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Center for Economic Development and Business Research

Transfer of Wealth 2010-2064

Technical Report

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Introduction

The Kansas Health Foundation asked the Center for Economic Development and Business Research at Wichita State University to update the 2007 Transfer of Wealth Analysis. The analysis identifies wealth and potential charitable giving by county over a 50-year time period from 2010 to 2060. The update includes the allocation of statewide wealth to the county level from 2010 through 2064.

Methodology

In order to estimate the wealth available for charitable bequests, several steps are required.
1. Estimate the total net worth in the state of Kansas based on national data
2. Estimate the total net worth of each county based on demographics and other data related to net worth
3. Estimate the number of deaths in each county through 2064 by age group, using Census Bureau birth, death, and migration data
4. Estimate the total estate value created within each county based on age at death and net worth by age
5. Estimate estate sizes based on IRS data
6. Estimate potential charitable bequests by estate size based on IRS data

State Net Worth

The Survey of Consumer Finances (SCF) is used to estimate relationships between several demographic and economic household characteristics and household net wealth. The SCF is produced every three years under the guidance of the Board of Governors of the Federal Reserve System and is conducted by the National Opinion Research Center. The most recent, complete SCF was produced in 2007.

The SCF contains detailed statistics on household assets and liabilities useful in determining the net worth of the household. Unlike most surveys of household wealth, this survey carefully assembles statistics of a disproportionately large sample of wealthy households that give disproportionately large amounts to charity. Survey results are weighted to be representative of a larger population. For instance, 2007 SCF results represent 116.1 million families based on survey results from 4,422 respondents.

However, public release data from the SCF does not report geographic locations of respondents. Therefore, a method was devised to estimate household wealth at the sub-national level. The method used by CEDBR follows that of the Center of Wealth and Philanthropy in their Wealth Transfer Microsimulation Model (WTMM). This model allocates probable wealth transfers to charities and social programs based on state level wealth estimates. These wealth estimates are approximated with a combination of the SCF data and the March Supplement of Current Population Survey (CPS) data obtained by the U.S. Bureau of the Census.

The Current Population Survey (CPS) is a monthly survey of about 60,000 households conducted by the Bureau of the Census for the Bureau of Labor Statistics. The survey has been conducted for more than 50 years. CPS data are used by government policymakers, legislators, the press,

and academics as important indicators of national and regional economic conditions and for planning and evaluating many government programs.

The Annual Demographic Survey or March CPS supplement is the primary source of detailed information on income and work experience in the United States. Unlike the SCF, the CPS identifies the geographic location of the respondent household. However, the CPS does not attempt to identify household or family wealth. Hence the CPS cannot be used to estimate the distribution of household wealth alone.

While both the CPS and the SCF surveys collect detailed statistics, neither survey replicates the other. However, several variables are common to both surveys. These variables allow the estimation of household wealth from the CPS using estimates from SCF.[1] Hence, wealth estimates from the SCF, with no geographic reference, can be imputed from the CPS, which has geographic references. This is carried out by first estimating the national relationships of net-worth estimates to the various household characteristics that are duplicated in the surveys. These relationships are then used to form estimates of wealth from the CPS dataset.[2]

The variables include:
- The age of the head of family
- Family income
- Number of children living at home
- Self-employment
- Education

These variables capture multiple relationship levels. For example, high income for older people produces a different degree of wealth than high income for those who are younger. A regression equation relates these variables to net worth based on the SCF data. If the CPS data are representative of their corresponding SCF observations, then the CPS data for the state of Kansas can be used in the equation to provide estimates of Kansas net worth.

To assure that the relationship is reliable, CEDBR compared SCF and CPS variables. The summary statistics show that all variables are closely related; however, income across the national SCF and Kansas CPS shows noticeable differences in the income levels between the surveys. The differences arise from the disproportionate representation of high-wealth families in the SCF survey. However, the close proximity of the two median measures of income assures us that the two income measures are comparable. Weighting deemphasizes the presence of these high-wealth families. Additional tests were done to verify the equation since the SCF samples were from are random population as well as a controlled population, while the CPS samples were from a single representative population.

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[1] While the majority of statistics included in the SCF are related to characteristics of families, these statistics are more comparable to the U.S. Bureau of the Census definition of households than to its definition of families, which excludes one-person families. Hence household statistics are used from the CPS for comparison to family statistics in the SCF.

[2] It was determined that using 2007 CPS data would not take into account the Great Recession. Therefore, CEDBR used 2011 CPS data to include the impacts the recession had on average annual household income.

County Net Worth

The first step in estimating county net worth from the estimated Kansas net worth total, based on the Survey of Consumer Finance and the Current Population Survey, was to allocate the total to the individual counties by population.

However, all counties are not alike, requiring CEDBR to adjust the allocated amounts based on variables that contribute to total net worth. The variables included total population, taxable property used in production, age of the head of household, education, size of family, households with self-employment income and high income households.

To reflect the differences among counties several steps were used.
1. Taxable property used in production, households with self-employment income and high income households:
    a. Calculated that value as a percent of the county total.
    b. Subtracted the county percent from the median county percent
2. Median age of householder, size of family:
    a. Calculated the county value as a percent of the statewide value
    b. Subtracted the county percent from the median county total
3. Education index:
    a. Created the education index
        i. Weighted the 2010 Estimated Population by Education, according to level of education, for each county, divided by the total
        ii. Calculated the county index value as a percent of the state index value
        iii. Subtracted the county percent from the median county value

Next, the ranges of all of the resulting county values were weighted to allow for relatively equal importance to all variables. The geometric mean of all resulting values for each county was calculated and applied to the county allocation of total net worth by populations. A final adjustment was made to all values so that the individual county's estimated net worth totals equaled the statewide estimated net worth.

Although much of the data is available on an annual basis, all population, demographic, and taxable property statistics were 2010 American Community Survey data in order to maintain consistency with the national to state level data analysis.

Potential Charitable Bequests

Population Aging

County population was aged using a model created by CEDBR, based on Census Bureau projections of birth, death, and migration. The CEDBR model starts in 2010 and projects death rates through 2064. Total deaths by county were estimated from the model. Deaths were projected by four age groups, birth to age 40, 40 through 59, 60 through 79 and 80 or older.

The CEDBR model for Kansas counties uses the conventional cohort survival model. For each cohort or age group, population is forecasted using individual cohort projections of survival

rates, birth rates and migration. The starting point for the projections is the 2010 Census Bureau Summary File 1.[3]

The first step in the projection process is to "age" each cohort by applying the appropriate cohort survival rate. The cohort survival rate is the percentage of persons in the cohort group that will survive for five years.   The survival rates used are the complement of the age-specific death rates for Kansas for 2010, divided by 1,000.[4] Because projected death rates were not available for years beyond 2010, CEDBR used the 2010 death rates for the entire period of the forecast. Longer life expectancies are forecast for the U. S. population, but the effect on small population projections will be minimal.

A simplifying assumption was made that migration patterns would not affect net worth holdings of individuals. In addition, migration patterns may not be reliable for small populations. Small communities may experience specific events that change their migration patterns in unexpected ways. For example, a natural disaster followed by an outflow of population would significantly impact migration over the 50 year projection horizon. With these factors in mind, CEDBR assumed that relocation out of a county did not necessarily impact ownership or net worth holdings within a county. It is unlikely that wealth is destroyed in the process of in- or out-migration.

To arrive at estate creation, which occurs when the last person in the household dies, projected individual deaths were converted to households by using the average size of household for each county. The simplifying assumption was made that the final householder was represented in these projections, thereby creating the final estates.

Total Net Worth/Estate Value

Average net worth values by age group were derived from the statewide net worth model and adjusted using the adjustment factor applied to the total county allocations. These adjusted averages were multiplied by the number of deaths in the appropriate age group to arrive at a total estate amount by county. This total estate was distributed into size ranges according to results from the SCF and CPS model results.

Charitable Bequest Potential

Finally, potential charitable bequest totals were calculated. Charitable giving increases significantly with increases in household or estate net worth. IRS data for 2007 is the latest available. Charitable giving levels used in the model are based on this data and applied to the total net worth of the households at the time the estate is created.[5]

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[3] U. S. Census Bureau. 2010 Census Summary File 1. http://factfinder2.census.gov/main.html
[4] Kansas Department of Health and Environment. 2010 Annual Summary of Vital Statistics. http://www.kdheks.gov/hci/AS2010.html
[5] IRS, Estate Tax Returns, Year of Death, Values for Tax Purposes by Tax Status and Size of Gross Estate, http://www.irs.gov/taxstats/indtaxstats/article/0,,id=210652,00.html

Limitations and Considerations

This analysis incorporates and inter-relates a large variety of data sets. Each assumption and relationship also includes some room for error. As the basis for each step becomes smaller, from nation to state, from state to county, from county to household and from household to estate and bequest, the potential error becomes more significant. The margin of error for data in the SCF, CPS and population projection source data can over or underestimate actual results.

Information in this report is consistent with data from the SCF, combined with CPS data. As previously mentioned, there are some foreseeable issues with using this methodology. Namely, the SCF specifically targets wealthier households in order to examine wealth holdings in the United States. Between the 2004 and 2007 SCFs, average net worth grew 13 percent. Specifically, lower net worth households lost net worth while higher net worth households gained net worth. This is partially due to age and the way net worth is held by age group. Note that households headed by individuals under the age of 40 held 48.4 percent of total net worth in their primary residence. Households headed by individuals between 60 and 79 years of age held 26 percent of their total net worth in their primary residence. As the housing market declined, households headed by younger individuals were more likely to see adverse effects to net worth than older households. This may not hold true for Kansans, given that housing prices did not decline until 2008 and declined at a much milder rate compared to the nation.

Table 1: National Net Worth Distribution by Age, 2007 (SCF)

National Net Worth Distribution by Age, 2007					
	Households, by Age of Head of Household				
	Under 40	40 to 59	60 to 79	80 and over	All
Financial Assets	18.2%	33.0%	40.2%	40.8%	34.3%
Vehicles (incl. RVs, planes, boats, etc.)	6.6%	2.9%	2.1%	1.4%	2.9%
Primary residence	48.4%	32.0%	26.0%	30.8%	31.8%
Residential property excl. primary resid. (e.g., vacation homes)	6.6%	7.8%	7.1%	7.3%	7.4%
Net equity in non-residential real estate	2.3%	3.0%	4.8%	3.2%	3.5%
Businesses (with either an active or nonactive interest)	17.4%	20.8%	19.0%	15.9%	19.5%
Other misc. nonfinancial assets	0.6%	0.6%	0.8%	0.5%	0.7%

The use of average net worth data is preferred to the use of median values because average values can be applied to population groups. This allows for the use of average household net worth by age group for a state to be applied to individual counties by age group. If a specific county does not meet these averages, or county age group characteristics do not match national and state data, estimates are likely to be inaccurate. For example, Kansas, and many rural counties in Kansas, have a much higher average age compared to the United States. This could overestimate average total net worth for the state.

Specific population estimates by counties are based on historic trends. These trends may or may not apply today. As noted in the Population Aging discussion, migration trends were not included. Charitable giving could be underestimated if the county has a large net inflow of migrants or if the opposite is true. For instance, Kiowa county migration patterns include the net outflow of population following the Greensburg tornado. This higher out migration rate is not included in this analysis. If out migration continues to occur at escalated rates, net worth may be overestimated for the county.

The total amount of net worth opportunity, or the total net worth available to be bequeathed or transferred as wealth, is unlikely to equal total net worth. Some experts estimate that total net worth that is transferrable at any point in time is between one and two thirds of total net worth, depending upon individual circumstances. As previously mentioned, CEDBR used 2007 IRS data to estimate the value of the capture goal. Using this methodology, CEDBR expects approximately 0.9 percent of total net worth is captured.

CEDBR did not estimate potential charitable estate giving by asset type. Furthermore, there is no differentiation by generation of wealth or generational giving. Charitable estate giving was not estimated based on the likely benefactors of generosity.

It is natural that readers and users of this research may want to undertake two comparisons.
- First, the comparison between the 2007 and the new 2012 Kansas Transfer of Wealth study. Comparisons can be helpful, but we offer significant levels of caution. The earlier study was completed pre-Great Recession and this study embraces the new realities post-Great Recession. The overall structure of wealth has changed between these two time frames. Differences in results can be accounted for, in part, by the differences in reality in the 2007 study compared to the post-Great Recession time frame.
- Secondly, the comparison between Kansas and other states, or one county with a similar county. When comparing Kansas results with other states, or one county with another county, in another state, it is important to keep in mind that these studies all have unique time frames and often employ somewhat different approaches to estimate current net worth or the transfer of wealth opportunity. Findings in most cases will be comparable, but there will be differences due to these two factors.

The analysis is based on a 2 percent per year growth rate applied to net worth. Results are available in the WealthTOW-CaptureGoal.xlsx spreadsheet provided with this report. While a 2 percent growth rate may appear conservative, it allows for changes in all the elements included in net worth. Variations in financial rates of return in either direction would have a significant impact on the size of estates. Results should not be viewed as forecasts of what is likely to happen, but instead as goals for charitable giving within a community.

Predictive forecasts, estimates and/or projections (hereinafter collectively referred to as "forward-looking statements") are employed in this analysis. These forward-looking statements are based on information and data provided by publicly available data sources and involve risks, uncertainties and assumptions that are difficult to predict. The forward-looking statements should not be considered as guarantees or assurances that a certain level of performance will be achieved or that certain events will occur. While CEDBR believes that all forward-looking statements it provides are reasonable, based on the information and data available at the time of writing, actual outcomes and results are dependent on a variety of factors and may differ materially from what is expressed or forecast. CEDBR does not assume any responsibility for

any and all decisions made or actions taken based upon the forward-looking statements provided by CEDBR.[6]

Results

CEDBR combined household wealth, described by demographics, from the Survey of Consumer Finance data, with household demographics from the Current Population Survey data to get the estimated net worth of Kansas households in 2011. The 2010 American Community Survey data was used to distribute the total net worth by age of head of householder and by household income. The majority of Kansas households have a total net worth below $199,000

Table 2: Household Net Worth Distribution, 2011

Kansas Households by Net Worth		
	Distribution	Kansas Households
Less than $199,000	45.3%	499,178
$200,000 to $499,999	27.7%	304,897
$500,000 to $999,999	13.1%	144,307
$1,000,000 to $4,999,999	12.4%	136,446
$5,000,000 to $9,999,999	1.1%	12,353
$10,000,000 to $19,999,999	0.4%	4,492
$20,000,000 or more	0.0%	-
Total	100.0%	1,101,672

In order to allocate the Kansas total net worth across counties, several variables were used. The initial allocation was by population alone. However, since all county households are not alike, five additional variables, which correlated with net worth, were analyzed and indexed, resulting in a county specific adjustment factor. The factor was applied to the initial net worth values for each county. County-specific adjustment factors range from 88.9 percent to 115.2 percent.

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[6] This analysis does not include any additional adjustments not mentioned above or in table 4 of this report. This includes adjustments for pending federal estate tax law, changes in agricultural real estate values, oil and natural gas wealth, water supply impacts, farm incomes or the impact of external farm ownership.

Table 3. Variables Used in County Allocations

Variable	Range	
	Minimum	Maximum
Total population[1]	1,294	531,228
Number of high income households in the county	-	14,459
Median age of the head of household	24	51
Education index[2]	122%	243%
Size of household	1.91	3.03
Real and personal property tax base (commercial, industrial, and mineral as a percent of the state total)[3]	0.04%	30.94%
[1] Population variables were obtained from the Census Bureau's 2010 American Community Survey.		
[2] Education index derived by CEDBR, based on the Census Bureau's 2010 American Community Survey.		
[3] Tax data was obtained from the 2009 State of Kansas, Department of Revenue, Division of Property Valuation.		

Population aging for households by age group provided projected deaths by age group. Multiplying the adjusted average net worth values, by the projected deaths, provided a total estate value. The distribution or make-up of the total estate amounts was based on initial net worth analysis. Charitable bequest estimates are based on IRS data, which analyzes bequests by estate size, as shown in the following table:

Table 4. Charitable Bequests by Estate Size

Size of Estate	Percent to Charity
Under $3.5 million	3%
$3.5 million < $5.0 million	5%
$5.0 million < $10.0 million	6%
$10.0 million < $20.0 million	7%
$20.0 million or more	27%
Average	12%

These percentages were applied to the distribution of the estate amounts to arrive at charitable bequest capture goals. Net worth for each county over the time period was calculated using a 2 percent annual growth rate. After distributing the total estate value for the county by size of estate, charitable bequests by estate size were calculated, resulting in total charitable bequest capture goals.

Table 5. Kansas Capture Goals

Kansas, Total Net Worth	
2010 Population	2,809,329
2010 Households	1,101,672
Estimated Total Estates 2010 through 2019	$79,165,154,530
Capture Goal 2010 through 2019	*$721,008,121*
Estimated Total Estates 2020 through 2029	$100,362,679,675
Capture Goal 2020 through 2029	*$914,067,654*
Estimated Total Estates 2030 through 2039	$119,527,943,683
Estimated Total Estates 2040 through 2049	$122,733,323,799
Estimated Total Estates 2050 through 2059	$117,415,271,164
Estimated Total Estates 2060 through 2064	$59,405,882,039
Capture Goal 2010 - 2064	**$5,451,929,674**