

Border Fencing, Migrant Flows, and Crossing Deaths

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Motivation



Gov. Abbott orders creation of 'steel wall' to secure Texas-Mexico border at Eagle Pass

Nearly 20 shipping containers are stacked side-by-side, forming the barrier

Border Wall Legislation: The Secure Fence Act of 2006

"This bill will help protect the American people. This bill will make our borders more secure. It is an important step toward immigration reform."

- President George W. Bush, 10/26/06

<https://georgewbush-whitehouse.archives.gov/news/releases/2006/10/20061026-1.html>

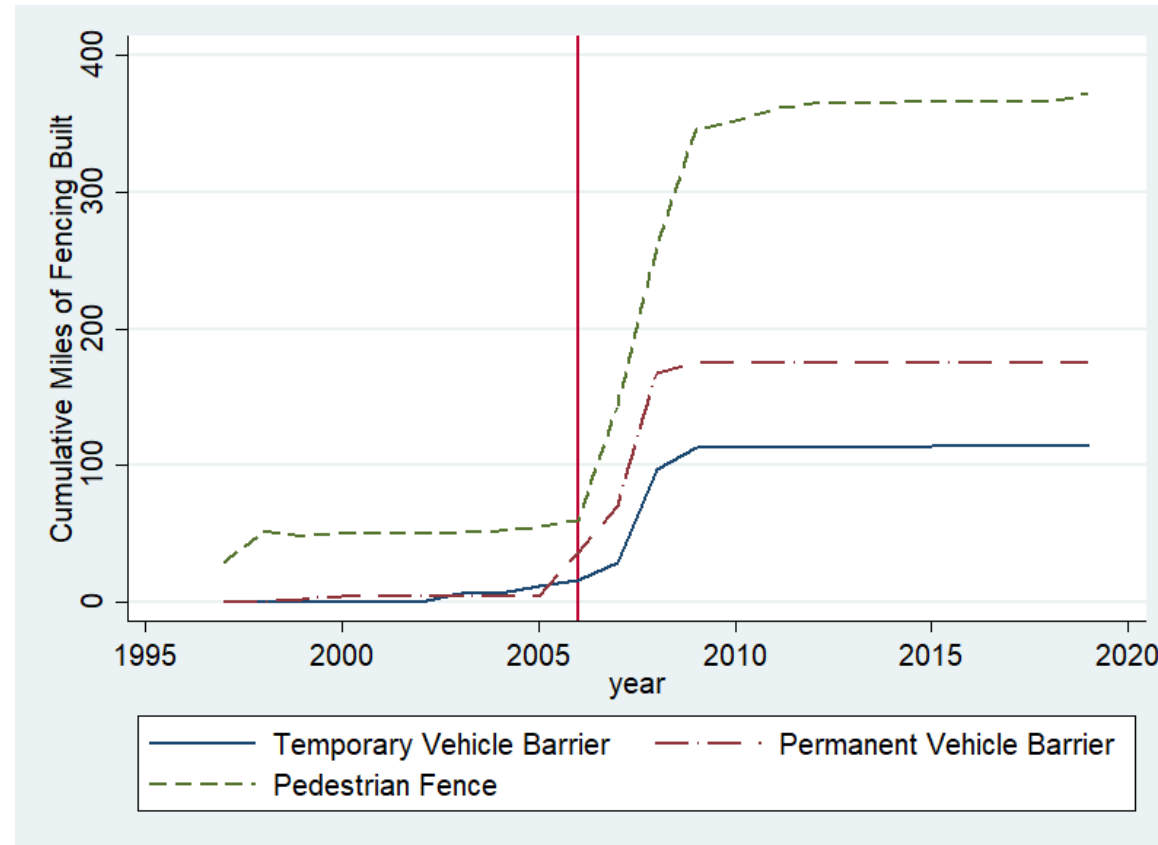
The Secure Fence Act:

- Authorizes the construction of hundreds of miles of additional fencing along our Southern border;
- Authorizes more vehicle barriers, checkpoints, and lighting to help prevent people from entering our country illegally;
- Authorizes the Department of Homeland Security to increase the use of advanced technology like cameras, satellites, and unmanned aerial vehicles to reinforce our infrastructure at the border.

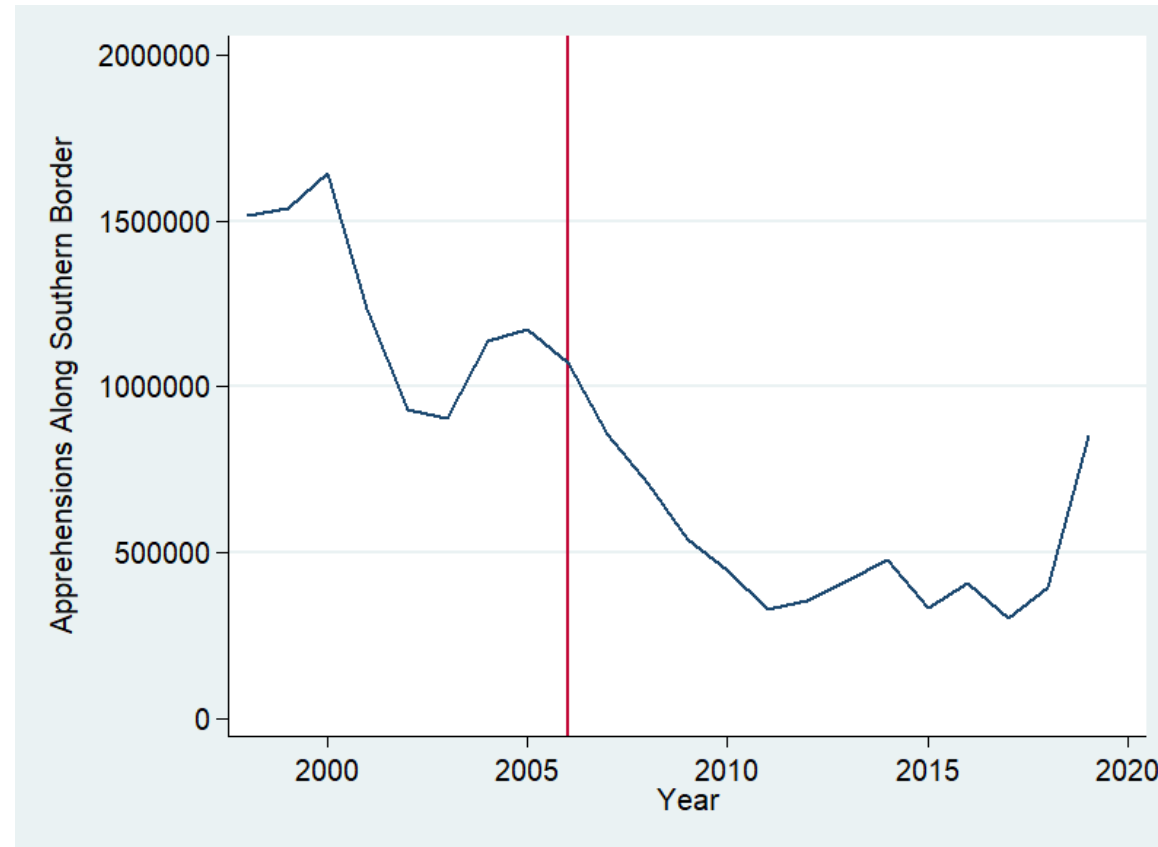
Construction

- By April 2009, DHS had erected about 613 miles (985 km) of new pedestrian fencing and vehicle barriers along the southwest border from California to Texas.

Fencing Along US-Mexican Border 1997-2019



What are the Impacts of the Secure Fence Act?



What are the Impacts of the Secure Fence Act?

- Abman and Foad (Forthcoming)
 - Synthetic control estimates across twelve border counties find no systematic evidence that border infrastructure reduced property or violent crime rates in the counties in which it was built.
- Feigenberg (2020)
 - Pedestrian fencing reduces crossings in fenced areas by up to 27 percent and in adjacent areas by up to 15 percent among potential migrants living in border municipalities. Also finds that fencing induces migrants to cross in alternative destinations.
 - Fence construction and timing was “plausibly exogenous,” i.e. determined by ease of ability to construct, land acquisition, and environmental evaluation, rather than strategically based on migration flows.
- Allen, Dobbin, and Morten (2019)
 - Wall had minimal impact on decision over whether to migrate, but changed choice of destination and route
 - Increased wages of low-skill workers by \$2.89 per year; Decreased wages of high-skill workers by \$3.60 per year

What are the impacts of the Secure Fence Act?

Allen, Dobbins, and Morten (2019)

- Deterrence Effect- Potential migrants choose not to migrate
- Diversion Effect- Migrants change destination within US
- Detour Effect- Migrants change route used to reach destination

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Additional Effects: Danger and Death?

Hypothesis: Building border fencing induces migrants to cross in more dangerous locations (desert, water crossings, private land, more remote/longer routes), thus increasing the probability of death.

Model and Data

Difference-in-differences Estimation

$$Y_{it} = \alpha + \beta_1 Fenced_i + \beta_2 SFA_t + \beta_3 Fenced_i * SFA_t + \Gamma X_{it} + \epsilon_{it}$$

$$Y_{it} = \ln(Apprehensions_{it}) \quad (1)$$

$$Y_{it} = \frac{Migrant\ Deaths_{it}}{Apprehensions_{it}} \quad (2)$$

Fenced=1 if Border Patrol sector had fencing built between 2006 and 2008

SFA=1 if Year>2006

Data Sources

Department of Homeland Security, US Border Patrol Sector Profiles (Various Years)

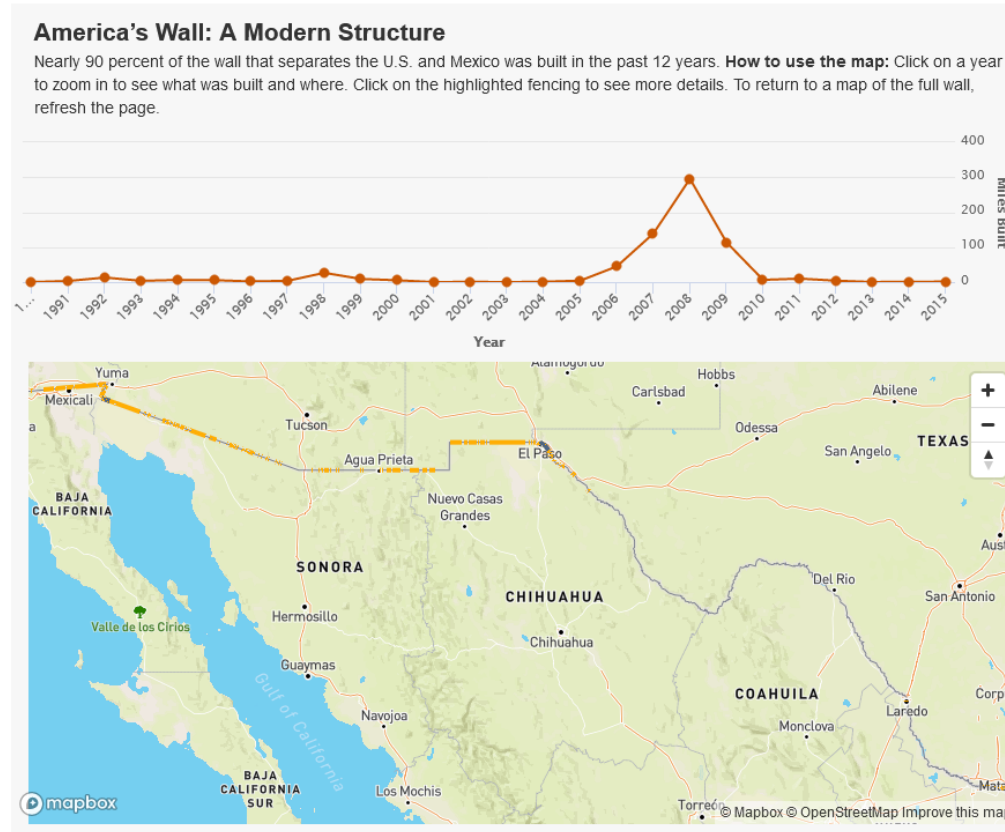
- Variables: Apprehensions, Staff Numbers, Migrant Deaths

Border Fence Data: America's Wall, Castaneda and Guerrero (2017): <https://www.kpbs.org/news/2017/nov/13/americas-wall/>

Border Fence Construction

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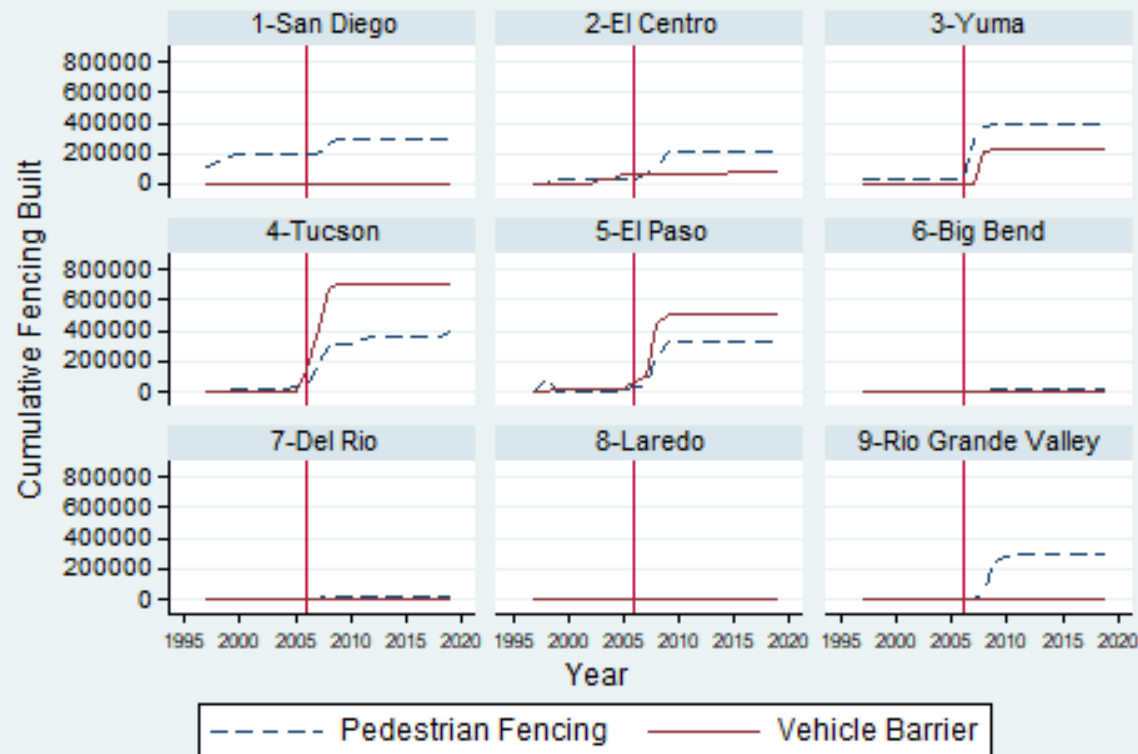
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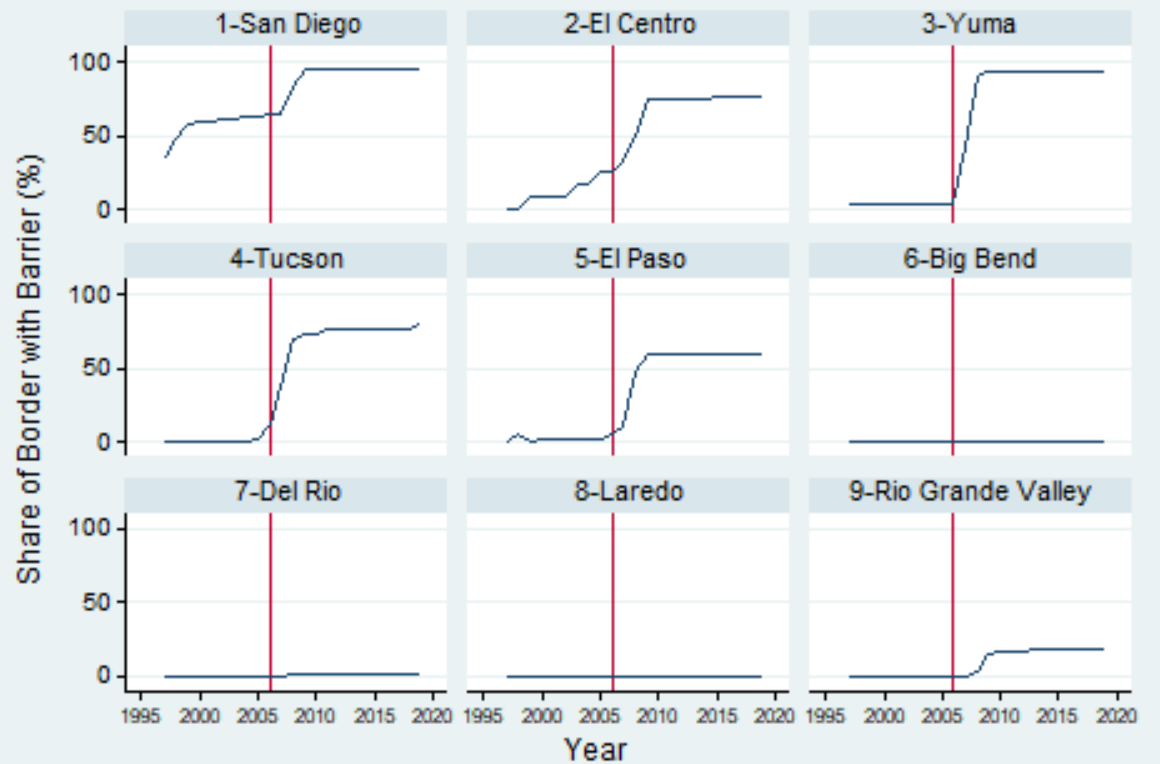
Border Patrol Sectors



Barrier Fencing by Sector

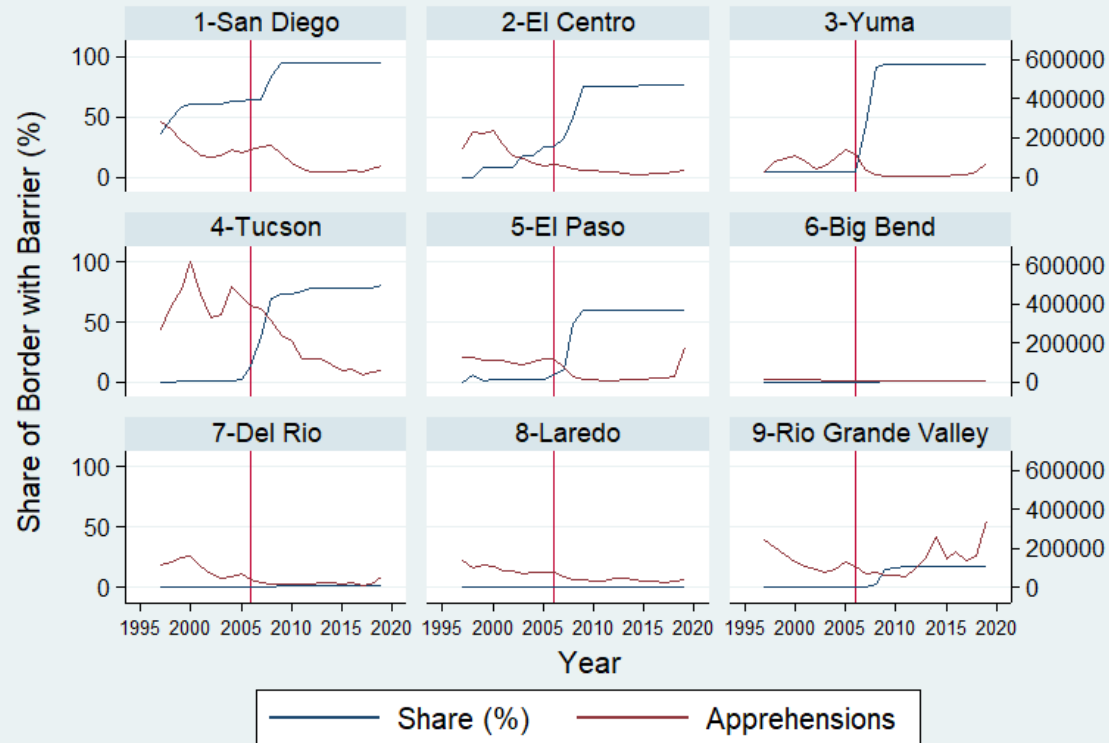


Graphs by sector

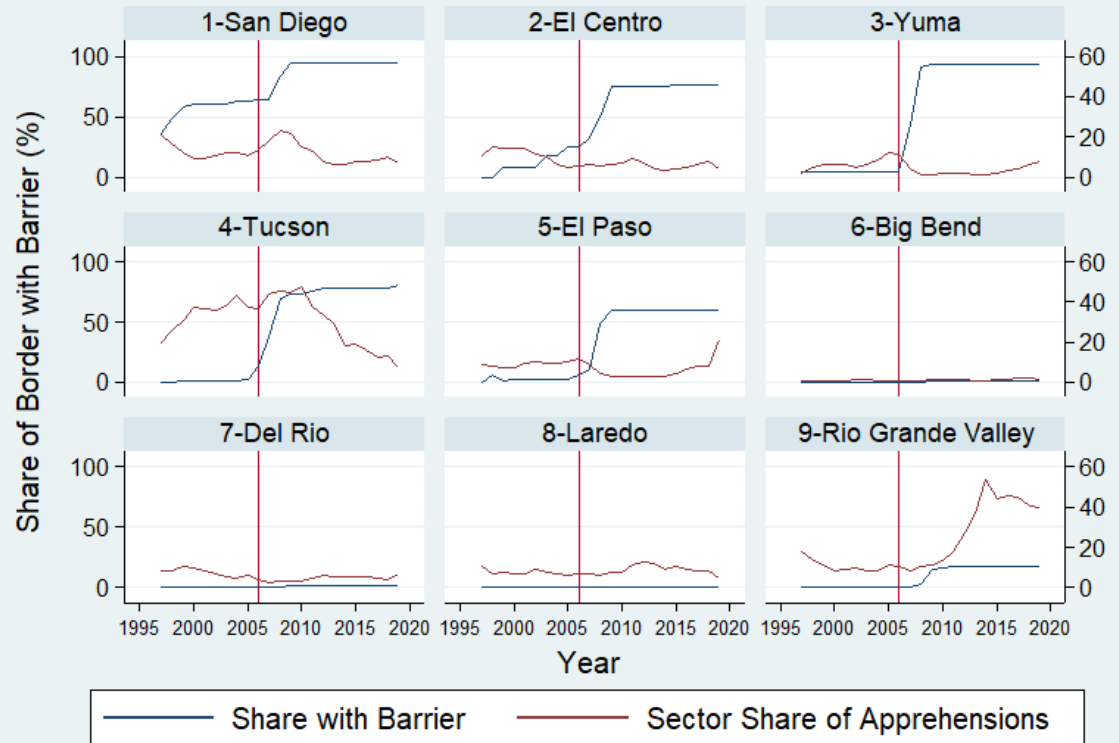


Graphs by sector

Barrier Share and Apprehensions



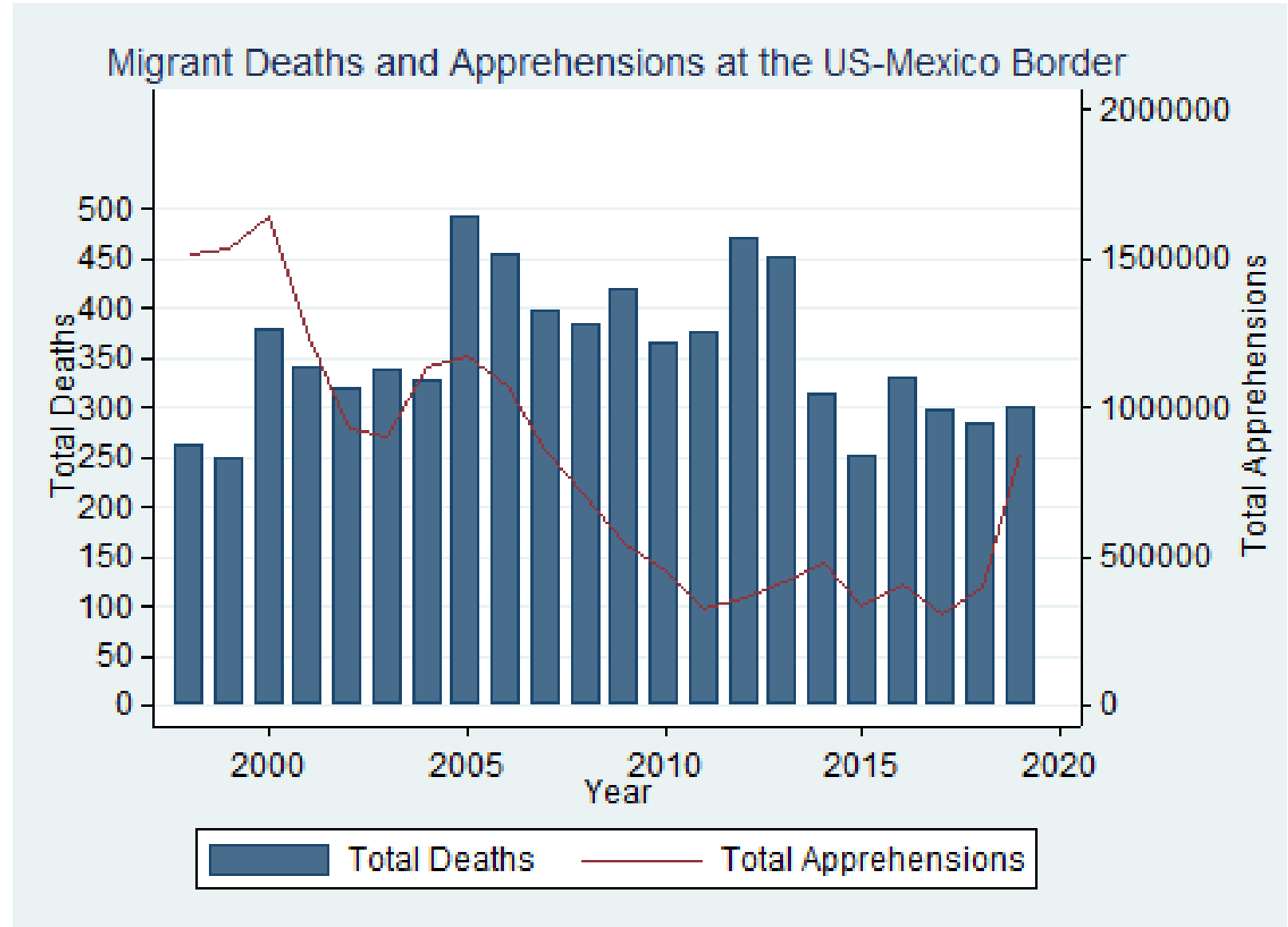
Graphs by sector



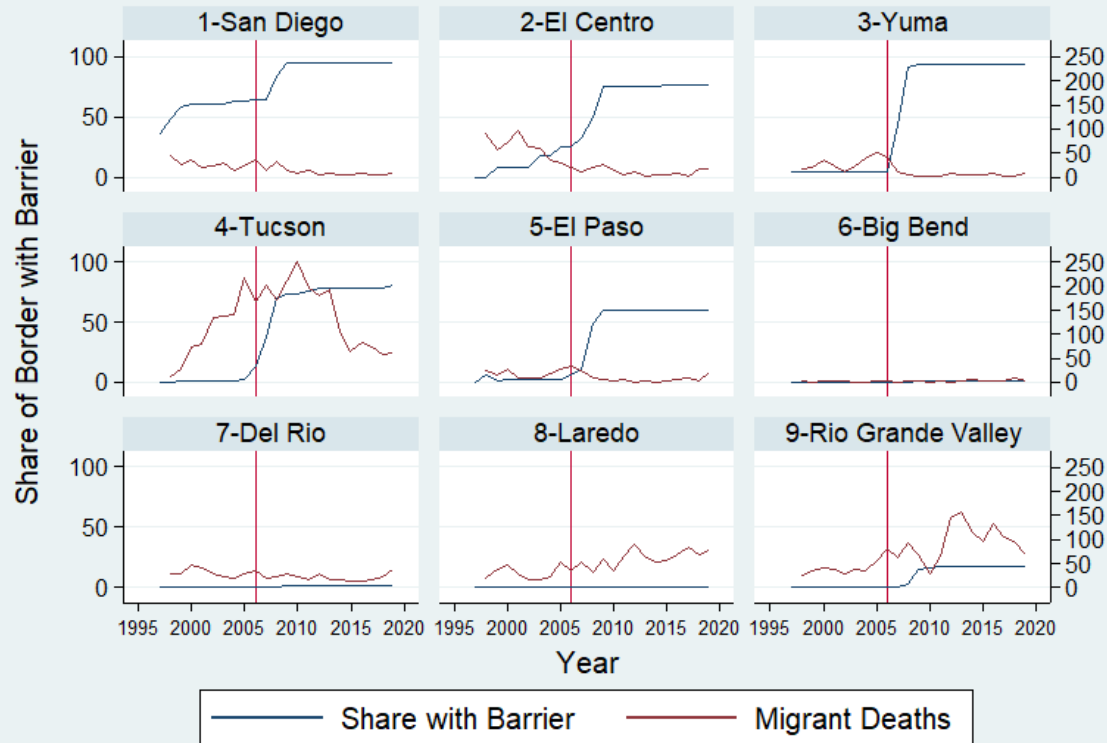
Graphs by sector

Border Apprehensions and Migrant Deaths

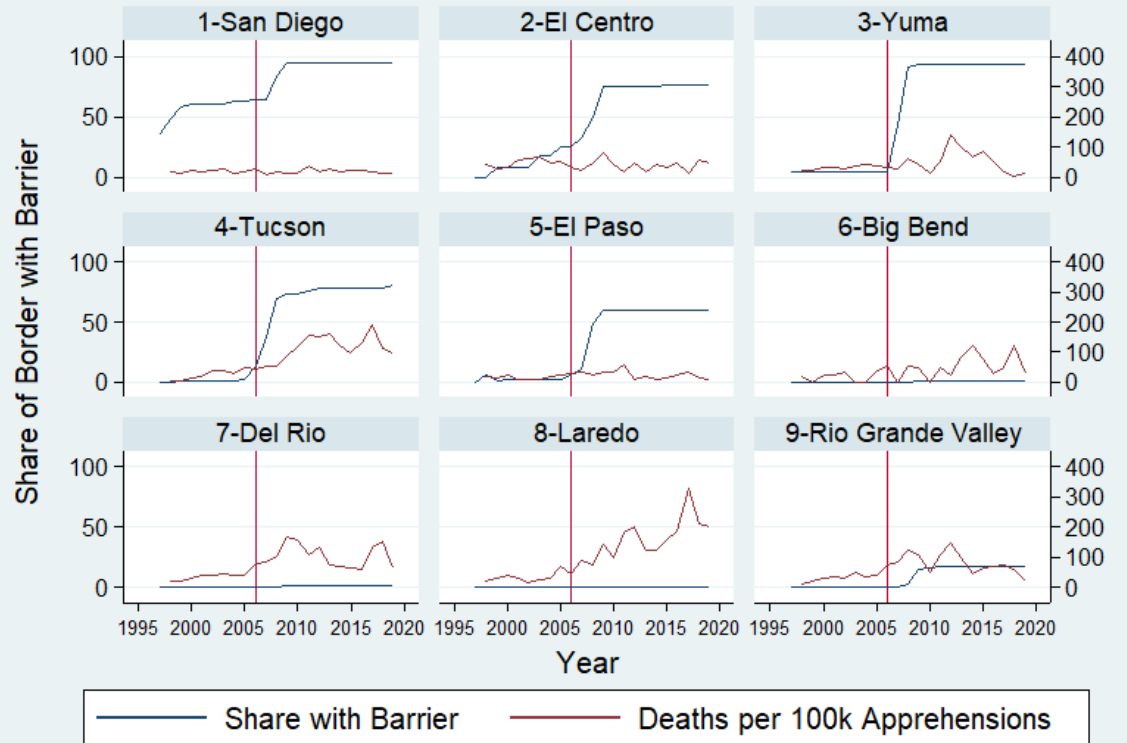
Migrant Deaths per Apprehension		
	Before 2006	After 2008
All Sectors	34.3	77.4
Fenced Sectors	32.1	61.0
Unfenced Sectors	38.8	110.3
Heart Disease	258.8	
Cancer	226.7	
Accidents	69.1	
St. Louis Murder Rate	69.4	



Barrier Share and Migrant Deaths



Graphs by sector



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Estimation Results

Table 1: Difference-in-differences Estimation Results

	Dep Var: Ln(Apprehensions)		Dep Var: Deaths per 100,000 Apprehensions	
	(1)	(2)	(3)	(4)
Fenced	1.1183*** (0.2262)	0.6403*** (0.1402)	-6.7566 (7.7189)	-19.6334** (6.4064)
Post-SFA	-0.9983*** (0.2699)	-2.2480*** (0.2913)	71.4246*** (16.0515)	80.5954* (31.2002)
Fenced*Post-SFA	-0.4080 (0.3303)	-0.8073*** (0.1963)	-42.5329* (17.8168)	-54.8831*** (14.9421)
Months Above 80° F		0.1398*** (0.0313)		8.3219*** (1.6361)
Staff _{t-1}		0.0010*** (0.0001)		0.0287*** (0.0054)
Constant	10.6173*** (0.1974)	10.2642*** (0.2859)	38.8467*** (7.1651)	-10.6392 (9.4815)
Year Fixed Effects				
N	153	153	153	153
F	40.3965	30.8240	13.2531	7.4500
p	0.0000	0.0000	0.0000	0.0000

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Conclusion

Evidence suggests that border fencing induces migrants to cross in more dangerous parts of the border, and increasing the death rate among migrants.

Given current levels of crossings between ports-of-entry, higher death rates do not seem to have a deterring effect on migrants.