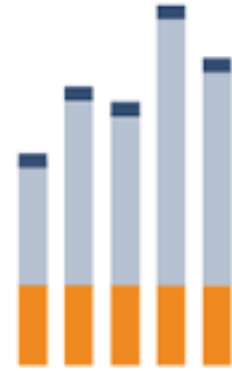




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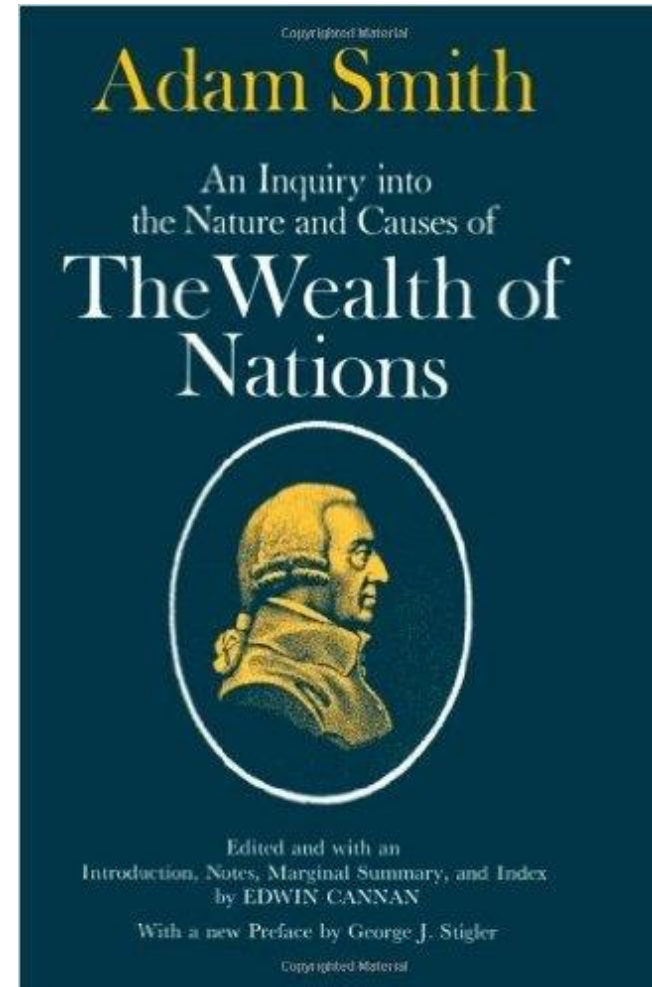
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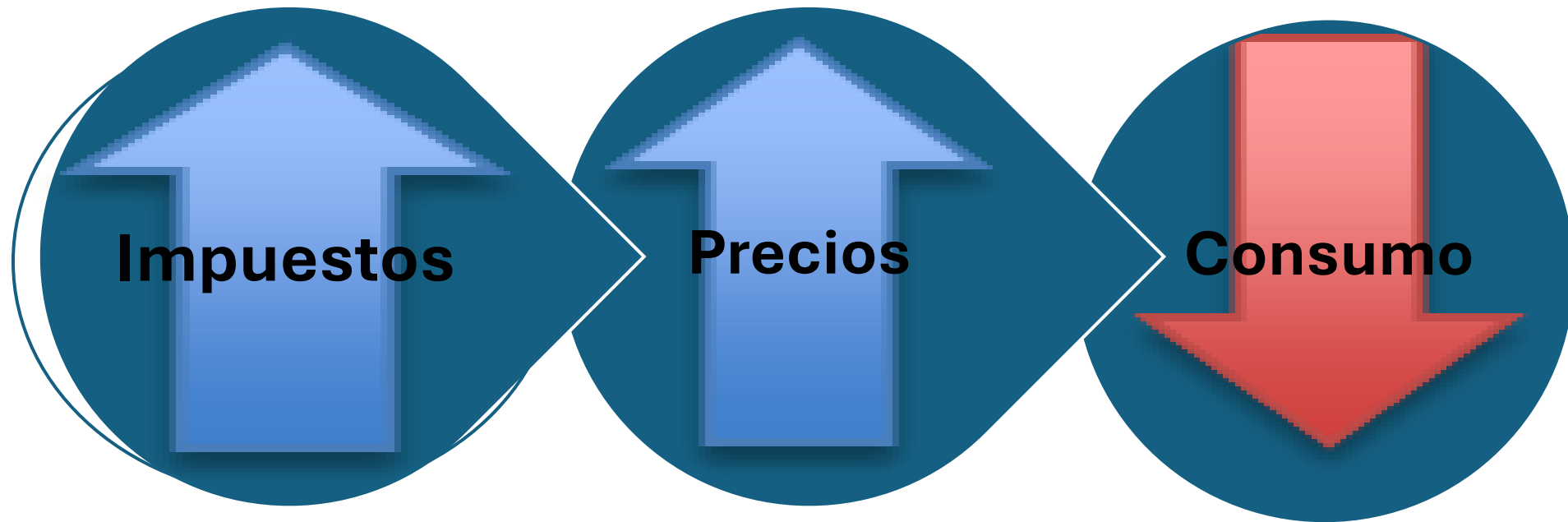
Demand analysis and effectiveness of tobacco taxation in improving health

Jeffrey Drope, PhD
Research Professor
Johns Hopkins University

"Sugar, rum, and tobacco, are commodities which are no where necessaries of life, which are become objects of almost universal consumption, and which are therefore extremely proper subjects of taxation."



El mecanismo es bastante simple:



Law of demand

- An increase in the price of a given product, all else constant, will reduce the quantity consumed of that product.
- How large or small the reduction depends on the price elasticity of demand (the percentage change in the quantity demanded resulting from a one percent increase in price).

Price elasticity of demand

- ... depends on several or more things including:
- whether or not consumers treat the good as a necessity or a luxury item.
 - how much of a consumer's income is spent on that good.
 - the availability of substitutes.

Price elasticity of demand specifically for tobacco products

- For some years, the conventional wisdom suggested that consumers were not responsive to price because of the addictive nature of nicotine products.
- But more advanced methodologies revealed that this was not true.
- Smokers are somewhat responsive to price in the short run, and more responsive to price in the long run.

Price elasticity ranges

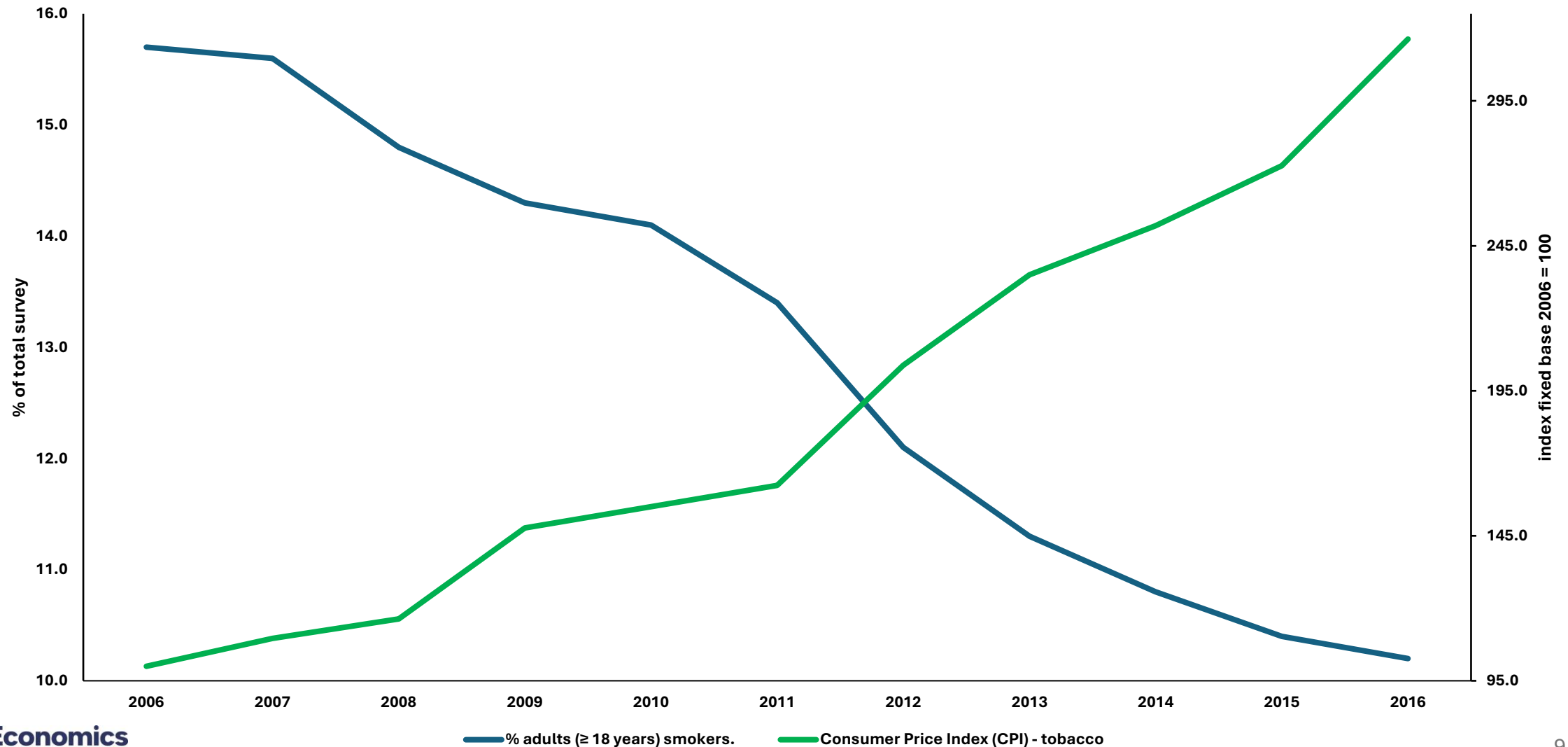
- In higher income countries, elasticities cluster around -0.4.
- Meaning that a 10% increase in price will lead to a 4% decrease in consumption.
- In lower income countries findings range more, -0.2 to -0.8 (a 10% price increase → 2-8% consumption decrease), clustering around -0.5.
 - Factors affecting the larger range include lower incomes, complex tobacco tax structures, availability of other tobacco products, and the extent of the illicit cigarette trade.

The declines in consumption...

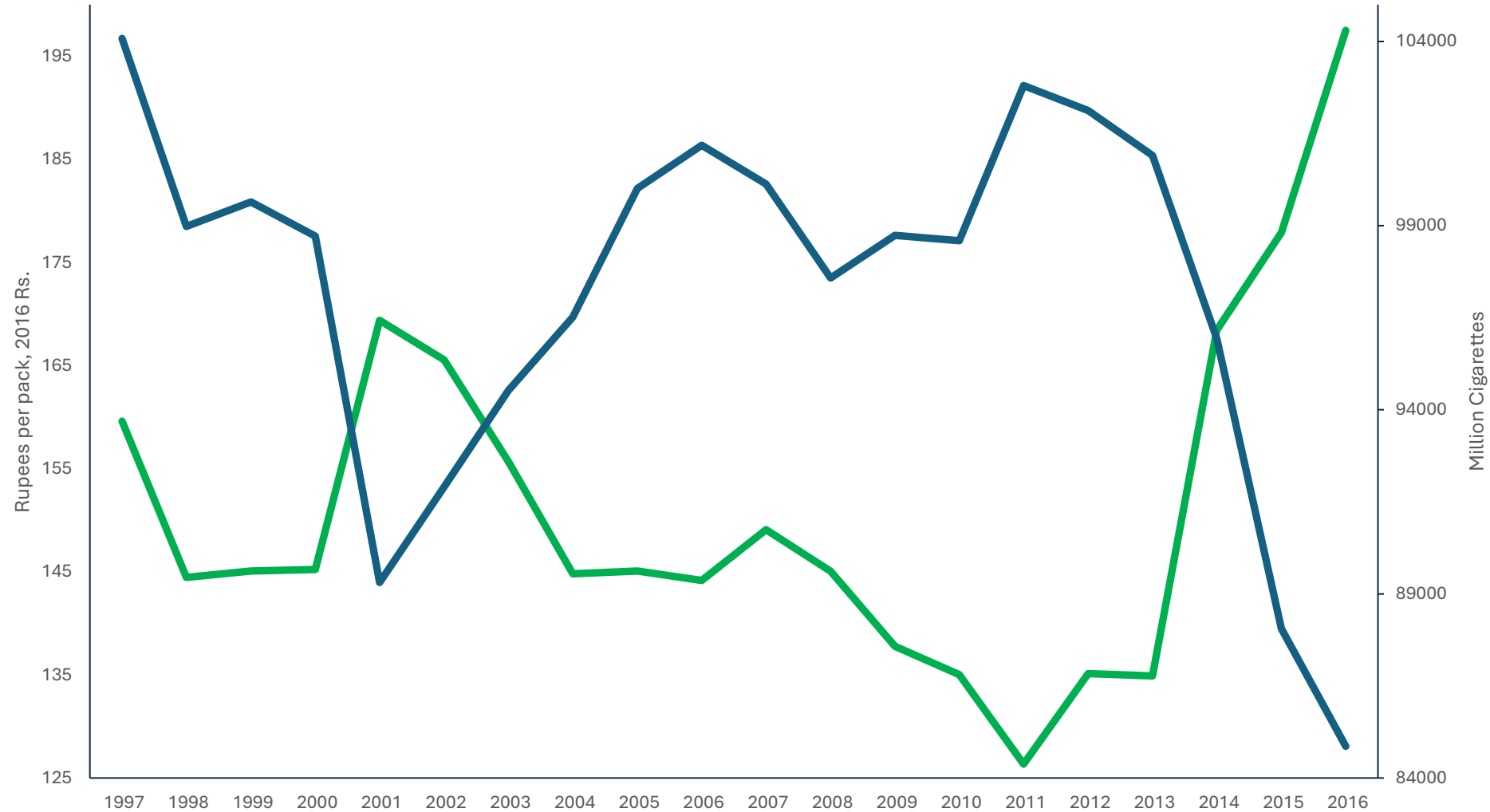
Come from three dynamics:

- People cutting down (50%)
 - People quitting smoking
 - Would-be smokers not starting to smoke
- } 50%

Prevalencia de fumadores adultos y precio (inflación ajustada) en Brasil, 2006-2016

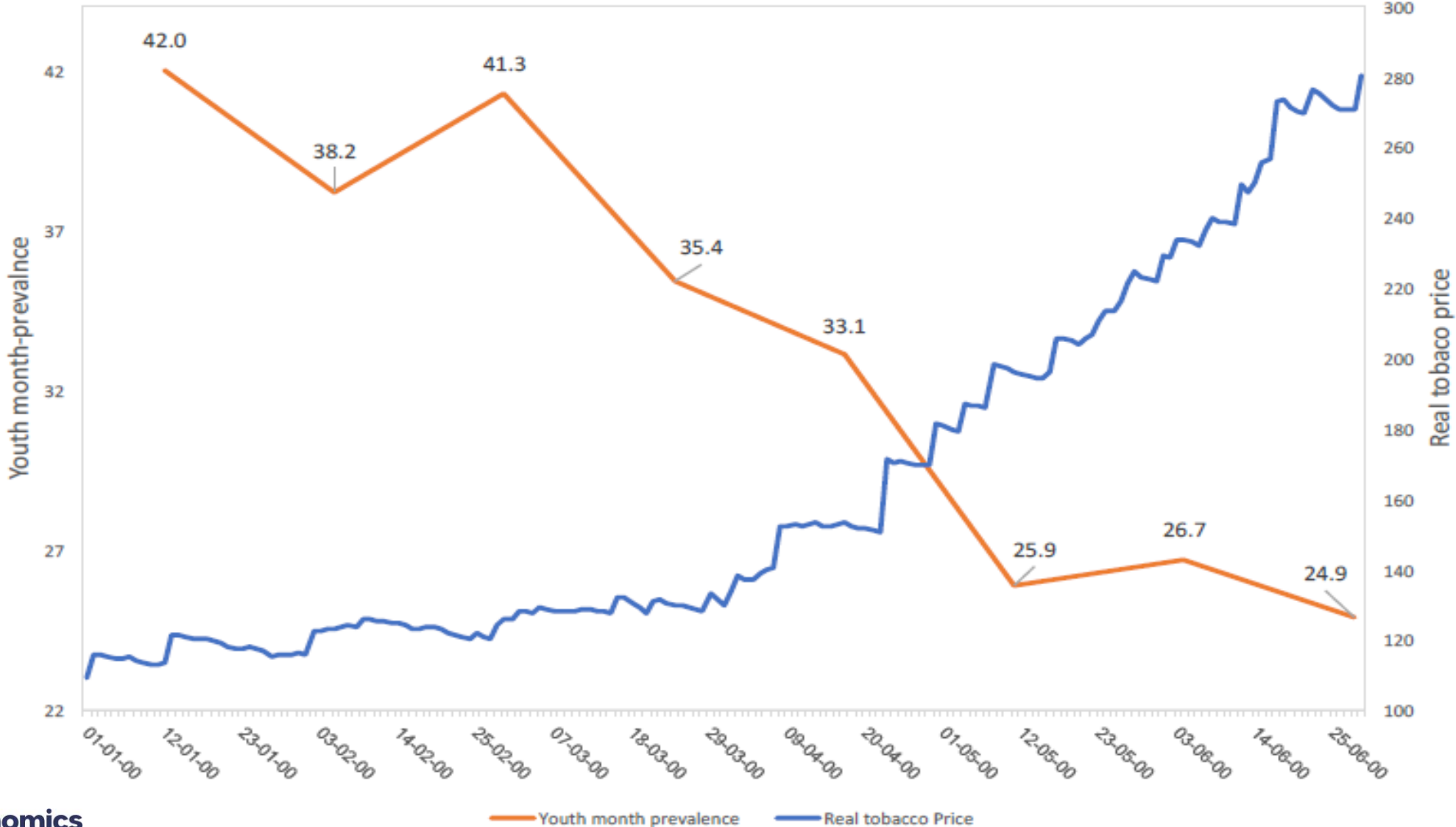


Los precios y venta de cigarrillos (*inflación ajustada*) en la India, 1997-2016

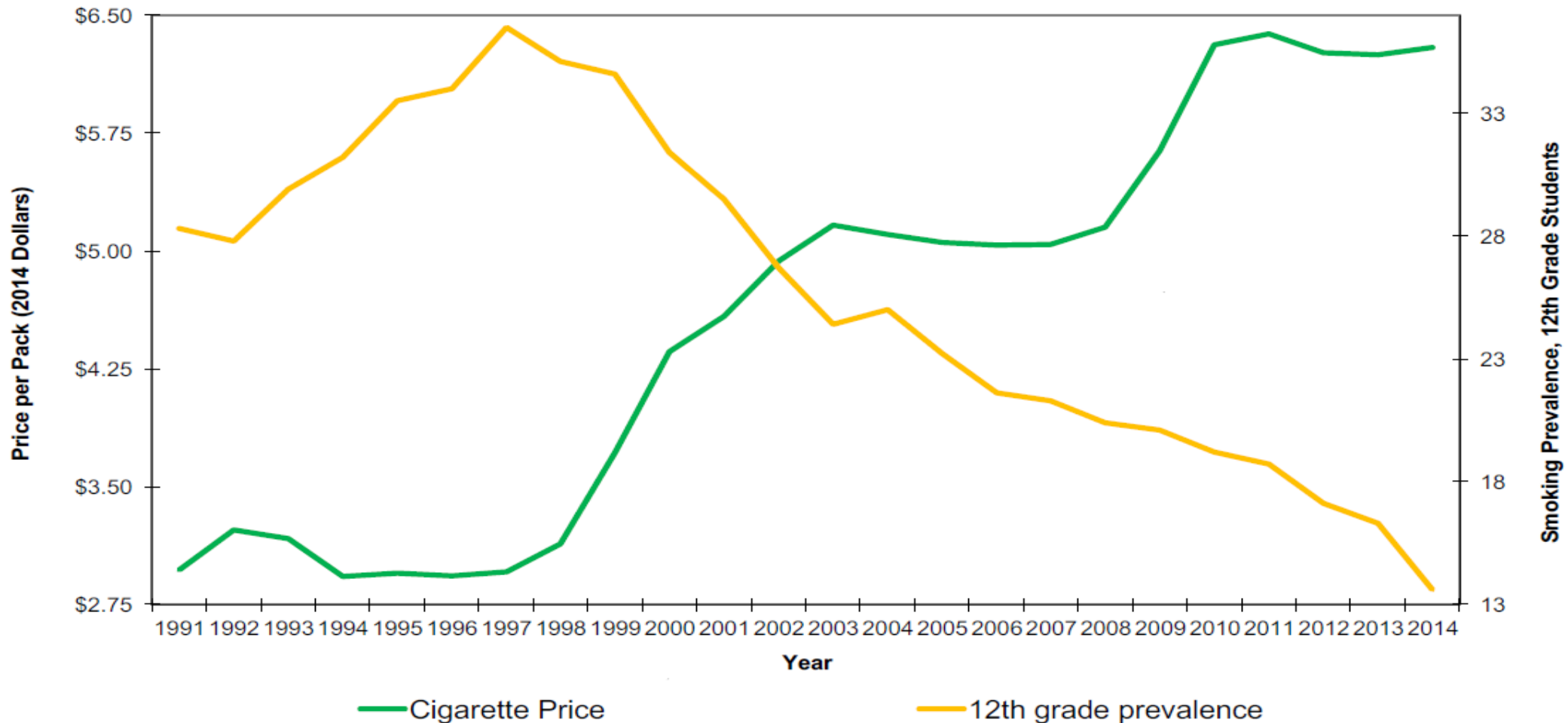


Sources: EIU, ERC, and World Bank and author's calculations

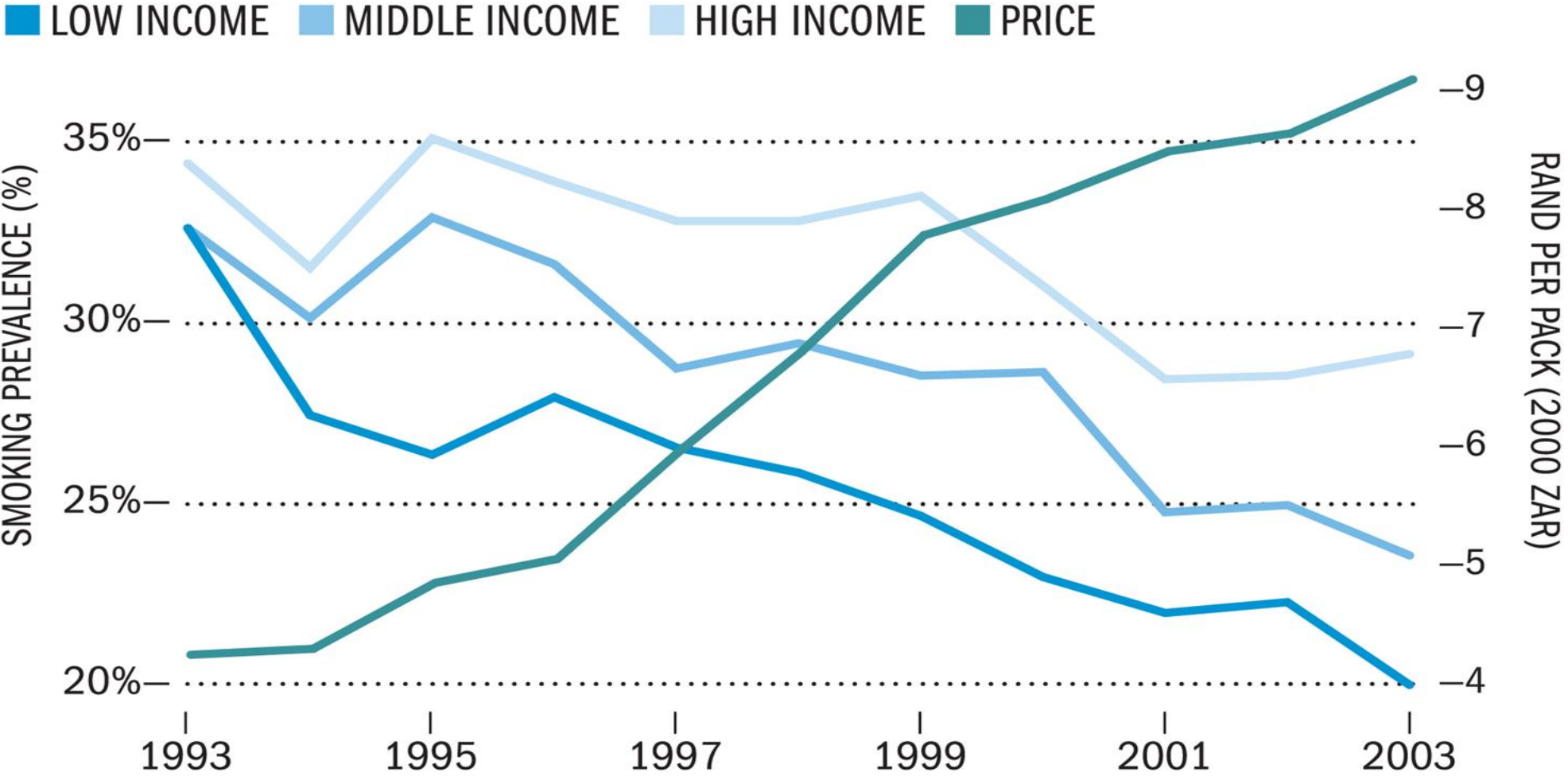
Precios (inflación ajustada) y prevalencia del tabaquismo entre los jóvenes en Chile, 2000-15



Precios del cigarrillo y prevalencia del tabaquismo entre los jóvenes, estudiantes de secundaria en los Estados Unidos, 1991-2014

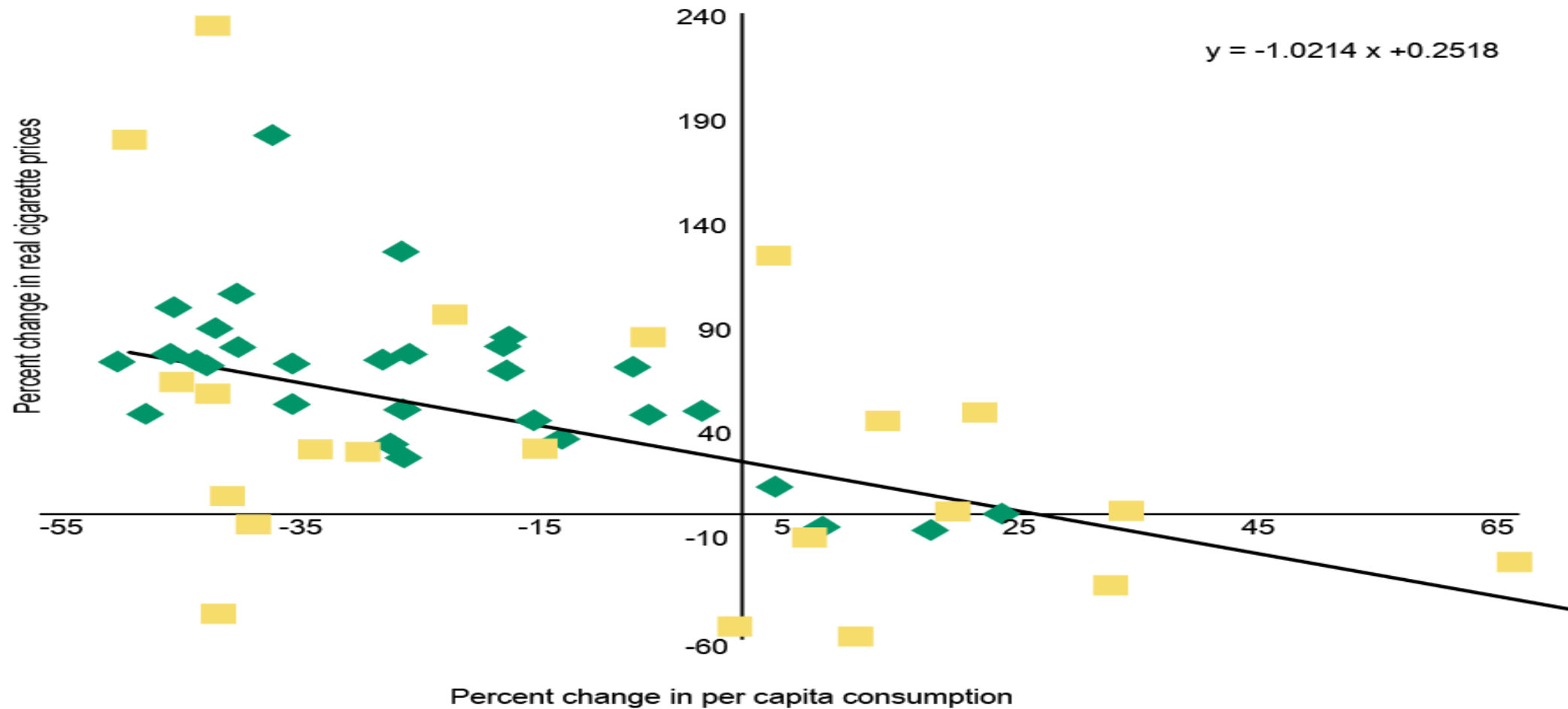


Precios y prevalencia del tabaquismo por grupo de ingresos en Sudáfrica, 1993-2003

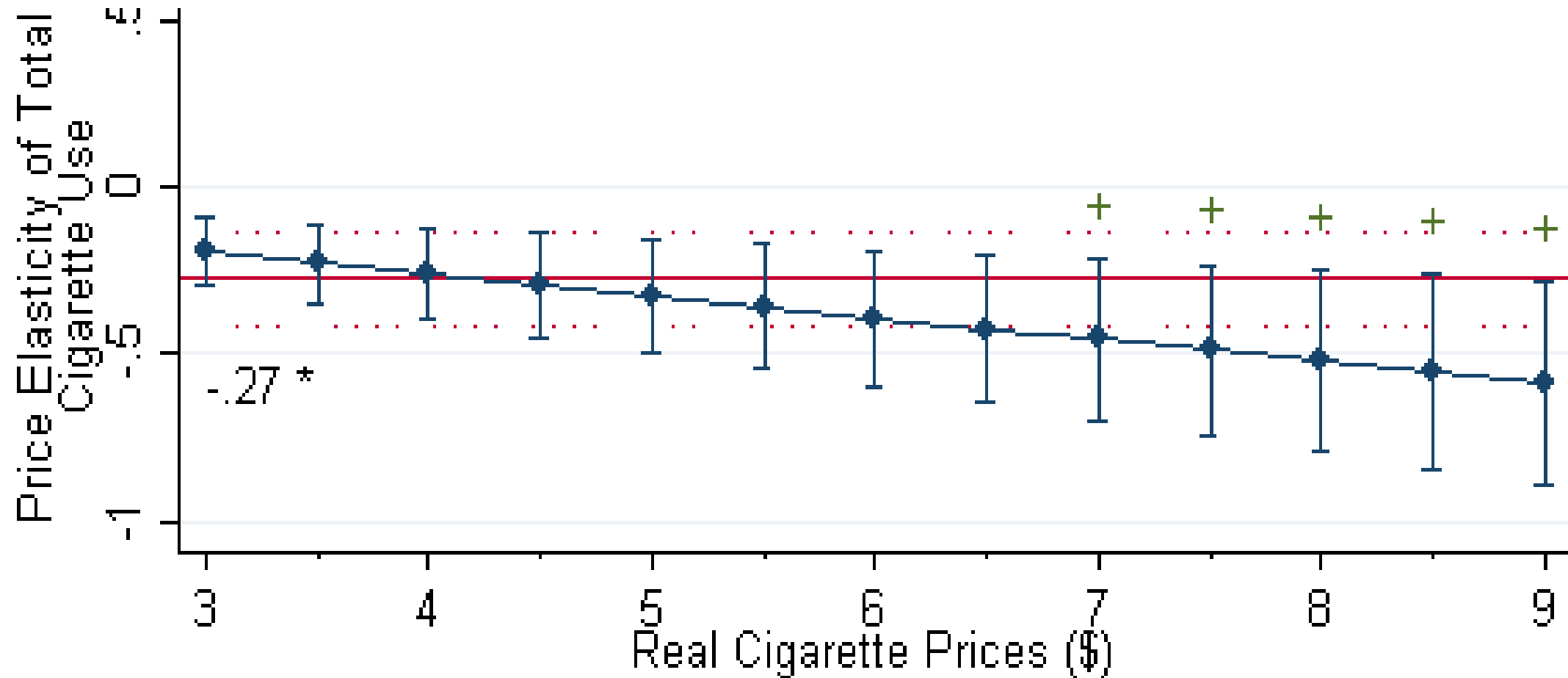


Source: *tobaccoatlas.org*

Cambio porcentual en los precios reales de los cigarrillos versus cambio porcentual en el consumo per cápita de cigarrillos, 1996-2011



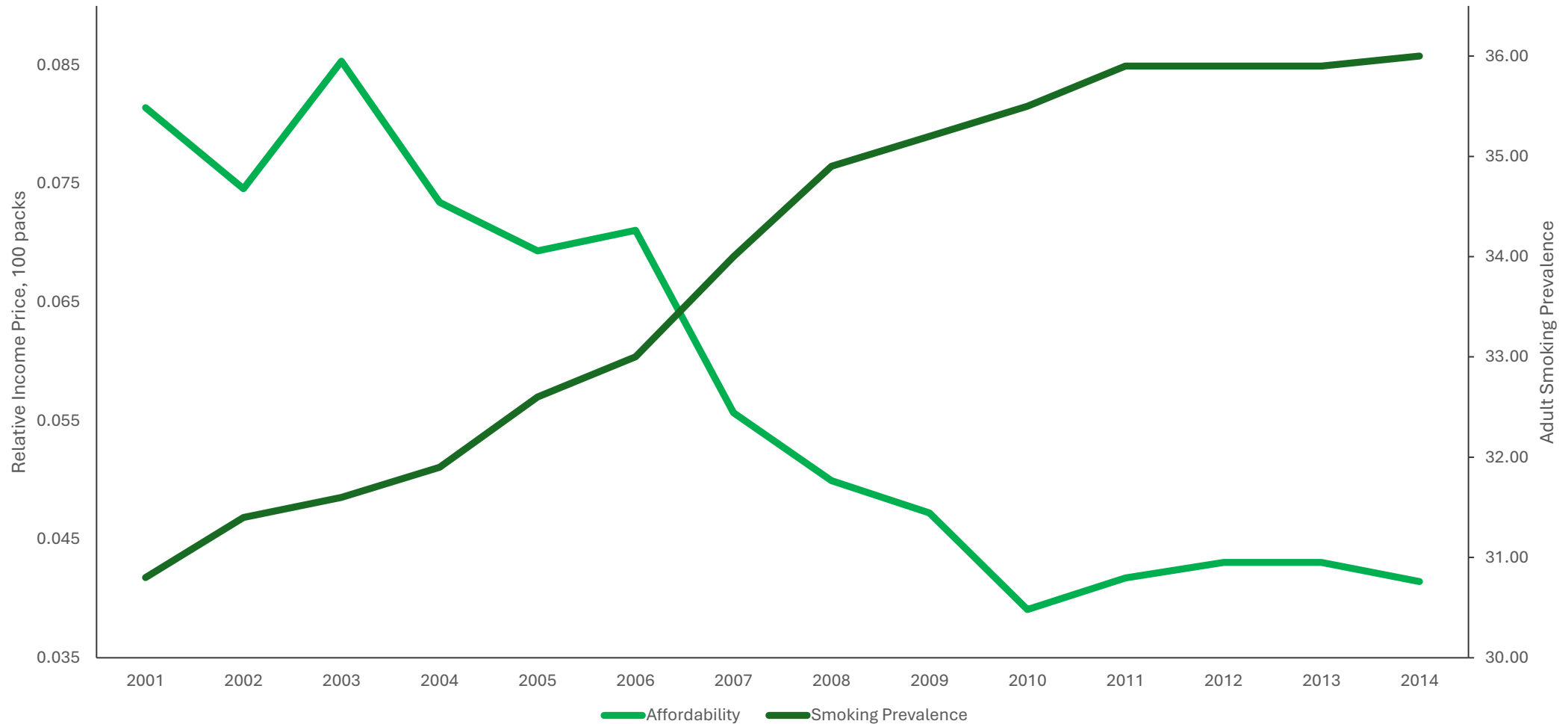
Aumento de la elasticidad con el aumento del precio– Estados Unidos



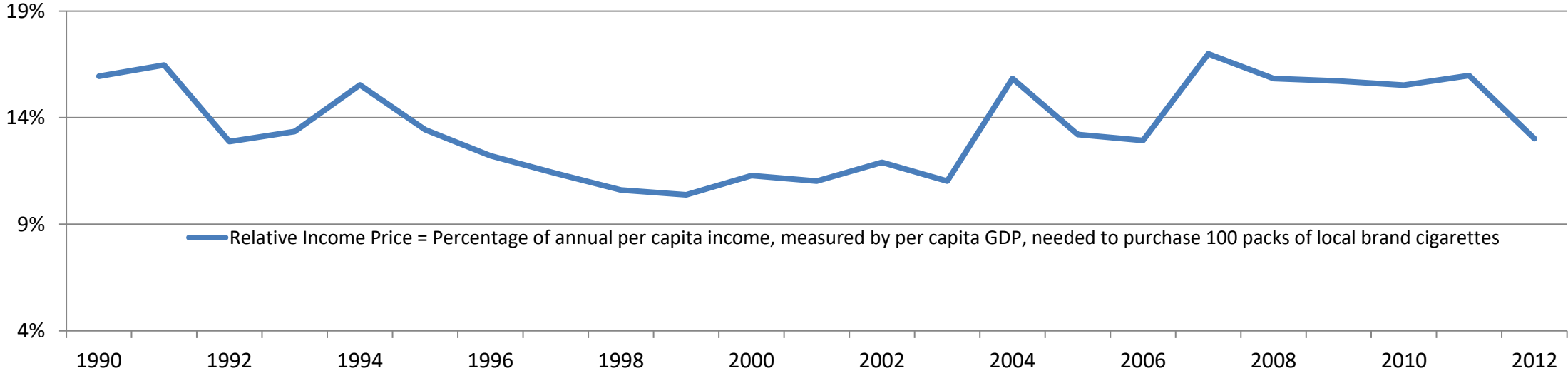
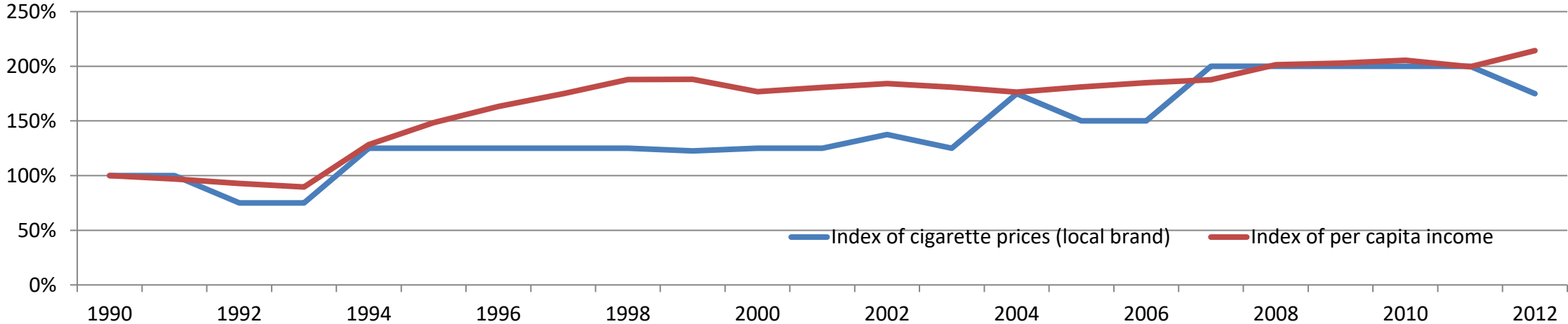
What about income?

- It can matter a lot.
- Particularly in high growth countries.
- Accordingly, economists also calculate income elasticities.
 - Increases in income lead to increases in consumption.
- Experts consider price and income together: “affordability.”
 - How do consumers change their behaviors when cigarettes and other tobacco products become more or less affordable?

Prevalencia del tabaquismo y la asequibilidad de los cigarrillos en Indonesia, 2001-14

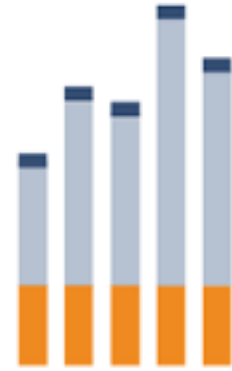


Precios, ingresos y asequibilidad en Côte d'Ivoire, 1990-2012





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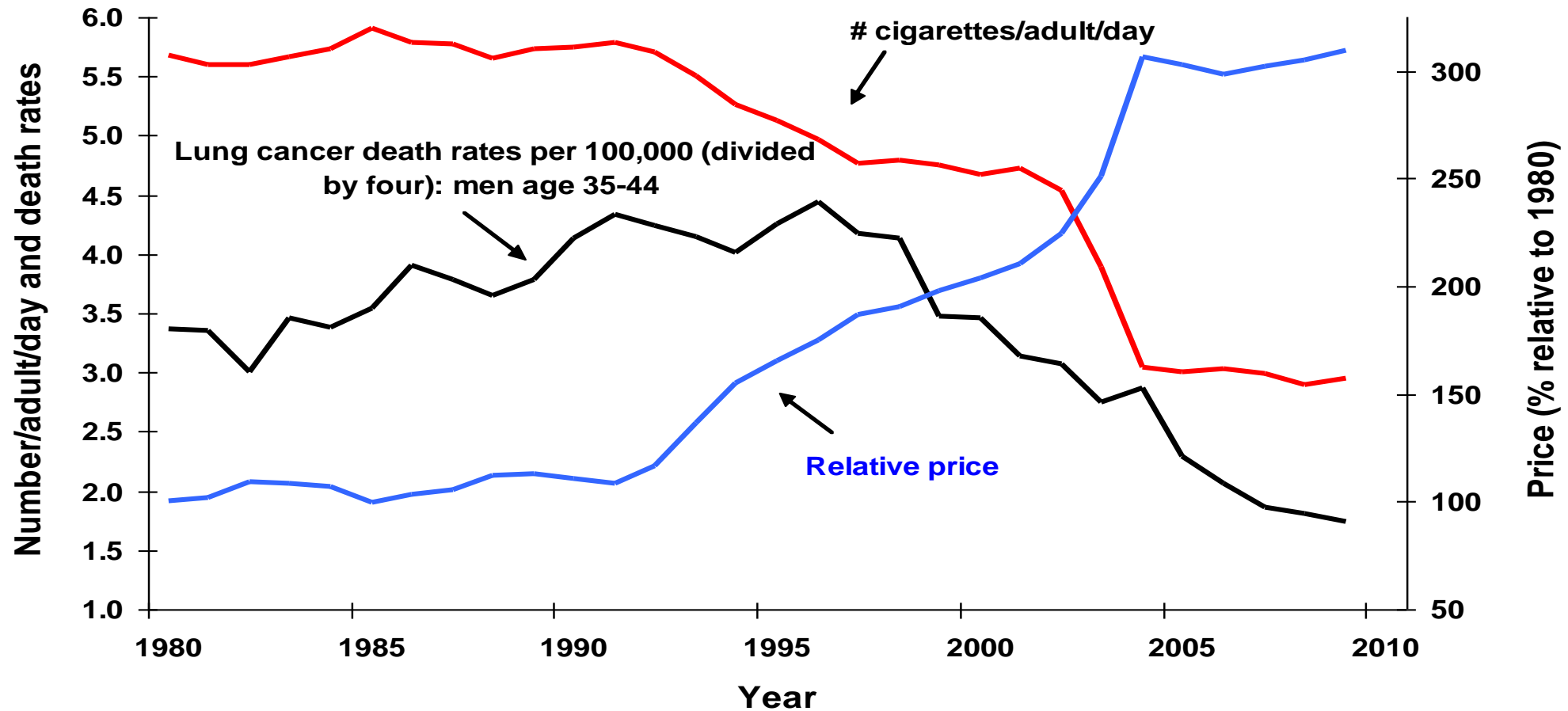


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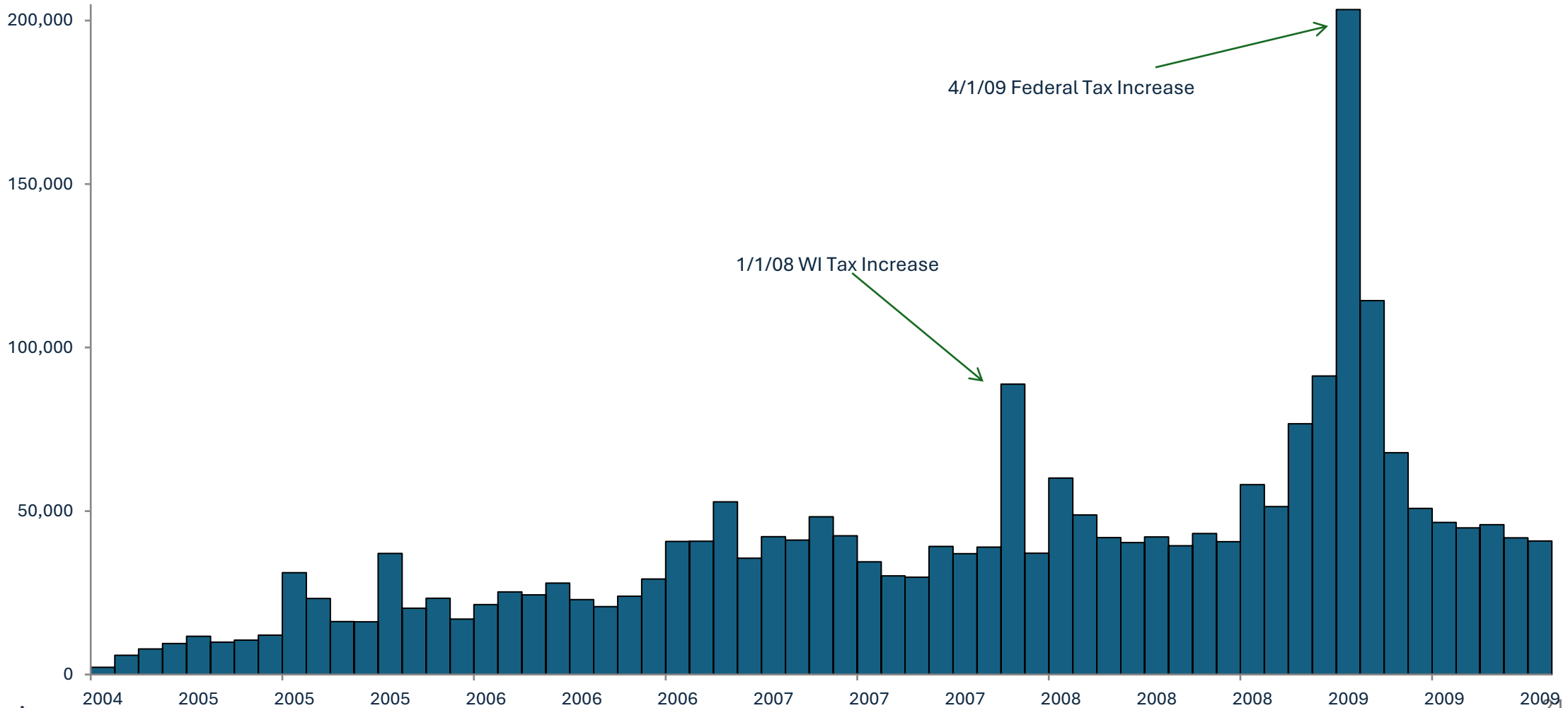
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Tobacco taxes and health-related outcomes

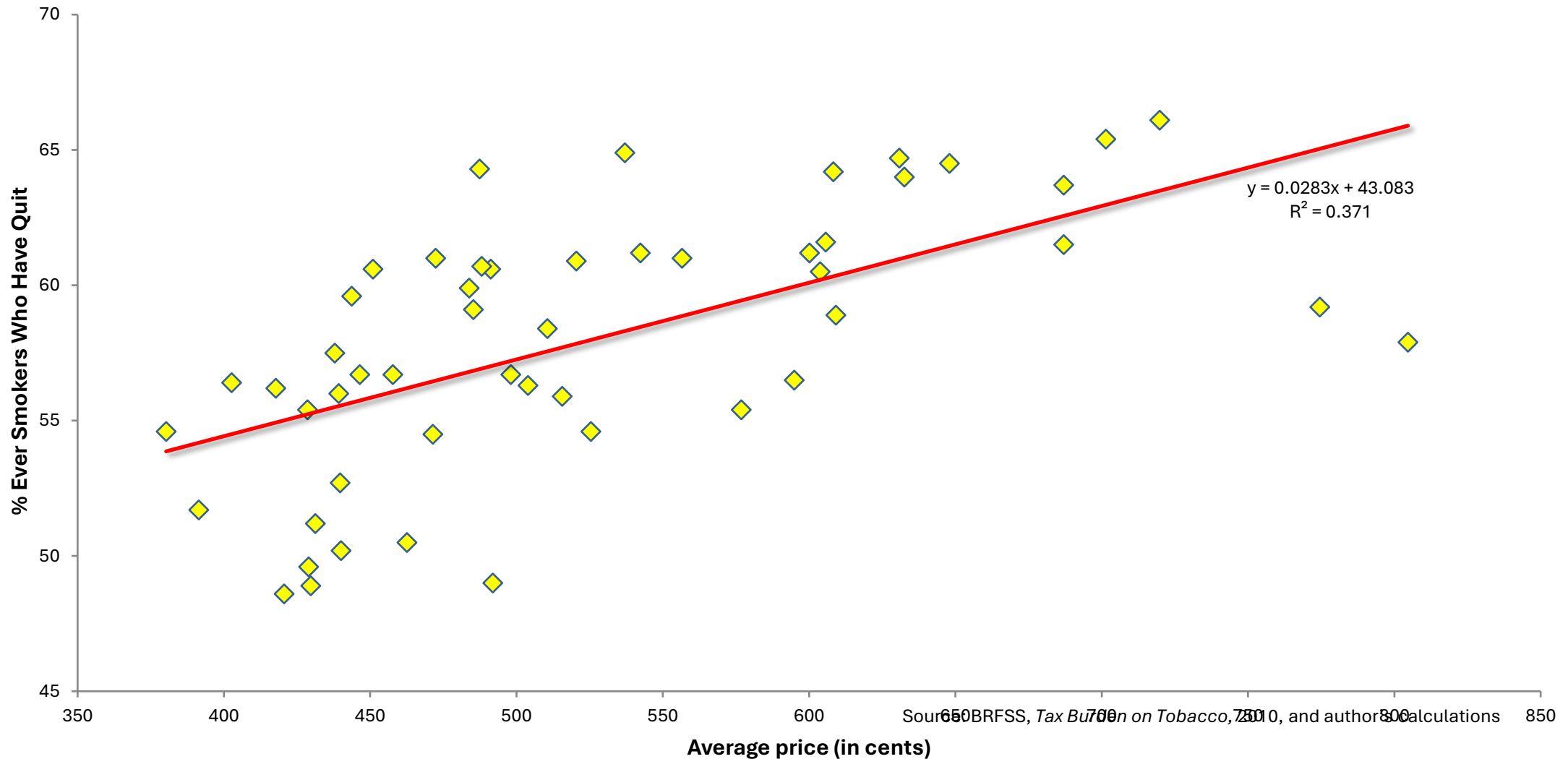
Precios, consumo y cáncer de pulmón en Francia, 1980-2010



Llamadas mensuales para dejar de fumar Estados Unidos, 11/04-11/09



Los precios de los cigarrillos y el cese en los Estados Unidos, 2009



Researchers find consistently across countries and regions that higher tobacco taxes:

Reduce

- Overall mortality.
- Deaths from throat, lung, and other cancers.
- Deaths from respiratory diseases.
- The number of hospitalizations for heart failure.
- The severity of childhood asthma.

Pregnant women are more responsive to price

- On average, pregnant women are two to three times more responsive to price changes in cigarettes compared to adults overall, leading to reductions in:
 - Low-birthweight births.
 - Sudden infant death syndrome.
 - Overall infant mortality.

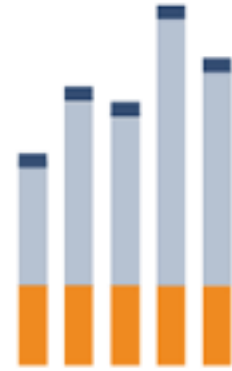
Consider: Recent research by Szklo et al. (2024) using the latest Brazil national health survey finds that smoking among pregnant women has increased markedly in recent years tracking closely with the increasing affordability of cigarettes.

Conclusions

- Though tobacco products like cigarettes are typically inelastic goods (the effect on consumption is proportionally lower than the percentage increase in price), the effects still remain significant.
- This is particularly true with larger price increases wherein the absolute size of the effects—e.g., declines in the number of smokers—are substantial.
- The declines in consumption from higher taxes have demonstrable positive effects on many health outcomes.



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Gracias.

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And coming November 12: www.economicsforhealth.org
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