Supply- and Demand-side factors influencing endemic drug use in America

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Demand versus Supply Drivers

Supply-side drivers
• Increasing availability of powerful drugs

Demand-side drivers
• Increasing demand for deadly substances
1. Supply-side drivers

2. Demand-side drivers


- All Drugs
- Prescription opioids
- Prescription rates

- Overdose Death Rate
- Prescription Rate

1999 2001 2003 2005 2007 2009 2011 2013 2015

All Drugs  Prescription opioids  Prescription rates

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- Overdose Death Rate
- Prescription Rate

1999 2001 2003 2005 2007 2009 2011 2013 2015

All Drugs  Prescription opioids  Prescription rates
Prescriber Behavior

Drug Reformulations
• 2010 Abuse-resistant OxyContin released
• PDMPs
  • 2012 Kentucky, Ohio, and West Virginia
  • 2015 Pennsylvania

Oxycodone Reformulation 2010

KY, OH, WV PDMPs

- Overdose Death Rate
- Prescription Rate

OxyContin Reformulation 2010

KY, OH, WV PDMPs

All Drugs
Prescription opioids
Prescription rates
Overview

1. Supply-side drivers
2. Demand-side drivers

Demand-side Factors
- Community economic disadvantage
- Mental health problems
- Relational problems
- Health conditions (chronic pain, sedentary life styles, etc.)
**Demand-side Factors**
- Community economic disadvantage
- Mental health problems
- Relational problems
- Health conditions (chronic pain, sedentary life styles, etc.)

**Ohio Overdose Rates by Education Level**

![Bar chart showing overdose rates by education level with HS Grad, Some college, Associates, and Bachelors categories. The chart indicates higher rates for HS Grad and lower rates for Bachelors.]

Rate per 100,000

- HS Grad
- Some college
- Associates
- Bachelors
Unemployment rates

1. Mask type of job
Panel A. Smoothed changes in employment by skill percentile, 1980–2005

Source: Autor and Dorn (2013)


Manufacturing Jobs 1990-2018
KY, OH, PA, WV
Ohio’s Industries

<table>
<thead>
<tr>
<th>Industry</th>
<th>2000</th>
<th>2015</th>
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<tbody>
<tr>
<td>Manufacturing</td>
<td>15.4</td>
<td>10.4</td>
</tr>
<tr>
<td>Government and government enterprises</td>
<td>12.1</td>
<td>11.5</td>
</tr>
<tr>
<td>Retail trade</td>
<td>11.7</td>
<td>10.1</td>
</tr>
<tr>
<td>Health care and social assistance</td>
<td>9.9</td>
<td>12.8</td>
</tr>
<tr>
<td>Accommodation and food services</td>
<td>6.4</td>
<td>7.2</td>
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Beveridge Curve, 2001-2016

Koffi, Hurst, and Schwartz (2018)

- Manufacturing decline lowered incomes for prime aged workers
- State manufacturing decline increased OD rates (causal)

Figure 7: U.S. Quarterly Real Output Index for the Manufacturing Sector (2000Q1 = 100)

Source: Kofi, Hurst, Schwartz 2018
One more robot per thousand workers reduces the Employment/Pop Ratio by about 0.18-0.24 percentage points.

Source: Acemoglu and Restrepo 2017
Carnegie Mellon Reels After Uber Lures Away Researchers
Uber staffs new tech center with researchers poached from its collaborator on self-driving technology

Robot spending will hit $188 billion by 2020, report predicts
Robotics and related services are expected to reach new heights, driven by an expanding market.

Amazon opens grocery store with no checkouts
January 22, 2018

Currently 47 million workers with HS degree or less
Driving: 3.4 million
Grocery store attendants: 2.4 million
Fast food counter workers: 3.7 million
Unemployment rates

1. Mask type of job
2. Mask LF participation

Labor Force Participation 1948-2016

Source: BLS
Fraction Working Zero Weeks During the Year
Males 21-55 by Education

Annual Hours Worked
Males 21-55 by Education

Source: Kofi, Hurst, Schwartz 2018
Men NLF express much lower levels of meaning to their daily lives than LF men
  • Not so for women

*Half of prime age men NLF use daily pain medication (Krueger 2017)*

In 2016, ~2.1 million people with opioid use disorder

*Could account for 78% of non-boomer LFP drop*

*Could be 100% in KY, OH, PA, WV*
Consequences of Job Bifurcation and Decreased LFP

[Graph showing Median Family Real Income and Productivity: Output per Hour from 1945 to 1980. Data source: BLS, CPS]
Productivity: Output per Hour

Median Family Real Income

Data source: BLS, CPS

The Fading American Dream
Percent of Children Earning More than their Parents, by Year of Birth

Source: Chetty et al. 2014
Academic Research

• Hollingsworth et al. 2017
• Kreuger 2017
• Betz and Jones 2018
• Kofi, Hurst, Schwartz 2018
• Ruhm 2018; Currie, Jin, Schnell 2018

Demand side: Relationships
Conclusions?

...nuanced
### Leading Causes of Death Under 55 in 2016

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<th>US</th>
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### Trends in substance use disorder in the past year age 18+

- **2002-2014**
  - 2.6m SUD
  - 2.6m AUD
Trends in substance use disorder in the past year age 18+
by drug

Past month Marijuana use age 12+

+230k HUD

+10m Using Marijuana
Takeaways

1. US drug crisis is more than a supply problem
2. Decline in economic opportunity impacts OD rates
3. Coming automation will likely exacerbate

Policy recommendations

Prevent new users

1. More thoughtful (slower) approach to economic policy
2. Investments in education/health
3. Better support of families EITC
4. Reduce prescription rates back to 1995 levels
5. Increase access to alternatives: Marijuana with caveats
Policy recommendations
Help existing users
1. Increase treatment for those already addicted
2. Reducing supply of illicit drugs…good luck

Thank You!
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