



By ANDY ZAVOINA, CRCM

## Pivot Tables, Part 1

**W**ORKING SMARTER, NOT HARDER, very often means using the tools you have effectively and efficiently. I have heard that only 50 percent of Microsoft Office users use even 20 percent of the software's capabilities. Sometimes we learn how to get done what we need to, dismissing the rest of the capabilities as being non-essential. At least at that point, they were nonessential. It is important to recognize the capabilities of our software to allow for more difficult tasks in the future. As we grow, so should our sophistication in software use. And it is not likely that when your bank spent thousands of dollars on your computer and software, they equaled that expenditure on training you how to use it.

Those numbers suggesting half of software users learn a fifth of the software's capabilities are likely not far from the truth. Just as there are those who don't have time to do bank work because they are trying to keep up with the software, there are many who are so busy doing bank work that they don't have time to learn the software. A third group is where I sometimes put myself: I learned how to make the program do what I wanted, and I stuck with that. As newer versions of programs come out, I might upgrade, but I might not take time to learn about the new features. And there may be a new, easier way to do what I've been doing. So where do we find the balancing point between software needs and meeting those needs?

In the next two installments of "Working Smarter—Not Harder," we will examine one feature in Microsoft Excel that may help you find at least part of that balance. We will look first at pivot tables—what they are and how they can help you. And in the next installment we'll review some practical uses for pivot tables from the compliance officer's desk.

When the requirements of the Community Reinvestment Act (CRA) changed dramatically in the early to mid-1990s I was a very heavy Excel user. We were a small bank and not required to complete data collection for CRA. We opted to anyway, so that

we could benchmark our performance standards and goals. Using Excel as a database, I was able to extract data for reports in many different ways. The problem was, I would define my criteria for some data and get that one bit, that one single item I wanted. This might be all the loans in one particular census tract. This was good information, but I would then have to copy and paste the results to another sheet, which was the beginnings of my report, and then redefine the criteria for another census tract and repeat the process again and again. It could easily take a week to complete the analysis-gathering process for the contents of any CRA, HMDA, or fair lending project. That wasn't efficient. Later I learned how to use array formulas to get more data at once. And as the number of records grew into the many thousands, Excel was choking. Access was a better tool at that point, but it is a dedicated database—who wants to learn how to design a car rather than just to drive one?

Pivot tables, a function that originated in Lotus 1-2-3, can be one of the most powerful tools at your disposal, yet they are one of the least used (in my experience) and least understood. The Google definition I found—"A data mining feature that enables one to summarize and analyze large amounts of data in lists and tables. Pivot tables can quickly be

rearranged by dragging and dropping columns to different row, column or summary positions"—is not much help either. But the Excel "Help" function offers no definition. Some years ago, I took a two-day Excel class and asked the instructor about them. She wasn't aware of any real functionality either. The capability to rearrange data and move columns from the left side to across the top seemed more like a way to correct a poorly designed layout to me. Little did I realize how much could be done with this.

In *Pivot Table Data Crunching*, Bill Jelen and Michael Alexander liken pivot tables to a kaleidoscope. They allow you to turn things around so that the data presents itself in different ways. This isn't just the rows and columns, but subtotals as well, sliced and diced in many ways you didn't originally conceive. And while you can generate many different pivot table reports and charts, the original data you started with remains intact and untouched. There is little to no chance you will destroy your original information, whether that be CRA or HMDA loan information or breakdowns of different deposit products.

If you start with your CRA or HMDA loan application register in an Excel format, you can quickly use these to perform edit checks and compare data such as a borrower's sex against his or her ethnicity. You can easily see where,

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for example, one says the borrower is a male, and the other field says there is no ethnicity provided. Excel and pivot tables also allow you to quickly measure data such as the number of loans in a geographic area, the total of those loans for a given period, and the median income of your borrowers, and to compare borrowers from an area to depositors in that same area.

I had noticed several postings in the BankersOnline.com threads from a user named Truffle Royale touting the use of pivot tables in this type of analysis. Many went without a response even though she—Barbara Job Packham, a compliance specialist from Banker's Bank in Madison, Wisc.—spoke highly of them. She wrote, "Doing a pivot table in Excel will all but eliminate your errors!!! The Feds were here for an interim review last fall and one examiner took the time to teach me how to do this. The only error we had on 2004 exam just concluded was due to an interpretation of the new rule and one quick global edit fixed it." And, "You can look at the purpose code for all your loans. The pivot table will show you how many loans are purchase, home improve-

ment and refis. In my case, it seemed I had too many refis. The pivot table gave me the loan numbers for the files marked as refis and I just reviewed those to find the ones that should have been home improvement and, worse yet, purchase. (Construction perm=purchase NOT refi!)"

Being a self-proclaimed Excel aficionado I thought I'd explore this, even though I already knew how to get the necessary data out of the loan application registers I had. Wow! Barbara quickly demonstrated to me just a few things that, while I already knew how to get, took at least five times longer and were so much more cumbersome. This time savings alone was worth exploring further. Remember that week-long data extraction task? Now it could be done on Monday. And this doesn't even allow for changes such as when your analysis detects a sharp decline in applications, and a reporting branch discovers it sent you an incomplete wrong file. While pivot tables won't improve the accuracy or efficiency of those supplying you with data, it will make the process of correcting reports much faster and easier. Certainly it helps when your data starts in Excel,

or may be exported to Excel from your core system. Many bankers will find that one or both of these scenarios is workable in their institutions.

Imagine you have 10,000 loan records in your Excel file and you want a summary report of these loans. Pre-pivot table procedures might have required the use of multiple advanced filters, DSUM calculations, and the Paste Special command, and could take seven steps and 15 minutes of your time, if you were quick. Use of a pivot table takes two steps, six mouse clicks, and less than one minute to complete. That is working smarter.

In addition to the compliance aspects of this analysis, there is a real value-added benefit. Compliance is continually branded as a "cost center." While I prefer "profit preservation," there is more we can do in our banks than handle all things compliance. After you have worked out getting extracts from the core systems on loan and deposit data to complete various reports on CRA, fair lending, and housing, you have a goldmine of data. The definition above for a pivot table includes data mining. You can now easily tell marketing and senior management where your deposits come from, and where they don't come from. You can do the same with loans, plus you can narrow your analysis down to the types of products (loan and deposits, if you have that data in your tables) that are coming from where, and when. Compare this to advertising that was done, or targeted advertising, and you'll be able to assist in evaluating the effectiveness of your ad campaigns. You could see which branches saw growth by product and time period. Combine this with the census data you already have and you will have a better understanding of your market, your attempts to meet the needs of the market, and how successful you are. Using other banks' HMDA and CRA data for comparison will also yield information your bank wants and needs to succeed. And with pivot tables, you can look at

this information in a table format, with graphs if desired, from many different viewpoints. Remember, though, that you can only get out as much as you put in. If you want deposit account types by date and geography, you need the product codes, the census tract or other geographical information, and the date opened. You might also want to know which accounts have direct deposit, pay the most in fees, have the greatest average balances, etc. As much as you put in, you can get out.

Pivot tables don't have as much power as Microsoft's Access database, but you likely have Excel on your computer now. Most of us have more experience with Excel, so we are more comfortable with it and it doesn't have the steep learning curve that Access does. Experimenting with pivot tables is easy. They are very forgiving in that you can go back and undo or completely re-create what you have done in minutes. And this is yours at virtually no additional cost. There are other programs that will have the cur-

rent census data loaded and will help you file your CRA and HMDA reports. They will produce tables of information for you and provide excellent reports. But these can cost thousands of dollars a year or more and might also bring with them steep learning curves. These programs might be the best expenditure for your bank, or they might not. The important thing is to recognize that you do have options.

In the next installment of "Working Smarter—Not Harder," we will look at some practical examples of using pivot tables that will include step-by-step instructions to show you how to extract information you want, and how it can be used to answer your questions on CRA, HMDA, and fair lending. **BC**

#### ABOUT THE AUTHOR

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