

Lamb birth weight - a new trait in the Norwegian Total Merit Index from 2017

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Take home message

- ✓ Too many heavy lambs at birth
- ✓ Growth rate has a large weighting in the Total Merit Index
- ✓ Positive genetic correlations between growth rate and birth weight
- ✓ Substantial increase in birth weight caused by indirect selection
- ✓ Birth weight included as a new optimum trait in the Total Merit Index from 2017
- ✓ The aim is to stabilize the genetic trend and to reduce the variation

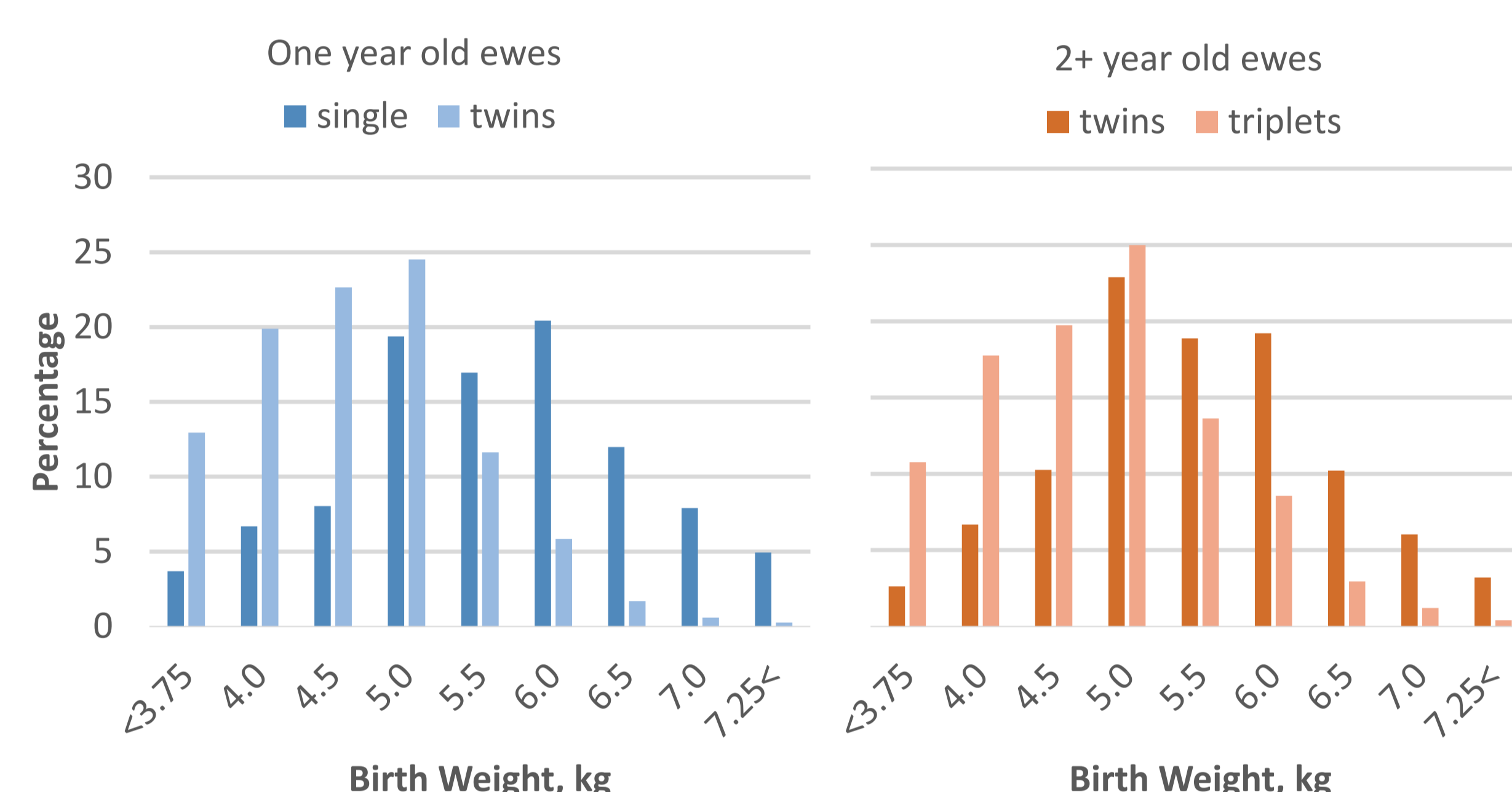
Phenotype is king



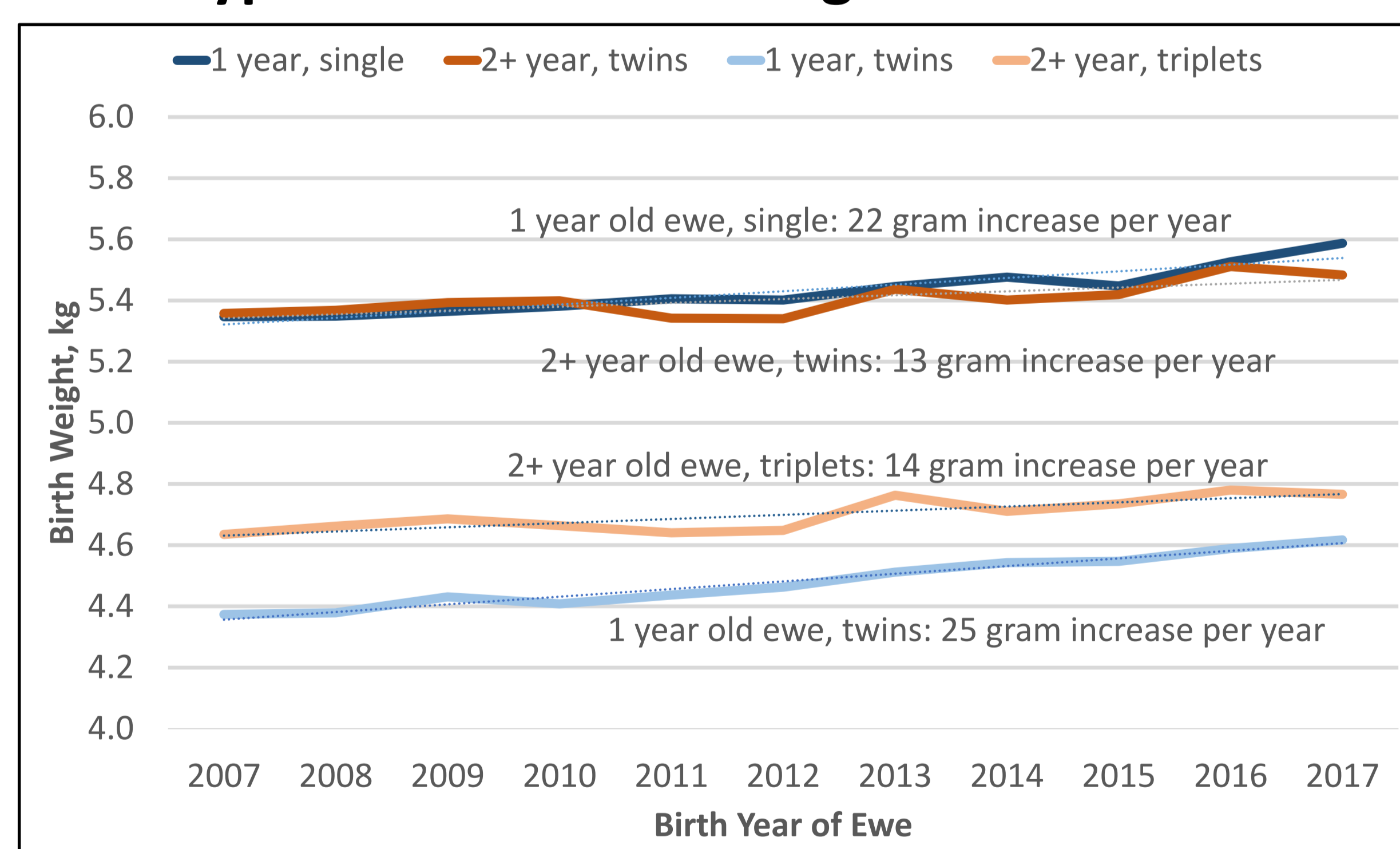
Norwegian White Sheep: Breeding population 2017

Number of flocks	921
Total number of ewes lambed	86,000
Proportion of ewes lambing as 1 year old	80%
Number of live born lambs	190,000
Live born lambs with recorded birth weight	85%

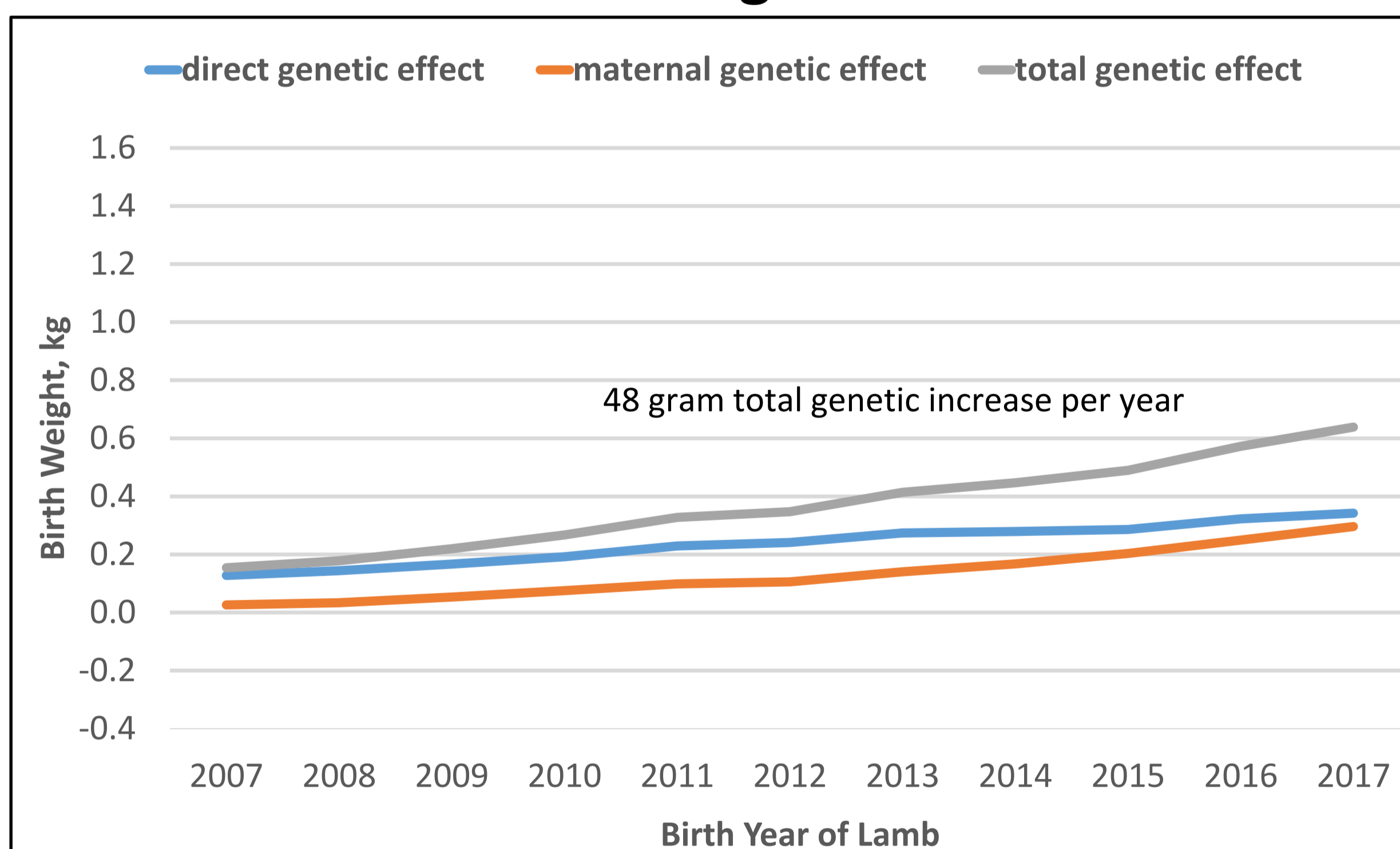
Distribution of birth weight



Phenotypic trend in birth weight



Genetic trend in birth weight



Genetic correlations between birth weight and growth traits

	Birth Weight direct	Birth Weight maternal
Heritability	0.11	0.18
6-week weight, direct effect	0.22	0.28
6-week weight, maternal effect	0.00	0.39
20-week weight, direct effect	0.25	0.36
20-week weight, maternal effect	-0.08	0.22
Carcass weight, direct effect	0.22	0.23
Carcass weight, maternal effect	-0.10	0.23

Summary

- ✓ Birth weight has increased over time
- ✓ Genetic trend is larger than phenotypic trend
- ✓ Birth weight is heritable and moderately correlated to growth traits
- ✓ Genetic trend in birth weight is caused by indirect selection on growth traits in the Total Merit Index
- ✓ Birth weight is included as a new optimum trait in the Total Merit Index from 2017 (see poster on litter size)