

**The Armchair Quarterback:
Writing SAS® Code for the
Perfect Pivot (Table, That Is)**



NEBSUG
Nebraska SAS®
Users Group

Peter Eberhardt
Fernwood Consulting Group Inc.

Louanna Kong
SAS Software (Beijing) Co. Ltd., China

Nebraska SAS User Group 2013 One-Day Conference

Agenda

Review Excel Pivot Tables

```
Data globalForum;  
infile examples;  
do until (timesIn);  
input example 2.;  
call ShowExcel(example);  
call ShowSAS(example);  
call youDo(example);  
end;  
run;
```

**Impress your boss,
get a raise,
retire rich**

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Thanks to Chevell Parker

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What is a Pivot Table?

- Spreadsheet term
- Data summarization
 - Cross tab with more than two dimensions
- Drag and drop
- Scaled down version of OLAP

- PivotTable is a trademarked term of Microsoft

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What is a Pivot Table?

- Data table

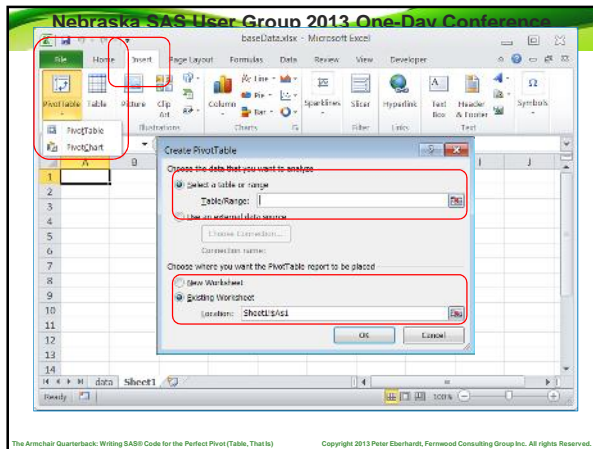
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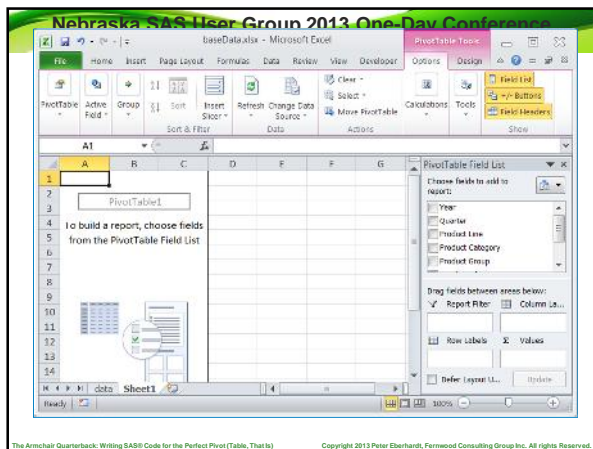
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Year	Quarter	Product Line	Product Category	Product Group	Quantity	Profit
2003	2003Q1	Children	Children Sports	A-Teens, Kids	309	51
2003	2003Q1	Children	Children Sports	Bathing Suits, Kids	102	15
2003	2003Q1	Children	Children Sports	Eclipse, Kid's Clothes	568	93
2003	2003Q1	Children	Children Sports	Eclipse, Kid's Shoes	311	7
2003	2003Q1	Children	Children Sports	Lucky Guy, Kids	313	7
2003	2003Q1	Children	Children Sports	Med Dash	340	51
2003	2003Q1	Children	Children Sports	N.I. Gear, Kids	748	187
2003	2003Q1	Children	Children Sports	Olsons, Kids	203	15
2003	2003Q1	Children	Children Sports	Dion Kid's Clothes	15	3
2003	2003Q1	Children	Children Sports	Osprey, Kids	504	81
2003	2003Q1	Children	Children Sports	Top Dog	364	60
2003	2003Q1	Children	Children Sports	Tracker Kid's Clothes	1355	238
2003	2003Q1	Children	Children Sports	Ypsilon, Kids	148	32

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baseData.xlsx - Microsoft Excel

PivotTable Field List

Choose fields to add to report:

- Product Line
- Product Category
- Product Group
- Quantity
- Profit

Drag fields between boxes below:

- Report Filter
- Columns Labels
- Row Labels
- Values

Year	2003Q2	2003Q3	2003Q4
Children	58950.54	201211.58	192382.77
Clothes & Shoes	1450263.92	2491704.43	2434930.22
Outdoors	1278990.97	1373321.3	1005420.77
Sports	1258048.85	1663741.22	1595522.33
Grand Total	4072252.28	5719978.43	5229456.09

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What is a Pivot Table?

- Terminology
 - PivotTable Field List
 - PivotTable Areas
 - Report Filter
 - Where clause
 - Column Labels
 - Classification variable
 - Row Labels
 - Classification variable
 - Summary Values
 - Statistic

PivotTable Field List

Choose fields to add to report:

- Year
- Quarter
- Product Line
- Product Category
- Product Group

Drag fields between boxes below:

- Report Filter
- Columns Labels
- Row Labels
- Values

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TableEditor Tagset

- PivotTables from SAS
 - Base SAS
 - ODS
 - TableEditor Tagset
 - Not included in SAS distribution
 - See the paper to get the download location

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TableEditor Tagset

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 - Base SAS
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 - » See the paper to get the download location

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```
proc template;
define tagset Tagsets.Tableeditor;
mvar sysver;
define event initialize;
do /if $options["BANNER_COLOR_EVEN"];
set $banner_even $options["BANNER_COLOR_EVEN" ];
else;
unset $banner_even;
done;
do /if $options["BANNER_COLOR_ODD"];
set $banner_odd $options["BANNER_COLOR_ODD" ];
else;
unset $banner_odd;
done;
do /if $options["FBANNER_COLOR_EVEN"];
set $fbanner_even $options["FBANNER_COLOR_EVEN" ];
else;
unset $fbanner_even;
done;
do /if $options["FBANNER_COLOR_ODD"];
set $fbanner_odd $options["FBANNER_COLOR_ODD" ];
```

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```
else;
unset $fbanner_odd;
done;
do /if $options["COL_COLOR_ODD"];
set $col_odd $options["COL_COLOR_ODD" ];
else;
unset $col_odd;
done;
do /if $options["COL_COLOR_EVEN"];
set $col_even $options["COL_COLOR_EVEN"];
else;
unset $col_even;
done;
do /if $options["HEADER_BCOLOR"];
set $header_bcolor $options["HEADER_BCOLOR" ];
else;
unset $header_bcolor;
done;
do /if cmp($options["OVERRIDE"], "yes");
set $override "yes";
```

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```
else;
  unset $override;
done;

do /if cmp( $options["FROZEN_HEADERS"], "yes");
  set $frozen_headers "yes";

else;
  unset $frozen_headers;
done;

do /if $options["FROZEN_ROWHEADERS"];
  set $frozen_rowheaders $options["FROZEN_ROWHEADERS" ];

else;
  unset $frozen_rowheaders;
done;

do /if $options["HIGHLIGHT_COLOR"];
  set $highlight_color $options["HIGHLIGHT_COLOR" ];

else;
  unset $highlight_color;
done;

do /if $options["GRIDLINES"];
  set $borders $options["GRIDLINES" ];
```

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TableEditor Tagset

- PivotTables from SAS
 - * turn off the default listing destination;
 - ods tagsets.tableeditor
 - file="&resultsHome\example1.html"
 - options(
 - auto_excel = "yes" pivotrow = "product_line"
 - pivotcol = "quarter" pivotdata = "profit"
 - pivotpage = "year" quit="NO"
 - excel_save_file="&JavaResultsHome\example1.xlsx")
 - Title1 "Example 1 - Create the First Pivot Table";
 - proc print data=sashelp.orsales;
 - run;
 - ods tagsets.tableeditor close;

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TableEditor Tagset

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TableEditor Tagset

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  pivotcol   = "quarter" pivotdata = "profit"
  pivotpage  = "year"   quit="NO"
  excel_save_file="&JavaResultsHome\example1.xlsx"
);
Title1 "Example 1 - Create the First Pivot Table";
proc print data=sashelp.orsales;
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```

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TableEditor Tagset

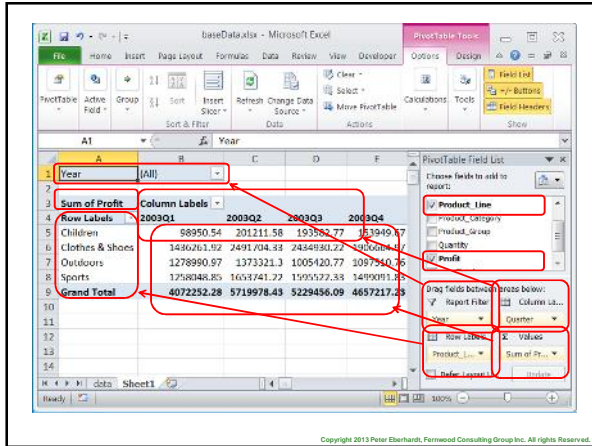
- PivotTables from SAS
 - * turn off the default listing destination;

```
ods tagsets.tableeditor
file="&resultsHome\example1.html"
options(
  auto_excel = "yes"    pivotrow = "product_line"
  pivotcol   = "quarter" pivotdata = "profit"
  pivotpage  = "year"   quit="NO"
  excel_save_file="&JavaResultsHome\example1.xlsx"
);
Title1 "Example 1 - Create the First Pivot Table";
proc print data=sashelp.orsales;
run;
ods tagsets.tableeditor close;
```

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Obs	Year	Quarter	Product Line	Product Category	Product Group	Quantity	Pr
1	2003	2003Q1	Children	Children Sports	A-Team Kids	300	530
2	2003	2003Q1	Children	Children Sports	Sammy Suits Kids	100	184
3	2003	2003Q1	Children	Children Sports	Eclipse Kid's Clothing	588	934
4	2003	2003Q1	Children	Children Sports	Eclipse Kid's Shoes	331	707
5	2003	2003Q1	Children	Children Sports	Lucky Clay Kids	310	739
6	2003	2003Q1	Children	Children Sports	Mad Dash	340	574
7	2003	2003Q1	Children	Children Sports	N.D. Gear Kids	748	1375
8	2003	2003Q1	Children	Children Sports	Classes Kids	200	181
9	2003	2003Q1	Children	Children Sports	Onion Kid's Clothes	70	100
10	2003	2003Q1	Children	Children Sports	Osprey Kids	504	814
11	2003	2003Q1	Children	Children Sports	Top Dog	384	508
12	2003	2003Q1	Children	Children Sports	Tracker Kids Clothing	1983	2318
13	2003	2003Q1	Children	Children Sports	Ypsilon Kids	148	321
14	2003	2003Q1	Clothes & Shoes	Clothes	Eclipse Clothing	2087	3688

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TableEditor Tagset

- PivotTables from SAS
 - ODS tagsets.tableEditor destination
 - Generates a web page with detail data
 - » A button to start Excel is automatically added
 - » The first example we bypassed the button with the `auto_excel='YES'` option
 - Generates java script to build the pivot table

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Exercise 1

- Click on the **Eberhardt – 146** icon to start SAS
- In SAS
 - File... Open Program
 - » You should be in **Examples** folder
- Open **tableEditor.sas**
 - This will create a temporary tableEditor tagset
 - Submit this code and check the log.

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Exercise 1

- Open exercise1.sas

```
>>> create the pivot table just shown
      button_text will be Create PivotTable
      auto_excel  will be yes
      pivot_row   will be product_line
      pivot_column will be quarter
      pivot_data  will be profit
      pivot_page  will be year
      quit        will be NO
```

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Exercise 1

- Open exercise1.sas

```
ods tagsets.tableeditor
file=&resultsHome\example1.html"
options(
  button_text = "Create PivotTable"
  auto_excel  = "yes"
  pivotrow    = "product_line"
  pivotcol    = "quarter"
  pivotdata   = "profit"
  pivotpage   = "year"
  excel_save_file=&JavaResultsHome\example1.xlsx"
  quit="NO"
);
```

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Multiple Summary Variables

- Two summary statistics
- Start the wizard and select the data
- Select the column label (year)
- Select the row label (product_line)
- Select first summary variable (profit)
 - The sum statistic is selected by default

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Multiple Summary Variables

- Change the summary statistic from sum
 - Click on the Sum of Profit drop down
 - Click on Value Field setting
 - Select Average from the list

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Multiple Summary Variables

- Add quantity to summary values area

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	2003		2004	
Row Labels	Average of Profit	Sum of Quantity	Average of Profit	Sum of Quantity
Children	12420.66462	34460	14482.53481	
Clothes & Shoes	93972.28909	205405	110131.3215	
Outdoors	182090.1056	66278	163476.4342	
Sports	68254.59352	131054	82777.00511	
Grand Total	74541.30314	437147	89448.22795	

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Exercise 2

- Open exercise2.sas

```
>>> create the pivot table just shown
pivot row will be product_line
pivot column will be year
pivot data will be profit,quantity
pivot data statistics will be sum,average
```

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Exercise 2

```
ods tagsets.tableeditor
file=%&resultsHome\example2.html"
options(
  button_text = "Excel"
  pivotrow = "product_line"
  pivotcol = "year"
  pivotdata = "profit,quantity"
  pivotdata_stats = "sum,average"
);
```

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Multiple Pivot Tables

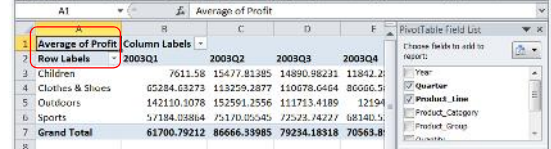
- Three pivotTables
 - Minimum profit by quarter (columns) and product line (row)
 - Maximum profit by quarter (columns) and product line (row)
 - Average profit by quarter (columns) and product line (row)

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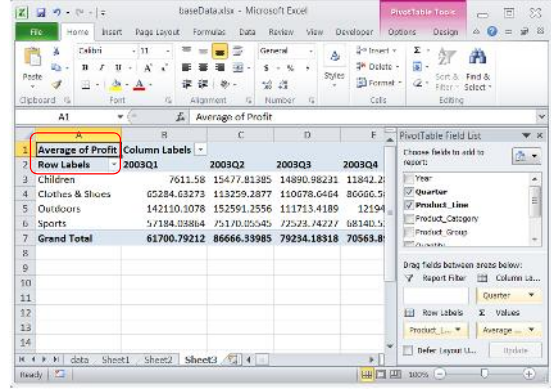
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Multiple Pivot Tables

- Repeat the process to create a pivotTable for each sheet



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Multiple Pivot Tables

- In SAS

```
ods tagsets.tableeditor
file=&resultsHome\example3.html"
options(
  button_text = "Excel"
  pivot_series="yes"
  pivotrow="Product_Line | Product_Line | Product_Line"
  pivotcol=" Quarter | Quarter | Quarter"
  pivotdata="Profit | Profit | Profit"
  pivotdata_stats="Min | Max | Average"
);
```

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Multiple Pivot Tables

- In SAS

```
ods tagsets.tableeditor
file="&resultsHome\example3.html"
options(
  button_text = "Excel"
  pivot_series="yes"
  pivotrow="Product_Line | Product_Line | Product_Line"
  pivotcol=" Quarter | Quarter | Quarter"
  pivotdata="Profit | Profit | Profit"
  pivotdata_stats="Min | Max | Average"
);
```

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Multiple Pivot Tables

- In SAS

```
ods tagsets.tableeditor
file="&resultsHome\example3.html"
options(
  button_text = "Excel"
  pivot_series="yes"
  pivotrow="Product_Line | Product_Line | Product_Line"
  pivotcol=" Quarter | Quarter | Quarter"
  pivotdata="Profit | Profit | Profit"
  pivotdata_stats="Min | Max | Average"
);
```

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Average of Profit	Quarter	2003Q1	2003Q2	2003Q3	2003Q4
Children		7611.58	15477.81385	14890.98231	11842.28231
Clothes & Shoes		65288.63272	118259.2877	110678.8464	86666.38905
Outdoors		142110.1078	152591.2556	115713.4189	121945.64
Sports		57384.08964	75170.09545	72523.74227	68142.53773
Grand Total		61700.78212	86666.33985	79234.18318	70563.89742

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Exercise 3

- Open exercise3.sas

```
>>> create the pivot table just shown
pivot row will be product_line
pivot column will be quarter
pivot data will be profit
```

- first sheet statistic will be min,
- second sheet statistic will be max,
- third sheet statistic will be Average

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Exercise 3

```
ods tagsets.tableeditor
file=%&resultsHome\example3.html*
options(
  button_text = "Excel"
  pivot_series = "yes"
  pivotrow = "Product_Line | Product_Line | Product_Line"
  pivoteol = " Quarter | Quarter | Quarter"
  pivodata = "Profit | Profit | Profit"
  pivodata_stats = "Min | Max | Average"
);
```

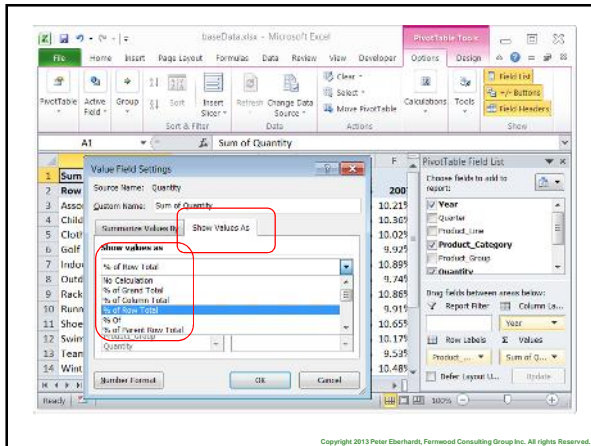
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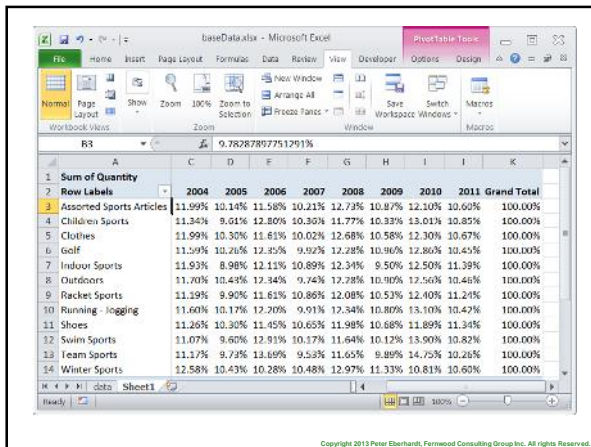
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Percent of Total

- Statistic as percent of a total
 - Percent of Row Total
 - Percent of Column Total
 - Percent of Grand Total
- year as column area
- product_category as row area
- quantity as summary variable
 - Sum
 - Percent of row total

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Percent of Total

- In SAS

```
ods tagsets.tableeditor
file="&resultsHome\example4.html"
options(
  button_text = "Excel"
  sheet_name = "Qty_By_Year"
  pivotrow = "product_category"
  pivotcol = "year"
  pivotdata = "quantity"
  pivotdata_stats = "sum"
  pivotalc = "row"
);
```

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Percent of Total

- In SAS

```
ods tagsets.tableeditor
file="&resultsHome\example4.html"
options(
  button_text = "Excel"
  sheet_name = "Qty_By_Year"
  pivotrow = "product_category"
  pivotcol = "year"
  pivotdata = "quantity"
  pivotdata_stats = "sum"
  pivotcalc = "row"
);
```

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Percent of Total

- In SAS

```
ods tagsets.tableeditor
file="&resultsHome\example4.html"
options(
  button_text = "Excel"
  sheet_name = "Qty_By_Year"
  pivotrow = "product_category"
  pivotcol = "year"
  pivotdata = "quantity"
  pivotdata_stats = "sum"
  pivotcalc = "row"
);
```

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Product Category	2003	2004	2005	2006	2007	2008	2009	2010	2011	Grand Total
Assorted Sports Articles	9.78%	11.98%	10.14%	11.58%	10.21%	12.72%	10.87%	12.10%	10.60%	100
Children's Sports	9.83%	11.34%	9.66%	12.80%	10.30%	11.77%	10.33%	12.94%	10.85%	100
Clothing	9.85%	11.95%	10.30%	11.61%	10.02%	12.68%	10.58%	12.30%	10.67%	100
Golf	9.32%	11.50%	10.26%	12.25%	9.92%	12.28%	10.90%	12.86%	10.45%	100
Indoor Sports	10.37%	11.93%	9.88%	12.11%	10.89%	12.34%	9.50%	12.50%	11.39%	100
Outdoors	9.59%	11.70%	10.43%	12.34%	9.74%	12.28%	10.90%	12.56%	10.46%	100
Racket Sports	10.38%	11.19%	9.90%	11.61%	10.86%	12.08%	10.53%	12.40%	11.24%	100
Running - Jogging	9.45%	11.60%	10.17%	12.20%	9.91%	12.34%	10.80%	13.10%	10.42%	100
Shoes	10.44%	11.26%	10.30%	11.45%	10.65%	11.98%	10.68%	11.89%	11.34%	100
Swim Sports	9.77%	11.07%	9.80%	12.91%	10.17%	11.64%	10.12%	13.90%	10.82%	100
Team Sports	9.34%	11.17%	9.73%	13.69%	9.53%	11.65%	9.89%	14.75%	10.26%	100
Winter Sports	10.52%	12.58%	10.43%	10.28%	10.48%	12.97%	11.33%	10.81%	10.60%	100

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Exercise 4

- Open exercise4.sas

```
>>> create the pivot table just shown
pivot row will be product_line
pivot column will be quarter
pivot data will be profit
```

- first sheet statistic will be min,
- second sheet statistic will be max,
- third sheet statistic will be Average

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Exercise 4

```
ods tagsets.tableeditor
file=%&resultsHome\example4.html"
options(
  button_text = "Excel"
  sheet_name = "Qty_By_Year"
  pivotrow = "product_category"
  pivoteol = "year"
  pivodata = "quantity"
  pivodata_stats = "sum"
  pivotcalc = "row"
);
```

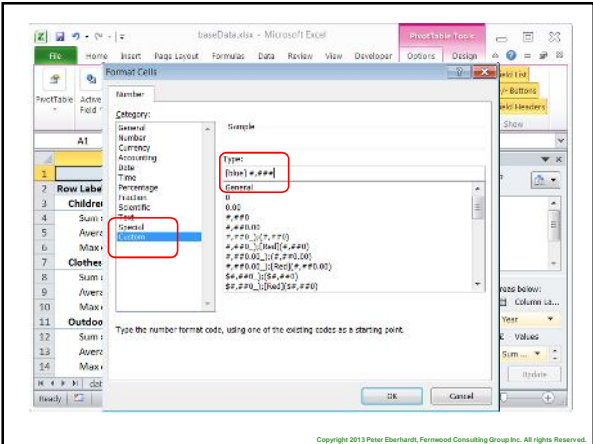
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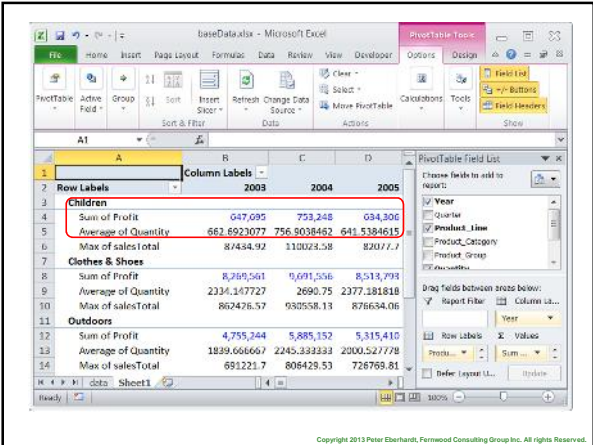
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Formatting Data

- Excel offers a variety of formatting options
- Use the pivotTable interface
 - Value Field settings
- Each data variable needs to be set separately

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Formatting Data

- Excel offers a variety of formatting options
- Custom format
 - [blue] #,###
 - » Colour in square bracket (optional)
 - » #,###
 - » Insert commas, no decimal
 - Custom formats can have 4 "sections" separated by semi-colon (;)
 1. Format for positive
 2. Format for negative
 3. Format for zero
 4. Format for text

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Formatting Data

- In SAS

```
ods tagsets.tableeditor
file=&resultsHome\example5.html"
options(
  button_text="Excel"
  pivotrow="product_line"
  pivotcol="year"
  pivotdata="Profit,Quantity,salesTotal"
  pivotdata_stats="Sum,Average,Max"
  pivotdata_fmt="[blue] #,###-[red] $#,###.##- $#,###.##"
);
```

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Formatting Data

- In SAS

```
ods tagsets.tableeditor
file=&resultsHome\example5.html"
options(
  button_text="Excel"
  pivotrow="product_line"
  pivotcol="year"
  pivotdata="Profit,Quantity,salesTotal"
  pivotdata_stats="Sum,Average,Max"
  pivotdata_fmt="[blue] $#,### ~ [red] #,###.## ~ $#,###.##"
);
```

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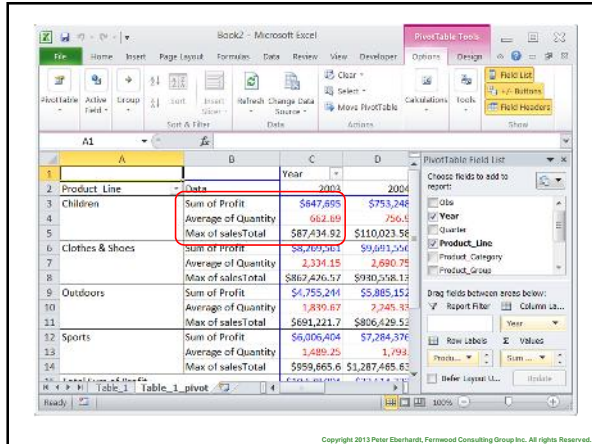
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Formatting Data

- In SAS

```
ods tagsets.tableeditor
file=&resultsHome\example5.html"
options(
  button_text="Excel"
  pivotrow="product_line"
  pivotcol="year"
  pivotdata="Profit,Quantity,salesTotal"
  pivotdata_stats="Sum,Average,Max"
  pivotdata_fmt="[blue] $#,### ~ [red] #,###.## ~ $#,###.##"
);
```

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Product Line	Year	2001	2004
Children	Sum of Profit	\$647,895	\$753,248
	Average of Quantity	862.88	796.6
	Max of salesTotal	\$87,434.92	\$110,023.56
Clothes & Shoes	Sum of Profit	\$8,499,281	\$9,683,306
	Average of Quantity	2,334.15	2,690.75
	Max of salesTotal	\$862,426.57	\$980,558.13
Outdoors	Sum of Profit	\$4,755,234	\$5,885,152
	Average of Quantity	1,839.67	2,245.33
	Max of salesTotal	\$691,221.7	\$806,428.52
Sports	Sum of Profit	\$6,006,404	\$7,284,376
	Average of Quantity	1,489.25	1,793
	Max of salesTotal	\$959,665.6	\$1,287,465.63

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Exercise 5

- Open `exercise5.sas`
- >>> create the pivot table just shown
- `pivotrow` will be product line
- `pivotcol` will be year
- `pivotdata` will be profit, quantity, salesTotal
- `pivotdata_stats` will be sum, average, max
- `pivotdata_fmt` will be
 - SUM: **blue** with dollar/commas,
 - AVERAGE: **red** with commas,
 - MAX: **default** with dollar/commas

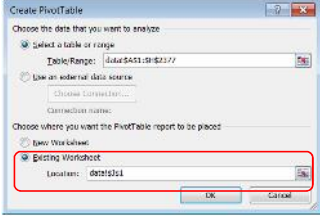
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Exercise 5

```
ods tagsets.tableeditor
file=&resultsHome\example5.html*
options(
  button_text = 'Excel'
  Pivotrow = 'product_line'
  Pivotcol = 'year'
  Pivotdata = 'Profit, Quantity, salesTotal'
  pivotdata_stats = 'Sum, Average, Max'
  pivotdata_fmt = '[blue] $#,### - [red] #,###.## - $#,###.##'
);
```

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Adding PivotTable to the Data Sheet

- Specify the location on the data sheet in the wizard



The screenshot shows the 'Create PivotTable' dialog box. Under 'Choose the data that you want to analyze', the 'Table Range' is 'data1\$A1:\$I:\$I'. Under 'Choose where you want the PivotTable report to be placed', the 'Existing Worksheet' radio button is selected, and the 'Location' is 'data1\$A1'. The 'OK' button is highlighted.

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Adding PivotTable to the Data Sheet

- In SAS

```
ods tagsets.tableeditor  
file="%resultsHome\example7.html"  
options(  
  button_text = "Excel"  
  sheet_name = "Pivot With Data"  
  excel_autofilter = "yes"  
  ptdest_range= "g1"  
  pivotrow = "product_category"  
  pivotcol = "year"  
  pivotdata ="profit"  
);
```

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Adding PivotTable to the Data Sheet

- In SAS

```
ods tagsets.tableeditor  
file="%resultsHome\example7.html"  
options(  
  button_text = "Excel"  
  sheet_name = "Pivot With Data"  
  excel_autofilter = "yes"  
  ptdest_range= "g1"  
  pivotrow = "product_category"  
  pivotcol = "year"  
  pivotdata ="profit"  
);
```

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Adding PivotTable to the Data Sheet

- In SAS


```
ods tagsets.tableeditor
file="%resultsHome\example7.html"
options(
  button_text = "Excel"
  sheet_name = "Pivot With Data"
  excel_autofilter = "yes"
  ptdest_range= "g1"
  pivotrow = "product_category"
  pivotcol = "year"
  pivotdata = "profit"
);
```

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	Product Category	Year	sales Tot	Prof
1	Children Sports	2003	9713.94	5380.65
2	Children Sports	2003	2684.91	1540.36
3	Children Sports	2003	18768.8	9348.95
4	Children Sports	2003	14208.42	7072.7
5	Children Sports	2003	13425.12	7399.4
6	Children Sports	2003	10367.82	5742.84
7	Children Sports	2003	33932.95	18975.47
8	Children Sports	2003	3243.43	1918.64
9	Children Sports	2003	621.86	309.43
10	Children Sports	2003	14675.5	8142.49
11	Children Sports	2003	10988.67	6086.73

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	Sum of Profit	Year	2004	2005
1	Sum of Profit			
2	Product Category	2003		
3	Assorted Sports Articles	2365199.05	2896541.55	2426049.28
4	Children Sports	647894.56	753247.81	634305.69
5	Clothes	3448479.99	4399460.33	3681077.44
6	Golf	840524	1049831.42	912442.59
7	Indoor Sports	364615.04	441445.23	297426.71
8	Outdoors	4755243.8	5885151.63	5315410.03
9	Racket Sports	487370.33	561206.14	507386.11
10	Running - Jogging	516256.38	645634.86	567269.11
11	Shoes	4821081.45	5342095.96	4832715.44
12	Swim Sports	171498.76	164433.43	172600.73

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Exercise 7

- Open exercise7.sas

```
>>> create the pivot table just shown
sheet_name will be Qty_By_Year
pivotrow will be product_category
pivotcol will be year
pivotdata will be profit
ptdest will be G1
  > pivot table and data are on same sheet
```

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Exercise 7

```
ods tagsets.tableeditor
file="%resultsHome\example7.html"
options(
  button_text = "Excel"
  sheet_name = "Pivot With Data"
  excel_autofilter = "yes"
  ptdest_range = "g1"
  pivotrow = "product_category"
  pivotcol = "year"
  pivotdata = "profit"
);
```

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Adding Sheets to an Existing Workbook

- Excel offers numerous ways to add a sheet to an existing workbook

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Adding Sheets to an Existing Workbook

- In SAS

```
ods tagsets.tableeditor  
file="%resultsHome\example8.html"  
options(  
  button_text = "Excel"  
  update_target="%JavaResultsHome.\example7.xlsx"  
  sheet_name="Sales"  
  pivotrow="product_line"  
  pivotcol="year"  
  pivotdata="profit"  
  pivot_format="medium5"  
);
```

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Adding Sheets to an Existing Workbook

- In SAS \

```
ods tagsets.tableeditor  
file="%resultsHome\example8.html"  
options(  
  button_text = "Excel"  
  update_target="%JavaResultsHome.\example7.xlsx"  
  sheet_name="Sales"  
  pivotrow="product_line"  
  pivotcol="year"  
  pivotdata="profit"  
  pivot_format="medium5"  
);
```

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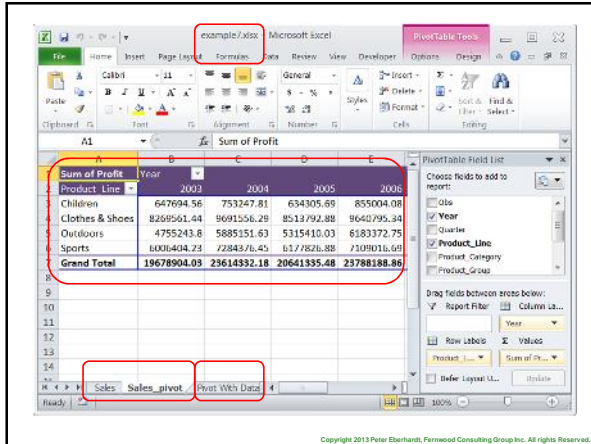
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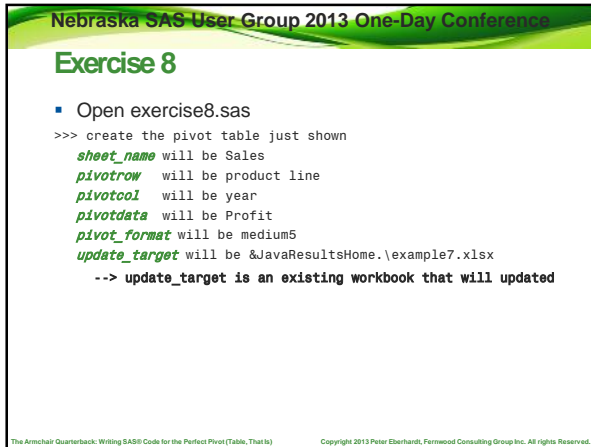
Adding Sheets to an Existing Workbook

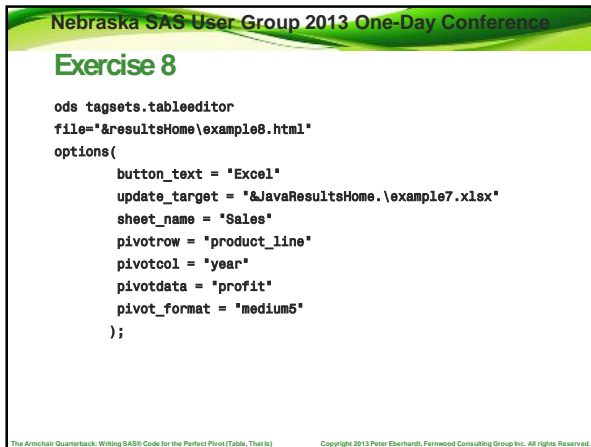
- In SAS \

```
ods tagsets.tableeditor  
file="%resultsHome\example8.html"  
options(  
  button_text = "Excel"  
  update_target="%JavaResultsHome.\example7.xlsx"  
  sheet_name="Sales"  
  pivotrow="product_line"  
  pivotcol="year"  
  pivotdata="profit"  
  pivot_format="medium5"  
);
```

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Updating a Range in an Existing Workbook

- SAS Access for PC File Formats

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Updating a Range in an Existing Workbook

```
ods tagsets.tableeditor file="%resultsHome\example9.html"
options(
  button_text = "Excel"
  update_target="%javaDataHome\example9.xlsx"
  update_sheet="Sales"
  update_range="1,7"
);
```

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Updating a Range in an Existing Workbook

```
ods tagsets.tableeditor file="%resultsHome\example9.html"
options(
  button_text = "Excel"
  update_target="%javaDataHome\example9.xlsx"
  update_sheet="Sales"
  update_range="1,7"
);
```

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Obs	Product Line	Year	salesTotal	Profit
2	529 Children	2005	8752.92	4841.05
3	530 Children	2005	2542.1	1470.23
4	531 Children	2005	14556.59	7236.99
5	532 Children	2005	13857.67	6798.38
6	533 Children	2005	10265.72	5620.17
7	534 Children	2005	8925.83	4936.69
8	535 Children	2005	35450.72	19837.47
9	536 Children	2005	3320.94	1962.18
10	537 Children	2005	464.53	730.78
11	538 Children	2005	12544.81	6961.26
				59890.2

Obs	Product Line	Year	salesTotal	Prc
1849	Children	2010	8497.15	4
1850	Children	2010	3136.58	1
1851	Children	2010	10490.71	1
1852	Children	2010	16188.74	8
1853	Children	2010	13332.49	1
1854	Children	2010	8729.17	4
1855	Children	2010	86642.88	76
1856	Children	2010	3394.69	1
1857	Children	2010	626.45	—
1858	Children	2010	14516.97	8
				67

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Exercise 9

- Open exercise9.sas

```
>>> create the pivot table just shown
      button_text will be "Excel"
      update_target will be &javaDataHome\example9.xlsx
      update_sheet will be Sales
      update_range will be row 1 column 7
```

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Exercise 9

```
ods tagsets.tableeditor  
file=&resultsHome\example9.html"  
options(  
  button_text = "Excel"  
  update_target="&javaDataHome\example9.xlsx"  
  update_sheet="Sales"  
  update_range="1,7"  
);
```

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Creating pivotTables from Existing Workbook

- Data already loaded in Excel from another source

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Creating pivotTables from Existing Workbook

```
ods tagsets.tableeditor file="&resultsHome\example10.html"  
options(  
  update_target ="&javaDataHome\example10.xlsx"  
  sheet_name ="Profit, Quantity, Sales"  
  pivotrow  ="Product_line | Product_line | Product_line"  
  pivotdata ="Profit | Quantity | Sales"  
  auto_excel = "yes"  
);
```

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Creating pivotTables from Existing Workbook

```
ods tagsets.tableeditor file="%resultsHome\example10.html"
options(
  update_target = "&javaDataHome\example10.xlsx"
  sheet_name = "Profit, Quantity, Sales"
  pivotrow = "Product_line | Product_line | Product_line"
  pivotdata = "Profit | Quantity | Sales"
  auto_excel = "yes"
);
```

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Creating pivotTables from Existing Workbook

```
ods tagsets.tableeditor file="%resultsHome\example10.html"
options(
  update_target = "&javaDataHome\example10.xlsx"
  sheet_name = "Profit, Quantity, Sales"
  pivotrow = "Product_line | Product_line | Product_line"
  pivotdata = "Profit | Quantity | Sales"
  auto_excel = "yes"
);
```

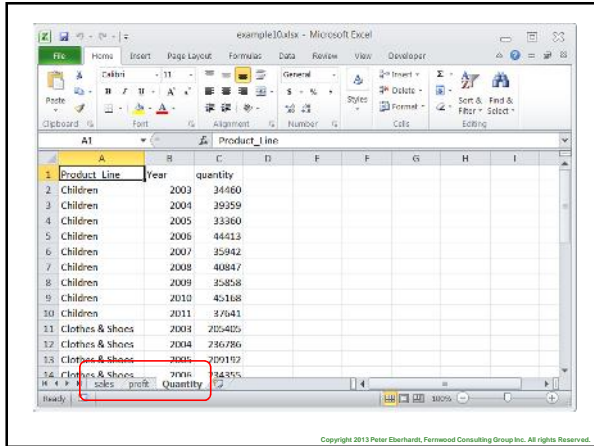
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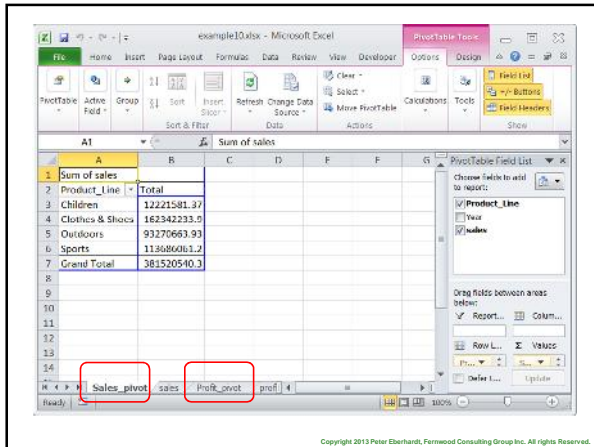
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Creating pivotTables from Existing Workbook

```
ods tagsets.tableeditor file="%resultsHome\example10.html"
options(
  update_target = "&javaDataHome\example10.xlsx"
  sheet_name = "Profit, Quantity, Sales"
  pivotrow = "Product_line | Product_line | Product_line"
  pivotdata = "Profit | Quantity | Sales"
  auto_excel = "yes"
);
```

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Exercise 10

- Open exercise10.sas

```
>>> create the pivot table just shown
update_target will be "&javaDataHome\example10.xlsx"
sheet_name will be Profit, Quantity, Sales
pivotrow will be "Product_line |Product_line | Product_line"
pivotdata will be "Profit | Quantity | Sales"
auto_excel will be yes
```

Note the use of the DATA_NULL_ report to generate a dummy web page

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Exercise 10

```
ods tagsets.tableeditor file="&resultsHome\example10.html"
options(
  update_target="&javaDataHome\example10.xlsx"
  sheet_name="Profit, Quantity, Sales"
  pivotrow="Product_line | Product_line | Product_line"
  pivotcol="year | year"
  pivodata="Profit | Quantity | Sales"
  auto_excel = "yes"
);
Title1 "Example 10 - PivotTables from an Existing Workbook";
data _null_;
file print;
put "Create Pivot Tables";
run;
ods tagsets.tableeditor close;
```

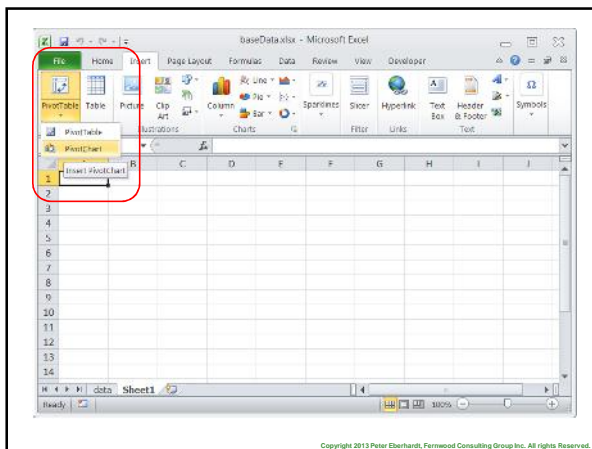
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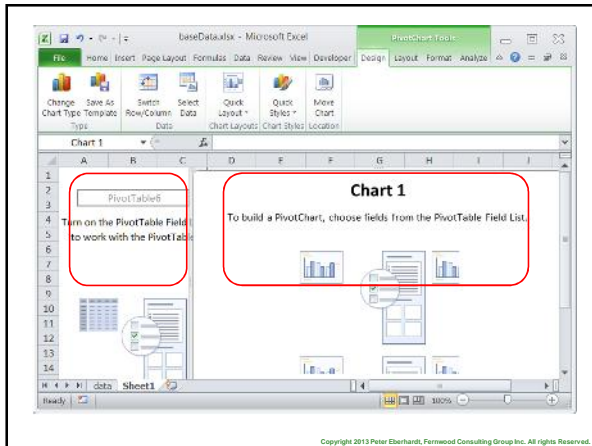
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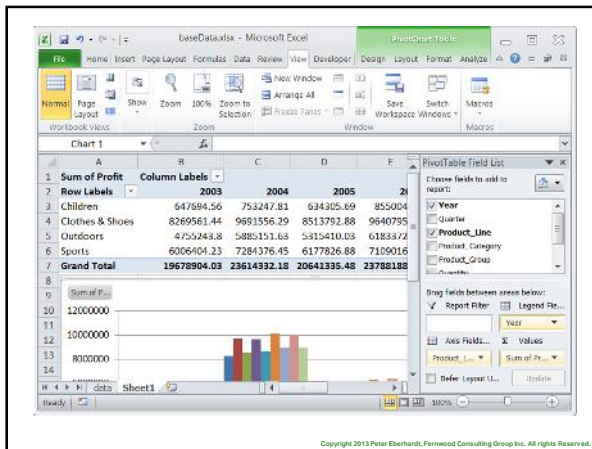
Creating pivotCharts

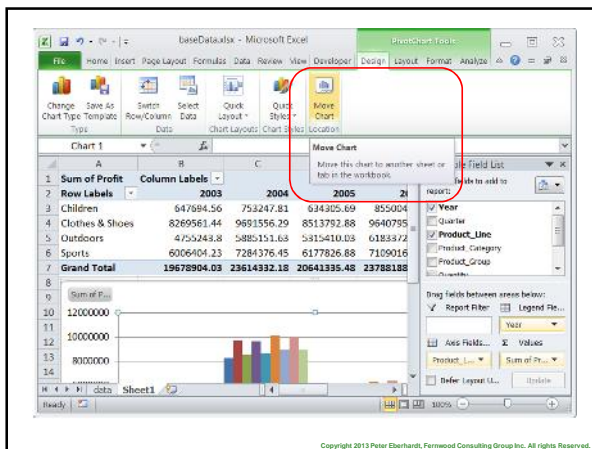
- Wizard – insert pivotChart
- Creates pivotTable AND pivotChart
- Changes to the table are immediately reflected in chart

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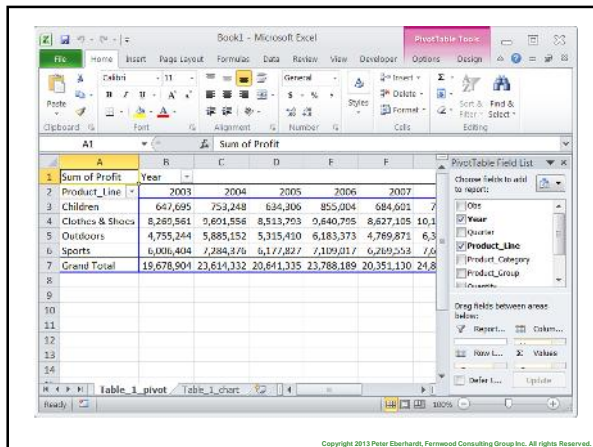
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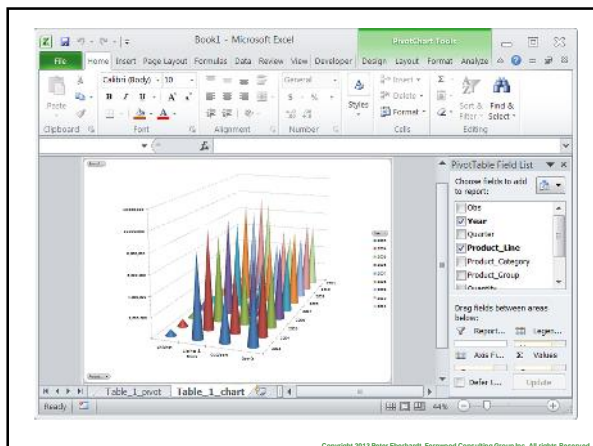
Creating pivotCharts

- In SAS

```
ods tagsets.tableeditor file="%resultsHome\example11.html"
options(
  button_text = "Excel"
  pivotrow    = "product_line"
  pivotcol    = "year"
  pivotdata   = "profit"
  pivotdata_fmt = "#,###"
  pivotcharts = "yes"
  chart_type = "conecol"
);
```

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Exercise 11

- Open exercise11.sas

```
>>> create the pivot table just shown
      pivotrow will be product_line
      pivotcol will be year
      pivotdata will be profit
      pivotdata_fmt will be #,###
      pivotcharts will be YES
      chart_type will be conecol
```

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Exercise 11

```
ods tagsets.tableeditor file="%resultsHome\example11.html"
options(
  button_text = "Excel"
  pivotrow="product_line"
  pivotcol="year"
  pivotdata="profit"
  pivotdata_fmt="#,###"
  pivotcharts="yes"
  chart_type="conecol"
);
```

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Creating pivotCharts

- Adding notations to the chart

```
options(
  pivotcol="year"
  pivotdata="profit"
  pivotdata_fmt="#,###"
  pivotcharts="yes"
  chart_type="cylindercol"
  chart_title="Profit Analysis"
  chart_yaxes_title="Profit"
  chart_xaxes_title="Product Line"
  chart_xaxes_orientation="45"
  chart_yaxes_numberformat="currency"
);
```

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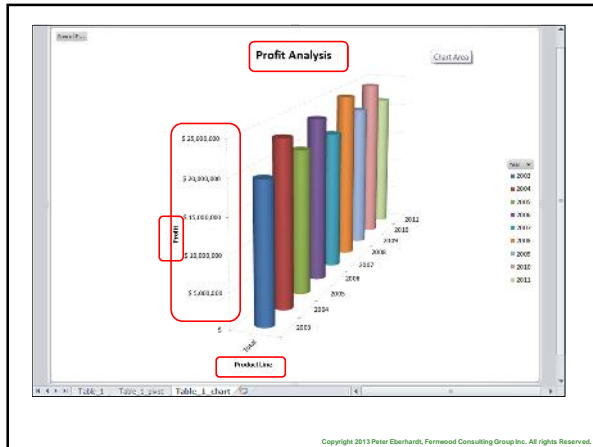
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Creating pivotCharts

- Adding notations to the chart

```
options(  
  pivotcol="year"  
  pivotdata="profit"  
  pivotdata_fmt="#,###"  
  pivotcharts="yes"  
  chart_type="cylindercol"  
  chart_title="Profit Analysis"  
  chart_yaxes_title="Profit"  
  chart_xaxes_title="Product Line"  
  chart_xaxes_orientation="45"  
  chart_yaxes_numberformat="$#,###,##"  
);
```

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Nebraska SAS User Group 2013 One-Day Conference

Review

- TableEditor tagset
 - Easy to create PivotTables and PivotCharts
- Numerous options to control virtually every part of the PivotTable and PivotChart
 - See paper for the options
- Can generate data as part of the process
- Can use data in existing workbooks


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Thanks

- To you for attending
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Peter Eberhardt
peter@fernwood.ca

how@fernwood.ca

Louanna Kong

