Extra Income, Health and Mortality: Evidence from Tribal Casinos

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Motivation

- American Indians have some of the most adverse health outcomes in the U.S. (Barnes et al, 2010; Jones, 2006).
- During the early stages of the COVID-19 pandemic, American Indians had some of the highest death rates (Akee and Reber, 2021).
- Poverty is an important social determinant of poor health and mortality rates (Sequist 2017; Sarche and Spicer, 2008; IHS, 2019; Gracey and Kiing, 2009).
  - Including lack of access to high quality health care
  - Lack of access to preventative care
  - Relatively high rates of homicide and violence

Motivation

- Data Availability makes research difficult for these populations.
  - Often mis-categorized on death certificates (Lucchesi and Echo-Hawk, 2018; Small-Rodriguez and Akee, 2021)

- Gorzig et al (2022) find that American Indians die approximately 12-13 years earlier than their white counterparts (administrative data).

- Other Indigenous Peoples have similarly poor health and mortality outcomes
  - Feir and Akee (2019) find that mortality rates for First Nations girls and women are 4 times that of non-Native Canadians from similar age groups.

Our Paper

- Previous work has shown an association between poverty and high mortality (and morbidity) rates.

- Our analysis attempts to establish a causal effect of
  - Economic development due to tribal gaming operations
  - Unconditional cash transfer payments from casino revenues to tribal citizens

- We study the effects of these policies on mortality rates across the age and gender distribution.

- We find that the increase in household income (due to the cash transfers) reduces overall mortality.

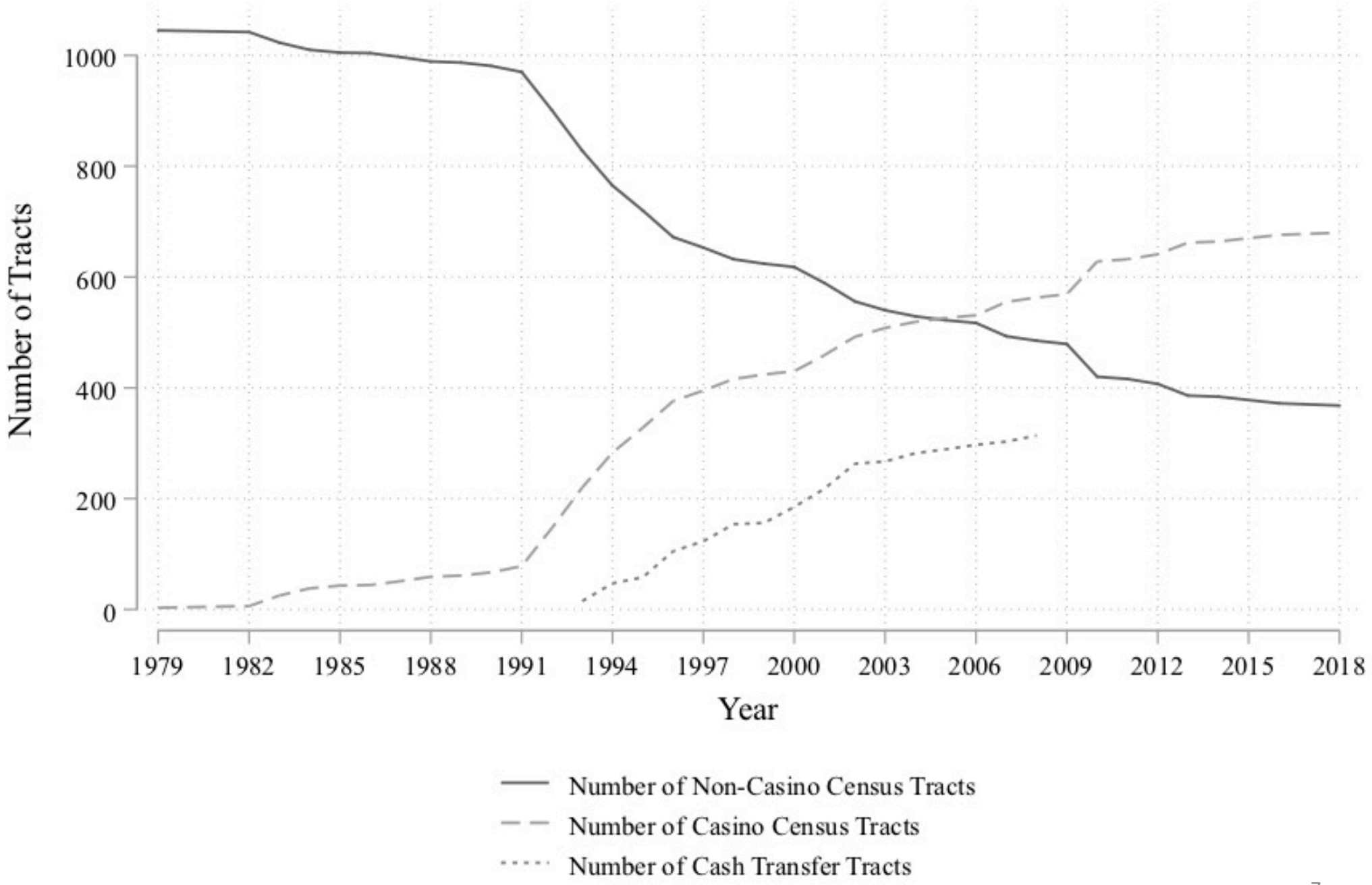
Institutional Background

- The Indian Gaming Regulatory Act (IGRA) was passed by Congress in 1988 with the explicit goal to promote “tribal economic development, self-sufficiency, and strong tribal governments”
- IGRA’s provisions stipulated that proceeds from gaming operations should go back to tribal governments
- These proceeds could be used to:
    1) Fund tribal government operations
    2) Provide for the general welfare of the tribal population (includes per capita payments)
    3) Promote tribal economic development
    4) Donate to charitable organizations
    5) Help fund operations of local government agencies

Institutional Background

- Over the next two decades, many tribes in the lower 48 states opened some sort of gaming operation – from slot machines and bingo halls, to large Las Vegas-style operations with attached hotels and restaurants
- Tribe's decision to open a casino on tribal lands in part determined by geography: those located further away from large urban centers are less likely to open casinos.
- Others have decided not to pursue casino revenues for various reasons.
- When the tribe starts gaming operations depends on the timing of negotiations with state and local governments. Some states and administrations have been more responsive than others. Thus, conditional on deciding to start such operations, the exact timing of approval is unknown at the point of application.
- Some tribes have distributed dividends from casino operations to tribal members, including tribal members who live off reservation lands.

Tribal Casinos

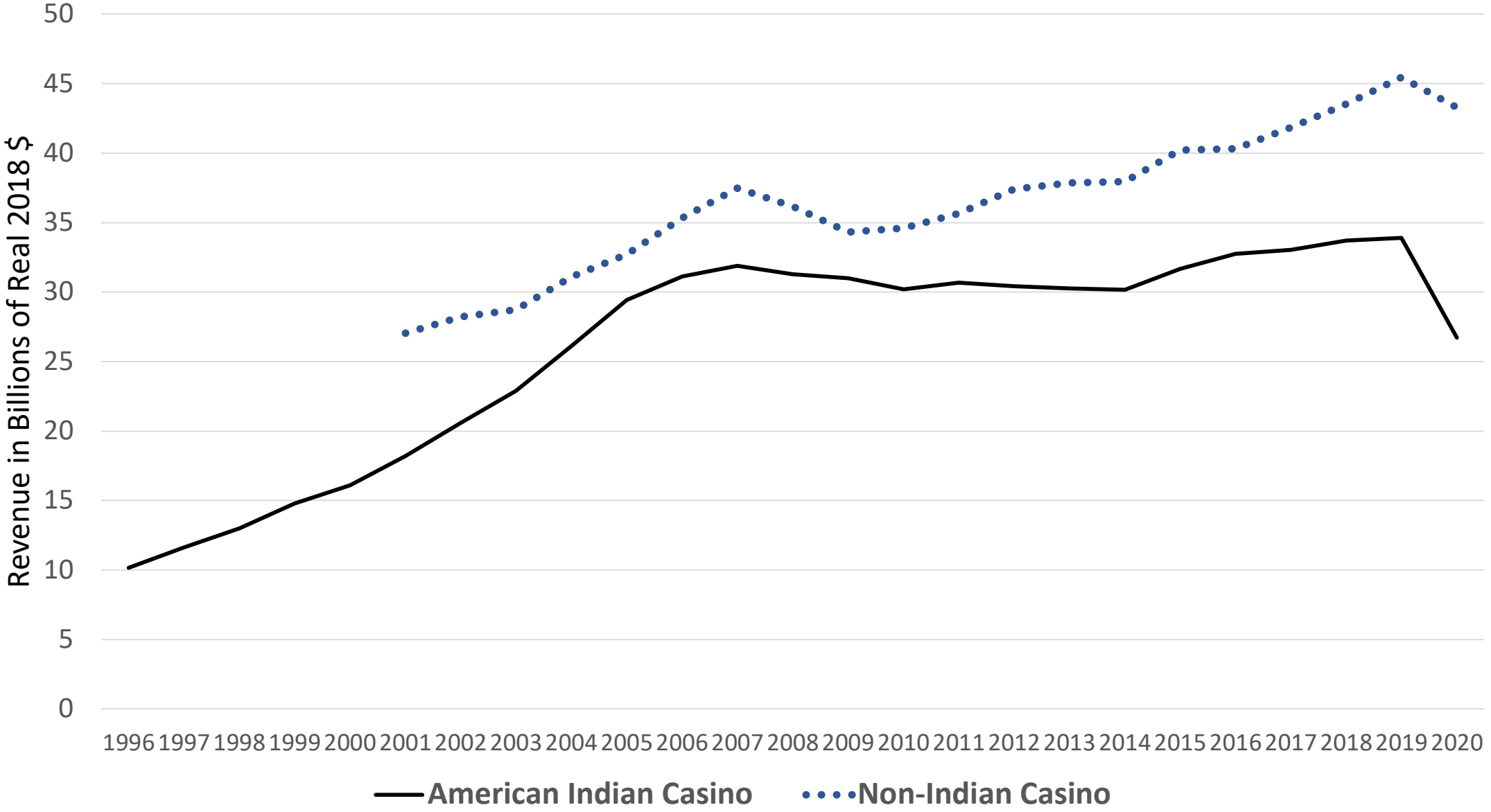


Source: Public reports from Casino City Data and U.S. Census Tract Data; Simeonova, Akee and Jones (2020)

Implications for tribes

- Gaming operations revenues and associated programs dwarf any other public intervention on tribal lands
- 27.8 billion in tribal gaming revenues in FY 2020 (pandemic related 20% decrease); the average gross margin of profitability for casinos and gaming is about 60%
- 2021 BIA budget is 1.9 billion; IHS budget for 2021 was 6.3 billion
- Comparison to other programs, non AI-specific: EITC is 63bn in 2019
- Per capita payments are hush-hush--range in size from a few hundred $ to tens of thousands
- Paid annually or semi-annually.
- Subject to federal income taxes but not state Income taxes

Aggregate Casino Revenues



Source: National Indian Gaming Commission

Data Set Creation and Sources

- 100% of Native Americans in the Medicare Master Beneficiary file and a 20% random sample of the rest of the population in 1998
- 100% of Native American in the Medicaid State files and a random 20% sample of the rest of the population
- Merged IRS-Census data for the years 1989-onwards; all adults (18-45) living on reservation census tracts in 1989
- Dates on casino openings and per capita transfer agreements (authors collected)
- Here we present data using the first data source

Empirical Specification

We create a panel data set for the probability of death in each year at the individual-level:

$$Y_{ijt} = \alpha + \beta * NativeAmerican_i \quad + \gamma \times Casino_{jt} + \delta * Casino_{jt} \times Native\ American + \theta_t + \mu_j + \sigma_i + \varepsilon_{ijt}$$

Y_{ijt} is equal to one if person i near or on reservation j died in year t.

$Casino_{jt}$ measures whether a casino is open on reservation j in year t.

μ_j is zip-code fixed effect; σ_i is a birth cohort-specific fixed effect

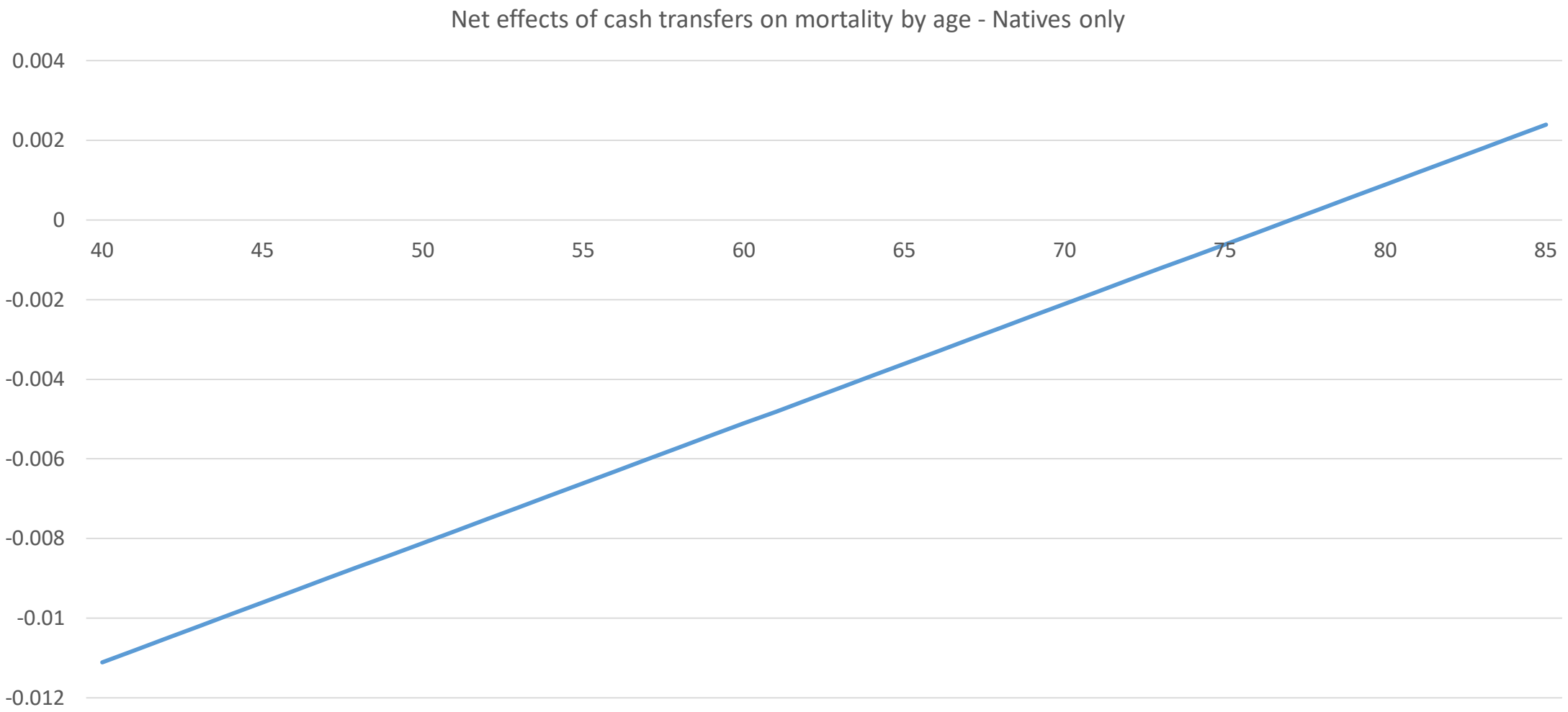
θ_t is year-specific fixed effect

Mortality and casino operations , linear probability models. Outcome variable is the probability of death in any year, 1999-2018.

Variable	All	Males	Females	<65
Native American	**0.00802**	**0.00911**	**0.00708**	**0.00398**
	(0.00062)	(0.00078)	(0.00074)	(0.00072)
Casino	-0.00022	-0.00025	-0.00020	0.00016
	(0.00042)	(0.00049)	(0.00045)	(0.00033)
Casino x Native American	0.00078	-0.00088	**0.00217**	0.00043
	(0.00086)	(0.00108)	(0.00097)	(0.00095)
Male	0.01579			0.00562
	(0.00009)			(0.00012)
Mean dep var	0.058	0.061	0.056	0.025
Adj R2	0.0381	0.0354	0.0405	0.0042
Obs	79,260,772	34,452,626	44,808,146	8,303,560
Zip Fes	x	x	x	x
Cohort Fes	x	x	x	x
Year dummies	x	x	x	x

Notes: SEs clustered at the zip code level; Sample restricted to individuals who were enrolled in Medicare in 1999 and resided on a Native American reservation or a neighboring zip code

Age profile of transfer effects



Conclusions

- This is the first study to examine the effects of tribal casino operations on health and mortality using panel data
- We find no significant effects of casino operations without accompanying cash transfers
- The associated cash transfers have negative effects on mortality
- We also find a strong age gradient for the cash transfers effects
- The gradient is reversed in the Native and non-Native population – younger Native Americans benefit from the transfers more