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& Practice in the
Retail Environment

Tobacco retailer density as a risk factor for smoking: A longitudinal analysis

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Tobacco Retailers Associated with Behavior

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Smoking prevalence was 0.86 percentage points higher in the most retailer-dense counties, compared to the least.

County-level associations between tobacco retailer density and smoking prevalence in the USA, 2012

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Review

~2.5% reduction in tobacco use following reductions in tobacco retailer density and proximity



OPEN ACCESS

Associations of tobacco retailer density and proximity with adult tobacco use behaviours and health outcomes: a meta-analysis

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How Much of this Association is Driven by Supply?



SUPPLY: More retailers produces more smoking through:

- Limited travel costs
- Visibility of marketing
- Pro-tobacco social norms



DEMAND: More smoking produces more retailers if retailers locate where smokers live



Building a National List of Likely Tobacco Retailers: National Establishment Time Series Database (2000-2017)



Convenience store/gas station



Grocery store/supermarket



Liquor store



Mass merchandiser



Dollar store



Drug store/pharmacy



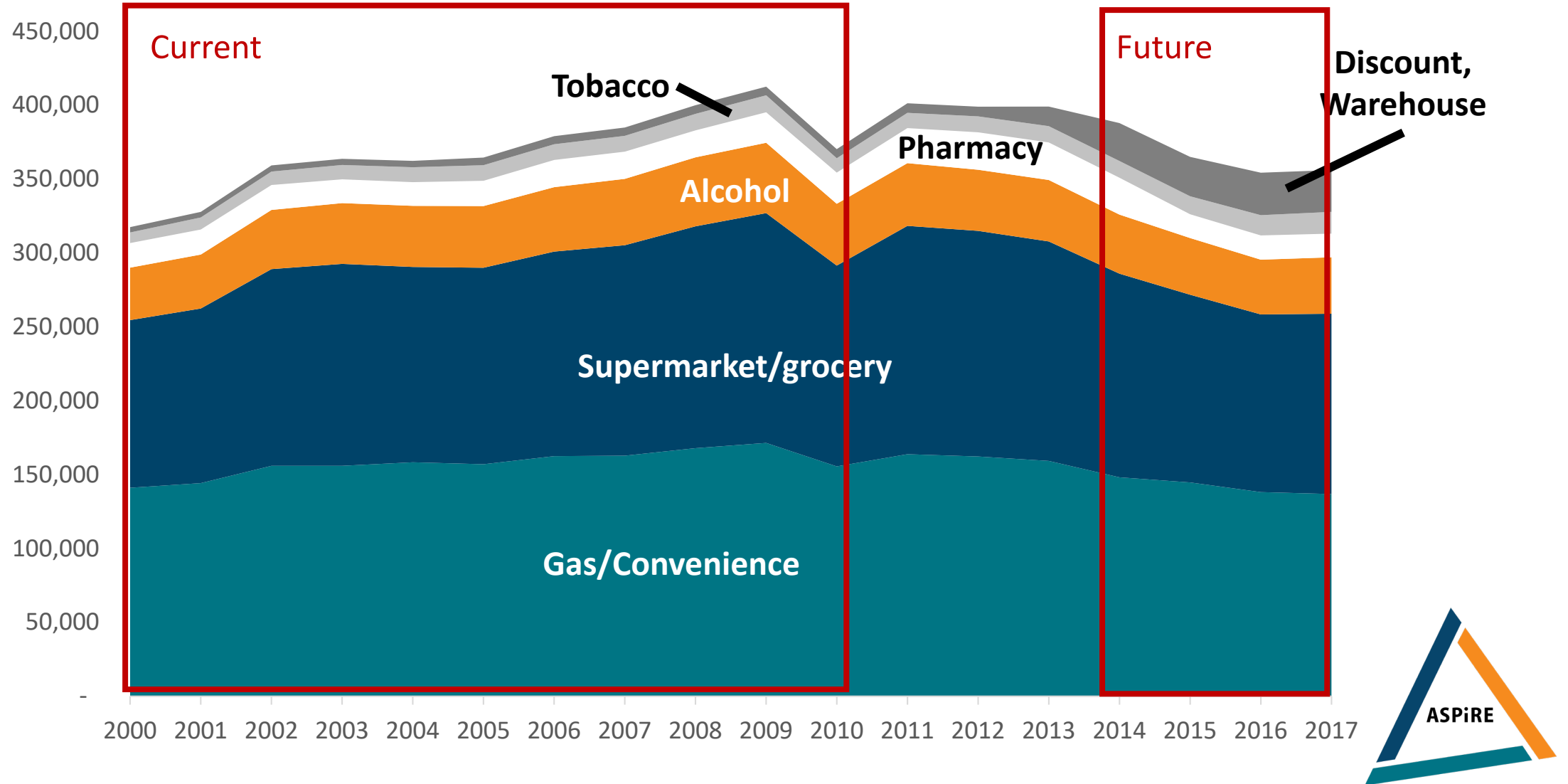
Tobacco shop

Exclusion examples:

- Retailers known to not sell tobacco (e.g., Whole Foods, Trader Joes, CVS after 2014)
- Small, non-chain pharmacies
- Pharmacies in places with tobacco sales pharmacy bans
- Some state run alcohol stores

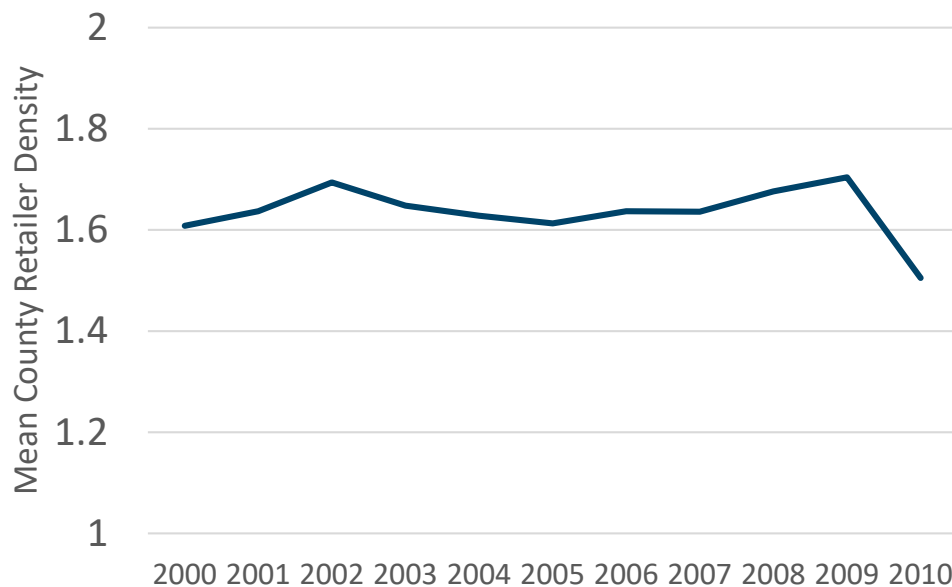
Protocol described in detail in Golden et al. (2022). <https://doi.org/10.1093/ntr/ntab150>

More than 300,000 Tobacco Retailers Each Year, 2000-2017

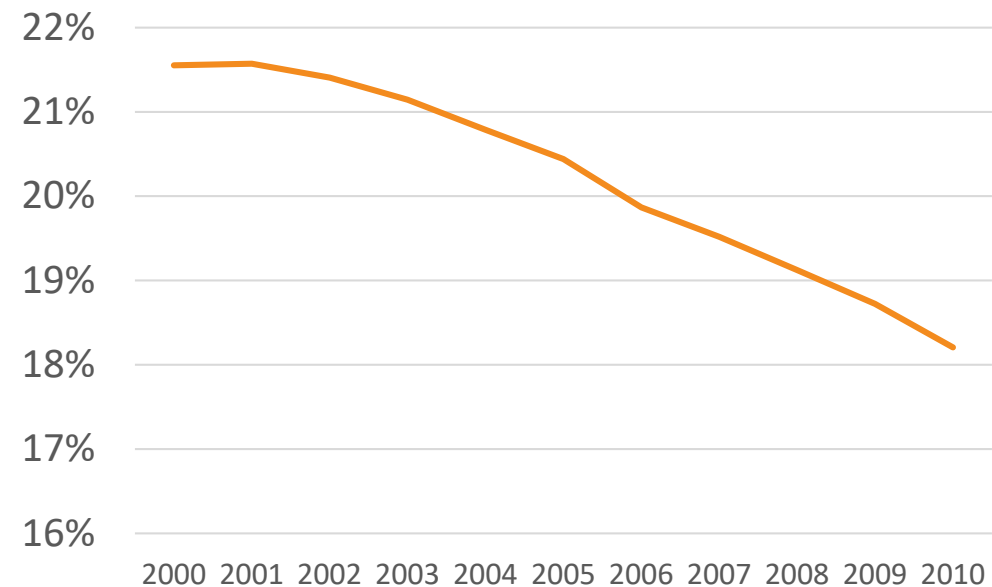


Key County-Level Variables (n=3,080 counties)

Tobacco Retailer Density: # tobacco retailers/1,000 pop

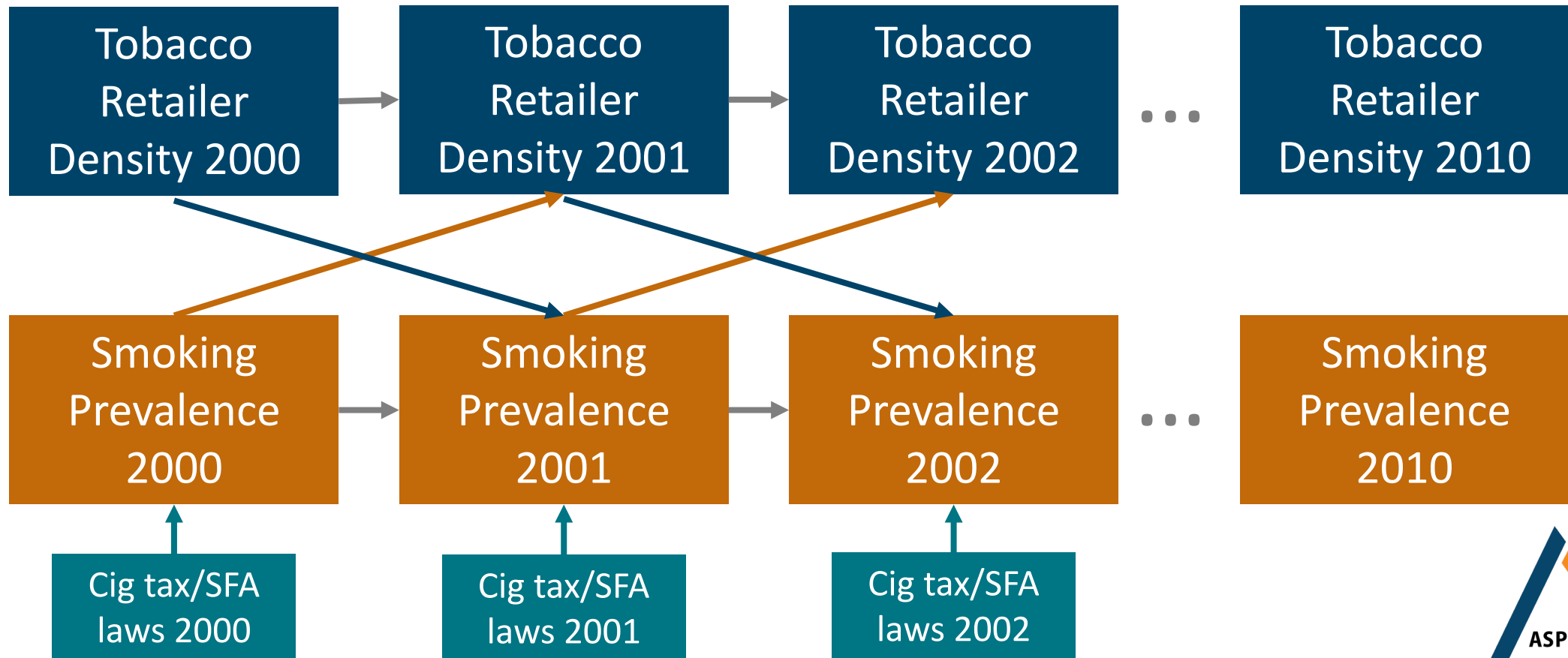


Smoking Prevalence: % of adults who report current smoking*



*Small area estimates of smoking prevalence derived from BRFSS data and calculated by Dwyer-Lindgren et al. See: <https://doi.org/10.1186/1478-7954-12->

Analysis: Random Intercept Cross-Lagged Panel Model



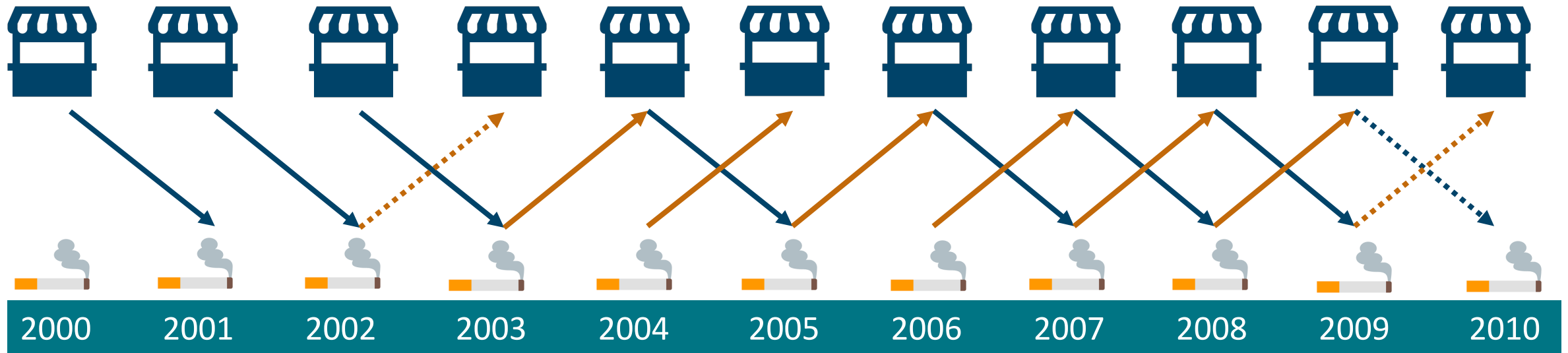
Preliminary Results

Between County Associations

Correlation between Random Intercepts of Smoking Prevalence and Retailer Density = **0.124** ($p < 0.05$)

Within County Associations

→ Positive significant association → Negative significant association
No Arrow: No significant association



All models control for tobacco taxes and smoke free air law strength. All autoregressive associations are +, sig. at $p < 0.05$
ICC (RD) = 0.92; ICC (smoke) = 0.87; CFI=0.98, RMSEA=0.05, RMR = 0.16

Limitations and Next Steps to Address Them

Relative strength of supply and demand not assessed

Standardize variables

Limited within-county variation

Consider 2-year lag

Results Specific to Time Window

Analyze 2014-2017



Preliminary Conclusions

Even when adjusting for the effects of smoker demand, and correlations within counties over time, tobacco retailer density is positively associated with smoking prevalence.

Tobacco retail policy that reduces the number of tobacco retailers per person has the potential to reduce subsequent county smoking prevalence.



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