Is micro-captive insurance an alternative to commercial insurance?

Defining a captive, specifically a micro-captive

Captive insurance is a form of self-insurance where a company creates its own licensed insurance subsidiary to underwrite its risks.

> There are several types: pure captives, group captives, rent-a-captive, micro-captive, protected cell companies, etc.

We don't get into crop insurance here. See work by Dr. Cory Walters at the University of Nebraska for more.

Special thanks to Ken Harrison of The Eliason Group, LLC for his insights on captives with more information on www.captiveonthefarm.com

Defining a captive, specifically a micro-captive

•A micro-captive is a captive insurance company that elects to be taxed under **IRC § 831(b).** This provision allows the captive to:

- •Be taxed **only on investment income**, not on premium income.
- •Qualify if it receives **less than $2.8 million** (2024 threshold; indexed for inflation) in annual premiums.

•Originally intended to help small businesses manage risk without relying on large commercial insurers.

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An example to help us understand a captive

Commercial

1) Work with agent to identify carrier
2) Determine asset values for coverage & limits
3) Set deductible (say $2,500 per)
4) Pay agent premium (mostly goes to carrier)
5) If, and when, a claim occurs the policy covers above deductible
    1) Market value vs. replacement value vs. Actual cash value

Captive

1) Set up captive and identify captive manager
2) Determine asset values for coverage & limits & follow state capital requirements
3) Captive to cover losses up to (say $250,000)
4) Reinsurance for above captive covered losses
5) Pay captive premium (goes to your captive)
6) If, and when, a claim occurs the captive covers $250,000 (unless reinsurance level is higher)
    1) Market value vs. replacement value (optional)
    2) It's like $250k is your deductible

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Exercise we'll take you through today

- Show historical trends in insurance premiums, claims, and loss ratios.
- What's been the probability of a general farm claim?
- Examine the financial feasibility of a micro-captive for self-insuring general purpose comprehensive and liability coverage versus purchasing commercial insurance.
- Discuss what researchers have learned about the use of captive insurance in a general business setting.
- Discuss IRS and Kansas specific regulations.

History of captive insurance – some concepts to discuss

Captive insurance is a form of self-insuring and first arose in the 1950s. Historically, larger companies with a unique set of risks to insure, as well as strong financial performance, will form a captive insurance company. The captive insurance company will be a subsidiary of the main company, act as it's own insurance company, managed by a professional captive manager, and likely reinsure against losses above a specific level.

The primary company will pay premiums to the captive (that is, itself) and the premiums will invest and hold tax advantages. The captive will then pay out upon a claim.

What we know from KFMA data 2002-2024

- 29,418 data entries
- $267.5M in (nominal) premium payments, 29,418 premiums paid
  - Don't know deductibles
- $35.1M in observed (nominal) claim payments, 3371 claims*
  - Don't know deductibles
- 13.13% loss ratio ($35.1M / $267.5M)
  - Don't know deductibles
- Simple probability of an observed claim: 11.46% (3371 / 29,418)*

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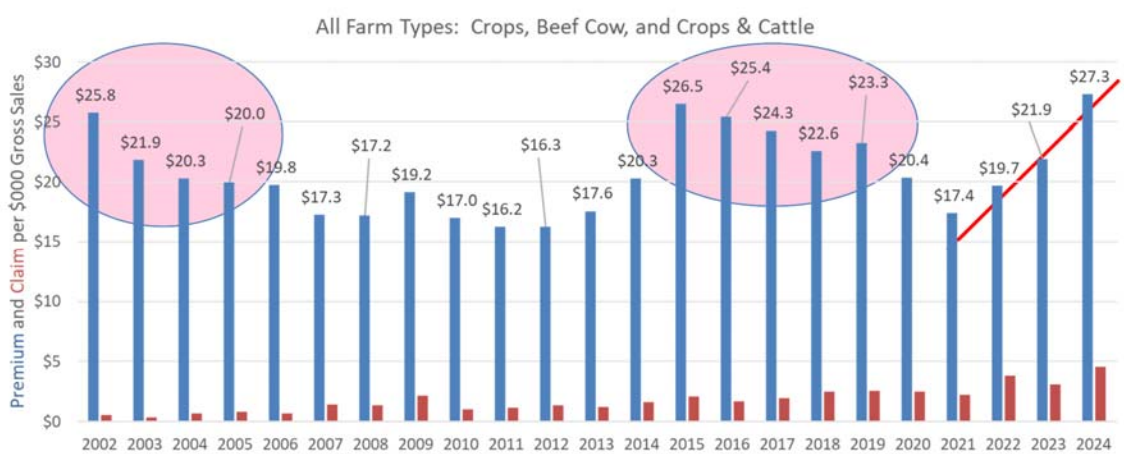
Historical premiums and claims per $000 gross sales



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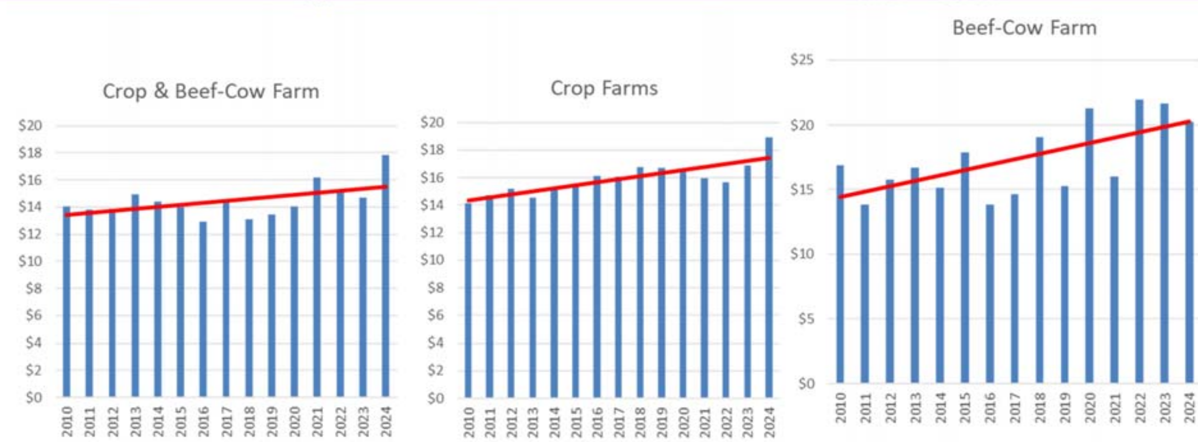
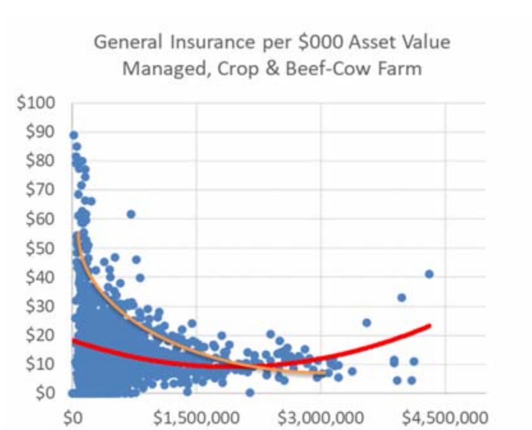
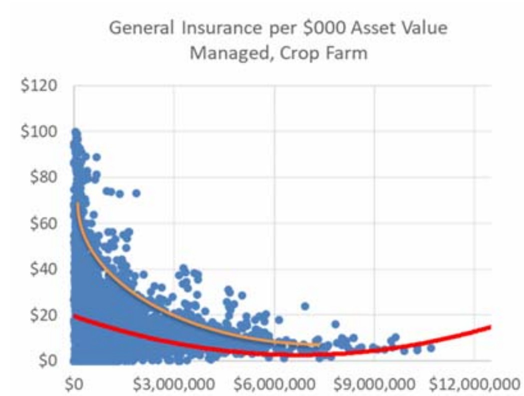
Historical premiums per $000 intermediate assets & beginning inventories of current assets managed



Fewer beef-cow only farms in KFMA database in recent years, so sitting aside this farm type

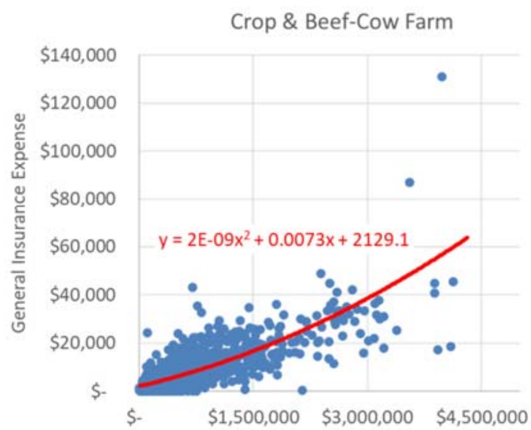
Observe economies of size with size of operation for premiums paid?

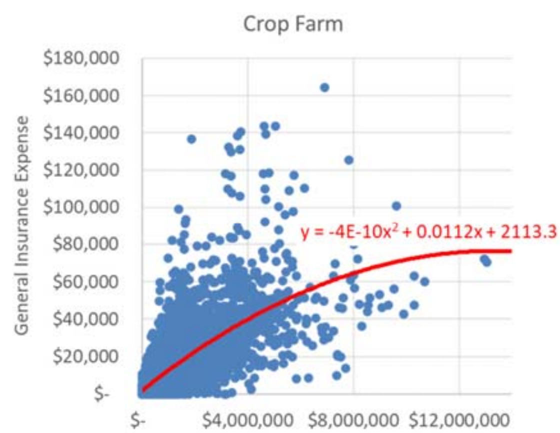




Red Line data selected; Orange line we drew in

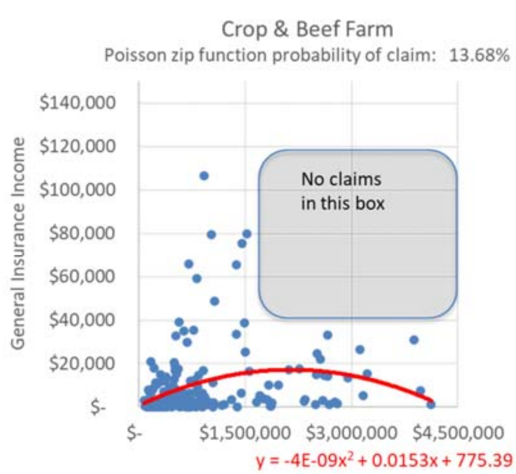
Premiums paid by size of insurable assets managed

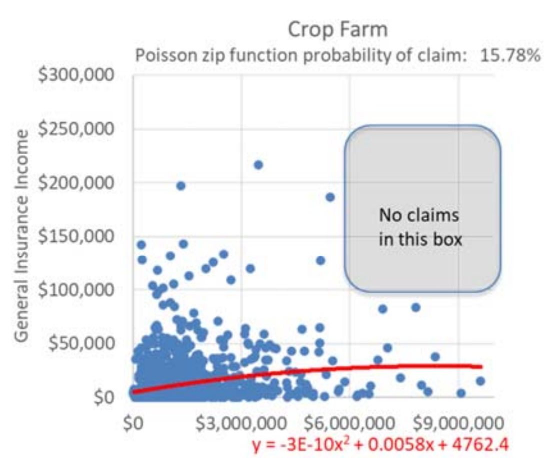




2020 – 2024 data only

Indemnities (claims) by size of insurable assets managed, upon claim filed





2020 – 2024 data only

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Crop farm: DCF assumptions in comparing commercial vs. captive

Capital reserve startup ($s, KS statues set at $250k minimum)	$250,000					
Management fee structure	Assets insured ===>	$500,000	$1,000,000	$2,500,000	$5,000,000	$10,000,000
Management fee fixed ($s)	$15,000	$ 17,500	$ 15,000	$ 12,500	$10,000	$6,000
Management fee of premium (%)	10.0%					
Cost of setting up micro-captive ($s)	$0.00					
Cost of annual micro-captive tax filings ($s)	$0.00					
Deductible	Assets insured ===>	$100,000	$500,000	$1,000,000	$2,500,000	$5,000,000
Can adjust for sitautional analysis	Deductible ==>	$1,000	$2,500	$2,500	$5,000	$20,000
	(% deductible)	1.00%	0.50%	0.25%	0.20%	0.40%
Average state tax rate (%)	6.0%					
Average federal tax rate (%)	18.0%					
Capital Gains tax rate (%)	20.0%					
Market return (%)	7.5%					
Inflation rate (%)	2.5%					
Discount rate (%)	20.0%	(could range from 15% to 30%)				
Re-insurance cost intermediate & current inventory assets managed ($/000)	$5.00	0	<=== enter 1 if you want to assume higher liability as capital reserves grow.			
Re-insurance level (captive covers any claim below level listed; equal capital startup when in doubt)	$250,000		(advised to enter 1 only if plan to get to capital reserves to $500,000 after year 1)			
Premium above estimated premium (captive)	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6
' ====> this can fluctuate based on revenues and expected liabilities (recommended to not go above 7.5% of gross sales)	$0	$0	$0	$0	$0	$0
Farm intermediate and beginning inventory of current assets manage ($s)	$1,000,000					
Probabilty of a claim (%)	15.78%	Poisson ZIP method - see spreadsheet				

Crop farm: $0.5M in insurable assets, no extra premiums & no large claim

Discount Cash Flow Analysis

	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6	Yr7	Yr8	Yr9	Yr10
Commercial Insurance										
Premium paid	$ 7,613	$ 7,804	$ 7,999	$ 8,199	$ 8,404	$ 8,614	$ 8,829	$ 9,050	$ 9,276	$ 9,508
Expected annual indemnity (after accounting for deductibel)	$ 803	$ 833	$ 863	$ 895	$ 927	$ 960	$ 994	$ 1,028	$ 1,064	$ 1,100
Probability of claim	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%
Average claim when claim occurs	$ 7,587	$ 7,777	$ 7,972	$ 8,171	$ 8,375	$ 8,584	$ 8,799	$ 9,019	$ 9,245	$ 9,476
Deductible (adjust in NPV for probability of a claim unless large claim)	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500
Tax savings	$ 1,827	$ 1,873	$ 1,920	$ 1,968	$ 2,017	$ 2,067	$ 2,119	$ 2,172	$ 2,226	$ 2,282
Net value per year	$ (4,984)	$ (5,098)	$ (5,216)	$ (5,336)	$ (5,460)	$ (5,587)	$ (5,716)	$ (5,849)	$ (5,986)	$ (6,126)
Net present value over 10 years	**($22,455.53)**									
Captive insurance										
Capital reserve	$ 250,000	$ 246,818	$ 243,286	$ 239,375	$ 235,055	$ 230,292	$ 225,049	$ 219,287	$ 212,965	$ 206,037
Management fee	$ 18,261	$ 18,280	$ 18,300	$ 18,320	$ 18,340	$ 18,361	$ 18,383	$ 18,405	$ 18,428	$ 18,451
Reinsurance cost	$ 2,500	$ 2,563	$ 2,627	$ 2,692	$ 2,760	$ 2,829	$ 2,899	$ 2,972	$ 3,046	$ 3,122
Resinurance level	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000
Pemium paid	$ 7,613	$ 7,804	$ 7,999	$ 8,199	$ 8,404	$ 8,614	$ 8,829	$ 9,050	$ 9,276	$ 9,508
Market return on capital reserves and premiums	$ 18,750	$ 18,511	$ 18,246	$ 17,953	$ 17,629	$ 17,272	$ 16,879	$ 16,447	$ 15,972	$ 15,453
Tax savings (to farmer)	$ 6,810	$ 6,875	$ 6,942	$ 7,011	$ 7,081	$ 7,153	$ 7,227	$ 7,302	$ 7,380	$ 7,459
Taxed earnings (market returns to investment) ===> assume capital gains only	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (8,175)
Expected annual indemnity	$ 1,197	$ 1,227	$ 1,258	$ 1,289	$ 1,321	$ 1,354	$ 1,388	$ 1,423	$ 1,458	$ 1,495
Probability of a claim	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%
Average claim when claim occurs (net of deductible)	$ 7,587	$ 7,777	$ 7,972	$ 8,171	$ 8,375	$ 8,584	$ 8,799	$ 9,019	$ 9,245	$ 9,476
Entity set-up	$ -									
Additional entity (captive) tax filing cost to farm business taxes	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Net value per year	$ (236,391)	$ 13,574	$ 13,518	$ 13,439	$ 13,335	$ 13,203	$ 13,040	$ 12,845	$ 12,613	$ 226,553
Net present value over 10 years	**($117,820)**									

Crop farm: $1M in insurable assets, no extra premiums & no large claim

Discount Cash Flow Analysis	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6	Yr7	Yr8	Yr9	Yr10
Commercial Insurance										
Premium paid	$ 12,913	$ 13,236	$ 13,567	$ 13,906	$ 14,254	$ 14,610	$ 14,975	$ 15,350	$ 15,734	$ 16,127
Expected annual indemnity (after accounting for deductibel)	$ 1,225	$ 1,265	$ 1,307	$ 1,349	$ 1,393	$ 1,437	$ 1,483	$ 1,530	$ 1,578	$ 1,628
Probability of claim	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%
Average claim when claim occurs	$ 10,262	$ 10,519	$ 10,782	$ 11,051	$ 11,328	$ 11,611	$ 11,901	$ 12,199	$ 12,504	$ 12,816
Deductible (adjust in NPV for probability of a claim unless large claim)	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500
Tax savings	$ 3,099	$ 3,177	$ 3,256	$ 3,337	$ 3,421	$ 3,506	$ 3,594	$ 3,684	$ 3,776	$ 3,870
Net value per year	$ (8,589)	$ (8,794)	$ (9,004)	$ (9,220)	$ (9,440)	$ (9,666)	$ (9,898)	$ (10,136)	$ (10,379)	$ (10,629)
Net present value over 10 years	**($38,801.14)**									
Captive insurance										
Capital reserve	$ 250,000	$ 248,491	$ 246,736	$ 244,716	$ 242,406	$ 239,781	$ 236,814	$ 233,475	$ 229,734	$ 225,556
Management fee	$ 16,291	$ 16,324	$ 16,357	$ 16,391	$ 16,425	$ 16,461	$ 16,498	$ 16,535	$ 16,573	$ 16,613
Reinsurance cost	$ 5,000	$ 5,125	$ 5,253	$ 5,384	$ 5,519	$ 5,657	$ 5,798	$ 5,943	$ 6,092	$ 6,244
Resinurance level	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000
Pemium paid	$ 12,913	$ 13,236	$ 13,567	$ 13,906	$ 14,254	$ 14,610	$ 14,975	$ 15,350	$ 15,734	$ 16,127
Market return on capital reserves and premiums	$ 18,750	$ 18,637	$ 18,505	$ 18,354	$ 18,180	$ 17,984	$ 17,761	$ 17,511	$ 17,230	$ 16,917
Tax savings (to farmer)	$ 8,209	$ 8,324	$ 8,442	$ 8,564	$ 8,688	$ 8,815	$ 8,945	$ 9,079	$ 9,216	$ 9,356
Taxed earnings (market returns to investment) ===> assume capital gains only	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (4,212)
Expected annual indemnity	$ 1,619	$ 1,659	$ 1,701	$ 1,744	$ 1,787	$ 1,832	$ 1,878	$ 1,925	$ 1,973	$ 2,022
Probability of a claim	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%
Average claim when claim occurs (net of deductible)	$ 10,262	$ 10,519	$ 10,782	$ 11,051	$ 11,328	$ 11,611	$ 11,901	$ 12,199	$ 12,504	$ 12,816
Entity set-up	$ -									
Additional entity (captive) tax filing cost to farm business taxes	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Net value per year	$ (229,800)	$ 20,408	$ 20,606	$ 20,792	$ 20,965	$ 21,122	$ 21,263	$ 21,385	$ 21,487	$ 251,333
Net present value over 10 years	**($84,213)**									

Crop farm: $2.5M in insurable assets, no extra premiums & no large claim

Discount Cash Flow Analysis	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6	Yr7	Yr8	Yr9	Yr10
Commercial Insurance										
Premium paid	$ 27,613	$ 28,304	$ 29,011	$ 29,737	$ 30,480	$ 31,242	$ 32,023	$ 32,824	$ 33,644	$ 34,485
Expected annual indemnity (after accounting for deductibel)	$ 1,954	$ 2,023	$ 2,093	$ 2,165	$ 2,239	$ 2,315	$ 2,392	$ 2,472	$ 2,553	$ 2,637
Probability of claim	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%
Average claim when claim occurs	$ 17,387	$ 17,822	$ 18,268	$ 18,724	$ 19,192	$ 19,672	$ 20,164	$ 20,668	$ 21,185	$ 21,714
Deductible (adjust in NPV for probability of a claim unless large claim)	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000
Tax savings	$ 6,627	$ 6,793	$ 6,963	$ 7,137	$ 7,315	$ 7,498	$ 7,686	$ 7,878	$ 8,075	$ 8,276
Net value per year	$ (19,032)	$ (19,488)	$ (19,955)	$ (20,435)	$ (20,926)	$ (21,429)	$ (21,945)	$ (22,474)	$ (23,016)	$ (23,572)
Net present value over 10 years	**($86,001.10)**									
Captive insurance										
Capital reserve	$ 250,000	$ 248,471	$ 246,634	$ 244,459	$ 241,917	$ 238,975	$ 235,597	$ 231,746	$ 227,381	$ 222,457
Management fee	$ 15,261	$ 15,330	$ 15,401	$ 15,474	$ 15,548	$ 15,624	$ 15,702	$ 15,782	$ 15,864	$ 15,949
Reinsurance cost	$ 12,500	$ 12,813	$ 13,133	$ 13,461	$ 13,798	$ 14,143	$ 14,496	$ 14,859	$ 15,230	$ 15,611
Resinurance level	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000
Pemium paid	$ 27,613	$ 28,304	$ 29,011	$ 29,737	$ 30,480	$ 31,242	$ 32,023	$ 32,824	$ 33,644	$ 34,485
Market return on capital reserves and premiums	$ 18,750	$ 18,635	$ 18,498	$ 18,334	$ 18,144	$ 17,923	$ 17,670	$ 17,381	$ 17,054	$ 16,684
Tax savings (to farmer)	$ 13,290	$ 13,547	$ 13,811	$ 14,081	$ 14,358	$ 14,642	$ 14,933	$ 15,231	$ 15,537	$ 15,851
Taxed earnings (market returns to investment) ===> assume capital gains only	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (4,841)
Expected annual indemnity	$ 2,743	$ 2,812	$ 2,882	$ 2,954	$ 3,028	$ 3,104	$ 3,181	$ 3,261	$ 3,342	$ 3,426
Probability of a claim	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%
Average claim when claim occurs (net of deductible)	$ 17,387	$ 17,822	$ 18,268	$ 18,724	$ 19,192	$ 19,672	$ 20,164	$ 20,668	$ 21,185	$ 21,714
Entity set-up	$ -									
Additional entity (captive) tax filing cost to farm business taxes	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Net value per year	$ (215,365)	$ 35,155	$ 35,668	$ 36,171	$ 36,664	$ 37,144	$ 37,609	$ 38,056	$ 38,483	$ 266,185
Net present value over 10 years	**($20,004)**									

Crop farm: $5M in insurable assets, no extra premiums & no large claim

Discount Cash Flow Analysis

	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6	Yr7	Yr8	Yr9	Yr10
Commercial Insurance										
Premium paid	$ 48,113	$ 49,316	$ 50,549	$ 51,813	$ 53,108	$ 54,436	$ 55,797	$ 57,192	$ 58,621	$ 60,087
Expected annual indemnity (after accounting for deductibel)	$ 988	$ 1,092	$ 1,198	$ 1,307	$ 1,418	$ 1,532	$ 1,650	$ 1,770	$ 1,893	$ 2,019
Probability of claim	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%
Average claim when claim occurs	$ 26,262	$ 26,919	$ 27,592	$ 28,282	$ 28,989	$ 29,713	$ 30,456	$ 31,218	$ 31,998	$ 32,798
Deductible (adjust in NPV for probability of a claim unless large claim)	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000
Tax savings	$ 11,547	$ 11,836	$ 12,132	$ 12,435	$ 12,746	$ 13,065	$ 13,391	$ 13,726	$ 14,069	$ 14,421
Net value per year	$ (35,578)	$ (36,389)	$ (37,220)	$ (38,071)	$ (38,944)	$ (39,839)	$ (40,756)	$ (41,696)	$ (42,659)	$ (43,647)
Net present value over 10 years	**($160,198.33)**									
Captive insurance										
Capital reserve	$ 250,000	$ 246,646	$ 242,739	$ 238,228	$ 233,060	$ 227,180	$ 220,524	$ 213,027	$ 204,616	$ 195,216
Management fee	$ 14,811	$ 14,932	$ 15,055	$ 15,181	$ 15,311	$ 15,444	$ 15,580	$ 15,719	$ 15,862	$ 16,009
Reinsurance cost	$ 25,000	$ 25,625	$ 26,266	$ 26,922	$ 27,595	$ 28,285	$ 28,992	$ 29,717	$ 30,460	$ 31,222
Resinurance level	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000
Pemium paid	$ 48,113	$ 49,316	$ 50,549	$ 51,813	$ 53,108	$ 54,436	$ 55,797	$ 57,192	$ 58,621	$ 60,087
Market return on capital reserves and premiums	$ 18,750	$ 18,498	$ 18,205	$ 17,867	$ 17,480	$ 17,038	$ 16,539	$ 15,977	$ 15,346	$ 14,641
Tax savings (to farmer)	$ 21,102	$ 21,569	$ 22,049	$ 22,540	$ 23,043	$ 23,559	$ 24,088	$ 24,631	$ 25,186	$ 25,756
Taxed earnings (market returns to investment) ===> assume capital gains only	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (10,371)
Expected annual indemnity	$ 4,143	$ 4,247	$ 4,353	$ 4,462	$ 4,573	$ 4,688	$ 4,805	$ 4,925	$ 5,048	$ 5,174
Probability of a claim	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%
Average claim when claim occurs (net of deductible)	$ 26,262	$ 26,919	$ 27,592	$ 28,282	$ 28,989	$ 29,713	$ 30,456	$ 31,218	$ 31,998	$ 32,798
Entity set-up	$ -									
Additional entity (captive) tax filing cost to farm business taxes	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Net value per year	$ (197,703)	$ 53,074	$ 53,836	$ 54,578	$ 55,298	$ 55,993	$ 56,657	$ 57,288	$ 57,880	$ 264,015
Net present value over 10 years	**$53,548**									

Crop farm: $2.5M in insurable assets, $100k/year extra premiums, & no large claim

Discount Cash Flow Analysis

	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6	Yr7	Yr8	Yr9	Yr10
Commercial Insurance										
Premium paid	$ 27,613	$ 28,304	$ 29,011	$ 29,737	$ 30,480	$ 31,242	$ 32,023	$ 32,824	$ 33,644	$ 34,485
Expected annual indemnity (after accounting for deductibel)	$ 1,954	$ 2,023	$ 2,093	$ 2,165	$ 2,239	$ 2,315	$ 2,392	$ 2,472	$ 2,553	$ 2,637
Probability of claim	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%
Average claim when claim occurs	$ 17,387	$ 17,822	$ 18,268	$ 18,724	$ 19,192	$ 19,672	$ 20,164	$ 20,668	$ 21,185	$ 21,714
Deductible (adjust in NPV for probability of a claim unless large claim)	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000
Tax savings	$ 6,627	$ 6,793	$ 6,963	$ 7,137	$ 7,315	$ 7,498	$ 7,686	$ 7,878	$ 8,075	$ 8,276
Net value per year	$ (19,032)	$ (19,488)	$ (19,955)	$ (20,435)	$ (20,926)	$ (21,429)	$ (21,945)	$ (22,474)	$ (23,016)	$ (23,572)
Net present value over 10 years	**($86,001.10)**									
Captive insurance										
Capital reserve	$ 250,000	$ 338,471	$ 435,634	$ 542,190	$ 658,898	$ 786,573	$ 926,092	$1,078,400	$ 1,244,516	$ 1,425,534
Management fee	$ 25,261	$ 25,580	$ 25,907	$ 26,243	$ 26,586	$ 26,938	$ 27,299	$ 27,669	$ 28,048	$ 28,437
Reinsurance cost	$ 12,500	$ 12,813	$ 13,133	$ 13,461	$ 13,798	$ 14,143	$ 14,496	$ 14,859	$ 15,230	$ 15,611
Resinurance level	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000
Pemium paid	$ 127,613	$ 130,804	$ 134,074	$ 137,426	$ 140,861	$ 144,383	$ 147,992	$ 151,692	$ 155,484	$ 159,372
Market return on capital reserves and premiums	$ 18,750	$ 25,385	$ 32,673	$ 40,664	$ 49,417	$ 58,993	$ 69,457	$ 80,880	$ 93,339	$ 106,915
Tax savings (to farmer)	$ 39,690	$ 40,607	$ 41,547	$ 42,511	$ 43,499	$ 44,511	$ 45,549	$ 46,613	$ 47,703	$ 48,821
Taxed earnings (market returns to investment) ===> assume capital gains only	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 239,383
Expected annual indemnity	$ 2,743	$ 2,812	$ 2,882	$ 2,954	$ 3,028	$ 3,104	$ 3,181	$ 3,261	$ 3,342	$ 3,426
Probability of a claim	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%
Average claim when claim occurs (net of deductible)	$ 17,387	$ 17,822	$ 18,268	$ 18,724	$ 19,192	$ 19,672	$ 20,164	$ 20,668	$ 21,185	$ 21,714
Entity set-up	$ -									
Additional entity (captive) tax filing cost to farm business taxes	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Net value per year	$ (198,965)	$ 61,215	$ 72,135	$ 83,851	$ 96,421	$ 109,910	$ 124,384	$ 139,918	$ 156,590	$ 1,360,635
Net present value over 10 years	**$351,799**									

Crop farm: $2.5M in insurable assets, $100k extra premiums, & $500k claim year 3

Discount Cash Flow Analysis	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6	Yr7	Yr8	Yr9	Yr10
Commercial Insurance										
Premium paid	$ 27,613	$ 28,304	$ 29,011	$ 29,737	$ 30,480	$ 31,242	$ 32,023	$ 32,824	$ 33,644	$ 34,485
Expected annual indemnity (after accounting for deductibel)	$ 1,954	$ 2,023	$ 495,000	$ 2,165	$ 2,239	$ 2,315	$ 2,392	$ 2,472	$ 2,553	$ 2,637
Probability of claim	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%
Average claim when claim occurs	$ 17,387	$ 17,822	$ 18,268	$ 18,724	$ 19,192	$ 19,672	$ 20,164	$ 20,668	$ 21,185	$ 21,714
Deductible (adjust in NPV for probability of a claim unless large claim)	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000
Tax savings	$ 6,627	$ 6,793	$ 6,963	$ 7,137	$ 7,315	$ 7,498	$ 7,686	$ 7,878	$ 8,075	$ 8,276
Net value per year	$ (19,032)	$ (19,488)	$ 472,951	$ (20,435)	$ (20,926)	$ (21,429)	$ (21,945)	$ (22,474)	$ (23,016)	$ (23,572)
Net present value over 10 years	$199,245.93									
Captive insurance										
Capital reserve	$ 250,000	$ 338,471	$ 435,634	$ 295,072	$ 393,246	$ 500,997	$ 619,098	$ 748,382	$ 889,746	$ 1,044,156
Management fee	$ 25,261	$ 25,580	$ 25,907	$ 26,243	$ 26,586	$ 26,938	$ 27,299	$ 27,669	$ 28,048	$ 28,437
Reinsurance cost	$ 12,500	$ 12,813	$ 13,133	$ 13,461	$ 13,798	$ 14,143	$ 14,496	$ 14,859	$ 15,230	$ 15,611
Resinurance level	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000
Pemium paid	$ 127,613	$ 130,804	$ 134,074	$ 137,426	$ 140,861	$ 144,383	$ 147,992	$ 151,692	$ 155,484	$ 159,372
Market return on capital reserves and premiums	$ 18,750	$ 25,385	$ 32,673	$ 22,130	$ 29,493	$ 37,575	$ 46,432	$ 56,129	$ 66,731	$ 78,312
Tax savings (to farmer)	$ 39,690	$ 40,607	$ 41,547	$ 42,511	$ 43,499	$ 44,511	$ 45,549	$ 46,613	$ 47,703	$ 48,821
Taxed earnings (market returns to investment) ===> assume capital gains only	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 161,964
Expected annual indemnity	$ 2,743	$ 2,812	$ 500,000	$ 2,954	$ 3,028	$ 3,104	$ 3,181	$ 3,261	$ 3,342	$ 3,426
Probability of a claim	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%
Average claim when claim occurs (net of deductible)	$ 17,387	$ 17,822	$ 18,268	$ 18,724	$ 19,192	$ 19,672	$ 20,164	$ 20,668	$ 21,185	$ 21,714
Entity set-up	$ -									
Additional entity (captive) tax filing cost to farm business taxes	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Net value per year	$ (198,965)	$ 61,215	$ 319,253	$ 65,317	$ 76,498	$ 88,491	$ 101,359	$ 115,166	$ 129,982	$ 1,028,074
Net present value over 10 years	$399,640									

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Crop farm: $2.5M in insurable assets, $100k extra premiums, $500k reinsurance & $500k claim year 3

Discount Cash Flow Analysis	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6	Yr7	Yr8	Yr9	Yr10
Commercial Insurance										
Premium paid	$ 27,613	$ 28,304	$ 29,011	$ 29,737	$ 30,480	$ 31,242	$ 32,023	$ 32,824	$ 33,644	$ 34,485
Expected annual indemnity (after accounting for deductibel)	$ 1,954	$ 2,023	$ 495,000	$ 2,165	$ 2,239	$ 2,315	$ 2,392	$ 2,472	$ 2,553	$ 2,637
Probability of claim	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%
Average claim when claim occurs	$ 17,387	$ 17,822	$ 18,268	$ 18,724	$ 19,192	$ 19,672	$ 20,164	$ 20,668	$ 21,185	$ 21,714
Deductible (adjust in NPV for probability of a claim unless large claim)	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000
Tax savings	$ 6,627	$ 6,793	$ 6,963	$ 7,137	$ 7,315	$ 7,498	$ 7,686	$ 7,878	$ 8,075	$ 8,276
Net value per year	$ (19,032)	$ (19,488)	$ 472,951	$ (20,435)	$ (20,926)	$ (21,429)	$ (21,945)	$ (22,474)	$ (23,016)	$ (23,572)
Net present value over 10 years	$199,245.93									
Captive insurance										
Capital reserve	$ 250,000	$ 338,471	$ 440,876	$ 294,273	$ 396,699	$ 511,550	$ 639,056	$ 779,796	$ 934,564	$ 1,104,306
Management fee	$ 25,261	$ 25,580	$ 52,173	$ 26,243	$ 26,586	$ 26,938	$ 27,299	$ 27,669	$ 28,048	$ 28,437
Reinsurance cost	$ 12,500	$ 7,571	$ 5,958	$ 9,149	$ 6,956	$ 5,529	$ 4,537	$ 3,811	$ 3,259	$ 2,827
Resinurance level	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000
Pemium paid	$ 127,613	$ 130,804	$ 396,730	$ 137,426	$ 140,861	$ 144,383	$ 147,992	$ 151,692	$ 155,484	$ 159,372
Market return on capital reserves and premiums	$ 18,750	$ 25,385	$ 33,066	$ 22,070	$ 29,752	$ 38,366	$ 47,929	$ 58,485	$ 70,092	$ 82,823
Tax savings (to farmer)	$ 39,690	$ 39,349	$ 109,167	$ 41,476	$ 41,857	$ 42,444	$ 43,159	$ 43,961	$ 44,830	$ 45,753
Taxed earnings (market returns to investment) ===> assume capital gains only	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 174,174
Expected annual indemnity	$ 2,743	$ 2,812	$ 500,000	$ 2,954	$ 3,028	$ 3,104	$ 3,181	$ 3,261	$ 3,342	$ 3,426
Probability of a claim	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%	15.78%
Average claim when claim occurs (net of deductible)	$ 17,387	$ 17,822	$ 18,268	$ 18,724	$ 19,192	$ 19,672	$ 20,164	$ 20,668	$ 21,185	$ 21,714
Entity set-up	$ -									
Additional entity (captive) tax filing cost to farm business taxes	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Net value per year	$ (198,965)	$ 65,199	$ (369,168)	$ 68,535	$ 81,956	$ 95,829	$ 110,425	$ 125,919	$ 142,441	$ 1,090,241
Net present value over 10 years	$27,702									

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Summary of DCF comparison analysis

- Have to be larger operation to recognize potential benefits of forming a captive.
  - Reinsurance
- Have capital to initialize captive
  - What level of self-insurance are you willing to cover?
- Be in a financial position to overpay premiums to build up reserves
  - Transfer from one hand to the other with tax advantages

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What research informs us from outside agriculture

- **Risk Retention & Cost Control**: Firms often form captives to retain predictable risks (Sacks & Levy, 2006).
- **Customization**: Captives allow more control over claims handling, loss prevention, and policy design (Anderson & Brown, 2005).
- Empirical evidence (e.g., Hoyt & Khang, 2000) shows that firms using captives can experience **improved ROE** and reduced total cost of risk (TCOR) relative to firms relying on the traditional insurance market.
- **Cost Efficiency**: Empirical studies (e.g., Hoyt & Khang, 2000) show that captives can lower total risk financing costs over time compared to conventional insurance.
  - **Lower Insurance Costs**: Captives help reduce reliance on commercial insurers, allowing firms to retain more predictable risks at lower cost (Anderson & Brown, 2005).
  - **Risk Reduction**: Firms with captives often experience lower volatility in risk-related expenses and improved budgeting accuracy.

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IRS and Kansas Regulations: IRS

Tax Shelter Abuse: Many micro-captives have been used to **deduct large premiums** for **low-risk or contrived coverage**, with little or no intent to pay claims.

Red Flags:

- Unreasonably high premiums (note, captives for crop insurance).
- Circular flow of funds.
- Coverage of implausible or highly unlikely risks.
- Same or related parties controlling both the insured and insurer.

IRS and Kansas Regulations: Kansas regulations

Captive as regulated by K.S.A. 40-4302 (to learn more conduct web search for: K.S.A 40-4302)

- The captive must only insure the risks of its parent or affiliated entities
- Cannot provide personal lines of insurance, work comp, employer's liability among others
- Insurance provided must be within the state (conditions apply)

Capital requirements and operation as stated by K.S.A 40-4304 (to learn more conduct web search for: K.S.A 40-4304)

- The captive must maintain unimpaired paid-in capital of $250,000 (if association captive; $500,000)
- This capital must be in the form of cash unless otherwise approved by the (state) insurance commissioner
- Pure captives cannot make a loan or investment in its parent company without the expressed written consent of the commissioner
  - Some support for captive capital used as collateral by the parent organization

IRS and Kansas Regulations: boundaries

As directed by K.S.A. 40-901 (to learn more conduct web search for: K.S.A 40-901)

- **Property & Interests** – Fire, lightning, weather hazards, earthquakes, floods, riots, war risks, etc., including crops, trees, and farm products.
- **Water Damage** – From leaks, burst pipes, tanks, sprinklers, and related equipment.
- **Vehicles & Aircraft** – Loss/damage from any cause (including theft/vandalism), and liability from their operation.
- **Marine & Inland Marine** – Ships, cargo, goods in transit, navigation hazards, war risks, builders' risks, and associated property.
- **Other Casualty Risks** – Any property loss not prohibited by law or reserved to other insurers.
- **Consequential Loss** – Resulting from the covered causes above.
- **Livestock & Animals** – Death, theft, or accident; other lawful insurable events.

- K.S.A. 40-901 expands K.S.A. 40-1102: for example, liability

- An insurance company additionally shall not expose itself to loss on any one risk or hazard to an amount exceeding 10% of its paid-up capital and surplus, *unless the excess risk is reinsured to another duly authorized insurer*.
  - Speakers today have recommended picking a self-insured level financially responsible and then re-insuring.

Thank you