Why and how do original national evaluations deviate from joint Nordic EBVs – Sweden

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Reasons for differences between NAV and National model

- **Data** editing and trait definitions harmonized across countries
- Improved **model** with a better definition of fixed effects
- New **genetic parameters**
- **Pedigree:**
  - Larger: including links with the other countries
  - Better definition of genetic level from animals with missing parents
- Change in **genetic base** and **standard deviation** of breeding values:
  - Genetic level difference and different spread of the EBVs

Swedish national beef evaluation

Growth evaluation (5 traits)

- Birth weight (maternal and direct),
- Weaning weight gain (maternal and direct)
- Post-weaning weight gain

Carcass evaluation (8 traits)

- All traits from growth evaluation +
- Slaughter daily gain
- Conformation and fat class

Swedish national beef evaluation

Calving ease (3 traits)

- Birth weight
- Calving ease (maternal and direct)

A total of 11 single breeding values are published together with a birth index (FiX), maternal index (MiX) and production index (PiX).

The three indexes are weighted together into a total breeding index (AiX)

Correlations / genetic trends

COMPARISONS BETWEEN THE NATIONAL AND THE NAV CARCASS EVALUATIONS

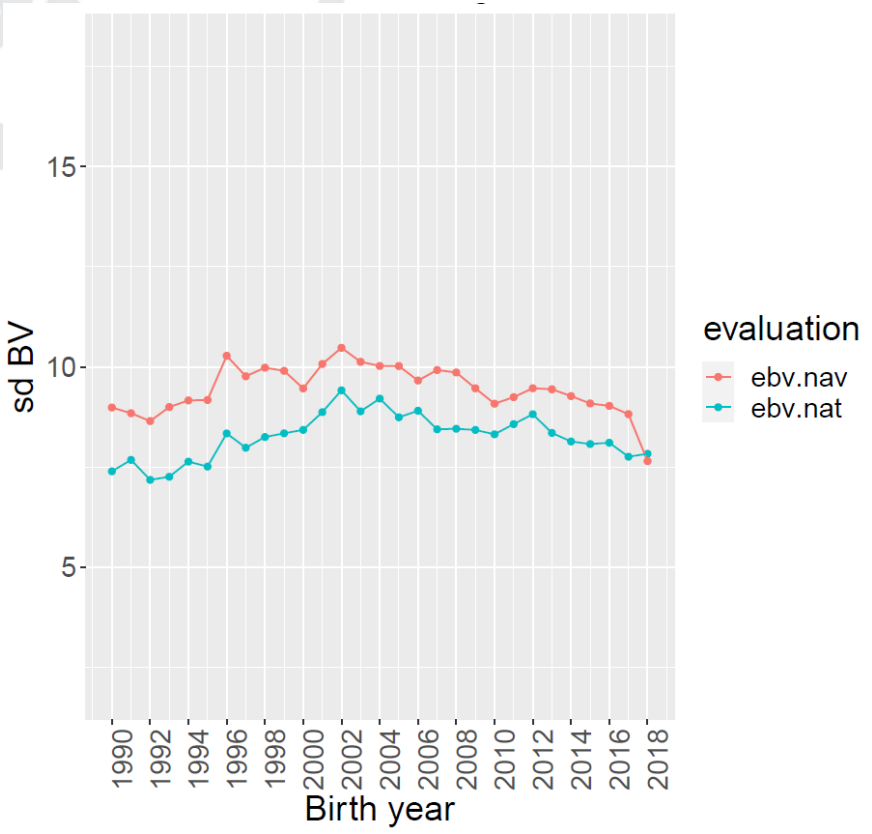
Correlations between BV from Swedish-NAT and NAV model (SWE-animals with at least birth weight observations born >=2000)

	AAN	BSM	CHA	HER	LIM
Birth weight (m)	0.80	0.78	0.82	0.84	0.82
Birth weight (d)	0.93	0.93	0.96	0.95	0.93
Weaning weight gain (m)	0.82	0.83	0.81	0.85	0.83
Weaning weight gain (d)	0.85	0.89	0.89	0.88	0.87
Post-weaning weight gain	0.87	0.90	0.88	0.87	0.84
Slaughter daily gain	0.85	0.82	0.78	0.84	0.79
Conformation class	0.52	0.82	0.90	0.75	0.87
Fat class	0.53	0.81	0.86	0.72	0.79

Breeding values for
Slaughter daily gain in Hereford

Genetic trend

Standard deviation



Conclusions (1/2)

- Breeding value changes NAV vs. National (Swedish) evaluation due to:

  - **Genetic base**: change in genetic level and in the spread of the breeding values but no re-ranking of animals
  - **Data edits, trait definition, model effects and pedigree and genetic parameters:** changes in ranking of animals within and across years.

Conclusions (2/2)

- Correlations between joint NAV and national Swedish estimated breeding values are in general between 0.70-0.90 in the recent birth years, lower for older year classes
  - Lower correlations are found for conformation and fat class breeding values in Angus cattle of about 0.5
- Genetic trends are in general very similar in joint NAV compared to Swedish national evaluations