjustment methodology
 - FIOPI Fixed Input-Output Price Index
 - Development costs
 - Projected number of licenses

BLS Software Index

- Improvements to the index –
 - Attempting alternative quality adjustment methodology
 - Discussions with sample augmentation reporters about providing the additional information needed for this quality adjustment procedure

BLS Software Index

- Improvements to the index –
 - Attempting alternative quality adjustment methodology
 - Other possible quality adjustment strategies
 - Function points
 - Lines of code
 - Hedonic models

BLS Software Index

- Conclusions –
 - Costly index to develop and maintain
 - World wide users of index
 - Continuing to research industry
 - Attempting quality adjustment