PURDUE AGRICULTURAL ECONOMICS REPORT

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FEBRUARY 2017

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THE NEW METHOD FOR CALCULATING ASSESSMENTS WILL REDUCE TAXES FOR FARMLAND OWNERS

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Farmland assessments for property taxes rose rapidly from 2007 through 2015. The taxable assessed value of agricultural property increased by 81% statewide during these years, and as a result agricultural property taxes rose 63%. During this time property taxes for all taxpayers actually fell by 4%.

The reason for the farmland assessment and tax increase was an increase in the base rate of farmland. That's the starting point for the assessment of farmland statewide. Increases in commodity prices and decreases in interest rates caused the base rate formula calculation to increase from $880 per acre in 2006 and 2007 to $2,050 in 2015, nearly a two-and-a-half-fold increase.

But in the legislative session of 2016, the Indiana General Assembly changed the base rate formula. This will stop the rise in the base rate and is projected to substantially reverse past increases. The base rate will fall 4% from $2,050 to $1,960 for taxes in 2017. Our projections show a further drop of at least 40% by the early 2020's, to a base rate of $1,070. Farmland tax bills are likely to fall too.

This means, however, that tax bills of other taxpayers are likely to rise, and some local governments in rural areas are likely to see reductions in property tax revenue.

The Increase in Farmland Assessments, 2007-2015

The story of the rising base rate has been told several times in the pages of the *Purdue Agricultural Economics Report*, most recently in June 2015. Here it is in brief.

The base rate is a dollar figure per acre calculated by the state's Department of Local Government Finance (DLGF). All farm acreage in Indiana is assessed starting with this value. Each acre's assessment is then multiplied by a soil productivity index, which measures the soil's productivity for growing corn. The index varies from 0.5 to 1.28. Assessments for some acreage are then reduced by an influence factor, which is a percentage reduction based on factors that reduce productivity, such as forest cover or frequent flooding.

In most years from 2003 to 2015, the base rate was calculated using a capitalization formula, which divides the net income from an average acre by a rate of return. Net income is the average of rents on a typical acre and a calculation of operating income based on commodity prices, yields and costs. Starting in the mid-2000's commodity prices began to rise. The corn prices used in the base rate formula rose from $2.00 in 2006 to $7.23 in 2013, and soybean prices rose from $5.78 in 2006 to $14.70 in 2013. The cash rent of an average acre, measured each year by the Department of Agricultural Economics land price survey, rose from $122 per acre in 2004 to $232 in 2014.

Just as important was the decrease in the rate of return in the denominator of the base rate formula. This rate is the average of the interest rates on farm real estate loans and farm operating loans, published by the Chicago Federal Reserve. The average dropped from 8.2% in 2006 to 4.7% in 2015. This reflected the general reduction in interest rates, partly the result of the Federal Reserve's efforts to fight the Great Recession and encourage economic recovery.

The rise in rents and commodity prices in the numerator, combined with the fall in interest rates in the denominator, produced the rapid rise in the base rate. Farmland tax bills followed.

Table 1 shows the base rate calculation for taxes in 2014 and 2015. Since taxes in one year are based on assessed values from the year before, farmland taxes in 2014 were based on assessments for 2013. The base rate for 2014 taxes was calculated with six years of data, from 2005 to 2010. Capitalized values called "market value in use" were calculated by dividing cash rent and operating net incomes by the capitalization rate. Six years of calculations were made, the highest value was dropped, and the average of the remaining five was the base rate, rounded to the nearest $10.

Table 1. Calculation of the Base Rate for Taxes in 2014 and 2015.

Calculation of the Base Rate for an Acre of Farmland

Assessment Year 2013; Tax Year 2014

	NET INCOMES			MARKET VALUE IN USE		
Year	Cash Rent	Operating	Cap. Rate	Cash Rent	Operating	Average
2005	110	59	7.22%	1,524	817	1,170
2006	110	74	8.18%	1,345	905	1,125
2007	122	184	7.94%	1,537	2,317	1,927
2008	140	189	6.56%	2,134	2,881	2,508
2009	139	116	6.17%	2,253	1,880	2,066
2010	141	172	5.97%	2,362	2,881	2,621

Base Rate **$1,760**

Calculation of the Base Rate for an Acre of Farmland

Assessment Year 2014; Tax Year 2015

	NET INCOMES			MARKET VALUE IN USE		
Year	Cash Rent	Operating	Cap. Rate	Cash Rent	Operating	Average
2006	110	74	8.18%	1,345	905	1,125
2007	122	184	7.94%	1,537	2,317	1,927
2008	140	189	6.56%	2,134	2,881	2,508
2009	139	116	6.17%	2,253	1,880	2,066
2010	141	172	5.97%	2,362	2,881	2,621
2011	161	254	5.61%	2,870	4,528	3,699

Base Rate **$2,050**

In 2015 the capitalized values for 2005 were eliminated from the calculation, and the values for 2011 were included. As it happened, the 2011 capitalized value was the highest of the six, so it was dropped from the average. The 2010 value had been dropped the year before, so it was included. In effect, the 2005 value of $1,170 exited the base rate average, and the 2010 value of $2,621 entered. The base rate rose 16.5% from $1,760 to $2,050.

The data used in the base rate calculation for 2015 taxes were for 2006 through 2011, so there was a 4-year lag between the latest year of data and the tax year. Cash rent increases continued through 2014, and commodity price increases continued through 2013. So, ever-higher values would have continued to enter the base rate formula—with the four-year lag—through 2018. Only in 2019 could the base rate have begun to decline. Projections showed the base rate topping $3,000 for 2018 taxes. Property tax bills would have continued to rise for five years after the downturn in farm incomes.

The General Assembly's Response in 2016

The Indiana General Assembly passed a stop-gap bill in 2015, which froze the base rate at $2,050 for taxes in 2016. Without the freeze, it would have increased 18% to $2,420 under the existing formula. The 2015 bill limited increases after that. Hearings were held in the summer of 2015, and the result was included in Senate Bill 308, which passed by large margins at the end of the short session in March 2016. The governor signed it as Public Law 180. The bill included several property tax provisions, some more controversial than the change in farmland assessments.

SB 308 made two big changes in the base rate formula. First, it reduced the four-year lag to two, which is probably as small as the lag can be. Taxes in 2017 will be collected on the farmland assessments for 2016, which were set at the beginning of the year. Data from 2015 was the most recent available. Before, the base rate for taxes in 2017 would have been based on rents, prices, yields, costs and interest rates from 2008 through 2013. Now data from 2010 through 2015 will be used.

Second, the new formula introduces a system for adjusting capitalization rates, which splits the base rate calculation into two parts. The *preliminary* calculation uses the traditional capitalization formula, with a two-year lag instead of four. It uses the actual farm-related capitalization rates in the denominator. Then, the preliminary base rate is compared to the existing base rate certified by DLGF in the previous year. If the preliminary base rate is within 10% of the existing base rate, then the actual capitalization rates in the calculation would be replaced with 7% for all six years in the calculation. If the preliminary base rate was more than 10% *lower* than the existing base rate, a lower interest rate of 6% would be used. And, if the preliminary base rate was more than 10% *higher* than the existing base rate, a higher interest rate of 8% would be used.

This is intended to stabilize the base rate. If the preliminary calculation shows that the base rate will fall a lot, a low interest rate is used in the denominator to lessen the decrease. If the calculation shows a big rise in the base rate, a higher interest rate is used to lessen the increase. If the preliminary calculation comes close to the existing base rate, a middle-range interest rate is used to keep it there.

Table 2 shows the calculation for pay-2017. The first part of the table shows the preliminary calculation, and the second part shows the final calculation. The existing base rate for taxes in 2016 is $2,050. The preliminary calculation used actual interest rates and other data from 2010 through 2015—a two-year lag—and the result is $2,987. The preliminary rate is 45.7% higher than the existing rate, well above 10%. So, for the final calculation, all six of the actual interest rates are replaced with 8%. Since the actual interest rates ranged from 4.7% to 6.0%, the denominator of the calculation increases, which makes the final base rate smaller. The result of the calculation was $1,960, a 4% *decrease* from 2016's $2,050 (and a 34% decrease from the preliminary base rate of $2,987).

Base Rate Projections to 2025

Projections of the base rate could be extremely accurate when the formula had a four-year data lag. For taxes in 2018, for example, the formula would have used data through 2014. Those numbers were already "in the books," so they could be inserted into the existing formula to predict the 2018 base rate accurately.

Such precision is not possible now that the most current data are used in the calculation. The base rate for 2018 uses data for 2011 through 2016. The first five years are known; 2016 data must be projected (though many values are already clear). The projected base rate for 2019 uses data through 2017, so two forecast values must be included. The projected base rate for 2024 uses data for 2017 through 2022, so all of the data on commodity prices, rents, yields, costs and interest rates are forecasts.

Table 2. Preliminary and Final Base Rate Calculation for Taxes in 2017.

Preliminary Calculation of the Base Rate for an Acre of Farmland

Assessment Year 2016; Tax Year 2017

	NET INCOMES			MARKET VALUE IN USE		
Year	Cash Rent	Operating	Cap. Rate	Cash Rent	Operating	Average
2010	141	172	5.97%	2,362	2,881	2,621
2011	161	254	5.61%	2,870	4,528	3,699
2012	185	116	5.06%	3,656	2,292	2,974
2013	204	342	4.84%	4,215	7,066	5,640
2014	205	173	4.77%	4,298	3,627	3,962
2015	198	-39	4.74%	4,177	-823	1,677
				Base Rate		**$2,987**
				Change from existing $2,050		**45.7%**

Final Calculation of the Base Rate for an Acre of Farmland

Assessment Year 2016; Tax Year 2017

	NET INCOMES			MARKET VALUE IN USE		
Year	Cash Rent	Operating	Cap. Rate	Cash Rent	Operating	Average
2010	141	172	8.00%	1,763	2,150	1,956
2011	161	254	8.00%	2,013	3,175	2,594
2012	185	116	8.00%	2,313	1,450	1,881
2013	204	342	8.00%	2,550	4,275	3,413
2014	205	173	8.00%	2,563	2,163	2,363
2015	198	-39	8.00%	2,475	-488	994
				Base Rate		**$1,960**

The appendix describes the sources of our forecast data in detail. In general, prices settle near $4 per bushel of corn and $10 per bushel of soybeans by 2021 and after. Average cash rent falls to $179 per acre by 2025. Yields trend upward to 183 bushels per acre for corn and 55 bushels per acre for soybeans by 2025. Costs trend upward by about 2% per year. Interest rates rise to near 6.5% in 2022 and after.

Figure 1 shows projections of base rates using the old capitalization formula, the SB 308 calculation of the preliminary base rate, and the SB 308 final base rate. They are based on the best forecasts we could make about future corn and soybean prices, yields, costs, rents and interest rates. But another word for forecasts is "guesses."

The old capitalization formula used actual interest rates with a four-year data lag. Its value was projected to peak in 2018 at $3,065. Since that value was based on known data through 2014, it's a very good guess. After 2018 lower commodity prices would have begun reducing the base rate under the old formula.

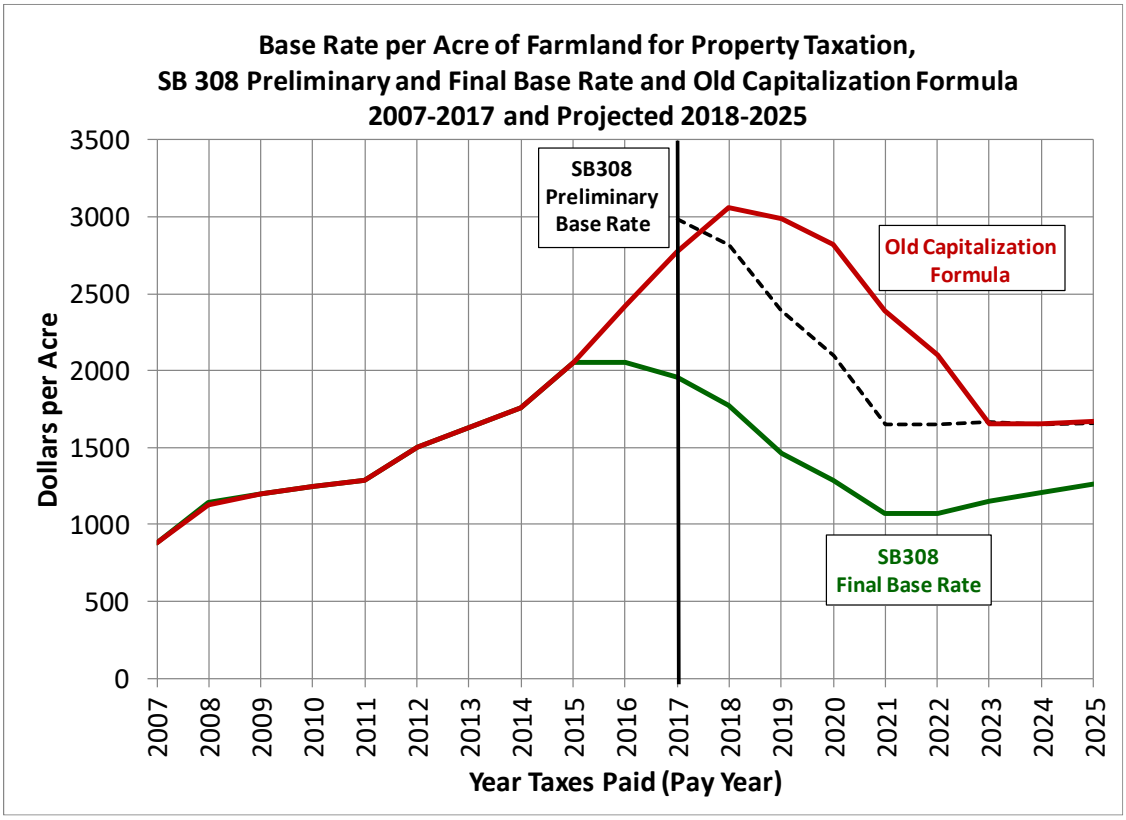

Figure 1.

The dotted line is the preliminary base rate calculation under the new formula in SB308. It uses actual interest rates with a two-year lag, so it's the same as the old capitalization formula, just two years early. That is, the preliminary base rate figure for 2017 is the same as the old capitalization formula base rate for 2019.

Table 3. Base Rate Projections, 2018-2025

	Old Capitalization Formula	SB 308 Preliminary	SB 308 Final
2016	2,420		2,050
2017	2,770	2,987	1,960
2018	3,060	2,818	1,770
2019	2,990	2,391	1,460
2020	2,820	2,093	1,290
2021	2,390	1,640	1,070
2022	2,090	1,635	1,070
2023	1,640	1,654	1,150
2024	1,640	1,631	1,210
2025	1,650	1,639	1,260

The 2017 preliminary base rate is $2,987, well above the 2016 base rate of $2,050. As a result, under the SB308 formula, the final base rate uses capitalization rates of 8% in the denominator for all six years of the calculation (see Table 2). Since the actual interest rates were lower than 8%, the final base rate is lower than the preliminary base rate. Base rate projections are shown in Table 3.

The base rate is $2,050 for taxes in 2016, and the DLGF has announced a base rate of $1,960 for taxes in 2017. We project that under the SB 308 formula the base rate will continue to decline through 2021, to $1,070. This would be a 48% reduction from the current value. Reductions from the old capitalization formula are even larger. The SB 308 formula delivers tax relief to farm land owners compared to what would have been (the old capitalization formula) and compared to what exists now (the current base rate).

Effects on Taxpayers and Local Revenues

If farmland owners pay less in property taxes, either other taxpayers will pay more, or local governments will receive less revenue, or both. Local governments might charge higher property tax rates to raise the same revenue from lower taxable assessed value. Or, local governments might not raise tax rates enough to compensate for the drop in assessed value, so that revenue will be lower.

If tax rates go up, more taxpayers will see their tax bills exceed their property tax caps. They will receive tax cap

credits to hold their tax bills at their caps. These credits are taxes that property owners do not pay, and revenue that local governments do not receive. Some local governments will collect a smaller share of their property tax levies.

If levies are not reduced, tax rate increases will be greatest where farmland is a larger share of taxable assessed value. In urban counties, farmland is often a very small share of assessed value. The decline in the base rate would have little effect on tax rates. In rural counties, however, farmland can be a large share of taxable assessed value. Tax rates are likely to rise more in these rural counties.

The map in Figure 2 shows counties where tax rates are likely to rise most as a result of a 48% reduction in the base rate of farmland. This is the maximum projected drop in the base rate from the $2,050 value in 2016, projected to occur in 2021 and 2022. Projected tax rates are calculated simply by dividing the property tax levies of all local governments in a county by the county's assessed value, less a 48% decline in farmland assessments. Many other rate, levy and assessment changes will affect tax rates in the next five years, but this map shows which counties are likely to be affected the most by the decline in the farmland base rate.

There are a dozen rural counties where tax rates would increase by 20% or more in this exercise. These are counties where farmland is an especially large share of taxable assessed value. Farmland owners would pay these higher rates on their lower farmland assessments, which is why farmland tax bills will fall less than the base rate. The tax bills of rural homeowners and other property owners would reflect the full increase in the tax rate.

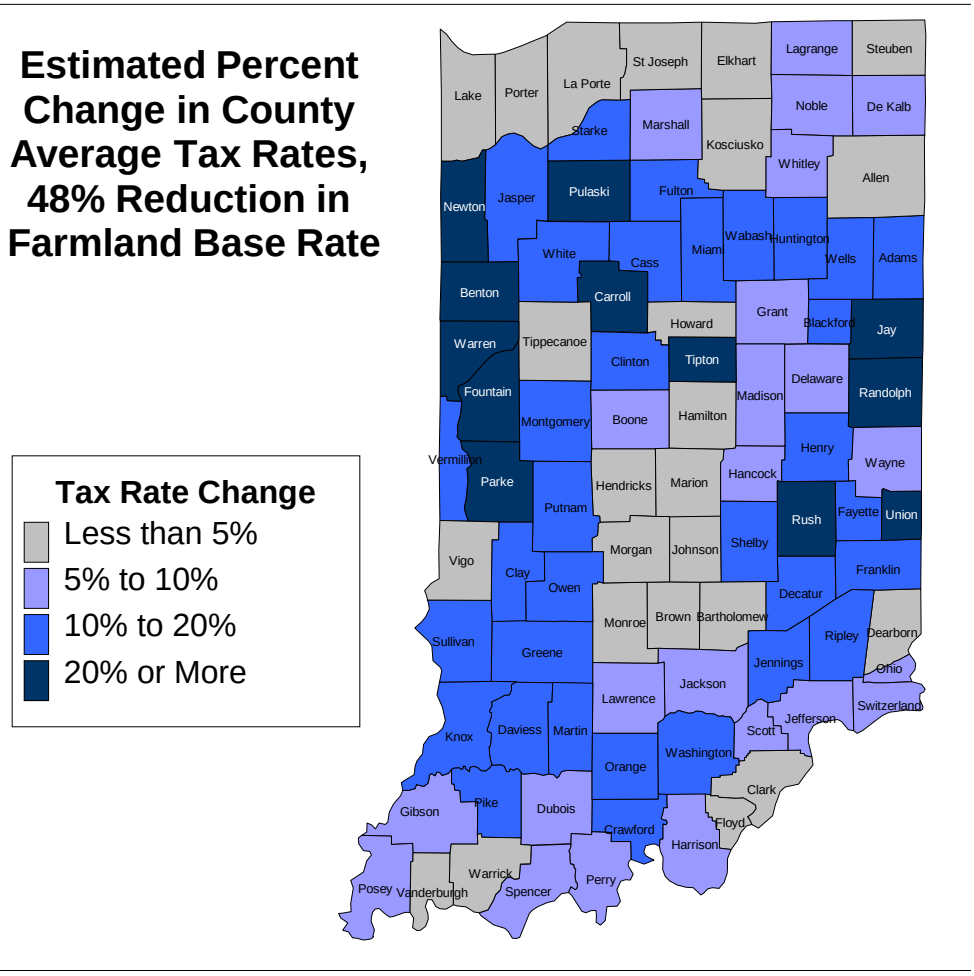

Figure 2.

Local governments will collect a smaller share of their property tax revenue if higher tax rates push more taxpayers above their tax caps. However, in many rural counties outside of cities or towns, tax rates are well under $2.00 per $100 assessed value, which means only the most expensive houses are above their tax caps. Increases in tax rates would increase the tax bills of property owners, but most would remain under their caps and so would pay their full tax bills.

In cities and towns in rural areas, tax rates are often above $2, because the city or town rate is added to the county, township and school rates. There is usually not much farmland in these cities or towns, of course, but the county and school rates that city or town taxpayers pay would increase, pushing more of them above their caps. Rural local governments that overlap cities or

towns would be most likely to lose revenue to the tax caps, as a result of the decrease in the farmland base rate.

Is SB 308 a Tax Cut for Farmers or Tax Bill Stabilization?

While we chose the best forecasts of commodity prices, rents, yields, costs and interest rates that we could find, they will be wrong. All forecasts are. How much will these errors affect the projected base rate of farmland? Table 4 shows the results of 14 alternate simulations to find out.

The table shows variations in the preliminary base rate numerator, which is net income, and the denominator, the capitalization rate, for all forecast years 2017-2025. Simulation 11, for example, shows results if both net income and the capitalization rate are 25% higher than the forecasts used for the projections shown in Table 3 (which is the "baseline" projection in Table 4). The projected preliminary and final base rates are shown for two years, 2021 and 2026. The year 2021 is five years in the future. The base rate calculation will use data for 2014 through 2019. Data for 2014 and 2015 are already known, while data for 2016 through 2019 are forecasts.

Table 4. Alternate Base Rate Projections.

	Change, 2017-2025		Values in 2021		Values in 2026	
Simulation	Net Income	Cap. Rate	Preliminary	Final	Preliminary	Final
Baseline	0%	0%	1,640	1,070	1,644	1,300
1	10%	0%	1,735	1,140	1,809	1,430
2	-10%	0%	1,545	1,010	1,480	1,170
3	30%	0%	1,925	1,270	2,138	1,690
4	-30%	0%	1,356	870	1,151	910
5	80%	0%	2,400	1,610	2,960	2,340
6	0%	10%	1,554	1,070	1,495	1,300
7	0%	-10%	1,746	1,070	1,827	1,300
8	0%	25%	1,450	1,070	1,315	1,480
9	0%	-25%	1,957	1,070	2,192	1,300
10	0%	50%	1,324	1,230	1,096	1,730
11	25%	25%	1,640	1,240	1,644	1,860
12	-30%	-25%	1,577	870	1,535	910
13	80%	-25%	2,946	1,610	3,946	2,340
14	-30%	30%	1,202	1,000	885	1,210

The year 2026 is ten years hence, and is based on forecast data for 2019 through 2024.

The results of variation in the forecasts of net income are shown in simulations 1 through 5. In every case the preliminary values for 2021 and 2026 remain well above the final values, an indication that the 8% capitalization rate is used in the denominator of the final calculation. With the denominator constant, the final base rates vary in proportion to net income. The two known values are fixed for the base rate in 2021, so (for example) a 10% increase in net income results in a 6.5% increase in the final base rate. In 2026 all six years of data are forecasts, so a 10% increase in all six net income figures results in a 10% increase in the base rate.

Variations of plus or minus 10% are minor changes. The 30% changes are consistent with the typical variations that occurred during the 1995-2015 period. Net income 30% below the baseline is consistent with the worst net income years in the past 20. The final base rate is $870 for 2021 and $910 for 2026 in that case. Net incomes that are 80% above the baseline are consistent with the best years in the past 20—the 2007 to 2014 period. The 2021 final base rate is $1,610, and the 2026 rate is $2,340. Remember that these percentage variations are sustained changes over ten years. Single years of high or low prices or yields would not produce such large differences from the baseline.

Simulations 6 through 10 show the effects of variations in the capitalization rate, which in our projections are based on the 10-year Treasury bond yield forecast by the Congressional Budget Office (CBO), plus a premium (see the appendix for an explanation). Variations within 25% have no effect on the final base rate for 2021. The projection remains at $1,070. This is because in each case the preliminary calculation remains more than 10% above the previous year's base rate, so the final

calculation uses an 8% capitalization rate in all four simulations.

The final base rate for 2026 changes only in simulation 8. The capitalization rate rises to 8.1%, which drops the preliminary value below the previous year's base rate. The calculation uses 7% as the final capitalization rate, so the final base rate is higher. This is near the result from projections made in 2015, when the CBO's long run interest rate forecasts were higher. Simulation 10 shows the results of an increase in the capitalization rates to near 10%, similar to those from the late-1990s. The preliminary value is higher than the previous year's base rate in each case, so the final capitalization rate is 7% in 2021 and 6% in 2026. The final base rate is higher than the baseline.

Simulations 11 and 12 combine changes in net income and the capitalization rate to show results for an expanding economy and a depressed economy. If both the general and farm economies expand faster than the baseline forecast, commodity prices and interest rates should be higher. Final base rates increase from baseline values. If the economy is depressed compared to baseline, commodity prices and interest rates should be lower. Final base rates decrease from the baseline values.

The base rate is $2,050 for pay-2016. It will be $1,960 for pay-2017. In all 12 of these simulations, ranging from minor to extreme differences from our baseline, the final base rates in 2021 are much lower than the current base rate. The final base rates in 2026 are lower than current base rate in 11 of the 12 simulations. There can be little doubt that the new base rate formula in SB 308 will mean a tax cut for farmland owners.

Finally, simulations 13 and 14 look at extremes. Simulation 13 has net incomes that match the highest sustained values and capitalization rates that match the lowest sustained rates over the past 20 years. The old capitalization formula would have resulted in base rates peaking at $3,065 with these values (see Figure 1). The SB 308 formula results in a base rate of $2,340 by 2026.

Simulation 14 is based on lower net incomes and higher capitalization rates that produce a preliminary base rate of $885 in 2026. That's near the lowest base rate that ever resulted from the old capitalization formula ($880 in 2006-7). The SB 308 calculation results in a higher final base rate of $1,210 for 2026.

Under these conditions the old capitalization formula produced base rates ranging from $880 to $3,065. The new formula projects base rates ranging from $1,210 to $2,340. The new formula stabilizes the base rate in extreme conditions.

So, what is this new base rate formula? There's hardly a doubt that it will reduce farmland base rates substantially over the next five years and beyond. It's a tax cut for farmers.

But Indiana's Supreme Court requires property assessments to be based on objective measures of property wealth. While it was never tested in court, the old method used objective data in a capitalization formula, which is one of the recognized methods for measuring wealth. Arbitrary changes in assessment methods to deliver tax cuts to particular property owners may not be Constitutional under the court's standard.

It might be argued that the new legislated limits on capitalization rates are simply stabilizing, as demonstrated in simulations 13 and 14. Extreme base rate values are limited, but perhaps farmland owners will pay the same taxes, averaged over the long run. The legislated capitalization rates of 6%, 7% and 8% appear to be based on past variations in interest rates. If future interest rates vary around this legislated range, then the stabilization view will be strengthened. If future interest rates remain lower than this range, then SB 308 will look more like an arbitrary tax cut for farmers.

Appendix: Methods and Sources for Base Rate Projections

Estimates for Corn and Bean Prices, Yields and Variable Costs: For the projection of the farmland base rate using the capitalization formula we used long-term forecasts from the University of Missouri's Food and Agricultural Policy Research Institute (FAPRI) publication, U.S. Baseline Briefing Book: Projections for Agricultural and Biofuel Markets, (March 2016) as well as

FAPRI's April Update. The publication includes forecasts for price, yield, variable costs, and government payments by crop from crop year 2015/2016 to crop year 2025/2026. These figures for corn and soybean prices were used in the capitalization formula. Variable costs and yields were adjusted for Indiana by calculating the percentage difference between historical Indiana and national values, averaging the percentage difference and using that average to adjust FAPRI's forecasts.

Estimates for Government Payments: There are two basic alternative government payment programs for farmers: Average Revenue Coverage and Price Loss Coverage. FAPRI reports the adoption rate through the end of our current Farm Bill and forecasts an adoption rate after that as well as forecasting payments for both corn and soybeans through 2025 crop year. A weighted average based on the adoption rate of the two different programs was calculated for both corn and soybeans each year to estimate the government payments received for the capitalization formula. The corn and soybean average payments were then averaged to come up with an average total government payment per acre for the given year.

Overhead Costs: In this year's Purdue Crop Cost and Return Guide, the estimation of overhead costs outside of property taxes increased only .5% over the figure DLGF used last year. With pressure from lower crop prices we expect farmers to keep overhead costs for machinery and family labor from growing at a high rate. For this forecast we assumed a 1.5% growth rate in the overhead costs through 2026.

Cash Rent: The cash rent number used in the capitalization formula is the average cash rent for the state as reported by the Purdue Land Value and Cash Rent Survey less DLGF's estimate of the average property taxes per acre. To come up with this value we projected rent and average property tax separately.

For cash rent, we used Michael Langemeier's (Purdue Ag Econ Department) projections for a west central Indiana farm taking the projected change in the west central Indiana cash rent and applying it to the state average.

Based on a 6-year average dropping the highest value of property tax as a percentage of the base rate, property taxes were forecast at 1.53% of the base rate for taxes paid in a particular year. The forecasted cash rent less this property tax estimation was used in the capitalization formula.

Capitalization Rate: The capitalization rate used in the farmland assessment formula is the average of the farm real estate and farm operating interest rates. This capitalization rate is closely correlated with the ten-year Treasury bond yields. In August 2016 the Congressional Budget Office projected that the ten-year Treasury rate will rise to a long-term level of 3.6% by 2022. The farmland capitalization rate averaged 2.9 percentage points above the 10-year Treasury between 1995 and 2015. We assume that the farm capitalization rate will rise to 6.5% by 2022, which is the CBO's 10-year Treasury yield projection plus 2.9%.

2016 RENTS FOR INDIANA PASTURE LAND, IRRIGATED FARMLAND, HAY GROUND, AND ON-FARM GRAIN STORAGE

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Estimates for the rental value of irrigated farmland, pasture land, hay ground, and on-farm grain storage in Indiana are often difficult to locate. For the past several years, questions about these items have been included in the Purdue Farmland Value Survey. The values from the June 2016 survey are reported here. Because the number of responses for some items is small, the number of responses is also reported.

Averages for pasture rent, the market value and cash rent for irrigated farmland, and the rental of on-farm grain storage are presented in Tables 1, 2, and 3, respectively. The rental rate for grain bins includes the situation where there is just a bin and the situation where there is a bin and utilities. Table 4 provides information about the rental rate for established alfalfa-grass and grass hay ground.

Information from prior years' surveys can be found in the Purdue Agricultural Economics Report archive, https://ag.purdue.edu/agecon/Pages/Purdue-Agricultural-Economics-Report-Archive.aspx. This information can generally be found in the August issue beginning in 2006.

Table 1. Pastureland: Number of responses, annual cash rent, and carrying capacity, June 2016

Region	Number of responses	Annual rent ($ per acre)	Carrying Capacity (acres per cow)
North	15	$100	1.9
Northeast	10	$98	2.1
West Central	10	$78	1.7
Central	18	$80	1.9
Southwest	5	$81	2.0
Southeast	18	$48	1.9
State	76	$74	1.9

Table 2. Irrigated farmland: Number of responses, estimated market value, annual cash rent and rent as a percent of farmland value, June 2016

Region [1]	Number of responses	Corn Yield (bu. per acre)	Market Value ($ per acre)	Cash Rent ($ per acre)	Rent as % of Land Value
North	15	228	$8,967	$303	3.4%
Northeast	8	220	$7,886	$255	3.2%
State	34	228	$8,639	$288	3.3%

[1] *There was an insufficient number of responses for the other regions to report values. The values from this region are included in the state total.*

Table 3. On-Farm grain storage rental: Number of responses and annual per bushel rent, June 2016

	Bins only		Bins and electric utilities	
Region	Number of responses	Rent ($/bu.)	Number of responses	Rent ($/bu.)
North	15	$0.16	13	$0.20
Northeast	14	$0.14	12	$0.21
West Central	12	$0.14	10	$0.19
Central	17	$0.15	14	$0.22
Southwest	7	$0.11	6	$0.15
Southeast	11	$0.17	11	$0.23
State	76	$0.14	66	$0.21

Table 4. Rental of established alfalfa and grass hay ground, June 2016

Region[1]	Alfalfa/Alfalfa-Grass Hay		Grass Hay	
	Responses	Rent ($/A)	Responses	Rent ($/A)
North	14	$165	14	$115
Northeast	11	$159	9	$112
West Central	9	$169	9	$131
Central	9	$155	10	$132
Southeast	16	$81	16	$49
State	61	$203	76	$138

[1] There was an insufficient number of responses for the Southwest region to report values. The values from this region are included in the state total.

IMPACT OF DEPOPULATION, CHANGING CUSTOMER PREFERENCES AND INCREASED BANKING REGULATIONS ON AGRICULTURAL BANKS

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Rural banks have been under a lot of pressures. As a new administration comes into power, with a mandate from voters to review the need for increased government regulations, information will be needed on the impact of recently enacted regulations. One of those laws that has had a profound impact on community banks is Dodd-Frank. This article will report on the impact of that law, as well as the impact of declining population in many rural counties and changing customer preferences on agricultural banks.

Imagine a local community, or even an entire county, without a full-service bank or even a bank branch. Although such a situation might be difficult for many rural residents to imagine, it is a distinct possibility. In fact, that possibility has already become a reality in some counties in rural America. Approximately forty percent of low-population, completely rural counties in the United States do not have a bank branch located in the county (Ellinger, 2012).

In addition, social changes are occurring that have resulted in an increasing number of bank products and services being preferred, and even demanded, via mobile devices or online. The implication is an increasing number of future transactions will likely occur outside a brick and mortar bank facility. The economic reality is that keeping a bank, or bank branch, open in a rural county with a stagnant or declining population has become increasingly difficult to justify (Barnard and Yeager, 2013).

The increased regulatory burden placed on commercial banks resulting from Dodd-Frank legislation has increased operating costs (Dodd-Frank Progress Report, Various Dates). These additional costs are particularly burdensome for smaller banks that do not have increasing deposit volume over which to spread those additional fixed costs.

This article discusses the number of agricultural banks in rural counties with a declining or stagnant population located in the top 20 agricultural producing states.

Table 1. Criteria for Classifying Counties as Rural, Rural/Mixed and Urban

Measure	Rural	Rural/Mixed	Urban
Population	Less than 40,000	40,000 - 100,000	Over 100,000
Density (people per sq. mi.)	Less than 100	100 - 200	Over 200
Population of largest city	Less than 10,000	10,000-30,000	Over 30,000

Source: Ayres, J., B. Waldorf, and M. McKendree. 2013. Defining Rural Indiana – First Step, Center for Rural Development. Purdue University. EC-766-W.

Agricultural banks with less than $250 million in total assets are analyzed, since they are most vulnerable to the adverse effects resulting from depopulation, changing consumer preferences, and the higher costs associated with increased regulatory requirements.

Background

Historically, many of the depository and lending needs in rural communities have been satisfied by locally-owned, full-service community banks or savings institutions, a branch of a larger bank headquartered in an urban area, or both. However, a full-service, brick and mortar facility brings with it fixed costs (i.e., depreciation on buildings, real estate taxes, equipment, salaries, etc.) that need to be spread over a large volume of business to be cost-effective and profitable.

Rural depopulation and its implications on delivering financial services was addressed in a 2014 study that came to the conclusion "…despite the adverse effects of depopulation, rural community banks have tended to perform well, but achieving growth remains a challenge" (Anderlik and Cofer, 2014). Depopulation in rural counties has an obvious negative impact on maintaining a bank in a local community, but what may be more pressing are the social changes underway.

Younger customers prefer to use technology due to convenience and 24-hour accessibility. Their financial needs are satisfied by mobile or online banking and the need for a brick and mortar facility is almost nonexistent. Although more mature and affluent rural residents may desire that a community bank or the branch of a larger bank be located in their county, the numbers of those locations are decreasing and the trend is definitely toward fewer brick and mortar facilities.

A 2012 survey conducted by the Board of Governors of the Federal Reserve found many younger, technology-oriented residents can satisfy their needs for financial services through online or mobile banking technology. Ninety-five percent of individuals age 18 to 24 had a mobile phone and 49% had a smartphone, with nearly 21% of mobile phone owners using mobile banking during the past 12 months and an additional 11% planning to use it in the next 12 months (Gross, Hogarth, and Schmeiser, 2012) [1].

The added costs to meet new government regulations is costly and impacts smaller banks more than larger banks. A paper published in 2013 by officials at the Federal Reserve Bank of Minneapolis projected that 6.5% of community banks with total assets less than $100 million would be unprofitable if one additional full-time person was added to meet new regulations at an assumed annual compensation of $70,000. For bigger community banks between $100 and $250 million in total assets, 1.9% of these would become unprofitable when two FTEs were added to meet regulations. For community banks between $250-500 million and $500 million-$1 billion, only 0.7% and 0.2% would become unprofitable when adding appropriate staff to meet regulations, respectively (Feldman, Heinecke, and Schmidt, 2013).

Data

This study uses Federal Deposit Insurance Corporation (FDIC) Call Report data for agricultural banks located in the top twenty agricultural producing states. The top twenty states are determined by the value added to the U.S. economy by the agricultural sector via the production of goods and services for 2012 (Value Added to the U.S. Economy, 2014).

The 2000 and 2010 U.S. Census county data was used to identify counties with a stagnant or declining population. Those counties with declining or zero population growth were used in the study. The number and size of the

Table 2. Number of Agricultural Banks Headquartered in Counties with Declining Population from 2000 to 2010, by Total Asset Category, as of March 31, 2014

State	Total	<100M	100-250M	250-500M	500M-1B	>1B
California	0	na	na	na	na	na
Iowa	122	56	49	15	1	1
Texas	41	27	8	4	0	2
Nebraska	99	63	25	8	2	1
Minnesota	67	49	13	3	2	0
Illinois	76	41	26	9	0	0
Kansas	122	78	32	11	1	0
North Carolina	0	na	na	na	na	na
Wisconsin	7	3	3	0	1	0
Indiana	8	1	3	4	0	0
North Dakota	52	33	14	4	1	0
Missouri	36	18	15	3	0	0
Georgia	9	5	3	1	0	0
South Dakota	36	20	12	2	1	1
Ohio	3	3	0	0	0	0
Washington	0	na	na	na	na	na
Arkansas	13	3	8	2	0	0
Michigan	4	2	1	1	0	0
Florida	0	na	na	na	na	na
Oklahoma	36	28	6	2	0	0
Total	731	430	218	69	9	5

Sources: U.S. Census Bureau, County Data, 2000 and 2010 and Federal Deposit Insurance Corporation Call Report, March 31, 2014.

agricultural banks located in those counties can be determined using the FDIC Call Report Data, with the size of banks reported in terms of total assets.

The classification system that appears to be most applicable for evaluating rural counties that depend primarily on agricultural production was used in a 2013 study conducted by Ayres, Waldorf and McKendree. The criteria used in the 2013 study is used in this analysis to determine rural counties and is provided in Table 1.

According to the FDIC, an agricultural bank is defined as a bank whose agricultural production loans plus real estate loans secured by farmland exceed 25% of its total loans and leases (FDIC Glossary). From 12/31/2002 through 12/31/2012, the number of agricultural banks in the U.S. declined by 16.9%; from 1,823 to 1,515 (FDIC Call Report Data, Various Dates).

Results

The top twenty agricultural states are listed in Table 2 along with the number of agricultural banks located in counties with declining population in those respective states, as of the March 31, 2014 FDIC Call Report. Of the 1,505 agricultural banks in the U.S. on that date, 1,407 (93.5%) are located in those twenty states. The five states with the most agricultural banks are Iowa, Illinois, Nebraska, Kansas and Minnesota.

The number of agricultural banks located in counties with decreasing population from 2000 to 2010 is 731, which is 52% of the agricultural banks in those twenty states. Although there is concern about the long-term financial viability of all banks located in counties with decreasing population, those that are particularly vulnerable are the smaller banks. As reported in Table 2, 648 (88.6%) of the 731 agricultural banks located in counties with declining population are smaller than $250 million in total assets.

Of the 648 agricultural banks located in counties with decreasing population and less than $250 million in total assets, 430 (66.4%) are less than $100 million and 218 (33.6%) are between $100 and $250 million in total assets. Of the 648 banks with less than $250 million in total assets, 432 (66.7%) or two-thirds are located in five states: Iowa, Illinois, Kansas, Minnesota and Nebraska,

The average size in terms of total assets for the 648 banks is $85.9 million, ranging from $63.7 million in Oklahoma to $134.3 million in Arkansas. As can be seen from Table 3, average total assets for banks less than $100 million is only $52.6 million, with average size per state ranging from $40.6 million in Minnesota to $74.9 million in Wisconsin.

Impact of Additional Regulatory Costs

A study conducted by the Federal Reserve Bank of Minneapolis staff analyzed the impact on community

banks of increased regulatory costs. They assumed additional costs would result from hiring additional staff to comply with increased regulations and extra audit and consulting services. They assumed compensation costs for one additional FTE would be $70,000 and would apply to all banks less than $100 million in total assets. The added compensation is subtracted from net income to determine the impact on profitability. For banks $100-250 million in total assets, it was assumed two additional employees would be hired at a total compensation of $140,000 (Feldman, Heinecke, and Schmidt, 2013).

Table 3. Average Total Assets of Agricultural Banks less than $250 Million in Total Assets Headquartered in Counties with Declining Population from 2000 to 2010, by Total Asset Categories, as of March 31, 2014

State	Total	<100M	100-250M
		$1,000	
California	na	na	na
Iowa	$103,985	$60,405	$153,791
Texas	72,509	49,680	149,557
Nebraska	77,944	48,945	151,022
Minnesota	67,496	40,644	168,705
Illinois	102,806	60,760	169,110
Kansas	77,821	48,186	150,058
North Carolina	na	na	na
Wisconsin	117,366	74,931	159,802
Indiana	111,162	59,646*	128,334
North Dakota	84,174	60,845	139,166
Missouri	95,879	59,722	139,268
Georgia	76,056	55,079	111,017
South Dakota	81,581	49,354	135,292
Ohio	74,457	74,457	na
Washington	na	na	na
Arkansas	134,322	61,102	161,780
Michigan	114,517	64,195	215,162*
Florida	na	na	na
Oklahoma	63,681	50,673	124,387
Total	$85,874	$52,634	$151,439

* Denotes only one bank in the state in that size category

Sources: U.S, Census Bureau, County Data, 2000 and 2010 and Federal Deposit Insurance Corporation Call Report, March 31, 2014.

The authors applied two tests to evaluate the impact of additional costs due to increased regulation. The first subtracted the additional costs from net income and recalculated the return on assets (ROA). The number of banks that fell below the "minimum required ROA" of the Minneapolis Federal Reserve Bank of 40 basis points (bp) before and after applying the additional regulatory costs were counted and compared. The second test also applied the additional costs of $70,000 per FTE and counted the number of banks that shifted from profitable to unprofitable to determine the impact of the additional compensation costs (Feldman, Heinecke, and Schmidt, 2013).

The same approach is used in this study using 2013 income data and balance sheet data from the December 31, 2012 and 2013 Call Reports. In the current study, the number of banks less than $250 million and below a ROA of 40 bp increased by 43 (46.2%), from 93 to 136 as a result of increased regulatory costs. Most of the increase, 39 banks or 90.7%, is for banks with less than $100 million in total assets. Only 4 of the additional banks are in the $100-250 million size category.

Also, thirty of the 633 agricultural banks with less than $100 million in total assets who experienced positive earnings during 2013 would experience negative earnings if earnings are reduced by $70,000 for regulatory compliance. Net income was reduced $140,000 for banks with $100-250 million in total assets and none of the 217

Table 4. Number of Agricultural Banks with ROA less than 40 Basis without and with the Additional Regulatory Costs for Banks Smaller than $250 Million in Total Assets, by Total Asset Category, as of March 31, 2014

	Less Than $250M		<$100M		$100-$250M	
	Less than 40 BP		Less than 40 BP		Less than 40 BP	
State	w/o Reg.	w/Reg.	w/o Reg.	w/Reg.	w/o Reg.	w/Reg.
California	na	na	na	na	na	na
Iowa	13	16	12	15	1	1
Texas	9	11	8	10	1	1
Nebraska	10	20	10	18	0	2
Minnesota	7	12	7	12	0	0
Illinois	10	13	9	12	1	1
Kansas	23	36	21	34	2	2
North Carolina	na	na	na	na	na	na
Wisconsin	0	0	0	0	0	0
Indiana	0	1	0	0	0	1
North Dakota	6	6	6	6	0	0
Missouri	1	3	1	3	0	0
Georgia	3	3	3	3	0	0
South Dakota	6	7	6	7	0	0
Ohio	0	0	0	0	na	na
Washington	na	na	na	na	na	na
Arkansas	0	0	0	0	0	0
Michigan	2	2	2	2	0	0
Florida	na	na	na	na	na	na
Oklahoma	3	6	3	5	0	1
Total	93	136	88	127	5	9

Sources: U.S, Census Bureau, County Data, 2000 and 2010 and Federal Deposit Insurance Corporation Call Report, March 31, 2014.

banks who experienced positive earnings in 2013 became unprofitable.

All thirty banks that became unprofitable due to increased regulatory costs are located in eight states. All of the states are located in either the Great Plains or the Corn Belt, with only Illinois located east of the Mississippi River. Again, 18 of the 30 banks (60%) are located in Kansas and Nebraska.

Summary

As members of the new administration assess the need for recently enacted regulations, information will be needed on the impact of those regulations. The impact of Dodd-Frank was discussed in this article, along with the impact of a declining population in many rural counties and changing customer desires and preferences on agricultural banks. The ability of agricultural banks in rural counties with declining populations to address the challenges that lie ahead will determine which banks survive those challenges. The key findings from this study are listed below.

Of the 1,505 agricultural banks on March 31, 2014, 1,407 (93.5%) are located in the top 20 agricultural producing states;

Of the 1,407 agricultural banks in the top 20 agricultural producing states, 731 (52%) are located in counties in which the population decreased from 2000 to 2010;

Of those 731 agricultural banks in counties with declining population, 648 (88.6%) are smaller than $250 million in total assets;

The average size in terms of total assets for those 648 banks is $85.9 million, ranging from $63.7 million in Oklahoma to $134.3 million in Arkansas;

Average total assets for banks less than $100 million is only $52.6 million, with average size per state ranging from $40.6 million in Minnesota to $74.9 million in Wisconsin;

The number of banks that would have a ROA below 40 bp in the less than $250 million total assets category would increase from 93 to 136 due to increased regulatory costs, with 39 of the 43 additional banks in the less than $100 million total asset category;

Thirty-two of those 39 banks (82%) are located in five states: Illinois, Iowa, Kansas, Nebraska and Minnesota;

The total agricultural loan volume outstanding for the 97 total agricultural banks in those five states with a ROA less than 40 bp is $847.9 million with $532.8 million (62.8%) in two states, Kansas and Nebraska; and

Thirty (4.7%) of the 633 agricultural banks less than $100 million in total assets, who experienced positive 2013 earnings would experience negative earnings if costs increased by $70,000 to hire one additional compliance officer, with 18 (60%) located in Kansas and Nebraska.

The likely decrease in the number of agricultural banks and reluctance of larger commercial banks to open a branch in rural counties with stagnant or declining population growth will likely result in the loss of an identifying institution for those local communities and an inconvenience for the agricultural loan customers. However, the total amount of agricultural debt affected will be less than 1% of the total agricultural debt in the country.

Consequently, such a transition will provide opportunities for other lending institutions located in those, or adjacent, counties. The identification of such opportunities will enable the financial institutions that remain to better focus resources and project future lending opportunities. Furthermore, the financial product and service needs of residents in those rural counties will likely be satisfied increasingly through electronic delivery means.

Footnotes

[1] The denominator varies for each question regarding mobile banking; therefore, the potential adoption rate is less than the sum of the percentages (Gross, Hogarth, and Schmeiser, 2012).

Reference.

Anderlik, J. M. and R.D. Cofer, Jr. 2014. Long-term Trends in Rural Depopulation and Their Impact for Community Banks, *FDIC Quarterly*, Vol. 8, No. 2.

American Bankers Association, Listing of 100 Largest Agricultural Banks. 2013. http://www.agrimarketing.com/s/85852.

Ayres, J., B. Waldorf, and M. McKendree. 2013. Defining Rural Indiana – First Step, Center for Rural Development. EC-766-W.

Barnard, F. and E. Yeager. 2013. The Role of Community Banks in Rural Indiana, Center for Rural Development. EC-768-W.

Cromartie, J. and S. Bucholtz. 2008. Defining the "Rural" in Rural America. Amber Waves, June. http://www.ers.usda.gov/AmberWaves/June08/features/ruralamerica.htm.

Dodd-Frank Progress Report. Various Dates. www.davispolk.com/Dodd-Frank-Rulemakding-Progress-Report/

Ellinger, Paul. 2012. Bank Branch Expansion in Rural Areas. FarmDoc Daily, University of Illinois (May 25, 2012).

Federal Deposit Insurance Company (FDIC) Call Report Data. Various Dates. https://cdr.ffiec.gov/public/

FDIC Glossary. No Date. http://www2.fdic.gov/qbp/Glossary.asp?menuitem=Glossary

Feldman, R. J., K. Heinecke and J. Schmidt. 2013. Quantifying the Cost of Additional Regulation on Community Banks. Minneapolis Federal Reserve Bank, Economic Policy Paper. May 30, 2013. www.minneapolisfed.org/publications_papers/pub_display

Gross, Matthew, Jeanne Hogarth and Maximilian Schmeiser. 2012. Customers and Mobile Financial Services, Board of Governors of the Federal Reserve System. Washington, D. C. (March 2012).

United States Census Bureau. County Intercensal Estimates (2000-2010). http://www.census.gov/popest/data/intercensal/county/county2010.htmlUSDA/ERS Farm Income and Wealth Statistics, March 17, 2014.

Value Added to the U.S. Economy by the Agricultural Sector via the Production of Goods and Services, 2010-2014. ERS USDA. 2014. www.ers.usda.gov/data-products/farm-income-and-wealth-statistics

Waldorf, B. S. 2007. What is Rural and what is Urban in Indiana? Purdue Center for Regional Development. PCRD-R-4. http://www.pcrd.purdue.edu/Communicaitons/Publications/default.aspx.

THE FAMILY BUSINESS: DIFFERENTIATION IN FAIRNESS BY LEADERSHIP TYPE

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Succession planning is a logical component in the life cycle of a family business. For business owners who want to continue operations, even after they are no longer able, it is an imperative element of planning. Part of that planning process is determining how the successor will be treated.

Much literature has focused on the importance of determining a successor and the process involved in doing so. Mishra and El-Osta (2007), as well as Mishra, El-Osta, and Johnson (2004), highlight the importance of succession planning by determining the potential failures possible resulting from not planning for retirement. These include issues such as financial insecurity, personal and family dissatisfaction, as well as unplanned capital losses. Smith (2010) confirms these factors, as well as potential loss of expertise and knowledge, loss of business, and damaged employee and client relationships. Morris et al. (1997) find, among other factors, that the relationships between family members are important in identification of successors, suggesting that fairness may have a role in pinpointing a successor.

A business owner's definition of fairness may be an important component of determining a successor. Depending on how a business owner evaluates and practices fairness within his or her business will likely have an impact on how the successor is selected. In this article, we consider the differences in perceptions of fairness across various groups of family business owners. We first consider the differences in fairness between those who have not identified a successor and those who have. Then, we consider the differences between male and female family business owners, followed by the differences between copreneurial and non-copreneurial couples.

We first consider which leadership types have identified a successor. We then, with considerations of these differences, compare male owners with female owners, as well as copreneurial couples and non-copreneurial couples. In this article we define a copreneurial family business as a couple working together day-to-day in the management of the firm.

To consider these different groups' perceptions of fairness in business, we use the 2010 Intergenerational Farm and Non-Farm Family Business Survey. The 2010 Intergenerational Farm and Non-Farm Family Business Survey was a 30-minute telephone survey of rural family businesses. The data set is a sample of 2,097 small and medium sized farms from Illinois, Indiana, Michigan, and Ohio; plus a random sample of 1,059 small Indiana businesses. The final sample consisted of 3,156 cases. The majority of the survey considered farm businesses with the Farm sample having 653 observations and the Non-Farm 83 observations. Overall, the sample consists of 736 family businesses.

We use a section of the survey which asks the business owner to determine what the perceptions of fairness in the business are, from a list of five options. These five options are:

a. Treat each according to his/her own needs
b. Treat each according to his/her own contribution
c. Treat all individuals the same
d. The business has no definition
e. Don't know

We use these five choices to analyze the differences in fairness between the various groups of business owners.

We first consider the differences between business owners who had identified a successor and business owners who had not identified a successor. In our sample, 521 business owners had not identified a successor and 204 business owners had identified a successor. In Table 1 we sub-categorize business owners who had and had not identified a successor, by gender, as well as copreneurial status. This table suggests that business owners who had a successor identified were largely male and were involved in a copreneurial relationship. These relationships are worth reflection as we explore fairness throughout this paper.

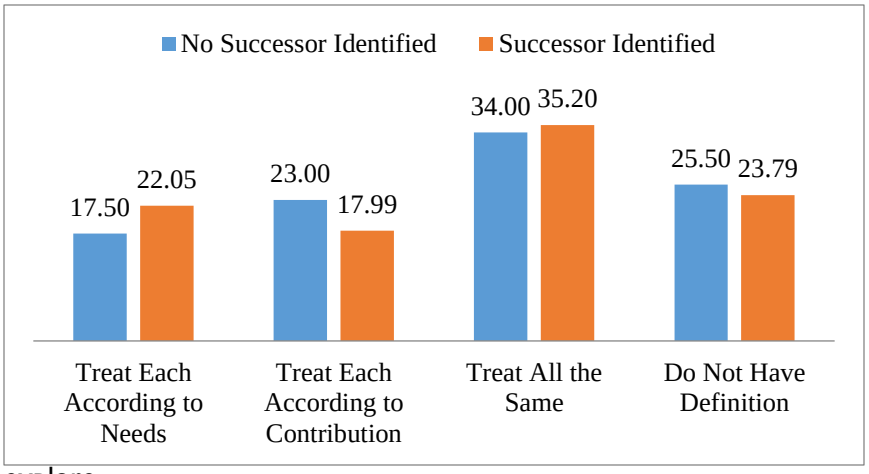


Figure 1: Differences in Fairness: No Successor Identified v. Successor Identified

There are some differences between leadership type and identification of a successor. These can be seen in Figure 1. Those who had identified a successor were more likely to treat each according to their needs and also more likely to treat all the same. Conversely, those who had not identified a successor were more likely to treat according to their contribution or to have no definition at all. For example, 23% of those without a successor treat each according to their contribution compared with 17.99% who had a successor. However, almost a quarter of each group have no definition of fairness; with 25.5% of those without a successor and 23.79% of those with a successor, having no definition of fairness.

Together, these results suggest that the differences in the definition of fairness between those who had not identified a successor and those who had are relatively small. If such definitions play a role in the decision of determining a business successor it is likely through percentage discrepancies between the statements of "treat according to needs" and "treat according to contribution".

Next, we consider the differences between male and female business owners. In our sample, we have 423 male business owners and 292 female owners. Discrepancies exist between all determinations of fairness. This can be seen in Figure 2. Female business owners were far more likely to treat each according to their needs, with 29.45%, compared with 14.66% of male owners. Male owners are slightly more likely to use every other definition. Male owners treat each according to their contribution with 20.57%, compared with 17.12% of female business owners. Similarly, for those who treat all the same, 36.64% are male owners and 32.88% are female owners. Male owners are also more likely to have no definition, with 28.13%, compared with 20.54% of female owners.

Taken together, these results indicate that male and female business owners are quite different in their definitions of fairness in their business. It also indicates that gender

Table 1: Business Owner Types

Successor		
	Business Owner is Male	*Business Owner is Female*
Copreneurial	34.50%	31.50%
Non-Copreneurial	22.50%	9.50%
No Successor		
	Business Owner is Male	*Business Owner is Female*
Copreneurial	36.64%	32.19%
Non-Copreneurial	20.65%	9.72%

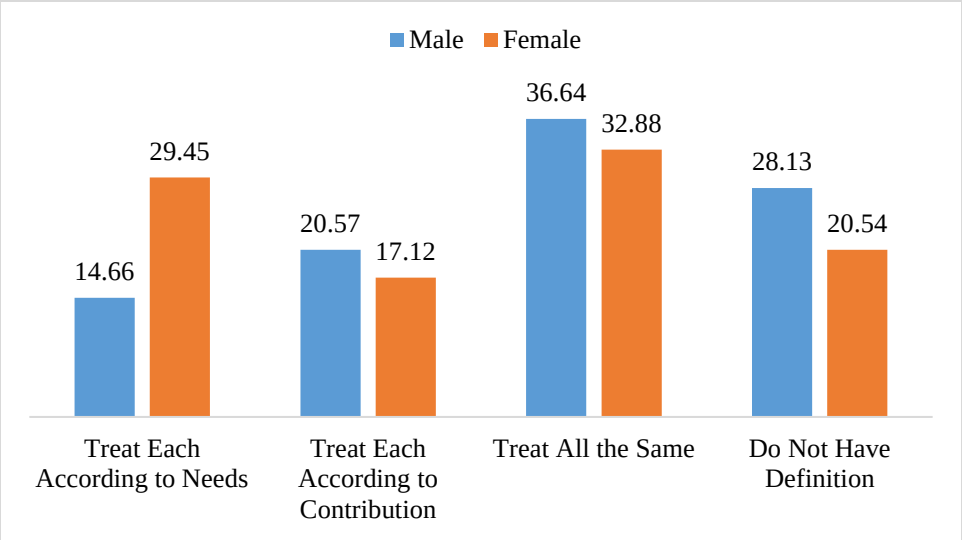


Figure 2: Differences in Fairness: Male v. Female Business Owners

may have a role in determining succession planning. Although this is suggested in Table 1, with fewer female business owners having a successor identified, compared with male business owners.

Finally, we consider the differences between copreneurial and non-copreneurial couples. In our sample, there are 211 non-copreneurial couples and 481 copreneurial couples. The differences are relatively small in all categories. This can be seen in Figure 3. Copreneurial couples were slightly more likely to treat each according to their own needs, with 21.41% compared with 19.43% of non-copreneurial couples. Additionally, copreneurial couples were more likely to treat all the same, with 35.14%, compared with 33.18% of non-copreneurial couples. Non-copreneurial couples were more likely to treat each according to their contribution, with 21.80%, compared with 17.88% of copreneurial couples. Both groups are almost exactly likely to have no definition.

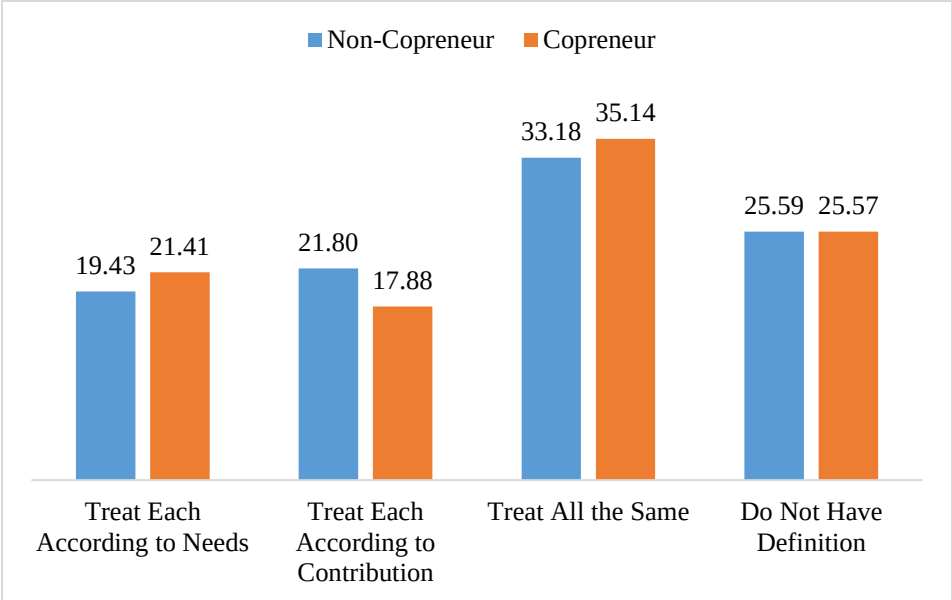
Together, these results suggest that copreneurial couples and non-copreneurial couples may not be very different in determinations of fairness.

Summary

How do small business owners view fairness? For some situations there are minimal differences in definitions of fairness between two groups of family business owners, including: 1) those who had identified a successor and those who had not and 2) copreneurial couples and non-copreneurial couples. The differences between those who had identified a successor and those who had not, as well as copreneurial and non-copreneurial couples, are relatively minor.

However, the differences in views on fairness between male and female family business owners is much larger. Women are more likely to treat each according to needs, and men are more likely to treat each according to contribution. Interestingly, a similar trend among all groups is the approximate 25% that have no definition of fairness. This may cause longer term problems in the family business if the perception of how successors are treated is inconsistent because there is no set definition of fairness.

Figure 3: Differences in Fairness: Copreneurial Couples v. Non-Copreneurial Couples



These results do not tell us everything that we might want to know about differences between these management groups, particularly in terms of management style, implementation of fairness, or ultimate outcomes. Future research into the implications of fairness on family business outcomes would be beneficial for determining its role in management of family firms.

References

Mishra, A.K., H.S. El-Osla, and J.D. Johnson, (2004). "Succession in Family Farm Business: Empirical Evidence from the U.S. Farm Sector", Selected Paper Presentation at the AAEA Meeting in Denver, Colorado. August 1-4, 2004.

Mishra, A.K., and H.S. El-Osla, (2007). "Factors Affecting Succession Decisions in Family Farm Businesses: Evidence from a National Survey" Journal of the A.S.F.M.R.A. 2007: 1-10.

Morris, M.H., R.O. Williams, J.A. Allen, and R.A. Avila, (1997). "Correlates of Success in Family Business Transitions", Journal of Business Venturing 12: 385 – 401.

Smith, S.M., (2010). "Legal Corner: Succession Planning for Family-Owned Businesses is

Critical for Rural America", Rural Cooperatives, July / August 2010: pages 9 and 46.

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