

## **Where and How Do Kids Get Their Cigarettes?**

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## **Issues:**

**Most Adult Smokers Begin Smoking as Teenagers**

**Teen Smoking Rates Have Been Rising in 1990's**

**Synar Amendment (1992): Forces States to Enact and Enforce Youth Access Laws**

## **Youth Access Laws:**

**Banning Retail Sales to Persons Under 18**

**Restricting or Banning Vending Machines**

**Restricting or Banning Advertising/Sale Near Schools**

**No Smoking on School Property**

## **Other Related Activities**

**Enforcement Audits**

**Require Licensing for Tobacco Retailers.**

## **Obvious Policy Goal:**

**Reduce Overall Population Smoking Rates by Reducing Teen Smoking Rates.**

## **How Can Teens Obtain Cigarettes?**

**Buy Them From Non-Compliant Merchants**

**Buy Them Using a Fake ID**

**Get Others to Buy for Them**

**Gifts – Others give them Cigarettes (No Monetary Exchange)**

**Steal**

## **A Possible Outcome: Formal Black Markets**

**No evidence that this exists presently**

## **How Do Teens Obtain Cigarettes?**

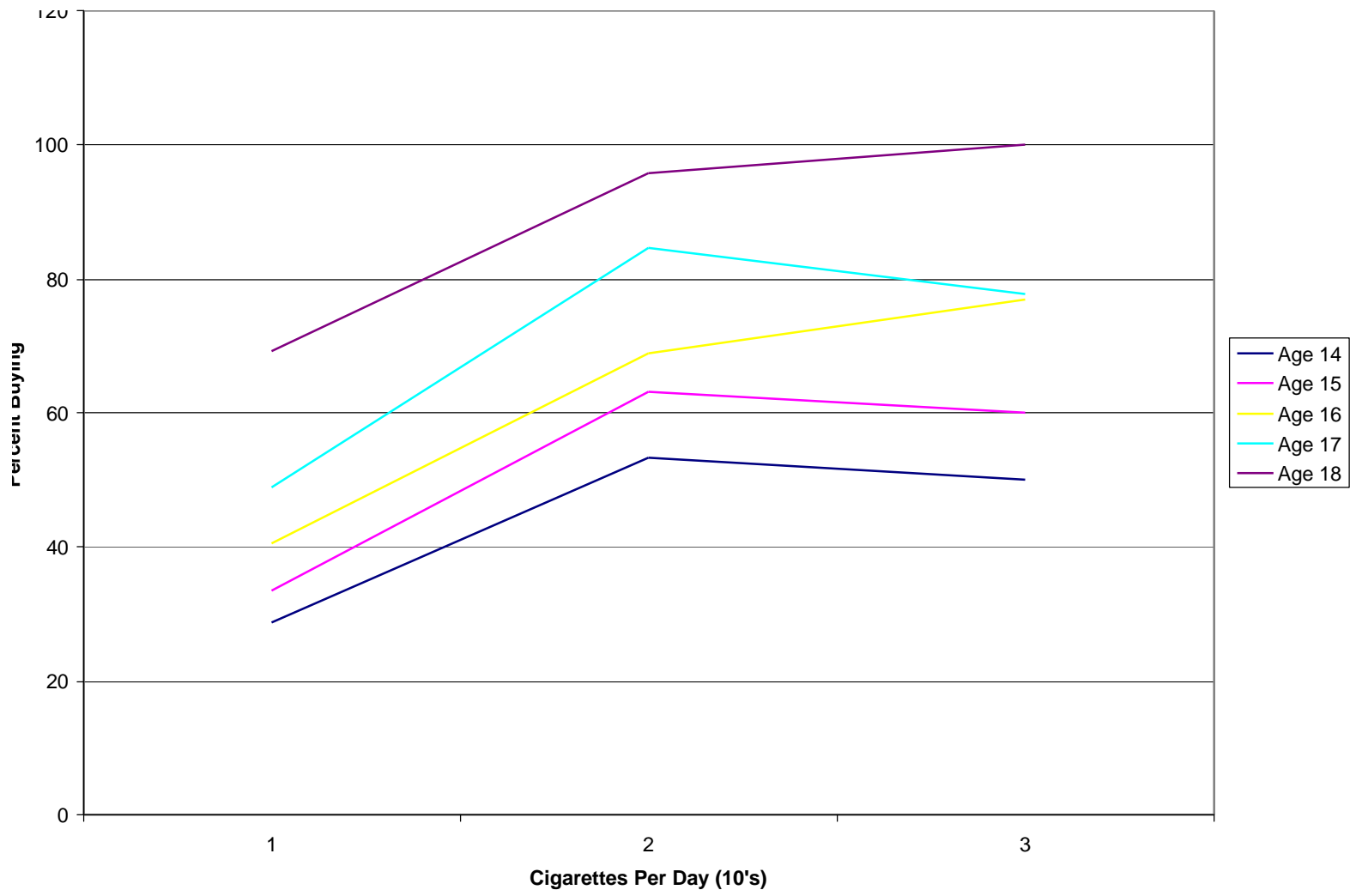
**All of the above are used:**

**Buy from retail outlets is the modal way**

**Gifts and getting others to make purchases common**

**Theft is rare (from either Stores or Parents).**

**No direct evidence of fake ID in data set**



	Age 14	Age 15	Age 16	Age 17	Age 18
1	28.8	33.5	40.6	49	69.3
2	53.3	63.2	68.9	84.6	95.8
3	50	60	76.9	77.8	100

Figure 1: Percent Buying, By Age and Intensity

## **Some Theoretical Observations**

### **Why Do Stores Sell To Teens When Illegal?**

**Principal-Agent Problems: Clerks Don't Care and Are Costly to Monitor**

**Profit Maximizing Behavior: Expected Profit Margins Are Still Sufficiently High, Given Current Fines and Enforcement Levels**

**Fines and Enforcement Levels Lack Salience – Insufficient Bite**

**Firms May Increase Prices to Take Into Account Penalties and Risk of Youth Sales  
(Note: This Means that Prices Paid By Teens Are Endogenous)**



## **Economics of Fake ID's:**

**Fake ID's: Firms Are Typically Not Liable When Fake ID's Are Used.**

**Compliance Checks Require Store Clerks to Demand to See an ID;  
If An ID is Presented and a Sale Is Made, Store Is Not Liable.  
If Clerk Refuses to Make Sale in the Absence of an ID, Store is Liable.**

**Costly To Obtain, but They Are A Fixed Cost: Marginal Price of Obtaining  
Cigarettes Unaffected**

**The Above Observation Implies That Enforcement Will Affect Prevalence But Not  
Intensity**

## **Effect of Youth Access Enforcement on Prices Paid by Teens**

**Prediction A: As enforcement efforts increases, prices paid by teens will rise.**

**This could be true if fake ID's are used (But Detected)**

**It will also be true if fake ID's are not used**

**Prediction B: If fake ID's use is widespread and undetected, then prices may not rise, prevalence rates may be affected but intensity is not affected.**

**Prediction C: If fake ID's are used, compliance will affect prevalence but not intensity of smoking for those who smoke**

**Prediction D: Enforcement of Youth Access Laws will reduce the amount of buying but raise the frequency of obtaining cigarettes by having others buy for teens**

## **Data: Audit and Survey Data**

**Questionnaire Administered to about 17 Thousand High School Students, Ages Range From 14 to 19.**

**Date Administered is Spring of 1996**

**Huge Number of Questions About Smoking, As Well As Family Background**

**Location is Given (State and County) so Local and State Laws and Levels of Enforcement Can Be Linked to Individual Questionnaires.**

## **Do Teens Pay More in High Compliance Jurisdictions?**

**Evidence: Yes**

**Table 1: Reported Price Per Pack of Marlboro: Low Compliance Jurisdiction versus High Compliance Jurisdiction**

	<b>Average</b>	<b>Standard Deviation</b>	<b>N</b>
<b>Low Compliance</b>	<b>1.97</b>	<b>0.33</b>	<b>28</b>
<b>High Compliance</b>	<b>2.27</b>	<b>0.39</b>	<b>79</b>

**Table 2: Reported Price Per Pack of Marlboro As A Function of Sales Tax and Non-Compliance (OLS)**

<b>Variable</b>	<b>Estimate</b>	<b>Standard Error</b>	<b>T -Value</b>
<b>Non-Compliance Rate</b>	<b>-0.1875</b>	<b>0.0920</b>	<b>-2.028</b>
<b>State Tax</b>	<b>0.0115</b>	<b>0.0009</b>	<b>12.823</b>

**N = 643, R<sup>2</sup> = .21**

## **Do Compliance Rates Have an Affect on the Decision to Buy versus Not Buy?**

**Evidence: YES**

**Table 3: Buy or Not Buy (For Smokers) (Probit)**

<b>Variable</b>	<b>Estimate</b>	<b>Standard Error</b>	<b>Chi Square</b>
<b>Age</b>	<b>0.3972</b>	<b>0.0531</b>	<b>55.8947</b>
<b>State Tax</b>	<b>-0.0008</b>	<b>0.0029</b>	<b>0.06643</b>
<b>Non Compliance</b>	<b>1.0508</b>	<b>0.3564</b>	<b>8.6912</b>

**N = 1886, log likelihood = -1264.72**

**This is consistent with the notion that in communities with rigorously enforced Youth Access Laws, teens who smoke get others to obtain cigarettes for them**

## **Given That a Person Smoked, Does Youth Access Enforcement Affect Intensity?**

**Evidence: NO**

**Table 4: Cigarettes Smoked (For Smokers)(OLS)**

<b>Variable</b>	<b>Estimate</b>	<b>Standard Error</b>	<b>T-Value</b>
<b>Age</b>	<b>0.6032</b>	<b>0.1392</b>	<b>-4.540</b>
<b>Price</b>	<b>-1.3252</b>	<b>0.2919</b>	<b>4.332</b>
<b>Non Compliance</b>	<b>0.6971</b>	<b>0.9671</b>	<b>0.721</b>

**N = 2,536, R<sup>2</sup> = 0.0166**

## **Does Youth Access Enforcement Lower Teen Smoking (Prevalence)? YES**

**Table 5: Decision to Smoke (Smoke = 1, Not Smoke = 0) (Probit)**

<b>Variable</b>	<b>Estimate</b>	<b>Standard Error</b>	<b>Chi Square</b>
<b>Age</b>	<b>0.1416</b>	<b>0.0224</b>	<b>39.8358</b>
<b>Price</b>	<b>-0.1098</b>	<b>0.0215</b>	<b>26.0991</b>
<b>Non Compliance</b>	<b>0.9955</b>	<b>0.1614</b>	<b>38.0484</b>

**N = 12,718, log likelihood = -7039.84**

**This result is consistent with the notion that Fake ID's reduce prevalence but not intensity**



**Conclusions:**

**Some Evidence That Fake ID's Are Used But Are Not Completely Confounding Enforcement of Youth Access Laws**

**Evidence That Vigorously Enforced Youth Access Laws Reduce Prevalence.**

**Kids Clearly Find Alternative Ways to Obtain Cigarettes in Despite Youth Access Laws.**

**There is Some Evidence That Some Retail Outlets May "Specialize" in Underage Sales. This Is An Argument for Licensing of Tobacco Retailers.**

## **Further Research:**

**Refine Econometrics**

**Design Questionnaires with Fake ID Questions**