Query Tool for the Disease Based Price Indexes[1]
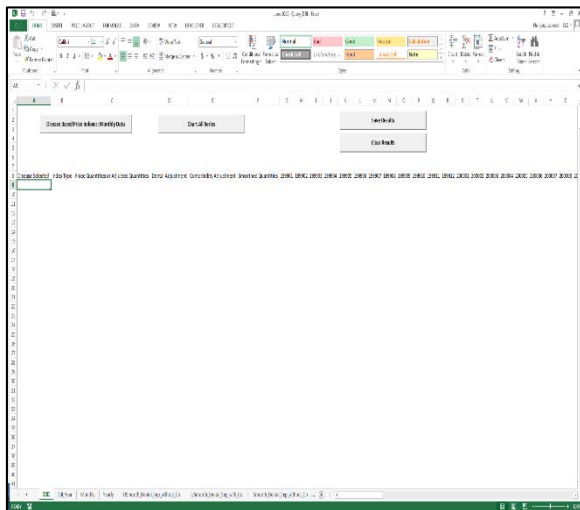
Introduction

Every month 544 monthly and 313 yearly Disease Based Price Indexes are updated. **Disease based indexes differ from the more common cumulative index in that quantities are not fixed and are adjusted yearly**. In order to make useful comparisons of the data in an efficient manner, a data retrieval tool was developed. The tool allows the user to quickly choose the type of data they wish to analyze. **The data retrieval tool is not compatible with Mac versions of excel.** The user has access to two tools; one for monthly data and one for yearly data. Each tool has six options to choose from:

- Disease Category
- Index Type
- Fixed Quantities or Adjusted Quantities
- Dental Adjustment
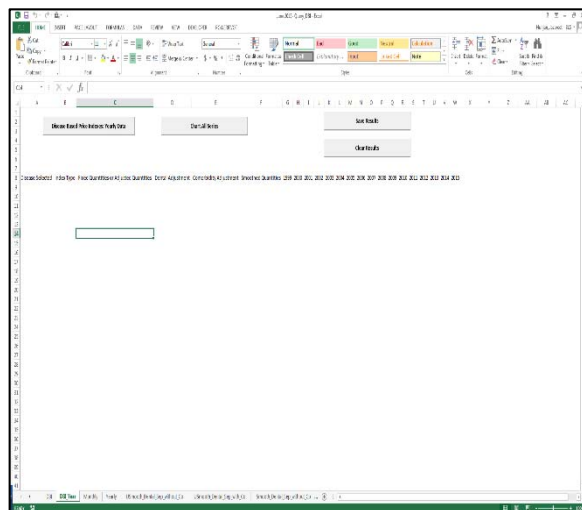- Comorbidity Adjustment
- Smooth Quantities

Instructions

1. To select monthly data, open the workbook and select worksheet "**DBI**." If you need yearly data, go to worksheet "**DBI_Year**."

Monthly Data   *Yearly Data*

I.   Make sure to have macros **enabled**. If macros are not enabled, the data retrieval tool will not work. For instructions on how to enable macros, please visit https://support.office.com/en-in/article/Enable-or-disable-macros-in-Office-files-12b036fd-d140-4e74-b45e-16fed1a7e5c6 .

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[1] "Experimental Disease Based Price Indexes,"(with Hunjan, Jaspreet and Rozental, Lyubov), BLS Manuscript, (2015)
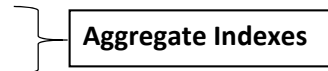
2. For monthly data, click the button "Retrieve Monthly Data" located in worksheet "DBI." For Yearly data, click the button "Retrieve Yearly Data" located in worksheet "DBI_Year." A user form with six categories should now appear. These categories allow the user to tailor their results. You will need to choose an option from each category in order to produce your results.

The categories are filters used to obtain the results and are discussed briefly below. For a more in depth discussion, please see the paper mentioned in

Userform which contains the six options footnote one.

I. Disease Category allows the user to choose between 17 disease types based on the ICD 10 manual and two aggregate indexes which are in bold.

- Infectious and parasitic diseases
- Neoplasms
- Endocrine- nutritional- and metabolic diseases and immunity disorders
- Mental disorders
- Diseases of the nervous system and sense organs
- Diseases of the circulatory system
- Diseases of the respiratory system
- Diseases of the digestive system
- Diseases of the genitourinary system
- Complications of pregnancy- childbirth- and the puerperium
- Diseases of the skin and subcutaneous tissue
- Diseases of the musculoskeletal system and connective tissue
- Injury and poisoning
- Symptoms; signs; and ill-defined conditions
- Diseases of the blood and blood-forming organs; Congenital anomalies; Certain conditions originating in the perinatal period
- Residual codes and unclassified
- Dental Diseases
- **Utilization Adjusted (Disease Based Indexes)**
- **Utilization Unadjusted (Lowe Indexes)**

Aggregate Indexes

II.	Index type has three options depending on which disease you select. The three options are:

- **Cumulative Disease Index**
  - This option is available for the 17 individual disease series but not the aggregate indexes.
  - Similar to most other BLS indexes, this index type has a fixed base period. The base period is set to January 1999.
- **Disease Index**
  - This option is available for the 17 individual series but not the aggregate indexes.
  - This index type differs from the Cumulative series because they do not have their base periods fixed to January 1999, and their quantities are changing yearly.
- **All Disease**
  - The only option available if you select Utilization Adjusted (Disease Based Indexes) or the Utilization Unadjusted (Lowe Indexes). These two indexes aggregate the individual disease series to form a single index respectively.

III.	Fixed Quantities (Lowe) or Adjusted Quantities (Disease Based)

- **Fixed Quantities** entails that the index was calculated using only base year quantities. In other words, quantities remain fixed throughout the series.
  - This option is not available when the Utilization Adjusted (Disease Based Indexes) option is selected.
- **Adjusted Quantities** means that the quantities used to calculate the index change every year. Quantities do not remain fixed.
  - **In order to get disease based price indexes, this option will need to be selected.**
  - This option is not available when the Utilization Unadjusted (Lowe Indexes) is selected

IV.	Dental Combined or Dental Separated
This option lets the user decide between two distinct methods used to calculate the Disease Based Price Index.

- **Dental Combined** was the original method used when the indexes were first developed. This method involves combining Diseases of the Digestive System with Dental Diseases.
  - This option is not available when the Dental Diseases option is selected
- **Dental Separated** allows for Dental Diseases to be independent of Disease of the Digestive System.
  - The only indexes that will be affected by this method are Dental Diseases and Diseases of the Digestive System.
  - The aggregate indexes are only minimally affected.

V.   Comorbidity Adjustment
Two methods are used to calculate the quantities of each disease by determining how they're weighted.

- **No Adjustment** allows for each disease to be equally weighted. For example, if a person goes to the doctor and is treated for four diseases, each disease is weighted (.25 = ¼). This weight is used to determine the yearly quantity sums of each disease.

- **Adjustment** uses a simple pro rationing method to calculate the quantity sums. The pro rationing utilizes national averages to determine how diseases are counted. For example, suppose the yearly national average of office visits that treat heart disease and diabetes is 3 and 2 respectively. Then for a single office visit that treats both heart disease and diabetes, 3/5 of the visit is allocated to heart disease and 2/5 of the visit is allocated to diabetes.

VI.   Smoothing Technique
The smoothing technique refers to how the utilization rates are adjusted since they are updated yearly. Utilization rates are the quantities of each disease; both adjusted and unadjusted for comorbidities.

- **UnSmooth** refers to utilization rates in which the yearly quantity change is incorporated into the January index. Unsmooth indexes are characterized by large jumps every January. For an example, please refer to chart 1 located at the end of this document.

- **Smooth** refers to utilization rates in which the yearly quantity change is equally allocated across the 12 months. For an example, please refer to chart 2 located at the end of this document.

3. When you are finished with your selections, press the button "Get Data." The data that matches your criteria will now appear on the worksheet "DBI." You can repeat steps 1-3 to obtain more data or if you're finished, press the button "Exit."

4. Once exited, press the button "Chart All Series" to graph the selected data.

5. To save the data to another workbook, press the button "Save Results." This will only transfer the data and not the chart.

6. To clear the results along with any charts, you can simply run the filter again or the press "Clear Results" button.

Worksheet Map

As mentioned earlier, every month 544 monthly and 313 yearly Disease Based Price Indexes are updated. This workbook contains all of the data that is produced using the different methods described above. Each method that produced data has a separate worksheet for both monthly and yearly data. The data is then grouped together by their frequency in either the "Monthly" or "Yearly" worksheet.

Worksheet Name	Worksheet Description
DBI	Location of the monthly data query tool
DBI_Year	Location of the yearly data query tool
Monthly	Contains all the monthly series data
Yearly	Contains all the yearly series data
Monthly Data Series	
USmooth_Dental_Sep_without_Co	Monthly Unsmooth dental separated without the comorbidity adjustment
USmooth_Dental_Sep_with_Co	Monthly Unsmooth dental separated with the comorbidity adjustment
Smooth_Dental_Sep_without_Co	Monthly smooth dental separated without the comorbidity adjustment
Smooth_Dental_Sep_with_Co	Monthly smooth dental separated with the comorbidity adjustment
Smooth_Dental_Com_with_Co	Monthly smooth dental combined with the comorbidity adjustment
Smooth_Dental_Com_without_Co	Monthly smooth dental combined without the comorbidity adjustment
USmooth_Dental_Com_without_Co	Monthly Unsmooth dental combined without the comorbidity adjustment
USmooth_Dental_Com_with_Co	Monthly Unsmooth dental combined with the comorbidity adjustment
Yearly Data Series	
Y_Smooth_Dental_Sep_with_Co	Yearly smooth dental separated with the comorbidity adjustment
Y_Smooth_Dental_Sep_Wout_Co	Yearly smooth dental separated without the comorbidity adjustment
Y_USmooth_Dental_Sep_with_Co	Yearly Unsmooth dental separated with the comorbidity adjustment
Y_USmooth_Dental_Sep_Wout_Co	Yearly Unsmooth dental separated without the comorbidity adjustment
Y_Smooth_Dental_Com_with_Co	Yearly smooth dental combined with the comorbidity adjustment
Y_Smooth_Dental_Com_Wout_Co	Yearly smooth dental combined without the comorbidity adjustment
Y_USmooth_Dental_Com_with_Co	Yearly Unsmooth dental combined with the comorbidity adjustment
Y_USmooth_Dental_Com_Wout_Co	Yearly Unsmooth dental combined without the comorbidity adjustment

Chart 1: Unsmooth Option
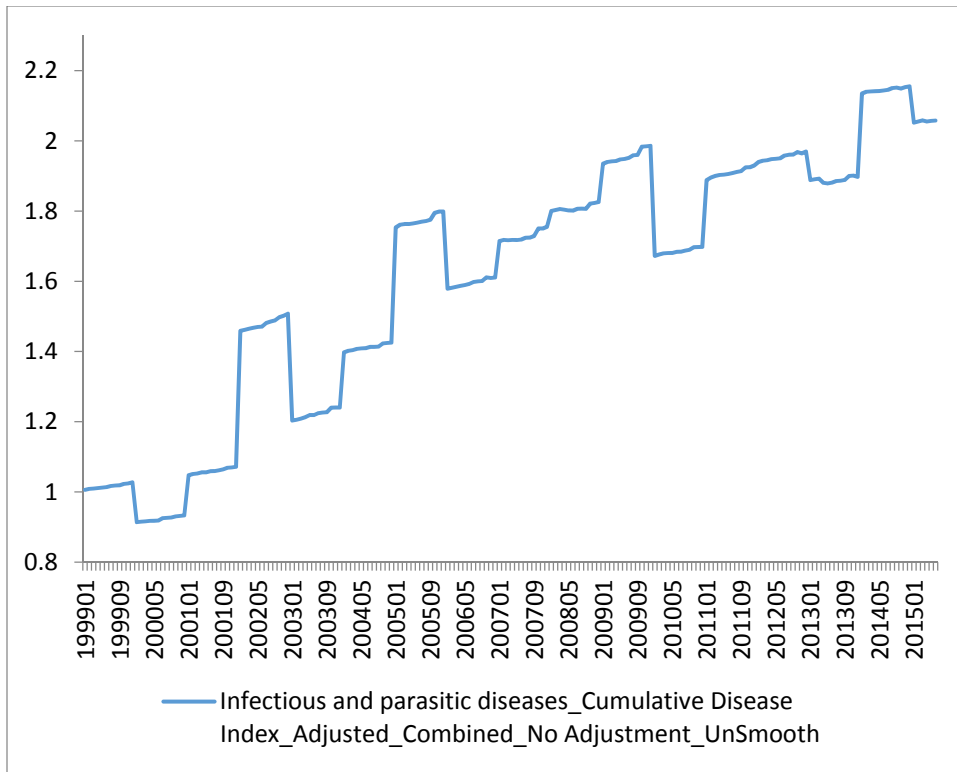

Infectious and parasitic diseases_Cumulative Disease Index_Adjusted_Combined_No Adjustment_UnSmooth

Chart 2: Smoothing Option

Infectious and parasitic diseases_Cumulative Disease Index_Adjusted_Combined_No Adjustment_Smooth