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Where's The End to Rising Tractor Prices?

Robert Ellis, University of Kentucky, Robert.Ellis@uky.edu

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Where's The End To Rising Tractor Prices?

Robert Ellis, Department of Agricultural Economics



Who Cares

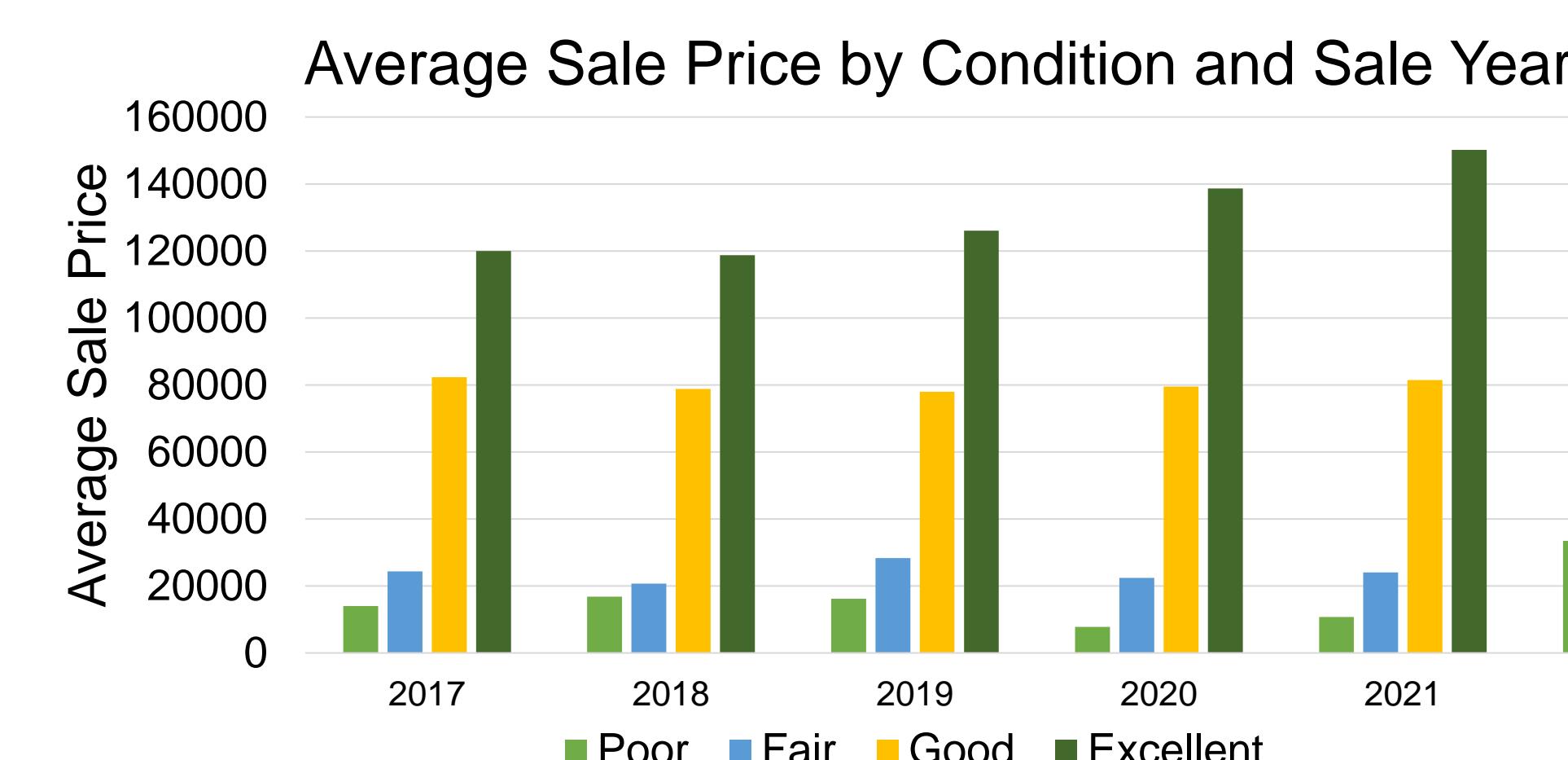
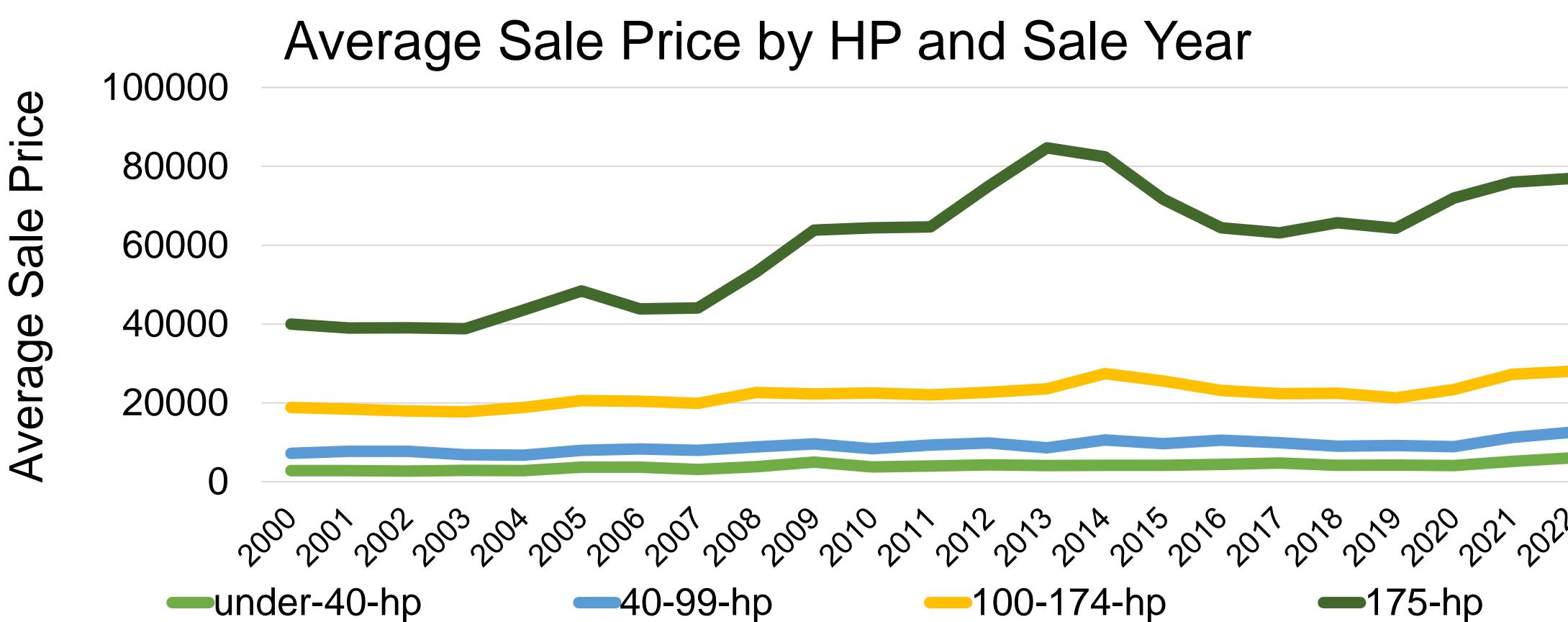
Used Machinery Prices are on the rise

- 2019-2021 per-hour costs up between 2.1% and 19.4% (Lattz and Schnitkey, 2021)
- June 2021-June 2022 10% to 13% (Schmidt, 2023)
- Predicted increase for 2023 – 8.7% to 13.9% (Anderson, 2022)

Machinery accounts for the second-largest asset group for crop farming operations

With expected decreases in future government payments, farmers will be more limited with asset purchasing.

Farmers need a better outlook on tractor values.



Objectives

- Identify the key factors influencing the used tractor market by tractor horsepower pre and post-pandemic
- Estimate the entire impact of the COVID-19 pandemic on the tractor market, and 3) evaluate the timing of impact changes around the pandemic shutdown dates

DATA and Models

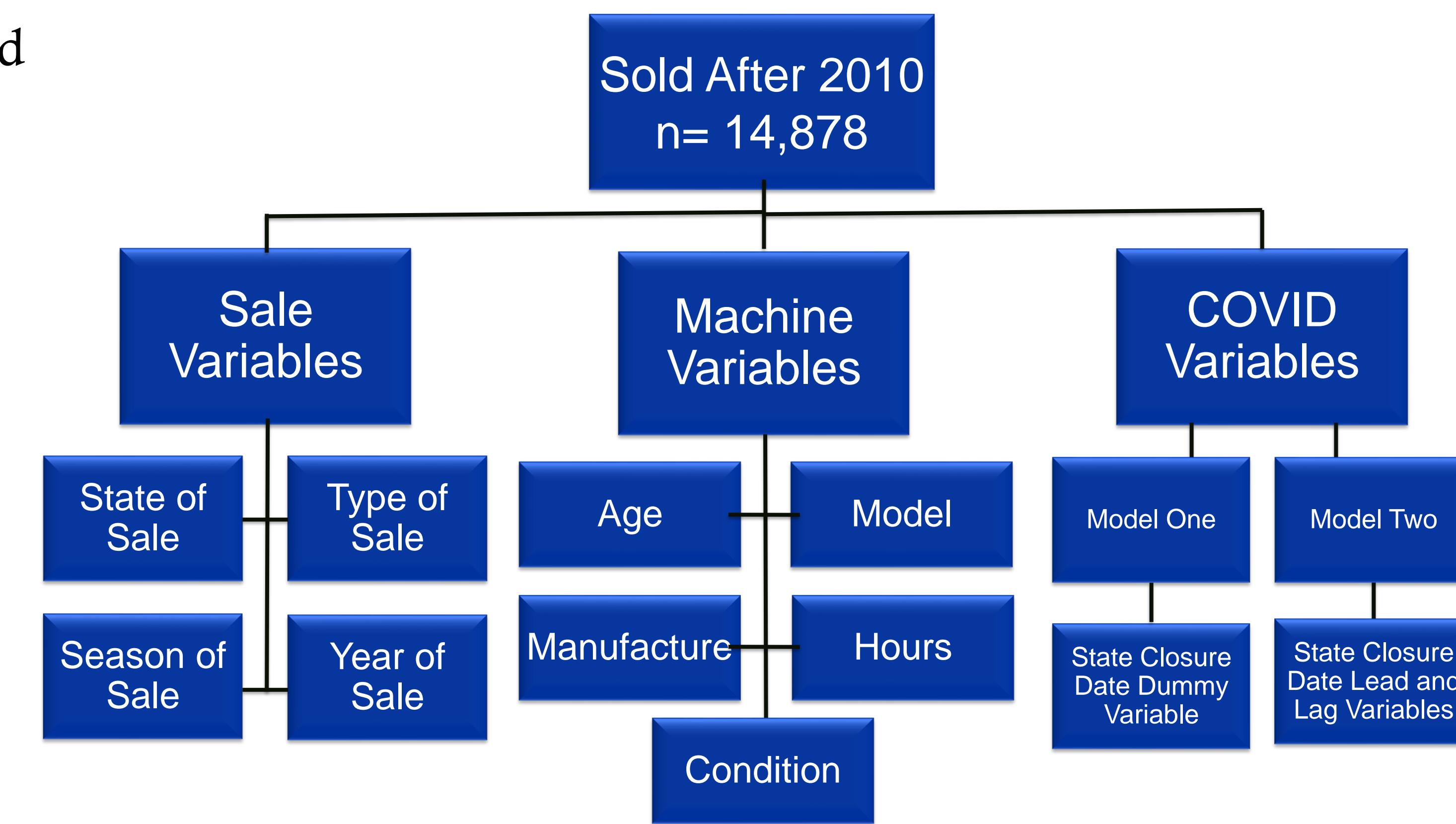
Secondary auction data from sales between 2010 and 2022 from one of the North American's largest machinery auction companies

Model 1)

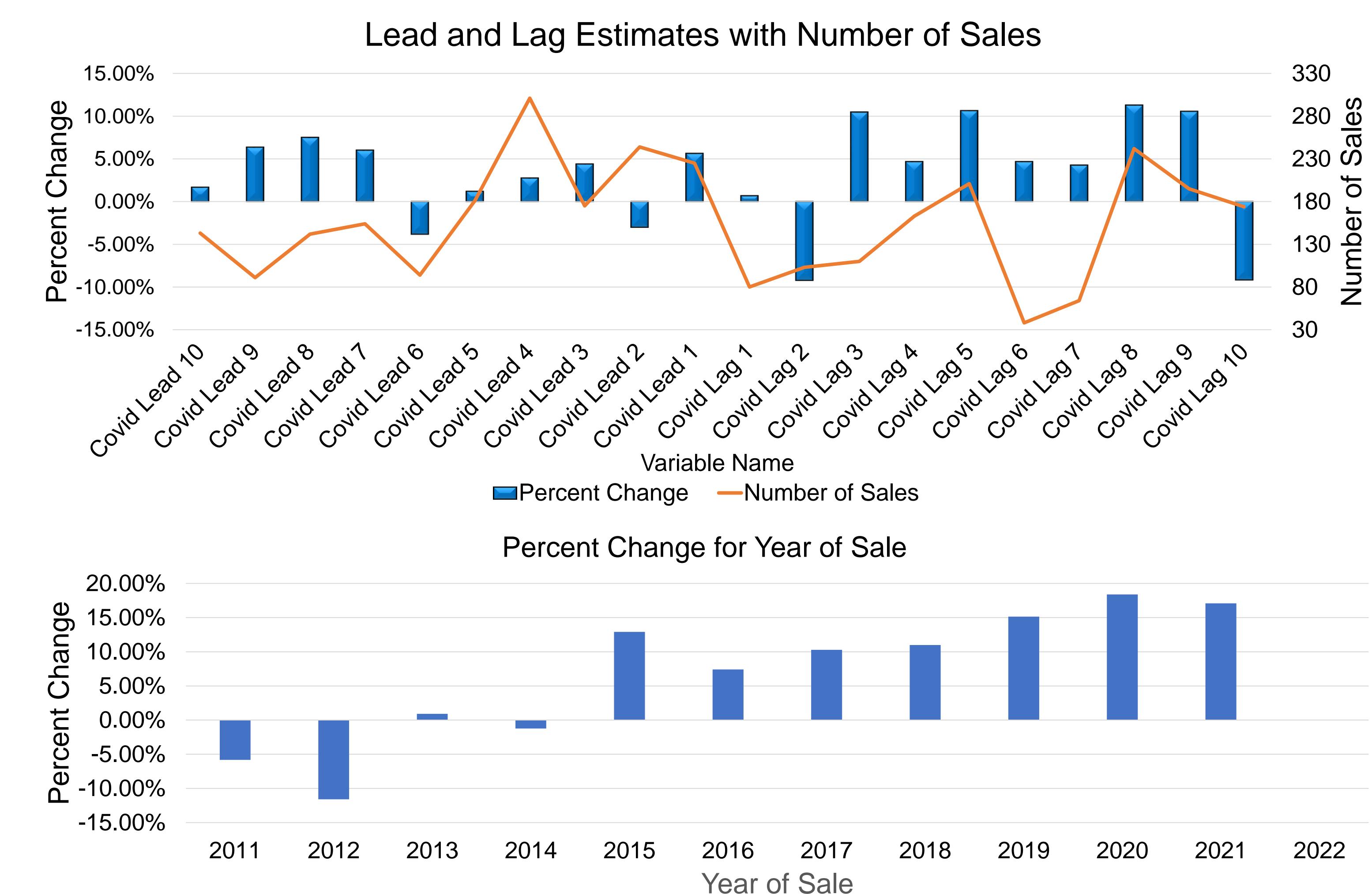
$$\ln(P_{ild}) = \beta_0 + \beta_1 H_i + \beta_2 A_i + \beta_3 M_i + \beta_4 C_i + \beta_5 S_{ist} + \beta_6 COVID_{ild} + \rho_{il} + T_{id} + \varepsilon_{ild}$$

Model 2)

$$\ln(P_{ild}) = \beta_0 + \beta_1 H_i + \beta_2 A_i + \beta_3 M_i + \beta_4 C_i + \beta_5 S_{ist} + \beta_6 LeadLag_{ild} + \rho_{il} + T_{id} + \varepsilon_{ild}$$



RESULTS



CONCLUSION

Manufacturer matters

Hours vs Age

Covid's overall impact through 2022 was 7% increase

Month to month Covid impacts ranged from -9% to 11%

ACKNOWLEDGMENTS