Never Stop Improving

Cost of Herd Replacement

PIC Australia

Benchmarking March 2020

Cost of Herd Re

How Much does a R

US
350

Euro
500

China
4 legs and a heart beat
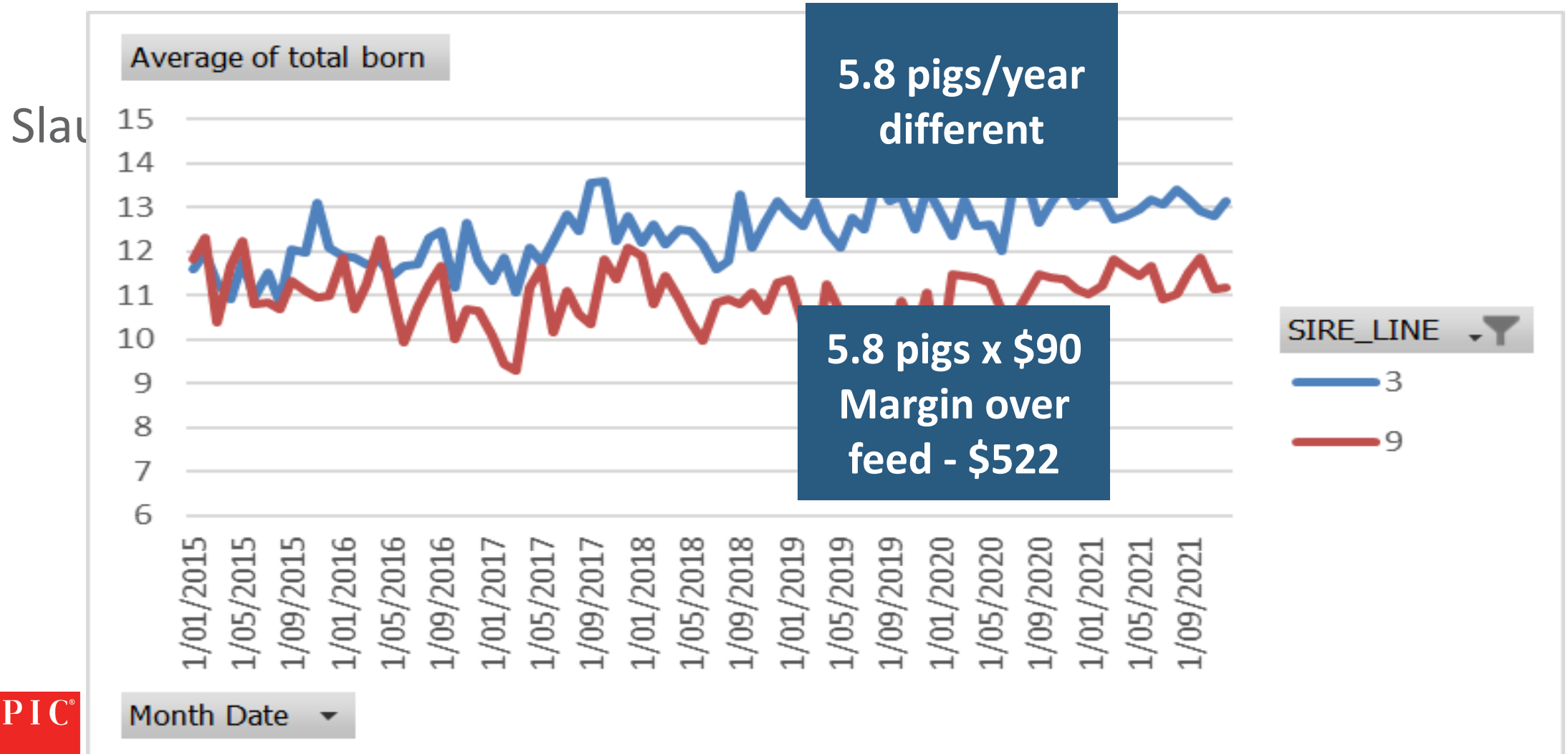
AUS
$600

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First **UP** select the right pig – Maternal not Slaughter

But First we need to ensure it is the right gilt

Slau

Average of total born

5.8 pigs/year different

5.8 pigs x $90 Margin over feed - $522

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Basic information used

- 1000 sow herd
- 2.35 litters per sow/year
- 25 sold/sow
- 10.63 sold / litter
- Female Bacon $3.80
- Cull value - $2.40
- Comparing herds with 54%/68%/80% replacement rates as per Benchmarking Data Australia

So Cost of Gilt on Farm -Net Value

- Lost Bacon Value
- Feeding to mating -70 days
- Space allowance
- Vaccinations
- Cull value less 9% deaths

Trait	Value
Bacon 80 kg x $3.80	$292.60
70 kg x 3kg x .53/kg	$111.30
1.4m2 x $2.60/week	$26.00
Vaccinations	$30.00
Cull Value less deaths	$349.44
Net Cost per gilt	**$121.86**

Remember
Every gilt you put into the herd cost you money

How many will determine how much $

Cost of Replacement Gilts

Can be broken down into

- Physical numbers
- Hidden Costs - not normally considered.

Capital Repayment

- If full cost is used - $600 Australia

- Repayment – if 10.63 sold at $20 margin = 2.35 litters

- If we use net value and how long sows are in the herd

Capital Value Repayment

Replacement Rate	Cull Parity	Pigs Produced @10.5 sold	$/progeny pig $121.86
54%	5.2	54.6	$2.23
67%	4.2	44.1	$2.76
80%	3.2	33.6	$3.63
		Difference	$1.40

Differing Replacement Rates

1000 sows		Pigs sold	25			
Replacement Rate	Number required	Cost/gilt	Value	Pigs sold	Net Difference	$per progeny pig
54%	540	$121.86	$65,804.40	25,000		
68%	680	$121.86	$82,864.80	25,000	$17,060.40	$0.68
80%	800	$121.86	$97,488.00	25,000	$31,683.60	$1.27

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Mating extra Gilts

- **90% Farrowing rate – cull returns**
- **In our 1000 sow example this means 5 more gilts required to ensure mating targets met.**
- **5 x $121.86 = $611.90**
- **45 farrowing's x 10.68 pigs sold**
- **$1.27/progeny pig**

Some will argue it saves NPD – and Yes

- **5 gilts 21 days NPD**
- **NPD $4.00/day**
- **Assume 70% of gilts stay in pig an produce same or better litter size**
- **Therefore on 30% have NPD**
- **5 Gilts x 30% x $4 x 21 days = $126.00**

- **Extra gilt cost - $611.90**

Opportunity costs - Hidden

What do you think may be some of these?

- **Gilt wastage**
- **Multiplication herd size**
- **Gilt Parity herd size**
- **Parity structure**

Gilt Wastage

Need to spend time and select gilts that will get to mating and stay in the herd

So select the right gilt

She needs to be suitable but there is a cost if a sow doesn't get to mating

Gilt wastage

Replacement Rate	Gilt Replacement	Wastage at 12.5%	$/progeny pig $121.86
54%	540	68	$0.33
67%	680	85	$0.41
80%	800	100	$0.49
		Difference	$0.16

Multiplication herd size

Maternal pigs are far less efficient than slaughter generation pigs
Remember this is also for the males as well produced by Maternal Mating's

- Efficient Multiplication herd size
  - 13% of total herd size
  - Some Multiplication herd sizes are 22%
  - 9% more than required
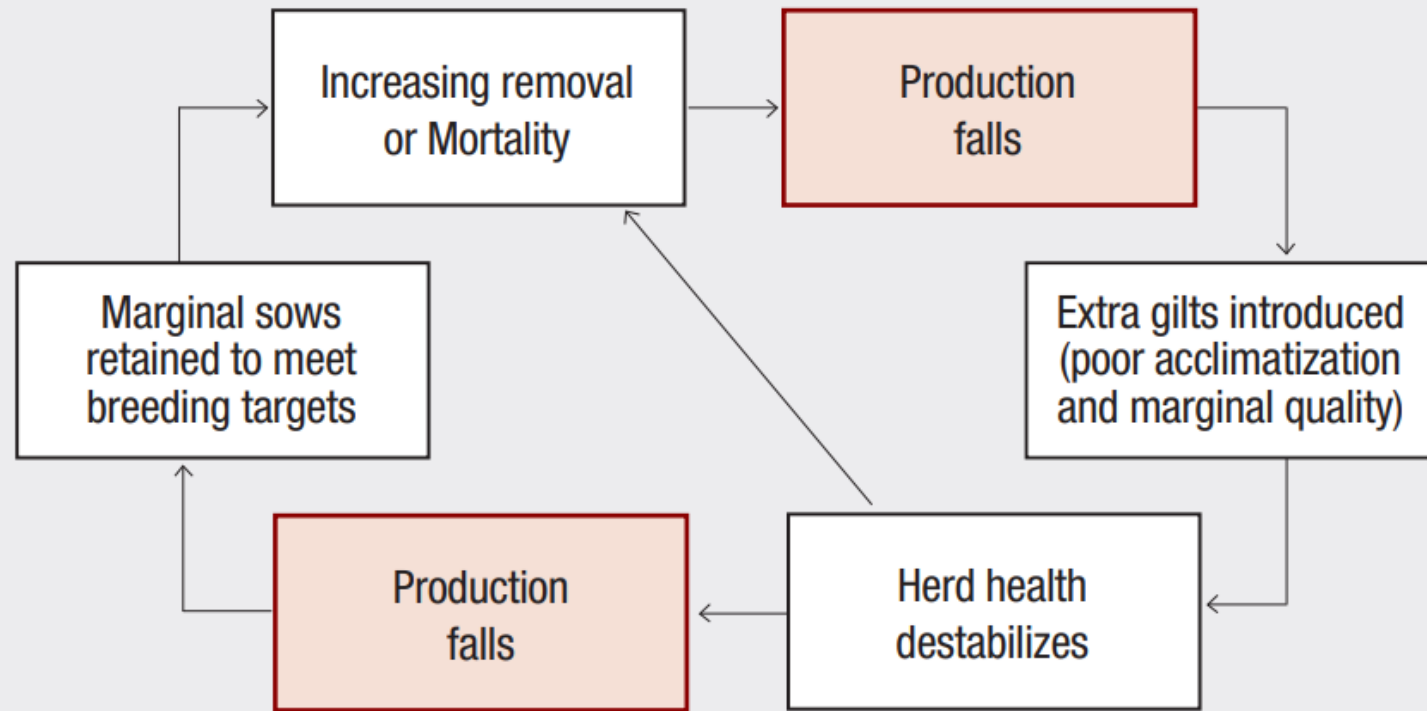
Multiplication inefficiencies

Replacement Rate	GGP/GP Herd Size	Difference
54%	13%	
80%	22%	9%
		Difference

Multiplication inefficiencies

Parameter	Unit	Affect	Value	No. Pigs affected	Value
Growth Rate	30 gms	4.8kg Lighter	$17.76	2250	$39,960
Grading	$0.15/kg	80 kg	$12.00	2250	$27,000
Pigs Produced	6% less 90 sows	0.64 pigs	$90.00	136	$12,182
				Total	$79,142
				$/progeny pig	$3.17

Gilt Parity Herd Size

Cycle of Rising Sow Removal & Mortality

- Increasing removal or Mortality
- Production falls
- Extra gilts introduced (poor acclimatization and marginal quality)
- Herd health destabilizes
- Production falls
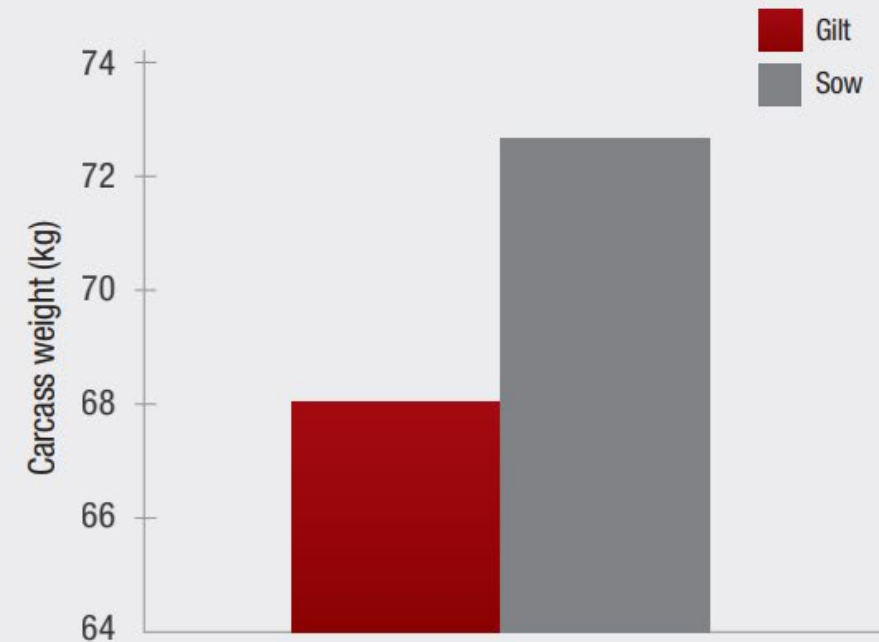- Marginal sows retained to meet breeding targets

Jerome Geiger, PIC (modified from)

Gilt Progeny versus Sow Progeny: Mortality
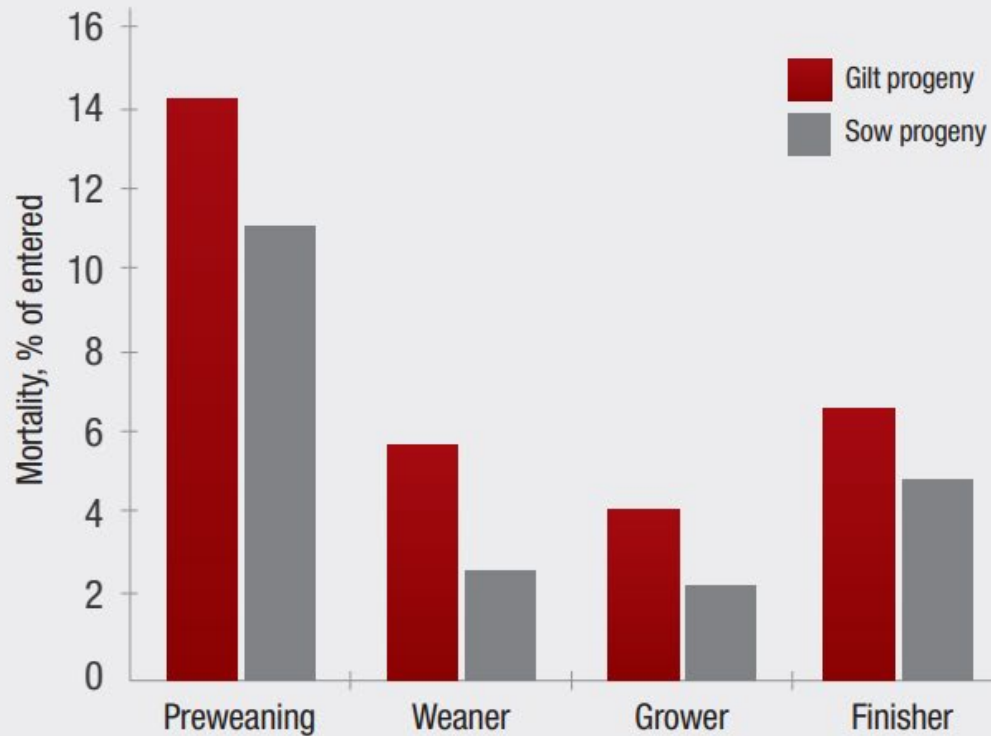
Smits and Collins, 2009

Gilt Progeny versus Sow Progeny for Carcass Weight (kg)
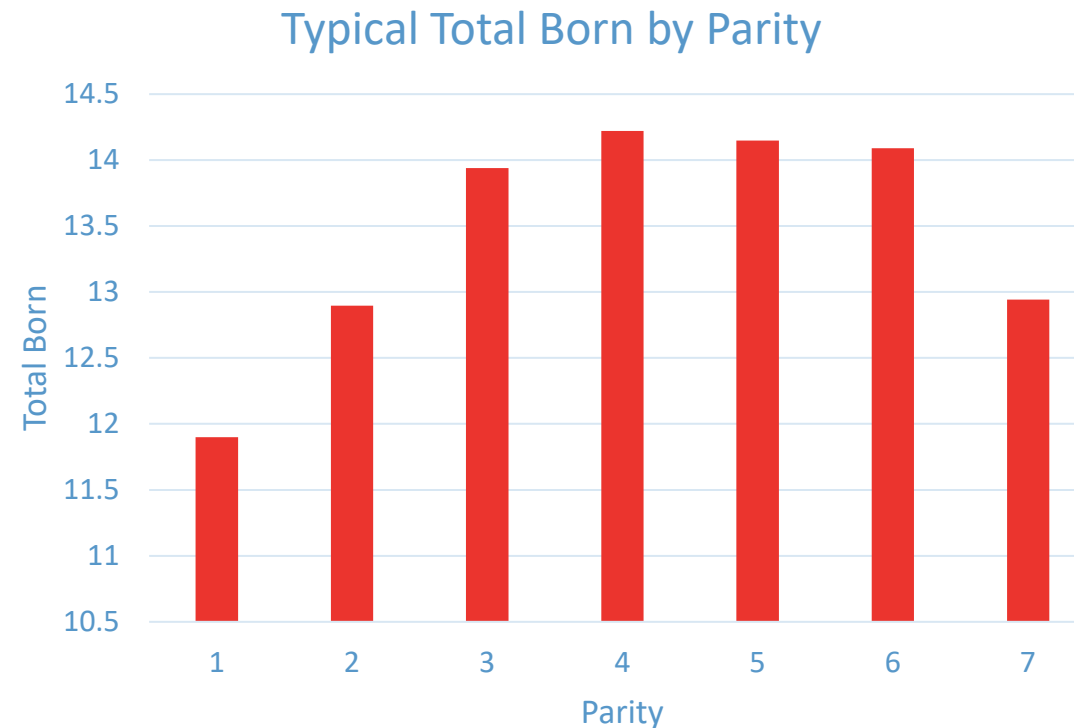
Smits and Collins, 2009

Larger Gilt herd size

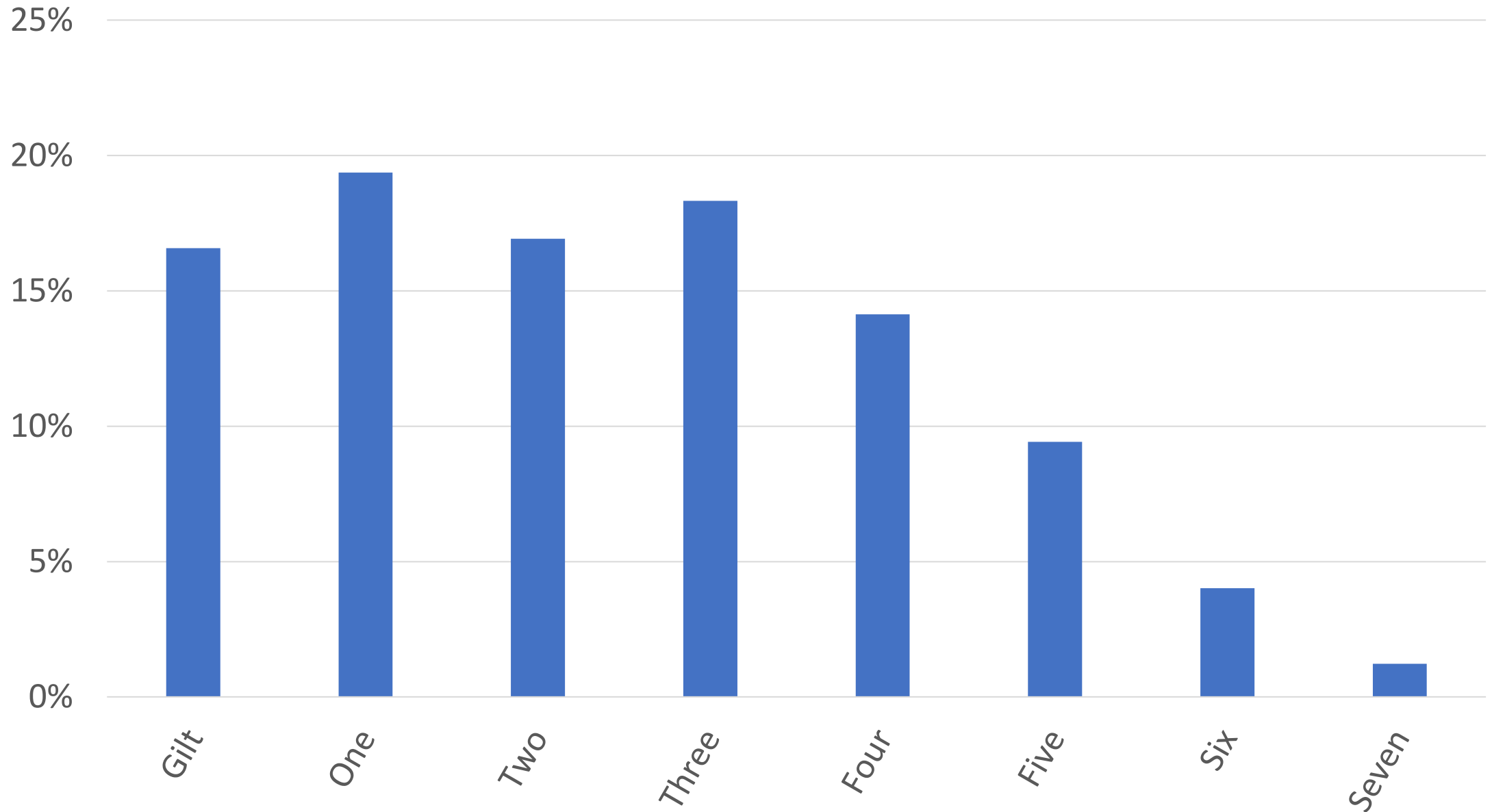| Replacement rate	Unit	Affect	Value		Value
54%	17%				
80%	22%	5%	50 Gilts	533 pigs	
Less Sold	3 pigs		50	$90	$13,500
Growth loss	30 gms	4.5 kg	$3.70	$16.65	$8,874.45
			$/progeny pig		$0.89

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Parity Structure

- The ideal is to have all sows in the highest producing parity
- Which parity do you think this is

Typical Total Born by Parity

Parity Structure – Replacement rate 54%

Parity Structure – Replacement rate 80%
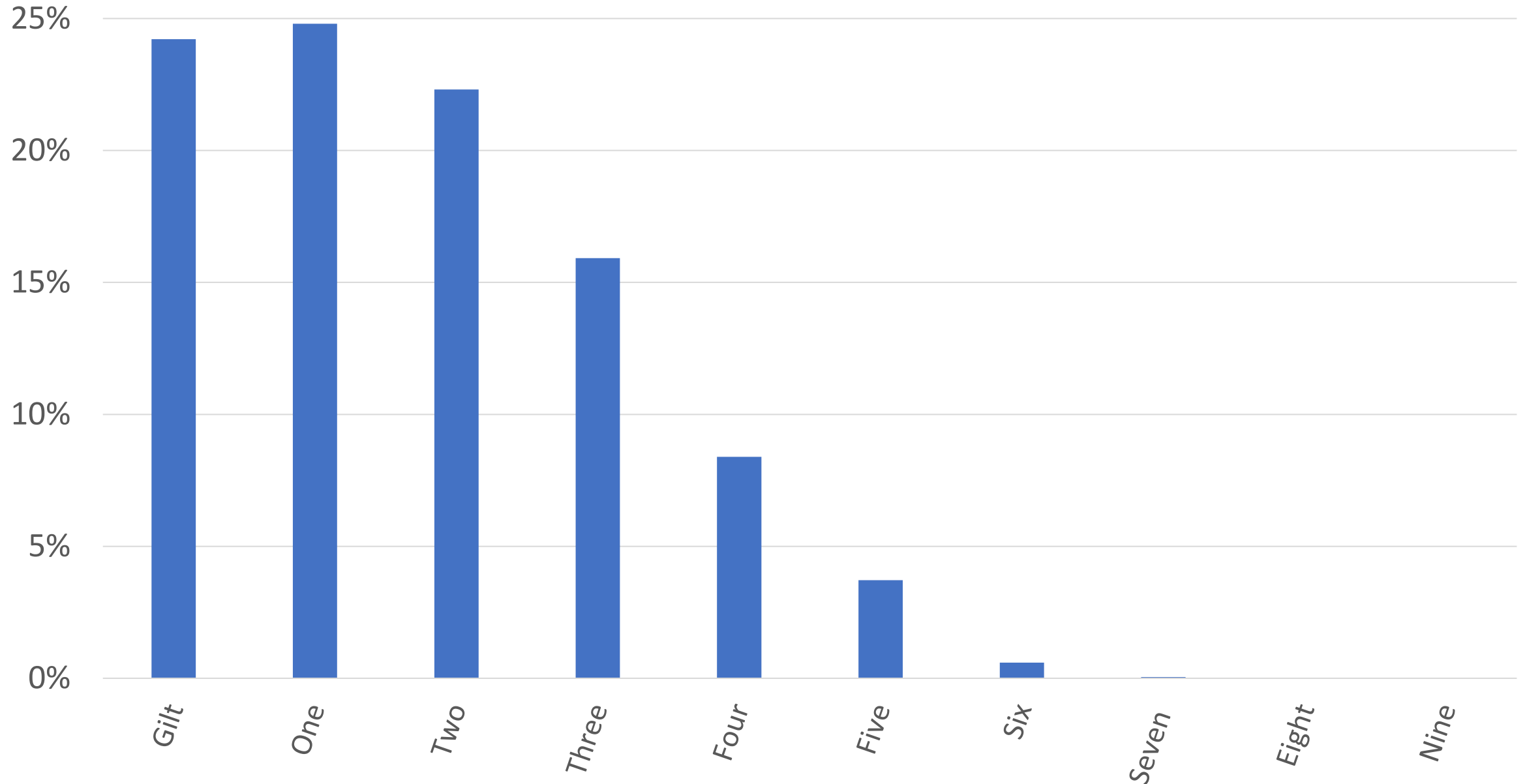
So there is a positive affect on having more sows in high producing Parities

Herd Structure

Rep rate	P1	P2	P3	P4	P5	P6	P7
54%	17%	19%	17%	18%	9%	4%	1%
80%	20%	24%	21%	13%	10%	6%	1%

PBA contribution by parity

Rep rate	P1	P2	P3	P4	P5	P6	Av PBA
	11.9	12.9	13.9	14.2	14.1	12.9	
54%	1.97	2.50	2.36	2.61	2.00	1.33	13.28
80%	2.32	3.12	2.91	1.88	1.47	0.86	13.06
						Differential	0.22

The cost to cover the 0.22/pigs/litter

- 0.22 x 2350 litters = 517 pigs less
- To produce 517 pigs
  - 517/10.68/2.35 = 21 extra sows in the system
  - Cost of extra sow = $1500/year = $31,500
  - Cost of extra gilt replacement = 21x 80% x 121.86 = $2,047.25
  - $31,500 + $2,047.25 = $33547.25
  - $1.34/Progeny pig

In Summary

There are opportunities that don't cost much

There are consequences to what you do with the gilt herd and the replacement rate

So if we address these inefficiencies

Differential between 54% and 80%	Value / progeny pig
Ca	
Re	
M	
Gi	
Multiplication Inefficiencies	$3.17
Larger Gilt herd Size	$0.89
Herd Structure	$1.34

$245,750

Food for thought

Thank You