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Working Party on Financial Statistics

USE OF CREDIT BUREAU DATA TO MEASURE HOUSEHOLD DEBT

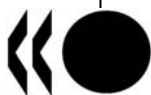
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This document has been prepared by Susan Hume McIntosh and Elisabeth Ball Holmquist (Federal Reserve, USA) and will be presented under item 5 of the draft agenda

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Credit Bureau Panel Data

- Based on work done by Lee and van der Klaauw at the NY Fed
- Quarterly Report on HH Debt and Credit at <http://data.newyorkfed.org/creditconditions>
- Consumer Credit Panel is quarterly panel dataset based on individual credit reports
- Data from 1999:Q1 to present

A research team at the Federal Reserve Bank of New York, with support from colleagues at the Board of Governors and the Federal Reserve Bank of Philadelphia, has created a quarterly longitudinal panel dataset based on individual credit reports from a large credit bureau for 1999:Q1 to the present. My remarks today are based on a paper written by Donghoon Lee and Wilbert van der Klaauw at the NY Fed which lays out their sample design and techniques and compares their results to flow of funds data.

This work gives an alternative method for calculating overall household mortgage and consumer credit levels by creating nationally representative estimates from micro data. A "Quarterly Report on Household Debt and Credit" highlighting this work is produced by staff at the NY Fed and is available on the NY Fed's public website listed on this slide.

Sample of Individuals

- Data from Equifax
- Includes individuals with credit history
- Excludes inquiry-only files
- Must have a social security number (SSN); about 16.6% of files contain no SSN
- Selected files with 9-digit SSN numbers ending in 1 of 5 arbitrarily picked 2 digit combinations; observed same group over time
- Sampling generated 5% random sample
- Checked each 1% for same average characteristics

Credit bureaus collect information on all U.S. residents who have applied for or taken out a loan or credit card from a lender or creditor. For this project, data from the credit bureau Equifax were used. Individuals with inquiry-only files were excluded. About 10 percent of the 220 million adults in the U.S. do not have a credit history.

To be included in the sample of individuals, you must have a social security number. About 16.6 percent of the files contained no social security number. Social security numbers have nine digits. The first five digits are assigned based on the location and date the number was assigned. The last four digits are assigned in chronological order as applications are processed. For this sample, social security numbers were selected ending in one of 5 arbitrarily picked two digit combinations, thus giving a 5 percent sample. The same group was observed over time. Each of the five groups were checked to make sure they had the same average characteristics.

Sample of Households

- Pulled credit files of everyone with same address as primary member (original 5%)
- Generated sample of about 11.2 million households from 38.1 million individuals
- Changes in household composition over time reflected in sample
- Target population: all U.S. households where at least one member has a SSN and a credit history

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The next step was to obtain a sample of households. The researchers pulled credit files of everyone with the same address as the primary member, that is those selected in the 5% sample of individuals. This generated a total pool of 38.1 million individuals that lived in 11.2 million households. Changes to household composition due to marriages, separations, deaths, departure or return of adult children, or establishment of new credit files as children take out first loans or become authorized users on a parent's credit card were tracked.

Ultimately, the target population includes all U.S. households where at least one member has a social security number and a credit history.

Sample Weights and Checks

- Appropriate household weight = $1/(1-.095^N)$
- Oversamples large households
- Used 2008 American Community Survey (ACS) to compare target population to overall population in US, NY State, NY City, and Manhattan
- Age distribution was similar to that in ACS

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The staff at the NY Fed then determined that the appropriate household weight equals $1/(1-0.95^N)$ where N is the number of individuals in a household with a least one social security number and a credit history. One point they noted was that using the household as the unit of observation will oversample large households.

Next they wanted to make sure that their target population was comparable in age distribution to the overall U.S. population. They used the 2008 American Community Survey (ACS) to accomplish this task, looking at a comparison of the two databases for the U.S., New York State, New York City, and Manhattan. They concluded that, for these four geographic areas, the age distribution based on their 5 percent sample was very similar to that based on the ACS sample. They did find that their panel had a slightly higher proportion of individuals 85 and older, and a slightly lower proportion under age 25 than the ACS.

Details on the method of determining the appropriate household weight and the comparability exercise with the ACS can be found in the Lee and van der Claauw paper.

Content of Credit Files

- Includes first mortgages, home equity installment loans (HEL), and home equity revolving accounts (HELOC)
- Includes auto loans, bank card accounts, student loans, other loan accounts
- Accounts must have been updated in last 3 months
- Indicator of the industry lender belongs to
- For calculating total debt, 50% of loan balance in joint accounts attributed to each individual

This slide describes the content of the credit files obtained from Equifax. Three types of mortgages are detailed: first mortgages, home equity installment loans (HEL), and home equity revolving accounts (HELOC). Consumer credit can be broken down into auto loans, bank card accounts, student loans, and other loan accounts which includes such items as retail credit cards and personal loans. To be included, accounts must have been updated in the last three months. There is an indicator of the industry the lender belongs to, such as banks, credit unions, or mortgage companies. Also, to account for the fact that a total loan amount owned jointly appears on both parties' credit files, 50 percent of the loan balance was attributed to each individual in a joint account when calculating total debt.

Flow of Funds Data Sources Mortgages

- Sum mortgage loans made by lenders
- Strict definition of mortgage loans: must be collateralized by 1-4 family home
- Loans in default not excluded from data until lender writes the loan off
- Regulatory data for commercial banks, thrifts
- Financial statements for GSEs, and Agency- and GSE-backed mortgage pools
- These account for 82% of total home mortgages

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I will now turn to the macro data published in the U.S. flow of funds accounts. In calculating total home mortgages we sum up the loans made by the lenders. To be considered a home mortgage the loan must have a one-to-four family home as collateral. It does not matter what the purpose of the loan is; any loan collateralized by a one-to-four family home is classified as a home mortgage. Also, it is important to note that mortgages that are in default are not removed from the data until the lending institution writes off the loan.

We have excellent data for **commercial banks and thrifts** since our source data is from regulatory reports and all institutions must report. Data for the **government-sponsored enterprises and the agency- and GSE-backed mortgage pools** are obtained from financial statements and are very complete. These two groups of institutions make up about 82 percent of total home mortgages in 2010:Q2.

Flow of Funds Data Sources Mortgages

- Private ABS issuers from private vendor based on servicer data on loan balances; covers 97% of active pools
- Add in ABS – 95% of home mortgages
- Finance cos. and mortgage cos. based on a sample; every 5 years survey universe (2011)
- Households (seller financing) - *Survey of Consumer Finances* done every 3 years

Data for the **private asset-backed security issuers** are tabulated by a private vendor based on outstanding loan balances obtained from mortgage servicers. These data cover 97 percent of active pools. We blow the data up to be 100 percent of the universe. If these loans are added to those discussed on the previous slide, we have 95 percent of our aggregate total of home mortgages.

The remaining 5 percent involves sectors with less complete data. **Finance companies and mortgage companies** are based on a quarterly sample and then benchmarked to a quinquennial survey of what is assumed to be the universe. The next benchmark will be in the summer of 2011. The **household sector**, as a lender, represents seller financing and is benchmarked every three years to data obtained from the *Survey of Consumer Finances*.

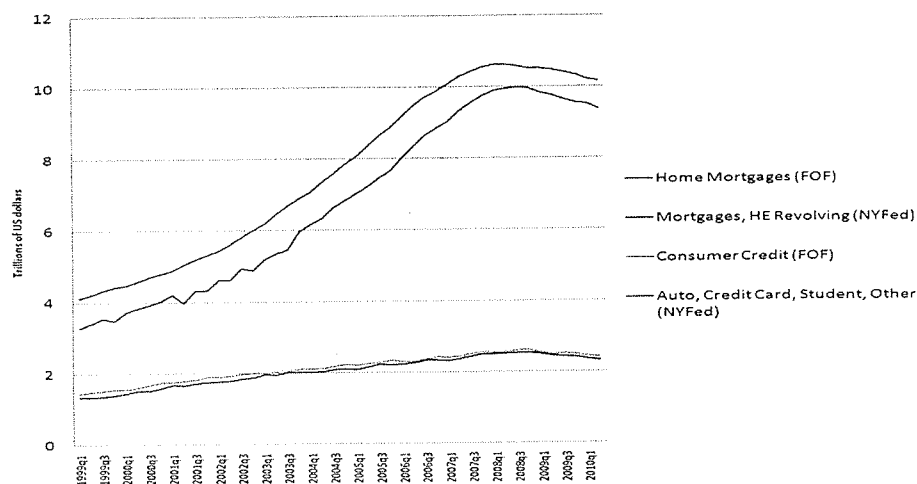
Flow of Funds Data Sources Consumer Credit

- Basically same sources as for mortgages
- Student loans from federal government data
- 70% from depository institutions and federal government data
- Add in finance companies and ABS issuers – 98% of total consumer credit

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Data sources for consumer credit statistics in the flow of funds accounts are mostly the same as for mortgages. However, federal government student loans are an important part of this debt statistic. Lending by depositories and the federal government account for about 70 percent of the total consumer credit outstanding. The addition of finance company loans and consumer credit that has been securitized yields about 98 percent of the total.

Comparison of Credit Bureau Data with Flow of Funds Household Debt



This slide compares data obtained from the credit bureau files with data published in the U.S. flow of funds accounts (FOF). FOF consumer credit (green line) is quite similar to the sum of auto loans, bank credit cards, student loans, and other loans in the NY Fed credit bureau data file (purple line).

For mortgages, flow of funds data (blue line) is somewhat higher than the NY Fed credit bureau data (red line), although they are still surprisingly close and have the same trend. On the next two slides I will highlight some issues that should be investigated in order to understand why these differences exist.

Issues with Credit Bureau Data

- Excludes individuals who live in a household with no SSN
- Not all credit unions report
- Excludes seller-financed mortgages
- Handling of joint accounts and loans in default
- No strict definition of mortgages, based on loan's purpose
- Date of report can vary
- Often errors in credit files

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First, regarding the credit bureau panel data, individuals who live in a household where no one has a social security number are excluded from the sample. Second, not all credit unions report to the credit bureaus so loans made by these missing institutions would not be captured in the credit file. Next, the credit files do not contain data on seller-financed mortgages. We also would want to investigate further the handling of joint accounts and the treatment of loans in default in compiling the total debt statistic.

Additionally, a loan classified as a mortgage in the credit bureau files may not fall under the strict definition of a mortgage used in the flow of funds account. And even more importantly, data in the credit bureau files reflect the **latest** date reported by the lender, which could be very different from the balances reported on the **last** day of the quarter. And finally, as many of you may know, there can often be errors in credit reports.

Issues with Flow of Funds Data

- Data are last day of quarter
- Strict definition of a mortgage
- Treatment of loans in default
- Finance companies harder to measure
- Mortgages on investment properties in nonfinancial noncorporate sector

Now turning to the flow of funds data, the timing, definition, and treatment of loans in default all have very strict rules. These are three issues we need to investigate further in comparing the two data sets to determine the effect of each on the observed difference. We also know that finance companies' lending can be difficult for us to measure. We hope to have a better benchmark next summer after processing the quinquennial survey.

Another point I would like to make is that there is a difference in the treatment of mortgages on investment properties held by individuals between the two datasets. In the flow of funds accounts, mortgages on investment properties are included in the **nonfinancial noncorporate sector** which includes partnerships and sole proprietorships. These data come from aggregate tax forms which have a two or three year delay and include only a total mortgage figure, which we must then split between home, multi-family, and commercial mortgages. Since we add up our lenders' data and subtract out mortgages held by other sectors, our household sector's holdings are affected by our business sector estimate of mortgages on investment properties. However, in the credit bureau files, these types of mortgages are assumed to be **household** debt. This different treatment, as well as any errors in our estimates of these mortgages, could either widen or narrow the difference in mortgage debt of households shown on the earlier graph.

Conclusion

- Micro/macro linkage of household debt is quite close
- Lender data in credit bureau panel dataset could be used to do more detailed comparisons
- Useful to look at micro data to validate macro data collection

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In summary, the micro/macro linkage of household debt appears quite close, but work on comparing the two datasets is just beginning. There are probably more issues than I have highlighted here that need to be looked at. One thing I have suggested is to use the lender field in the credit bureau data file to compare mortgages by lender to the flow of funds data. This might help separate data issues resulting from timing or definitional issues, particularly with the bank data.

In closing, Federal Reserve Board staff find it very useful to look at micro data to validate our macro data collection methods used in compiling the financial accounts of the United States.