# How do Economic Transfers affect Health?: Evidence from the Alaska Permanent Fund Dividend

Marion Aouad* Nathan Blascak† Michael Fitzpatrick‡§

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**Abstract**

We study the effects of cash transfers on health behaviors by examining how receipt of the Alaska Permanent Fund Dividend (APFD) – a large, near universal, and annually recurring cash transfer to Alaska residents – affects the timing and quantity of health care consumption. We firstly determine if receipt of the APFD heightens risky behaviors by examining the timing and quantity of drug- and alcohol-related hospital admissions. We then study if receipt of the APFD relaxes pre-existing liquidity constraints by examining if the receipt of health care whose timing may be flexible is sensitive to the disbursement of the APFD, specifically hip and knee replacements, cataract surgery and tonsillectomies. We do not find that the APFD affects the consumption of hip and knee surgeries, cataract surgery, or tonsillectomy procedures. However, there is evidence of "dangerous liquidity" for certain health behaviors. Alcohol-related emergency department admissions sharply increase by approximately 18.6 percent within one week of the APFD disbursement; we do not observe sharp increases in amphetamine, opioid, or cocaine consumption, but observe increases in subsequent weeks for amphetamine (8.6 percent) and opioid (15.3 percent) consumption. Further, we do not find that individuals increase their alcohol or drug consumption around the date the APFD is announced, only around the date of APFD disbursement, consistent with the importance of liquidity for certain risky behaviors.

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***NBER NOTE**: Submitting for 10 minute presentation slot. Either Marion Aouad or Nathan Blascak will present.*

*University of California, Irvine, Department of Economics. Email: marion.aouad@uci.edu

†Federal Reserve Bank of Philadelphia, Consumer Finance Institute. Email: nathan.blascak@phil.frb.org

‡University of California, Irvine, Department of Economics. Email: mefitzpa@uci.edu

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# 1 Introduction

How sensitive are health behaviors to the timing of repeat large, lump sum cash transfers? This is an important question given that risky health behaviors may increase around the time of smaller, repeated cash transfers, such as Supplemental Security Income/SSI (Dobkin and Puller (2007), Finkelstein and Notowidigdo (2025)) or one-time transfers (Gross and Tobacman (2014)). It is also relevant given the rise in health care cost-sharing reforms that increasingly expose consumers to a larger share of health care costs, which may inhibit the use of needed health care due to liquidity constraints (Gross et al. (2022)). Thus, this question is important for understanding the types of health behaviors engendered by large cash transfers and their subsequent effects on health outcomes. For example, do "full wallets" give rise to increases in risky behaviors and/or does the relaxation of liquidity constraints, owing to cash transfers, enable individuals to receive necessary care they may not have otherwise received?

We study the annual influx of cash generated by receipt of the Alaska Permanent Fund Dividend (**APFD**) to understand the effect of repeat, large, lump sum cash transfers on health care utilization. For context, the APFD was received by most Alaska residents (approximately 86%) over the last ten years, and the average per-person disbursement was $1500 per year over this period. We use event-studies to estimate changes in health care utilization in inpatient, emergency department (ED) and outpatient settings for Alaska residents between 2016 and 2023, using data from the Alaska Health Analytics and Vital Records. We first focus on drug and alcohol-related visits. We then examine if receipt of the APFD also results in increased utilization of more necessary health care that has flexibility in its scheduling, specifically hip and knee replacements, cataracts surgery, and tonsillectomies/adenoidectomy, with cataract surgery being the most commonly performed surgery in Ambulatory Surgery Centers (ASC) in 2019, and tonsillectomy/adenoidectomy being the most common ASC surgery for children, ages 0–17 years, in 2019 (McDermott and Liang (2023)). Specifically, we test if receipt of the APFD relaxes liquidity constraints that inhibit consumption of these types of health care.

As our data allow us to observe the *admission date* for health care utilization, we examine

utilization around both 1) the *announcement* of the APFD payment date, which typically occurs two to three weeks in advance of the payout and 2) the *actual* APFD payment dates.[1] By separately analyzing the response around these two distinct dates, we are able to test the importance of liquidity for risky behaviors (i.e., the presence of "dangerous liquidity)," in contrast to how the *expectation* of future money affects health behavior.

We find an 18.6% increase in alcohol-related emergency department visits within one week of the APFD disbursement (and 14% in the subsequent week), relative to the week prior to the disbursement, providing evidence that cash transfers can yield "full wallets" for those with alcohol use disorders. Thus, while the Permanent Income Hypothesis suggests that individuals should not respond to transitory, anticipated income shocks, we do not find this to be the case here. Additionally, we do not find any effects on admissions around the APFD announcement date. While we do not observe an immediate response among opioid and amphetamine admissions, we estimate a 15.3% and 8.6% respective increase in admissions two weeks after the dividend is disbursed. We also find a decrease in cocaine-related admissions by 13% within one week of the disbursement. However, we do not believe this effect is economically large given that there are very few ED cocaine admissions in any given week (fewer than 65) across our sample period. Additionally, we do not find that receipt of the APFD affects utilization of cataract surgeries, hip/knee replacements, nor tonsillectomies/adenoidectomies – procedures we consider necessary but may be elective with respect to the timing of the procedure. As such, we fail to find evidence of liquidity constraints in healthcare utilization for this set of medical procedures.

As alcohol ED admissions are the largest category of admissions we examine – in any given week, the weekly alcohol ED volume is 6 to 7 times that of amphetamine and opioid admissions, and more than 40 times large as the weekly volume for cocaine admission – we examine the characteristics of those admitted to the ED for alcohol around the APFD disbursement. We find that there is a composition shift in admission driven by increases in admissions for individuals

[1] We examine the likely date of direct deposit for the APFD.

belonging to traditionally, marginalized groups. This is consistent with Bruckner et al. (2011) who show excess mortality after casino-related cash transfers and Evans and Moore (2011) who show excess deaths from substance abuse after the APFD disbursement. This negative health result may be driven, in part, by local disamenties, such as the higher density of liquor stores in non-White neighborhoods (Romley et al., 2007). Additionally, among those with an alcohol-ED admission the week of the APFD disbursement, we find that approximately 50 percent of individuals admitted had an ED admission for alcohol within the prior 90 days. This suggests that for a non-negligible share of the population admitted for alcohol, the APFD may affect the intensive margin of alcohol admissions, by contributing to the *number* of alcohol admissions that occur, but it may not affect the extensive margin — that is whether an alcohol ED admission event *ever* occurs.

To understand the importance of liquidity for the increase in alcohol-ED admissions, versus the effect of social gathering that might occur as a result of receipt of a large cash payment, we also examine alcohol-ED admissions around select holidays, specifically July 4, December 25, and December 31. This is because holidays may represent times of heightened social activity, resulting in an increased likelhiood in the occurrence of risky behaviors (Blumenberg, Adam (2024)). However, holidays do not necessarily coincide with large increases in cash on-hand, as the APFD disbursement does. We do not find increased alcohol-ED admissions around these holidays, implying that liquidity appears to be a relevant factor for the observed increase in alcohol-ED admissions.

This paper contributes to three literatures. Firstly, we contribute to the literature studying the impacts of cash transfers on health by examining the impacts of a large, repeated and *near universal* cash transfer on health care utilization. Thus, our findings may be more likely to generalize to a much, broader population than those typically studied. In contrast, studies of cash transfers have typically focused on individuals participating in means-tested programs, such as SSI or Supplemental Nutrition Assistance Program (SNAP) benefits, children (Akee et al. (2013), Duncan et al. (2025)), or focus on one-time cash transfers. For example, our

closest antecedent Dobkin and Puller (2007) show that drug-related hospitalizations increase sharply around the first day of each month when many welfare programs disburse funds to recipients. However, these increases are largely driven by SSI recipients. Finkelstein and Notowidigdo (2025) similarly show that drug- and alcohol-related emergency department visits spike following SSI receipt but find no such effect for in-kind transfers, namely SNAP benefits. Gross and Tobacman (2014) study how receipt of the 2008 Economic Stimulus payment affects health care utilization; such payments increase the probability of any emergency department visit in the short- to medium-term by approximately one percent, or an additional 50,000 ED admissions in California. Like our findings, they show that this increase is driven by alcohol-related visits (and drug-related admissions). However, the stimulus payments examined are both smaller in size compared to the APFD, by a factor of two to three, and non-recurring; the APFD, in contrast, is much larger and dispersed annually. As such, we can learn how larger, recurring payments affect health behaviors. This is particularly important if individuals' responses to cash payments are non-linear in the size of the cash transfer (Andreolli and Surico (2026)). Lastly, Evans and Moore (2011) study a broad array of income shocks, including transfers, paychecks, and annual dividends, and their effects on all-cause mortality. They document an approximately nine percent increase in mortality one week after the APFD disbursement, and find that eight percent of Alaska deaths, during their sample period, are attributable to substance abuse. We expand on this by examining a broader set of health outcomes beyond mortality, and highlight the health risk of alcohol overconsumption around the time of APFD receipt.

Secondly, we contribute to literature studying the overall economic effects of the APFD. For example, a number of studies, including Watson et al. (2020) and Jones and Marinescu (2022), focus on the impacts of the APFD on crime and labor supply, respectively. Watson et al. (2020) finds an increase in police incidents related to substance-abuse after APFD disbursement, while Jones and Marinescu (2022) find no effects of the APFD on overall employment, but find increases in part-time employment. Additionally, several studies, such as Hsieh (2003) and

Kueng (2018), focus on the impact of the APFD on consumer spending, and estimate marginal propensities to consume (MPC) out of the APFD. Kueng (2018) finds increased consumption of non-durables within one quarter of APFD disbursement, but no anticipation effects occurring before the disbursement.[2] Related to health care, Guettabi and Witman (2023) show that receipt of the dividend has no effect on prescription drug consumption for privately insured Alaskans. Thus, we contribute to this growing literature by focusing on the effect of this cash transfer on risky health behaviors and by also examining if receipt of the APFD relaxes liquidity constraints that may inhibit healthcare consumption. As such, this is the first known study, to the authors, to examine the impact of the APFD on risky health behaviors and the utilization of health care, specifically health care received in an inpatient or outpatient setting.

Lastly, we contribute to growing discussions on the effects of Basic Income (BI) programs. BI programs have increased in prevalence in the US, with more than 160 pilots having taken place in more recent years.(Stanford Basic Income Lab (2026)). However, extrapolations from the findings of these programs may be limited, in part, because of smaller enrollments (often fewer than 1000 participants), income-eligibility requirements for participants, and also because these programs often operate for a few years or fewer. Thus, we contribute by examining a large-scale, long-running program that affects most residents of Alaska, and discuss the impacts of this large, near-universal, cash transfer on liquidity-sensitive health outcomes. By doing so, we show that certain risky behaviors are sensitive to the timing of cash transfers, namely the overconsumption of alcohol.

The rest of our paper will proceed as follows: Section 2 discusses the Alaska Permanent Fund background, Section 3 presents our data while Section 4 discusses the methodology. We present our results in Section 5, discussion in Section 6, conclude in Section 7.

[2] A review of the overall effects of the dividend can be found Gibson et al. (2020).

# 2 Alaska Permanent Fund Background

The Alaska Permanent Fund Corporation is a state-owned enterprise that manages a number of funds including its namesake, the Alaska Permanent Fund (APF). The APF generates revenues primarily through oil and mining, and total fund value as of September 2025 exceeds $84 billion dollars (Alaska Permanent Fund Corporation, 2025). Voters established the APF via an amendment to the Alaska State Constitution in 1976, and in 1982, the state began paying residents the Alaska Permanent Fund Dividend (APFD) annually. The dividend is an annual, lump sum payment given to all eligible residents that apply and the (nominal) average amount between 2016 and 2023 was approximately $1,500 (State of Alaska Department of Revenue, n.d.).

Eligible residents must apply in the first quarter of the year to receive the dividend. Eligibility requires individuals to meet a number of conditions. Firstly, one must be a resident of Alaska for the *entire* preceding calendar year. For example, to be eligible for the 2025 dividend, one must have been a legal resident of Alaska from *at least* January 1, 2024 - December 31, 2024. Of note, children born on or before December 31 are eligible for the dividend in the following calendar year. Secondly, one must both intend to remain an Alaska resident indefinitely and not claim residency in any other jurisdiction in the previous calendar year. Those who were sentenced due to or were incarcerated for a felony in the previous calendar year are ineligible.[3] Lastly, those absent from the state for more than 180 days must be on an "allowable absence," and residents must physically reside in Alaska for at "at least 72 consecutive hours at sometime during" either of the two preceding calendar years (State of Alaska, Department of Revenue, 2024). While we cannot observe individuals' eligibility status in our data, the dividend take-up rate is high; for example, we estimate that nearly 85% of the entire population were paid a dividend in 2023.[4]

The dividend amount for each year is calculated using the number of eligible applicants

[3] Those incarcerated in for a misdemeanor in the prior calendar year may also be ineligible if they have been previously convicted of a felony or multiple misdemeanors.

[4] The remaining 15% includes both ineligible persons and non-applicants.

in that year and the total amount of the Permanent Fund that is available for distribution, as determined by the AK state legislature.[5] The AK state legislature takes multiple factors into account when determining the amount available, including the financial performance of the total Fund itself. Available funds are also reduced by prior-year dividend obligations, operation expenses, and other state agency program appropriations. For example, the Alaskan legislature has used a portion of the Permanent Fund earnings over the past ten years to cover the cost of government services such as the Alaska Department of Health and Social Services and the Department of Corrections.

Table 1 provides information on the APFD disbursements for our sample. Each year, the dividend amount and payout date is announced anywhere from 2 to 4 weeks prior to the payout date. Payout dates typically occur in early October or late September save 2020. The overwhelming majority of applicants receive the dividend via direct deposit; this allows us to precisely estimate the effects of the dividend timing on health behaviors since nearly all recipients receive their disbursement on the same day. Lastly, the average dividend amount is about $1,500 but can vary anywhere from less than $1,000 to nearly $3,300 per person per year.

# 3 Data

We use admission-level data provided by the Alaska Health Analytics and Vital Records. Our sample includes the universe of inpatient, emergency department (ED), and other outpatient admissions to Alaska health care facilities occurring between 2016-2023. The data include medical information such as primary and secondary diagnoses and procedures; demographic information such as patient age, gender, race and ethnicity, and zip code of residence; and insurance information such as primary insurer and hospital charges. Lastly, we observe a time-invariant, person-specific identifier that allows us to identify if a person has had multiple visits

[5] Prior to 2018, the dividend calculation was made using a statutory formula. Dividend amounts from 2018 to 2024 have not used this formula.

to a health care facility in our data.

We categorize drug and alcohol admissions based on ICD-10 diagnoses codes and identify cataract, hip and knee, and tonsillectomy/adenoidectomy surgical procedures using or Current Procedural Terminology (CPT) codes. For drug and alcohol-related admissions, we follow Dobkin and Puller (2007), and classify an admission type as being related to drug or alcohol if either the principal diagnosis code or any of the 29 secondary diagnoses codes are recorded as the relevant ICD-10 code. We use the following ICD-10 codes to categorize admissions belonging to the admission category alcohol (F10 and T510X), amphetamines (F15, T43.62, and T43.65), cocaine (F14 and T405X), and opioids(F11, T40.0x, T40.1X, T40.2X, T40.3X, T40.41, T40.42 and T40.49).

Dates of the APFD direct deposit and check mailings are collected from the *Permanent Fund Dividend Division Annual Report*, which is provided by the State of Alaska Department of Revenue and is published each fiscal year. We determine the initial announcement date of the APFD, which provides the public with the [future] date of APFD payout and the amount to be paid out, by determining either 1) the date listed on The State of Alaska Department of Revenue, Permanent Fund Dividend Announcement, which states, *For Immediate Release* or 2) the date listed on an online Alaska news articles stating that the dividend amount (or payout date) was announced *today* (e.g.,"Today, the governor announced how much Alaska citizens will be getting" or "Today, the Department of Revenue announced the amount of the Alaska Permanent Fund Dividend").[6] Lastly, we define the date of the APFD payout, our benchmark for the disbursement date, as the date direct deposits are scheduled to be paid out. This is because, during our sample period, 88 percent of recipients, on average, receive their disbursement through this method. The remainder receive their disbursement via check, which is typically mailed out within two weeks of the direct deposit date.

[6]These two dates are confirmed to coincide.

### 3.1 Summary Statistics

We present summary statistics of patient data in our sample in Table 2 and benchmark them to both the Alaska and US population as a whole using American Community Survey (ACS) 5-year estimates from 2018-2022, the approximate midpoint of our sample period. Panel A shows the demographic breakdown. Our sample of patients is slightly older than both the Alaska and US average. Women constitute a disproportionate share of our sample (55-60%), especially relative to the Alaska population, which has more males (52.6%). The American Indian/Alaska Native (AIAN) population is overrepresented in the hospitalization data; while just under 14% of the Alaska population identifies as AIAN, about one third of all hospitalizations are from the AIAN population. Rural patients also constitute a disproportionate share of admissions; about half of our sample is rural patients, whereas only 15.2% of the Alaska population lives in a rural area. For additional context, we include median family size and median household income for Alaskans and all Americans; both populations have a median family size of 3 persons, and Alaskans have higher household incomes ($100,309 vs $88,612).

In Panel B, we calculate the primary payer share of admissions – government, commercial, self-pay, and other, where these categories are mutually exclusive. In Panel C, we calculate the share of people covered by government and commercial insurance and those without any coverage. These categories are not mutually exclusive as some people are dually-covered through marriage, Medicare/Medicaid etc. Public insurers are the primary payer for between half and over two thirds of admissions. However, only about 35% of Alaskans and Americans more broadly are covered by a public insurer.

## 4 Methodology

To investigate the effects of the dividend on health behaviors, we estimate the following event study:

$$y_t = \sum_{k=-8;k\neq-1}^{8} \beta_k Div_{kt} + \varepsilon_t \tag{1}$$

where $y_t$ is the natural log of admission counts in day $t$ and $Div_{kt}$ is an indicator equal to 1 if day $t$ is the $k^{th}$ week before or after the direct deposit date. Week 0 includes the direct deposit date and the six subsequent days. Our parameter of interest is $\beta_k$, where each coefficient $\beta_k$ represents the average *weekly* change in total *daily* log admissions.[7]

We rely on exogeneity in the annual timing of the APFD disbursement to identify the effect of dividend receipt on health behaviors (Guettabi and Witman (2023)). That is, we exploit the exogenous variation in the exact day (week) the dividend is released each year, where the dividend disbursement varies in calendar date as well as day of the week. The spirit of our strategy is to make comparisons between the weeks just after the APFD disbursement is made, in contrast to the week just prior to the dividend disbursement, under the assumption that health behaviors in the week just before the disbursement are a good counterfactual for health behaviors just after the disbursement. This presumes that within a local window of the disbursement, liquidity-sensitive health behaviors tend to trend smoothly in the absence of the cash disbursement. While this assumption cannot be tested directly, we provide evidence in support of our assumption by 1) examining and confirming smooth trends in utilization for health events that are not likely to be liquidity-sensitive or events whose timing is difficult to manipulate, and thus unlikely to be affected by the APFD (see discussion in Section 5.3) and 2) showing that in the two years the APFD was paid out in a non-typical disbursement (i.e., July 2020 and September 2022 versus the typical October disbursement), health responses, if any, occur around the respective payout dates in these atypical payout years. This allows us to rule out an October-specific effect as the explanation for changes in health behaviors.

[7] We cluster standard errors at the calendar week level to account for serial correlation in the dependent variable.

# 5 Results

## 5.1 Drug and Alcohol Admissions

Descriptive figures for drug and alcohol utilization in the aggregate are shown in Figure 2, where we present weekly totals for alcohol-, amphetamine-, cocaine-, and opioid-related visits. Panel (a) shows ED visits and panel (b) shows inpatient visits. There is a pronounced spike in alcohol-related ED admissions in the first two weeks after the dividend is paid out; total admissions increase from 2,345 admissions in the week prior to 2,842 – an approximate 21% increase. However, we find no visual evidence of changes in ED admissions for other drugs and no evidence of changes in inpatient admissions for *any* drug categories.

We next test for dangerous liquidity by estimating Equation (1) for admissions related to alcohol, amphetamine, cocaine, and opiates. We exclusively focus on emergency department (ED) encounters because ED admissions more appropriately isolate acute, high-risk behaviors that would not be observed in scheduled or elective care settings. Results are shown in Figure 3. Panels (a), (b), (c), and (d) show the effect on the log of alcohol-, amphetamine-, cocaine-, and opioid-related visits, respectively. We find an immediate and pronounced short-term increase in alcohol-related ED visits; there is an 18.6% increase in the week of the dividend and a 15% increase in the subsequent week. The effects return to statistically indistinguishable from zero after just two weeks. Further, we find no immediate effect on amphetamine- or opioid-related ED admissions. However, we estimate a 15.3% increase in opioid admissions two weeks after receipt of the dividend. There is also an 8.6% increase in amphetamine-related admissions after two weeks, but this effect is statistically significant at only the 10% level ($p = .051$). This suggests a slower consumption response for opioid and amphetamine use not observed in alcohol use. The differential consumption dynamics across drug types may be an artifact of opioids' and amphetamines' illicit and/or highly regulated nature; alcohol, on the other hand, can be conveniently purchased at retail stores by any of-age adult.

We also find a 13% decrease in cocaine-related admissions in the week of the dividend.

While this coefficient is statistically significant, this effect is largely an artifact of how rare cocaine-related admissions are in our sample. Across the eight years of data, we only observe 854 cocaine-related admissions in the ± 8 week window around the week of the dividend. In contrast, we observe nearly 44,000 alcohol-related admissions over the same period. Further, in Figure 2, we see that cocaine-related ED admissions remain relatively flat around the timing of the payout. Thus, we do not view this effect as qualitatively significant.

The previous results tested *if* excessive drug and alcohol consumption are sensitive to large, lump-sum payment. We next examine *how* sensitive these behaviors are to variation in the size of the APFD payment. Column 6 of Table 1 shows that there is substantial variation in the dollar amount of the dividend in our sample, ranging from less than $1,000 (2020) to over $3,000 (2022). To test for sensitivity along the intensive margin, we separately estimate Equation (1) for each year 2016–2023. We plot the estimated coefficient of $\beta_0$ – the average weekly change in daily alcohol admissions for the week of the dividend – against the respective dividend amount. Results are shown in Figure 4. While most of the yearly coefficients are statistically distinguishable from zero, we do not see a clear monotonic relationship between the dividend amount and alcohol admissions.

## 5.2 Heterogeneous effects on alcohol-related admissions

Given the sharp increase in alcohol- related admissions around the APFD and its large admission volume, we explore if there are heterogeneous effects of the dividend on alcohol consumption across different subpopulations. This is motivated by a body of literature documenting how risky alcohol consumption varies across different socioeconomic factors (Chartier and Caetano (2010) and Patrick et al. (2012)), gender (Yakovlev (2018) and Nolen-Hoeksema (2004)), and across age (Bohm et al., 2021), among other dimensions. We estimate Equation (1) using the share of alcohol admissions that come from the specific subgroup of interest as the dependent variable. That is,

$$y_t = \frac{\#\text{admits from subpopulation}_t}{\#\text{total admissions}_t}. \tag{2}$$

This approach allows – holding overall alcohol admissions fixed – to assess whether the *composition* of alcohol-related ED admissions has shifted across subgroups. The estimated coefficients are interpreted as the average weekly change in the *share* of total daily alcohol ED admissions coming from a particular subpopulation.

**Gender** Historically, men have engaged in binge drinking at much higher rates than women. However, in recent years, the gap has narrowed, driven in large part by the binge drinking rate of women in their 30s and 40s doubling between 2006-2018 (McKetta and Keyes, 2020). Given these two facts, it is ex ante unclear whether spikes in alcohol admissions should be differentially driven by men or women. Results are shown in Figure 6, where we use the male share of alcohol ED admissions as the dependent variable. While overall, males constitute the majority of these types of admissions in our sample (approximately 55% vs. 45%), we do not find a compositional shift in admissions around the time of APFD disbursement; all coefficients are statistically indistinguishable from zero. Alternatively put, men are not *differentially* affected by the dividend with respect to alcohol consumption relative to women.

**Age** Excessive alcohol consumption is also more highly concentrated among young people, in particular those aged 18-34 (Keyes and Miech, 2013). To test for heterogeneous effects across age, we divide our sample into six different age categories, allowing for variation in alcohol consumption likelihood across the age groups – those younger than 18, 18-34, 35-44, 45-54, 65-74, and those aged 75 years and older. Results are shown in Figure 7. We do not detect compositional changes in age for alcohol related ED admissions. Despite prior literature suggesting that binge and heavy episodic drinking is more popular among younger people, we find that APFD-induced alcohol-related admissions are more or less proportional across age groups. Further, our results are robustly null to alternative age groupings (e.g., dis-aggregating the 18-34 bins into 18-24 and 25-34).

**Geography** The literature provides mixed evidence on the geographic determination in excessive alcohol consumption risk; conclusions are sensitive to definitions of urbanicity and measures of alcohol consumption. However, the evidence leans more toward peoples from rural communities being at higher risk of alcohol-related harm than those from urban communities (Friesen et al., 2022). We test if those from urban or rural communities are differentially affected by the APFD in our setting. We adopt the approach of Evans and Moore (2011) and define an admission to be "urban" if the patient zip code is from a city with more than 10,000 residents (Anchorage, Fairbanks, and Juneau). Results are shown in Figure 8, where the outcome is the share of alcohol admissions from urban zip codes. We cannot conclude that the geographic composition of alcohol-related admissions is affected by the APFD disbursement.

**Race and Ethncity** Nationally, excessive alcohol consumption is more prevalent among White individuals than other racial groups. However, the White population has only the second-highest alcohol-mortality rate, second to the AI/AN population (Fesahazion et al., 2012). Further, whites are more likely to die from chronic alcohol-related diseases, whereas other racial groups are more likely to die younger from acute alcohol-attributable deaths (Naimi et al., 2025). We test whether the timing of the APFD disbursement has differential effects on alcohol admissions across racial groups. We categorize patient race as mutually exclusive groups and categorize Hispanic ethnicity, separately. For example, non-Hispanic Whites are coded as White, whereas Hispanic whites are coded as Hispanic. Our racial groups include American Indian/Alaska Native (AI/AN), Asian, Black, Hispanic, Pacific Islander, White, and Other. The "other" category includes patients of two or more races.

We estimate our benchmark event study model using share of alcohol ED admissions from each racial group as the dependent variable. Results are shown in Figure 9. We find large compositional change in alcohol-related ED admissions; namely, the share of AI/AN admissions increases, the share of white admissions decreases, and the shares from all other racial groups remains largely unaffected. We estimate a 5.2 and 4.7 point increase in the share of

admissions from the AI/AN population in the first two weeks after the receipt of the dividend; conversely, we estimate a 3.7 and 3.5 point drop for the white population. In the week preceding the dividend, the mean share of AI/AN alcohol ED admissions is 64%, which implies a an 8.13% relative increase ($5.2/64 \times 100$). The increase in admissions belonging to traditionally marginalized groups is consistent with prior literature. For example, Bruckner et al. (2011) find that accidental deaths among the Eastern Band of Cherokee Indians spike following large casino payments.

**Income** We next examine heterogeneity by income. Firstly, economic theory predicts that responses to income shocks vary depending on baseline resources; households with lower incomes face tighter budget constraints and may therefore exhibit larger consumption responses to income shocks. Secondly, the literature finds evidence of heterogeneous alcohol consumption and harm by socioeconomic status; for example, Collins (2016) finds that individuals from higher socioeconomic status consume “similar or greater amounts of alcohol" compared to those with lower socioeconomic status but the latter group faces higher rates of alcohol-related harm. Using data from the ACS, we identify a patient as residing in a “high income” area if they reside in a zip code as where the median zip code income is greater than the median income for all of Alaska; otherwise, individuals are categorized as residing in a “lower income” area. We estimate Equation (1) using the high-income share of alcohol ED admissions as the dependent variable. Results are shown in Figure 10. We find a precise null effect. While the majority (between 80-85%) of alcohol ED admissions come from lower-income zip codes, we find a precise null effect of the APFD disbursement on the composition of such hospitalizations.

**Insurance status** Results are shown in Figure 11.

## 5.3 Placebo admissions and robustness checks

As our setting does not provide a clear untreated comparison group, since the dividend is nearly universally received, we rely on placebo outcomes that should not plausibly be affected by the dividend to assess the validity of our research design. We focus on appendicitis, asthma, and birth admissions where the first two events are often acute with limited notice as to their occurrence and where there should be little incentive to time births to the APFD disbursement since children are eligible for the current years' fund payment so long as they are born by December 31 in the preceding calendar year. As such, these placebo outcomes act as a diagnostic test; if the increase in alcohol admissions we see is a spurious result due to factors other than the dividend, we should expect to see similar changes in the placebo outcomes.

We estimate Equation (1) where the dependent variable is the log count of appendicitis, asthma, or birth admissions. Appendicitis and asthma admissions come from inpatient, ED, and outpatient datasets, and birth admissions come solely from the inpatient dataset.[8] Results are shown in Figure 5 Panel (a) shows the estimated coefficients and confidence intervals for appendicitis, and panels (b) and (c) show the results for asthma and births, respectively. We do not detect statistically significant changes in admissions across all three placebos around the timing of the APFD disbursement. Further, the estimated coefficients are small in magnitude and are near zero. The absence of effects is consistent with our interpretation that the observed increases in alcohol admissions are due to receipt of the APFD rather than a spurious correlation.

We further evaluate the credibility of our design by ruling out calendar-specific shocks or seasonal factors. Because the dividend is usually paid out in the first week of October each year during our sample period, we estimate Equation (1) using only observations from 2020 and 2022, when the dividend was paid out in July and September, respectively. Results are shown in Figure 12. We find a respective 24.5%, 26.8% and 17.6% increase in alcohol admissions in the week of the dividend and subsequent two weeks. These estimated coefficients are

[8] Nearly every birth admission in our sample is in an inpatient setting.

qualitatively similar to our benchmark estimates, suggesting the latter are not confounded by October-specific factors.

## 5.4 Liquidity Constrained Health Behavior

We next test for liquidity constraints in health care consumption. If individuals are liquidity constrained, short-term increases in cash could affect both the timing and likelihood of seeking health care. Conversely, if individuals face no such liquidity constraints (e.g., by borrowing against future income), then temporary income shocks should have little to no effect on utilization. We focus on more necessary forms of health care with flexibility in scheduling; specifically, our outcomes of interest are hip and knee replacements and cataract surgeries, the latter being the most commonly performed surgeries in outpatient settings (McDermott and Liang, 2023). Results are shown in Figure 13. Panel (a) shows results for cataract surgery and panel (b) shows results for hip or knee replacement surgery. Both event studies yield noisy, not statistically significant effects. This is in part due to the fact that of a limited sample size – $N = 952$ days within $\pm$ 8 week window across 8 years. We find no evidence in support of liquidity constraints in health care consumption, but we are unable to conclude the absence of liquidity constraints with much precision.

While hip/knee replacement and cataract surgeries are popular procedures, they are primarily concentrated among those aged 65 and older where the overwhelming majority of those aged 65 and older are insured via Medicare, and thus may face relatively lower cost-sharing for health care. Given this, we expand our examination to tonsillectomy and adenoidectomy procedures to 1) focus on a younger demographic and 2) isolate individuals for whom a medical procedure may be more likely to bind their budget constraint, given that individuals receiving this health care are unlikely to have more generous Medicare insurance. Further, these are the most common major ambulatory surgeries performed in hospital-owned facilities in 2019 for those aged under 18 (McDermott and Liang, 2023). Results are shown in panel (c) of Figure 13. Again, we find no statistically significant changes in tonsillectomy/adenoidectomy proce-

dures around the timing of the dividend. In sum, we fail to find evidence in support of liquidity constraints in health care utilization for these procedures.

## 5.5 Responses around the Announcement Date

We next investigate the sensitivity of the examined health behaviors to the *announcement* of the APFD. In doing so, we examine the importance of liquidity versus the expectation of future money on health behaviors. To provide context to our examination, the predictions of the Permanent Income Hypothesis (Friedman, 1957) imply that individuals should not respond to transitory, anticipated income shocks, and should only react to *unanticipated* income shocks, where consumption increases at the announcement of such income shocks (assuming that individuals are not liquidity constrained).

To test if the future expectation of money engenders a similarly sized response to the actual receipt of cash, we examine whether there are changes in health care utilization around the announcement date of the dividend payout (i.e., the earliest date announcing the [future] payout date of the dividend and the amount that will be paid).

We estimate the following equation:

$$y_t = \sum_{k=-8;k\neq-1}^{8} \beta_k Announcement_{kt} + \varepsilon_t \tag{3}$$

where $Announcement$ is an indicator equal to 1 if day $t$ is the $k^{th}$ week before or after the dividend announcement. Week 0 includes the announcement date and the six subsequent days.

Results for alcohol and drug-related outcomes are shown in Figure 14. We do not detect statistically significant changes in admissions for amphetamines, cocaine, or opioids. We do estimate a 13.3% increase in alcohol admissions three weeks after the announcement; however, this is due to the fact that the direct deposit date is typically three weeks after the announcement. Therefore, it appears that alcohol consumption is sensitive to the actual receipt of cash,

rather than the expectation of future cash.

# 6 Discussion

To give a broader context to our findings, we consider why we do not find effects of the APFD outside of alcohol admissions, while also considering the economic significance of our alcohol estimate.

It may be the case that healthcare spending after receipt of the Permanent Fund dividend is not concentrated in major procedures, such as knee replacements or cataract surgeries, but rather in more routine care. Studies by the JPMorgan Chase Institute (JPMCI) provide strong suggestive evidence that this may be the case. Using linked bank account and credit card data for 1.2 million JPMorgan Chase Bank customers from 2014 to 2016, Farrell et al. (2018) show that around the time of tax refund repayments, consumers increase out-of-pocket (OOP) healthcare spending by 60 percent within the first week of receiving their tax refund (relative to a typical week prior to receiving the tax refund). 32 percent of all OOP payments made from the tax refund went to dentists' offices while 23 percent went to doctors' offices. Results were also greater for individuals in the lowest quintile of checking balances: for these individuals, the increase in OOP healthcare spending was 220 percent greater than in a typical week prior to the refund. For high checking account balance individuals (in the top quintile of balances), the post-refund increase was only 11 percent. These results suggests that liquidity constraints do play a major role in the timing and likelihood of receiving care. When combined with our results, it is also likely the case that liquidity constraints also matter for the *type* of care received when receiving a cash transfer.

In addition to increases in OOP healthcare spending, Farrell et al. (2018) also show that individuals receiving tax refunds also spent a large percentage of their increased liquidity to pay outstanding medical bills. 37 percent of the additional OOP spending triggered by the tax refund goes to remote bill pay (i.e., payments not made in-person), with 31 percent of that 37

percent going to hospitals. This suggests that the Permanent Fund dividend may not increase the likelihood of new hospital procedures around the timing of dividend receipt, but may instead lead to bill payments for prior hospitalizations or other prior healthcare procedures.

# 7 Conclusion

We examine the effects of receipt of the Alaska Permanent Fund Dividend (APFD) on health behaviors and health care utilization. We examine if the timing of certain risky health behaviors, namely drug and alcohol consumption that results in a hospital visit, is sensitive to the timing of the APFD disbursement. We also examine if the funds' disbursement relaxes liquidity constraints for health care consumption, such that there is an increase in the receipt of health care that has flexibility in its timing, where we focus on hip and knee surgeries, cataract surgery, and tonsillectomy/adenoidectomies.

We find evidence that receipt of the APFD results in "dangerous liquidity" for certain risky behaviors, specifically for alcohol consumption, with an approximately 18.6 percent increase in the number of alcohol-related emergency department admissions within one week of APFD disbursement. We also find a 15.3% increase in opioid admissions two weeks after receipt of the dividend and an 8.6% increase in amphetamine-related admissions after two weeks. Additionally, we do not find evidence of changes in the consumption patterns of the above mentioned health procedures. Lastly, we find that the timing and volume of drug and alcohol emergency department admissions is only sensitive to the timing of APFD payout, and not to the announcement of the future payout date nor future payout amount. This suggests that liquidity, rather than the future expectation of money, is an important contributor for certain risky behaviors.

# References


**Akee, Randall, Emilia Simeonova, William Copeland, Adrian Angold, and E Jane Costello**, "Young adult obesity and household income: effects of unconditional cash transfers," *American Economic Journal: Applied Economics*, 2013, *5* (2), 1–28.

**Alaska Permanent Fund Corporation**, "Financial Statements: September 30, 2025," PDF document 2025. Accessed via user-provided file.

**Andreolli, Michele and Paolo Surico**, "'Less is More': Consumer Spending and the Size of Economic Stimulus Payments," *American Economic Journal: Macroeconomics*, 2026, *18* (1), 34–68.

**Blumenberg, Adam**, "Avoid These Common Holiday Health Emergencies," 2024. https://www.columbiadoctors.org/news/avoid-these-common-holiday-health-emergencies [Accessed: March 2026].

**Bohm, Michele K, Yong Liu, Marissa B Esser, Jessica B Mesnick, Hua Lu, Yi Pan, and Kurt J Greenlund**, "Binge drinking among adults, by select characteristics and state - United States, 2018," *MMWR Morb. Mortal. Wkly. Rep.*, October 2021, *70* (41), 1441–1446.

**Bruckner, Tim A, Ryan A Brown, and Claire Margerison-Zilko**, "Positive income shocks and accidental deaths among Cherokee Indians: a natural experiment," *International Journal of Epidemiology*, 2011, *40* (4), 1083–1090.

**Chartier, Karen and Raul Caetano**, "Ethnicity and Health Disparities in Alcohol Research," *Alcohol Research & Health*, 2010, *33* (1–2), 152–160.

**Collins, Susan E**, "Associations between socioeconomic factors and alcohol outcomes," *Alcohol Res.*, 2016, *38* (1), 83–94.

**Dobkin, Carlos and Steven L. Puller**, "The Effects of Government Transfers on Monthly Cycles in Drug Abuse, Hospitalization and Mortality," *Journal of Public Economics*, 2007, *91* (11–12), 2137–2157.

**Duncan, Greg J, Katherine Magnuson, Alicia S Kunin-Batson, Hirokazu Yoshikawa, Nathan A Fox, Sarah Halpern-Meekin, Nicholas J Ainsworth, Sarah R Black, Jennifer Mize Nelson, Timothy D Nelson et al.**, "Cash transfers and their effect on maternal and young children's health: a randomized clinical trial," *JAMA pediatrics*, 2025, *179* (8), 867–875.

**Evans, William N. and Timothy J. Moore**, "The short-term mortality consequences of income receipt," *Journal of Public Economics*, 2011, *95* (11), 1410–1424. Special Issue: International Seminar for Public Economics on Normative Tax Theory.

**Farrell, Diana, Fiona Greig, , and Amar Hamoudi**, "Deferred Care: How Tax Refunds Enable Healthcare Spending," Technical Report, JPMorgan Chase Institute 2018.

**Fesahazion, Ruth G, Roland J Thorpe Jr, Caryn N Bell, and Thomas A LaVeist**, "Disparities in alcohol use: does race matter as much as place?," *Prev. Med.*, November 2012, *55* (5), 482–484.

**Finkelstein, Anna Chorniy Amy and Matthew J Notowidigdo**, "Paternalistic Social Assistance: Evidence and Implications from Cash vs. In-Kind Transfers," 2025.

**Friedman, Milton**, "The permanent income hypothesis," in "A theory of the consumption function," Princeton University Press, 1957, pp. 20–37.

**Friesen, Erik Loewen, Jacob Bailey, Sarah Hyett, Sina Sedighi, Mitchell Lennox de Snoo, Kenneth Williams, Rebecca Barry, Anders Erickson, Farid Foroutan, Peter Selby, Laura Rosella, and Paul Kurdyak**, "Hazardous alcohol use and alcohol-related harm in rural and remote communities: a scoping review," *Lancet Public Health*, February 2022, *7* (2), e177–e187.

**Gibson, Marcia, Wendy Hearty, and Peter Craig**, "The public health effects of interventions similar to basic income: a scoping review," *The Lancet Public Health*, 2020, *5* (3), e165–e176.

**Gross, Tal and Jeremy Tobacman**, "Dangerous Liquidity and the Demand for Health Care: Evidence from the 2008 Stimulus Payments," *Journal of Human Resources*, 2014, *49* (2), 424–445.

**_ , Timothy J Layton, and Daniel Prinz**, "The liquidity sensitivity of healthcare consumption: Evidence from social security payments," *American Economic Review: Insights*, 2022, *4* (2), 175–190.

**Guettabi, Mouhcine and Allison Witman**, "Universal Cash Transfers and Prescription Utilization: Evidence from the Alaska Permanent Fund Dividend," *Journal of Health Economics*, 2023, *90*, 102758.

**Hsieh, Chang-Tai**, "Do consumers react to anticipated income changes? Evidence from the Alaska permanent fund," *American Economic Review*, 2003, *93* (1), 397–405.

**Jones, Damon and Ioana Marinescu**, "The labor market impacts of universal and permanent cash transfers: Evidence from the Alaska Permanent Fund," *American Economic Journal: Economic Policy*, 2022, *14* (2), 315–340.

**Keyes, Katherine M. and Richard Miech**, "Age, period, and cohort effects in heavy episodic drinking in the US from 1985 to 2009," *Drug and Alcohol Dependence*, 2013, *132* (1), 140–148.

**Kueng, Lorenz**, "Excess sensitivity of high-income consumers," *The Quarterly Journal of Economics*, 2018, *133* (4), 1693–1751.

**McDermott, KW and L Liang**, "Overview of major ambulatory surgeries performed in hospital-owned facilities, 2019. Healthcare Cost and Utilization Project. Published December 2021," 2023.

**McKetta, Sarah C. and Katherine M. Keyes**, "Trends in U.S. women's binge drinking in middle adulthood by socioeconomic status, 2006–2018," *Drug and Alcohol Dependence*, 2020, *212*, 108026.

**Naimi, Timothy S., Adam Sherk, Keegan W. Lawrence, Julianna Reece, and Marissa B. Esser**, "Racial and Ethnic Disparities in Alcohol Consumption and Mortality in the U.S.," *American Journal of Preventive Medicine*, 2025, *69* (6), 107968.

**Nolen-Hoeksema, Susan**, "Gender differences in risk factors and consequences for alcohol use and problems," *Clinical Psychology Review*, 2004, *24* (8), 981–1010.

**of Alaska Department of Revenue, Permanent Fund Dividend Division State**, "Annual Reports – Permanent Fund Dividend Division," https://pfd.alaska.gov/Division-Info/annual-reports. Accessed: 2025-10-22.

**Patrick, Megan, Patrick Wightman, Robert Schoeni, and John Schulenberg**, "Socioeconomic Status and Substance Use Among Young Adults: A Comparison Across Constructs and Drugs," *Journal of Studies on Alcohol and Drugs*, 09 2012, *73*, 772–782.

**Romley, John A, Deborah Cohen, Jeanne Ringel, and Roland Sturm**, "Alcohol and environmental justice: the density of liquor stores and bars in urban neighborhoods in the United States," *J. Stud. Alcohol Drugs*, January 2007, *68* (1), 48–55.

**Stanford Basic Income Lab**, "Global Map of Basic Income Experiments," 2026.

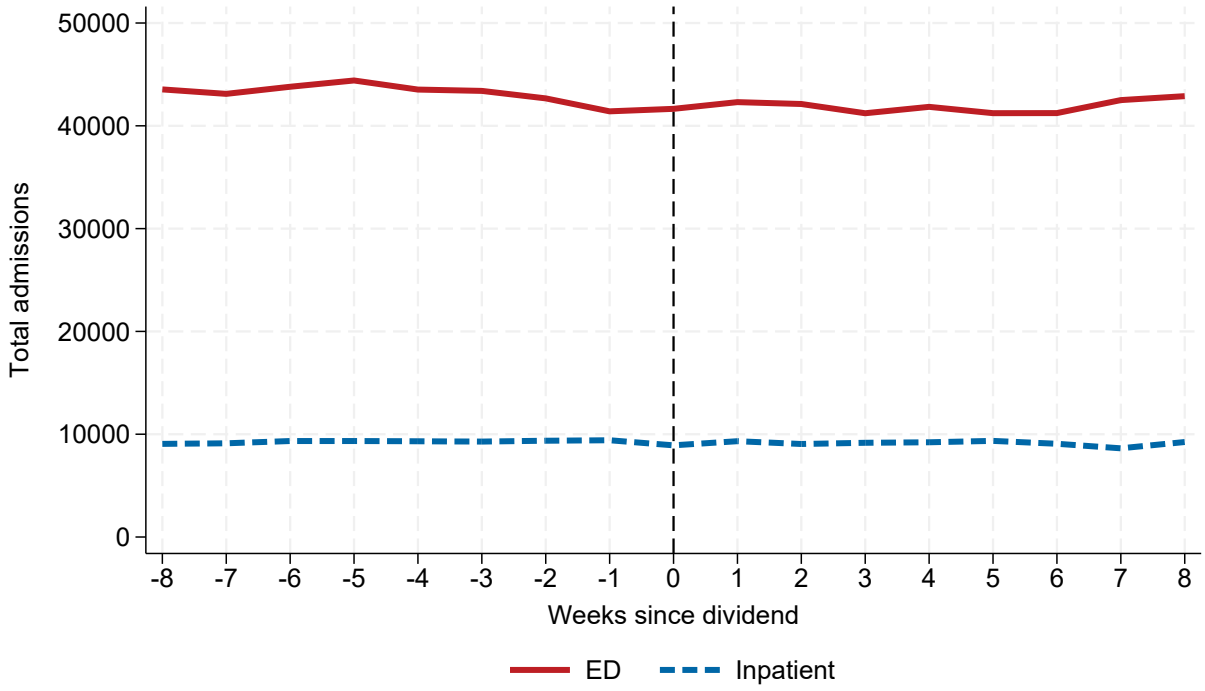
**State of Alaska, Department of Revenue**, "Permanent Fund Dividend: Eligibility Requirements," https://pfd.alaska.gov/eligibility/eligibility-requirements 2024. Accessed: 2026-03-13.

**Watson, Brett, Mouhcine Guettabi, and Matthew Reimer**, "Universal Cash and Crime," *The Review of Economics and Statistics*, 10 2020, *102* (4), 678–689.

**Yakovlev, Evgeny**, "Demand for alcohol consumption in Russia and its implication for mortality," *American Economic Journal: Applied Economics*, 2018, *10* (1), 106–149.

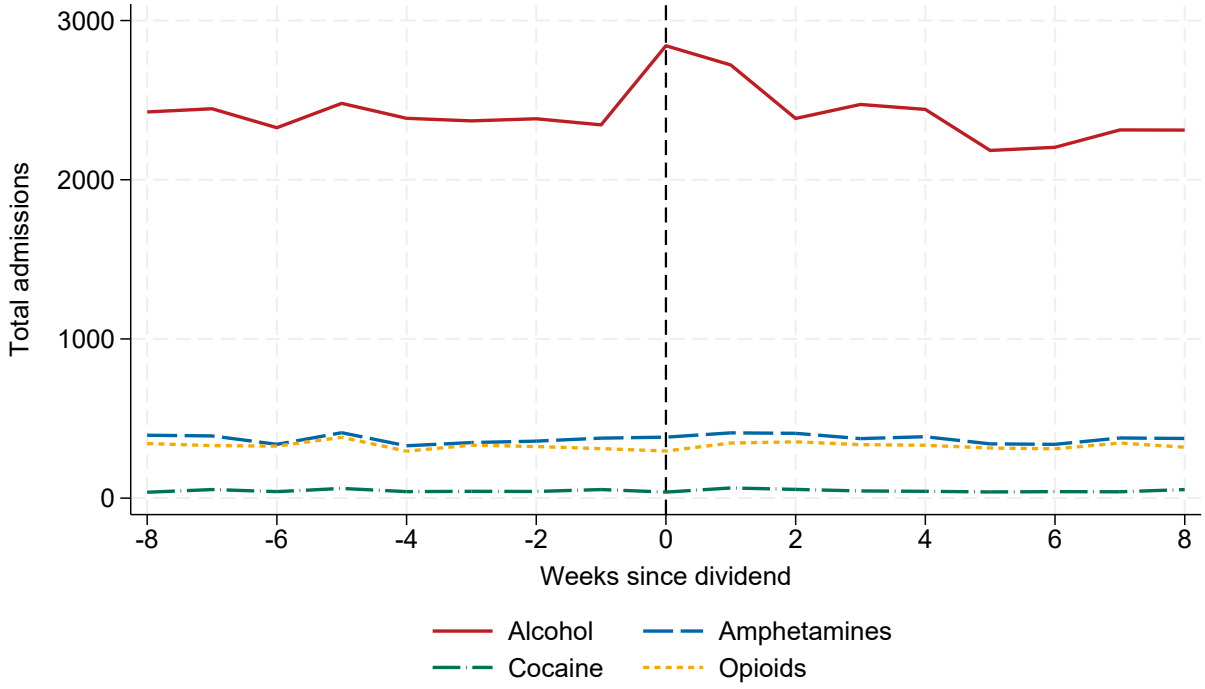
# Figures and Tables

Figure 1: Total weekly hospitalizations relative to the dividend

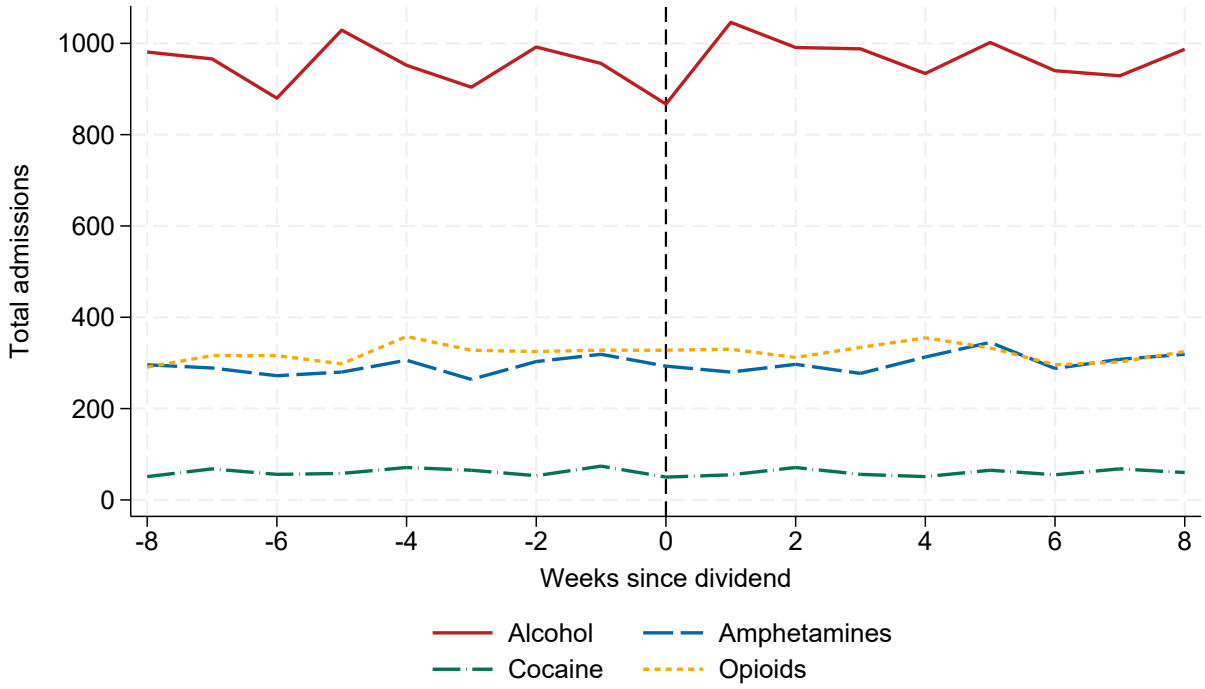



Note: Figure shows ... Authors' calculations based on Alaska Health Analytics and Vital Records datasets.

Figure 2: Total weekly drug-related hospitalizations relative to the dividend

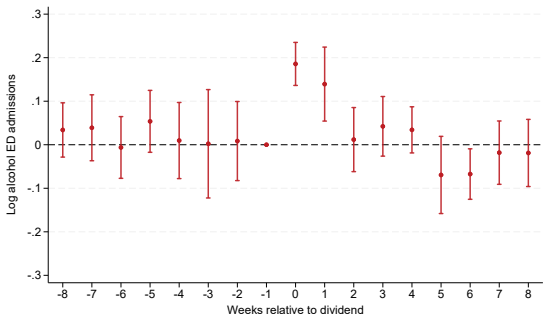



(a) Emergency Department

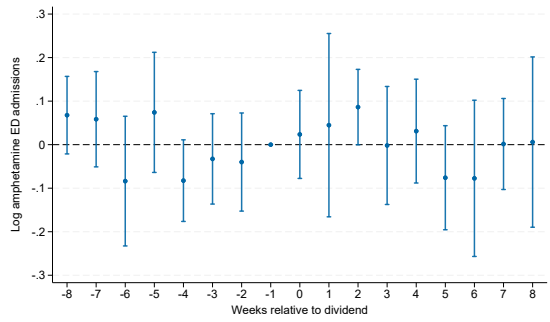



(b) Inpatient

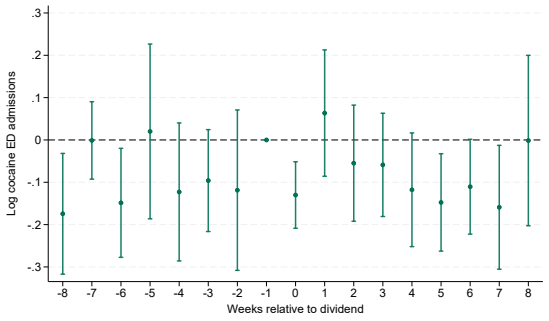
Figure 3: Effects of APFD on drug-related emergency department visits



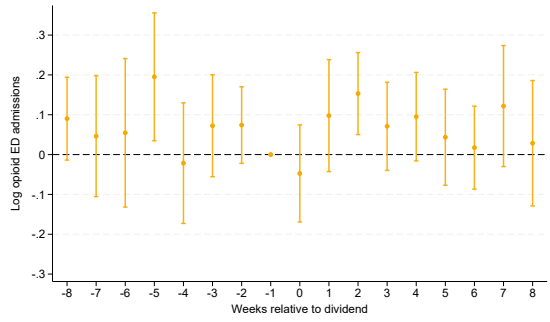

(a) Alcohol




(b) Amphetamines




(c) Cocaine




(d) Opioids

Figure 4: Effects of APFD admissions by dividend amount

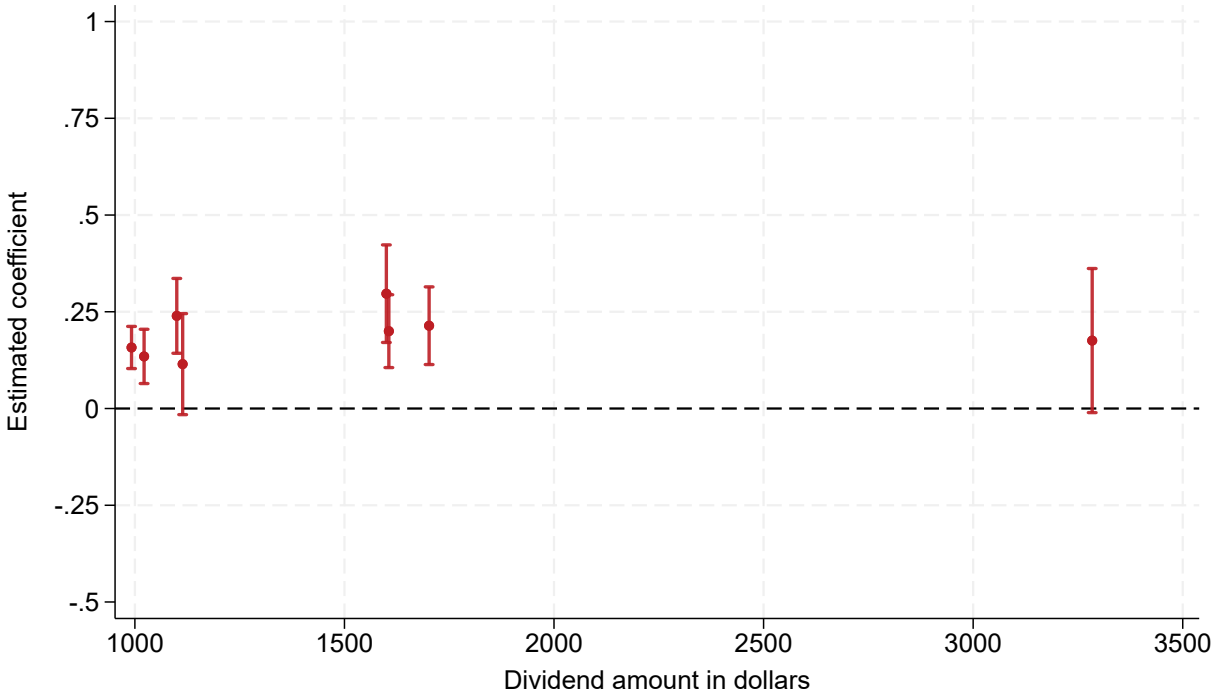
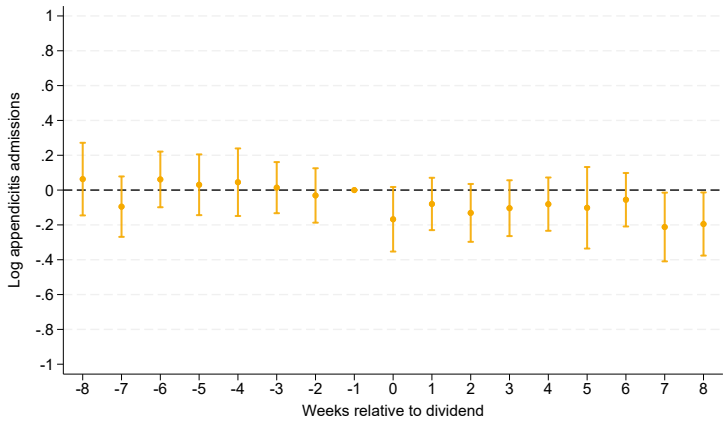
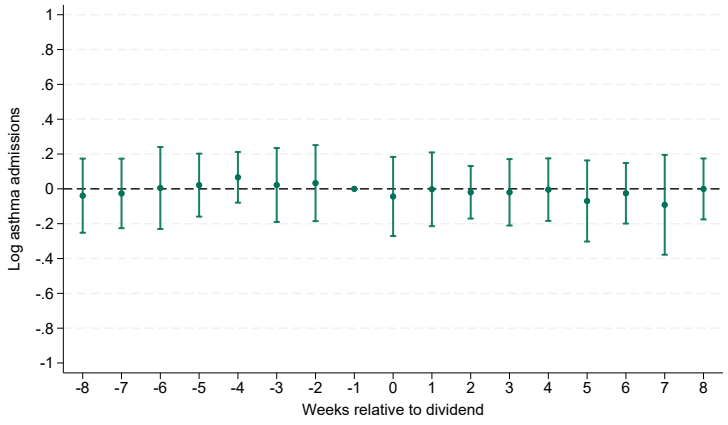


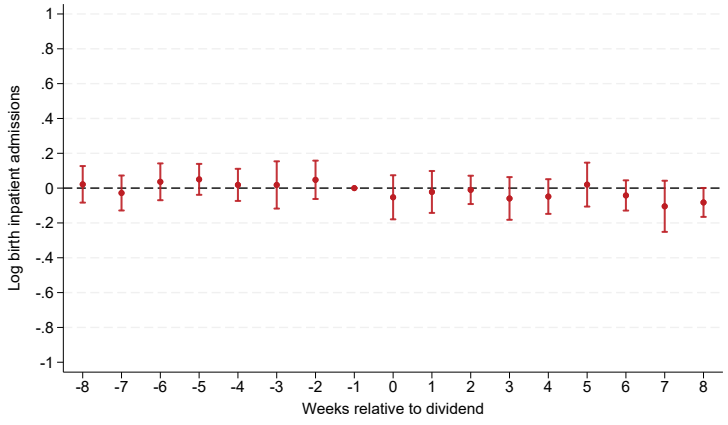
Figure 5: Effects of APFD on placebo admissions




(a) Appendicitis




(b) Asthma




(c) Births

Figure 6: Heterogeneous effects of APFD on alcohol-related admissions: Male share of admissions

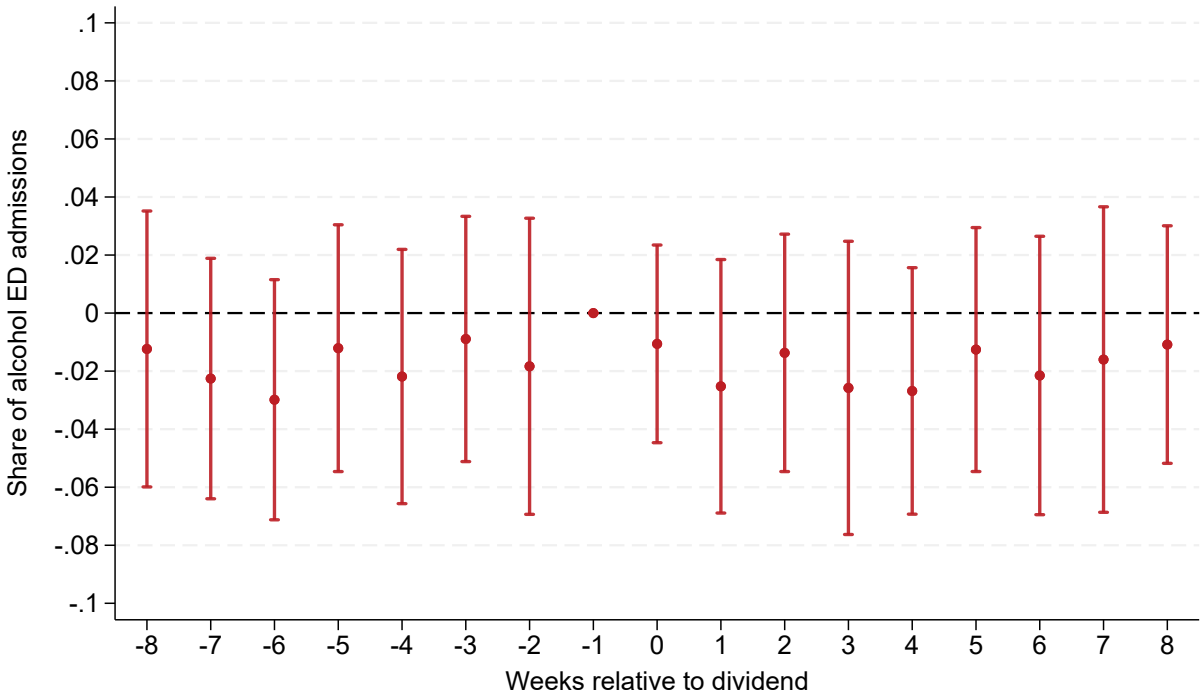
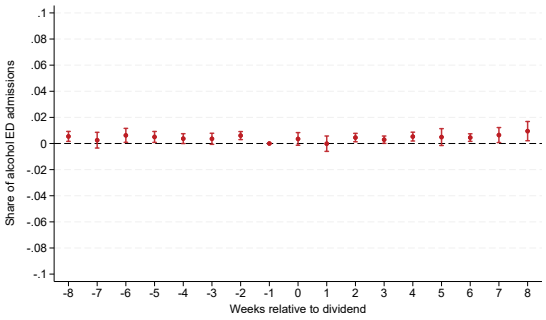
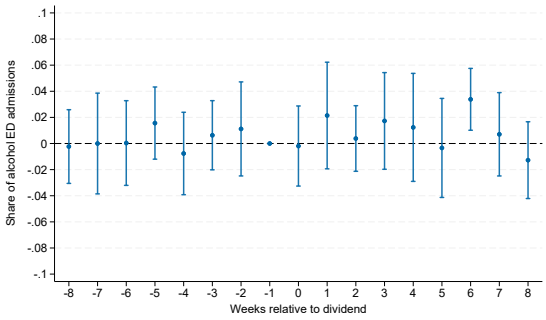


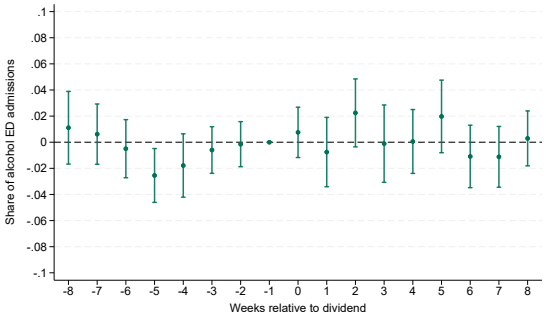
Figure 7: Heterogeneous effects of APFD on alcohol-related admissions: Age



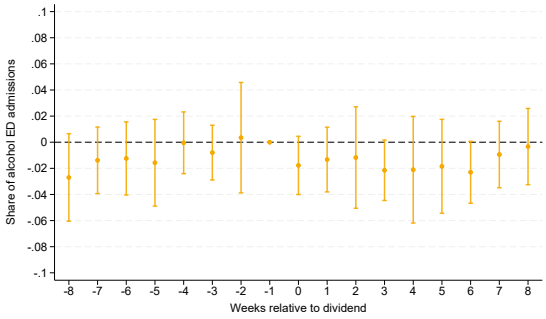

(a) < 18



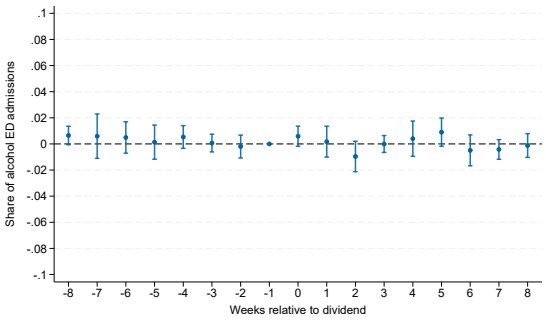

(b) 18-34



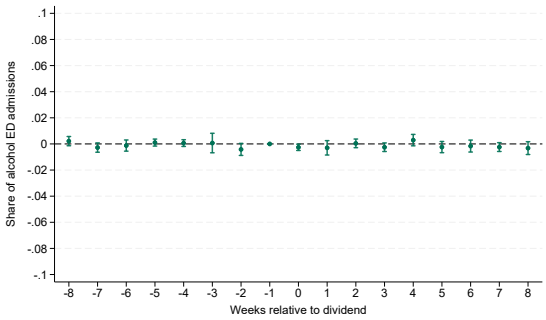

(c) 35-44




(d) 45-54




(e) 65-74




(f) 75+

Figure 8: Heterogeneous effects of APFD on alcohol-related admissions: Urban share of admissions

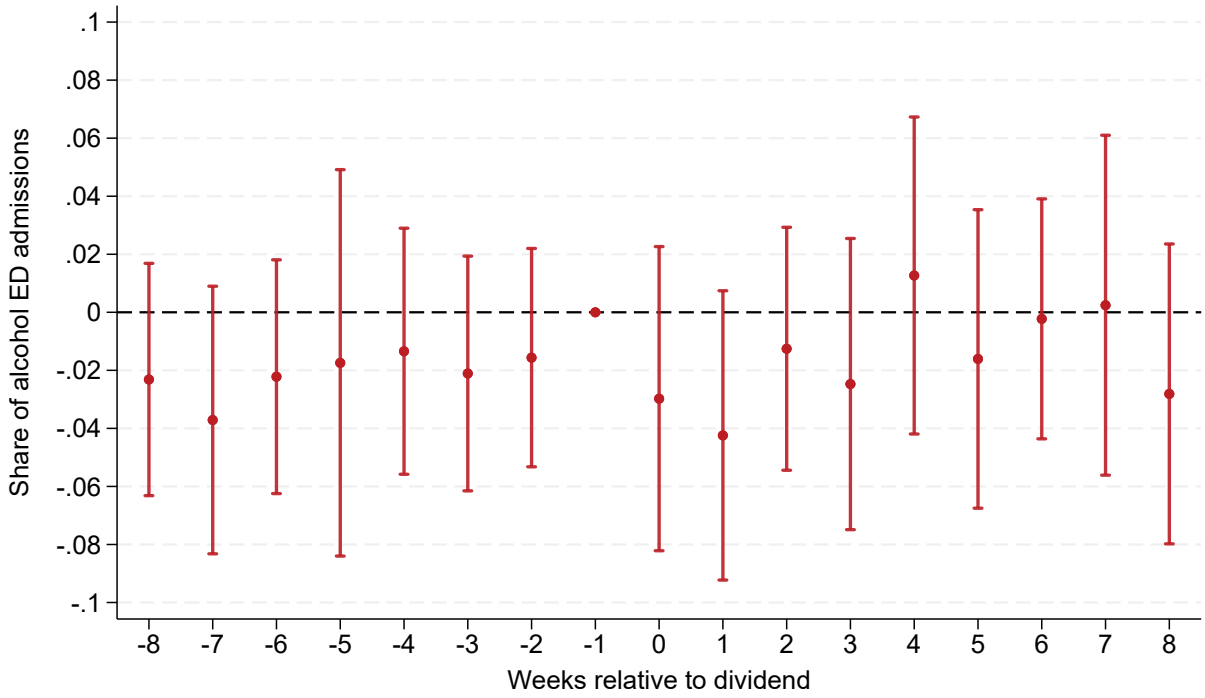
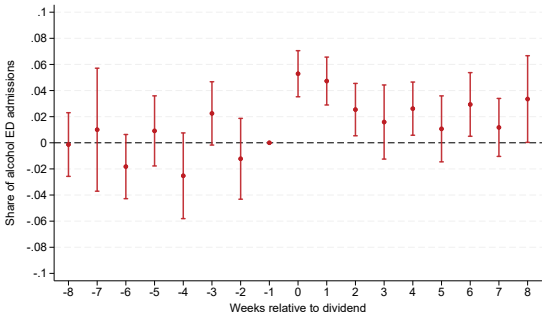
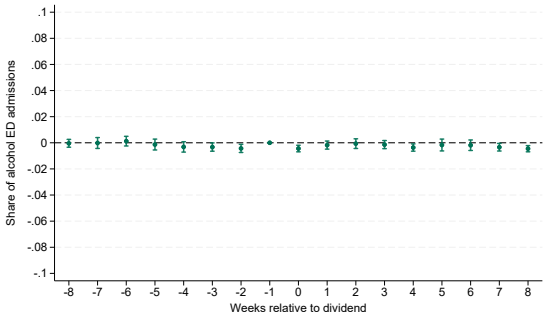


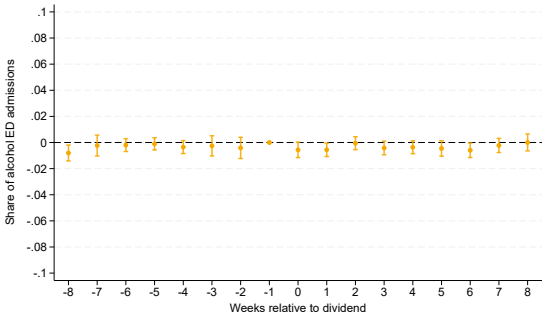
Figure 9: Heterogeneous effects of APFD on alcohol-related admissions: Race



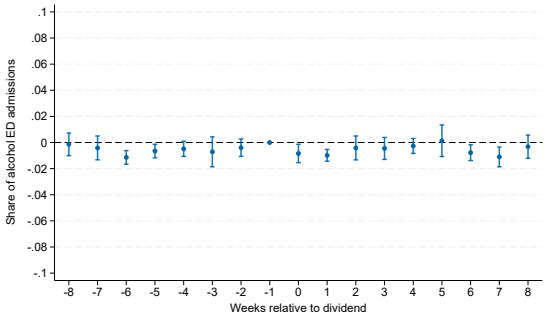

(a) American Indian/Alaska Native



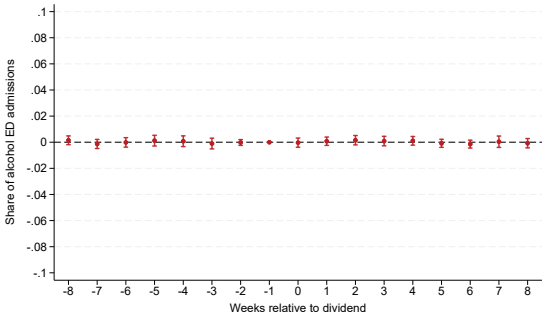

(b) Asian



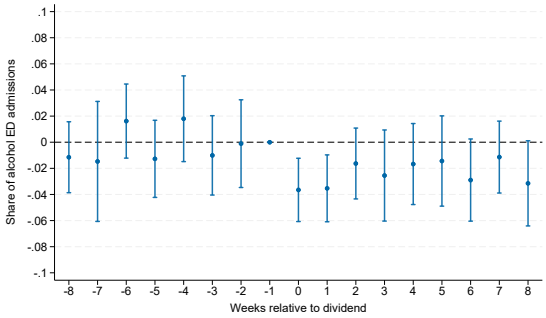

(c) Black



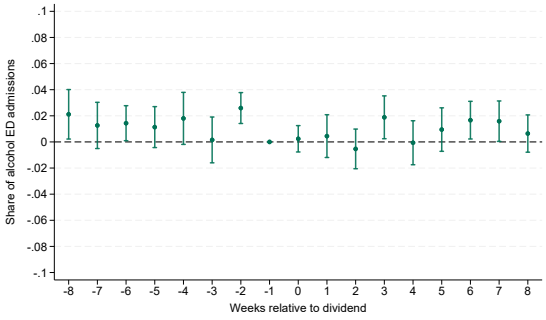

(d) Hispanic




(e) Pacific Islander




(f) White




(g) Other

Figure 10: Heterogeneous effects of APFD on alcohol-related admissions: Income

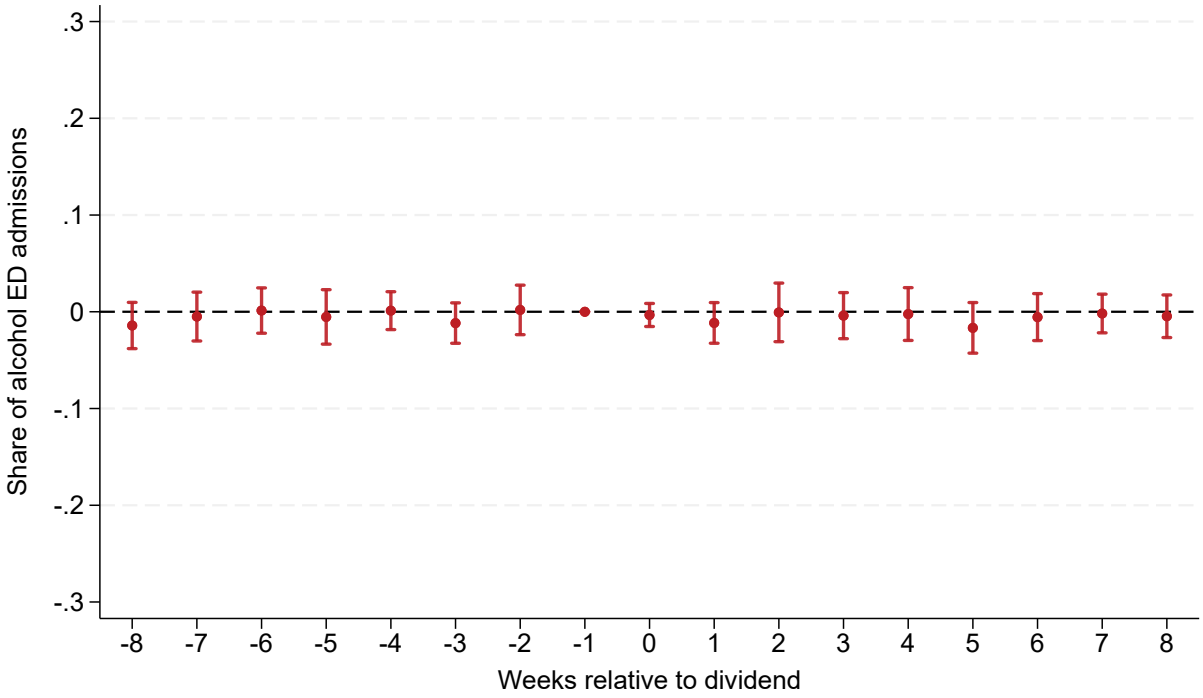
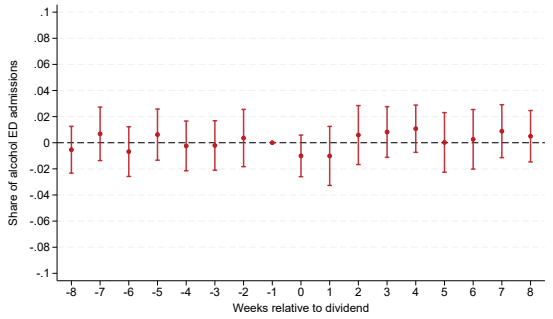
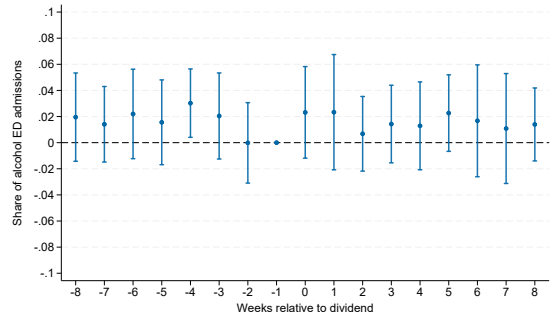


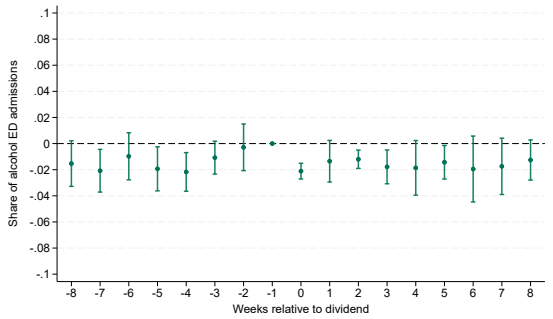
Figure 11: Heterogeneous effects of APFD on alcohol-related admissions: Insurance type



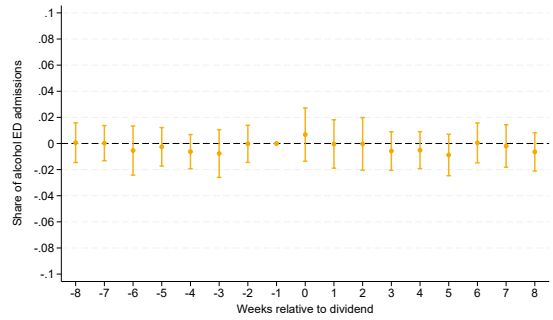

(a) Commercial




(b) Government




(c) Self-pay




(d) Other

Figure 12: Effects of the APFD on Alcohol ED admissions: July 2020 and September 20222 only

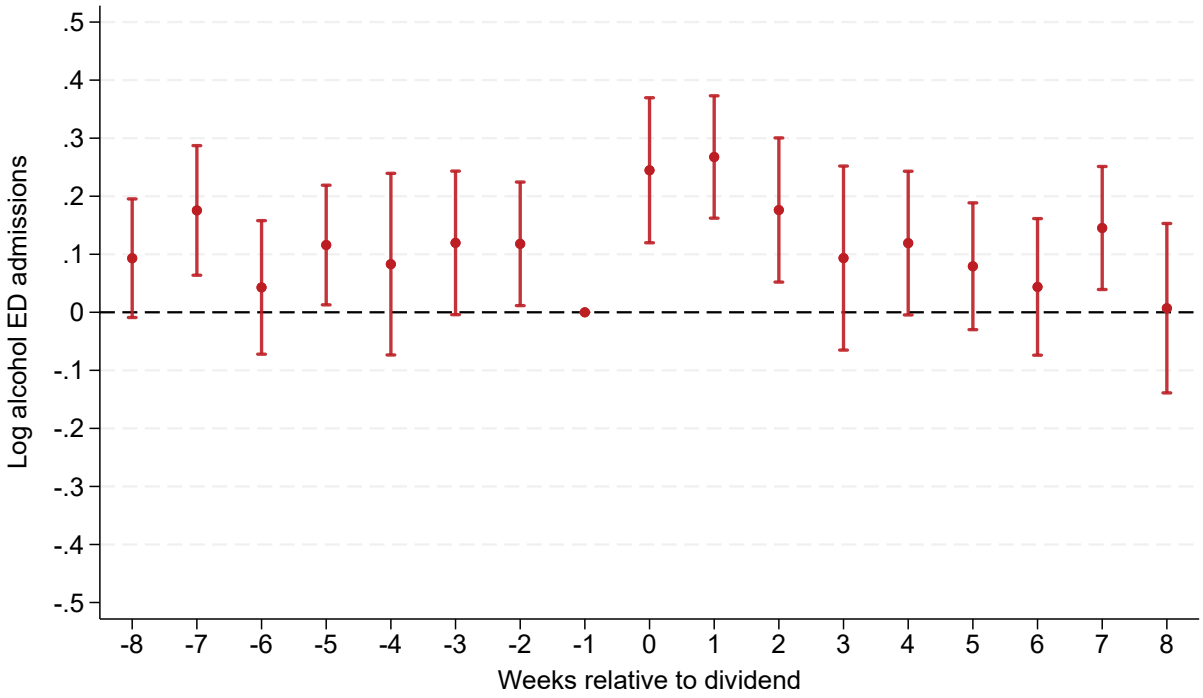
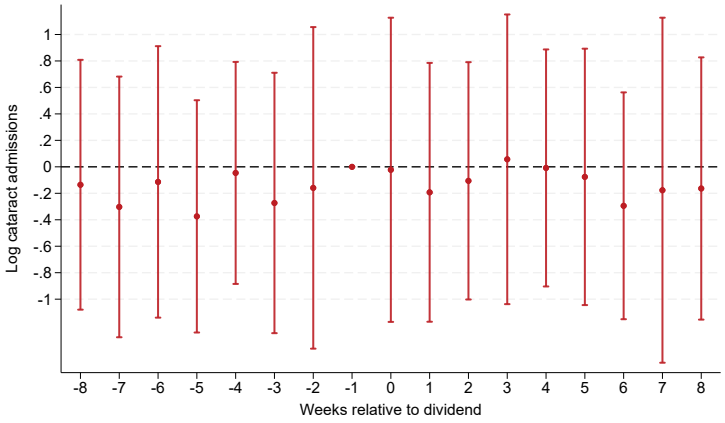
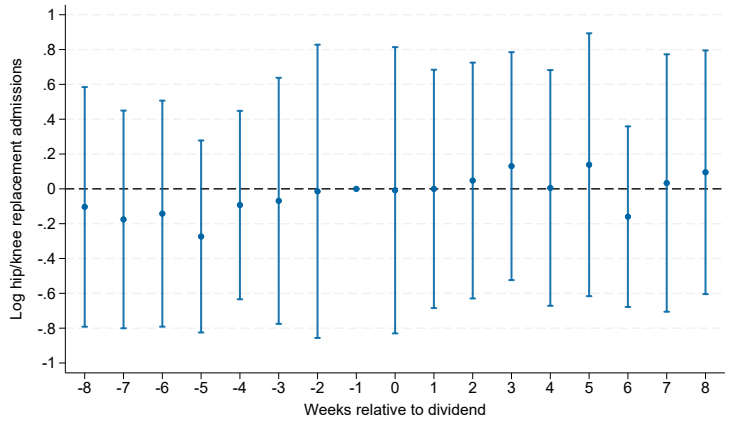


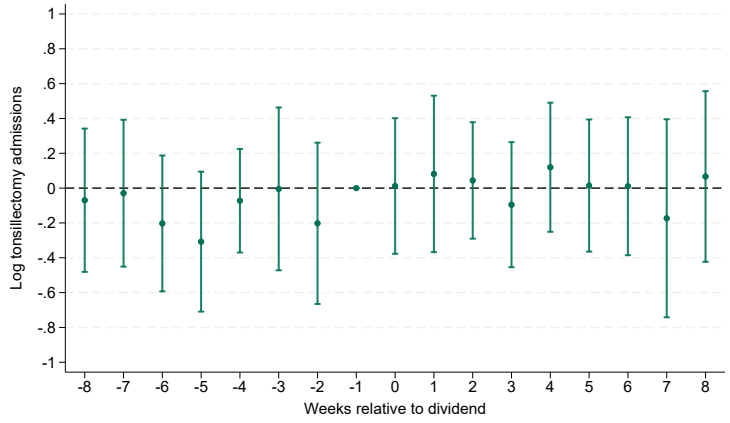
Figure 13: Effects of APFD on elective surgery procedures




(a) Cataract Surgery

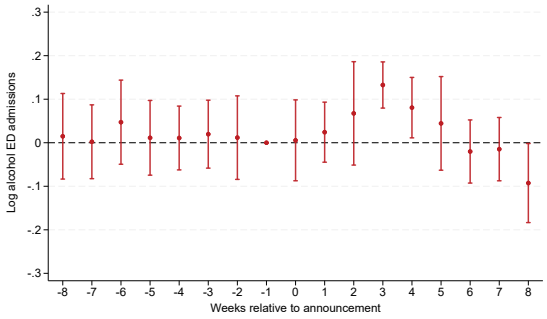



(b) Hip/Knee Replacement

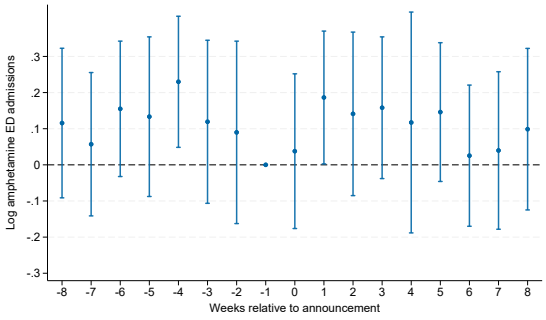



(c) Tonsillectomy/adenoidectomy

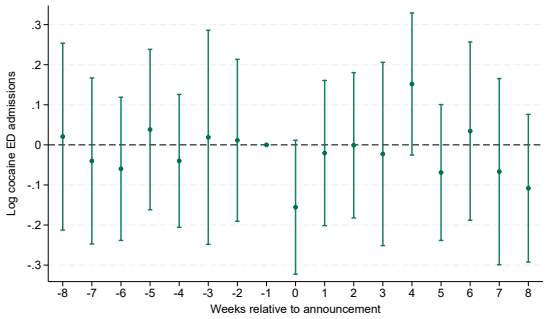
Figure 14: Effects of APFD announcement on drug-related emergency department visits



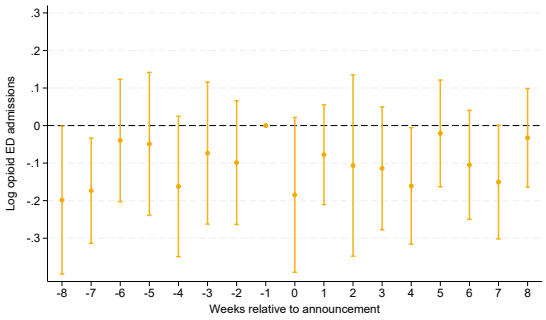

(a) Alcohol




(b) Amphetamines




(c) Cocaine




(d) Opioids

Table 1: APFD Summary, 2016-2023

| Year | Direct Deposit Date | Check Date | % Direct Deposit | Dividend Amount |
|---|---|---|---|---|
| 2016 | Oct 06 | Oct 06 | 84.17% | $1,022 |
| 2017 | Oct 05 | Oct 05 | 84.17% | $1,100 |
| 2018 | Oct 04 | Oct 04 | 85.22% | $1,600 |
| 2019 | Oct 03 | Oct 03 | 87.13% | $1,606 |
| 2020 | Jul 01 | Jul 01 | 88.58% | $992 |
| 2021 | Oct 11 | Oct 11 | 89.93% | $1,114 |
| 2022 | Sep 20 | Oct 06 | 90.94% | $3,284 |
| 2023 | Oct 05 | Oct 05 | 90.66% | $1,702 |

This table reports the direct deposit date, the mailed check date, the share of recipients who received direct deposit dividends, and the dividend amount each year. Dollar values are nominal. Information provided by State of Alaska Department of Revenue PFD Annual Reports (https://pfd.alaska.gov/Division-Info/annual-reports)

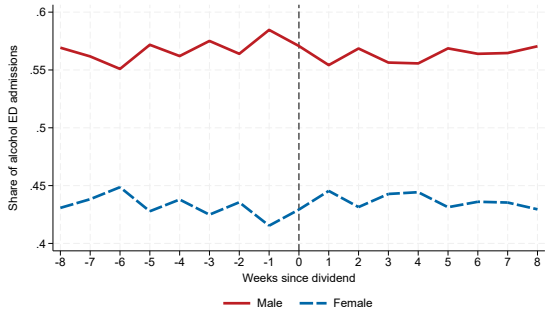
Table 2: Summary Statistics

| | Sample | | | ACS | |
|---|---|---|---|---|---|
| Variable | Inpatient | ED | Outpatient | Alaska | U.S. |
| **Panel A: Demographics** | | | | | |
| Age (years) | 43.0 | 38.2 | 46.2 | 36.5 | 39.1 |
| Male (%) | 44.5 | 46.2 | 40.0 | 52.6 | 49.6 |
| White (%) | 52.3 | 41.7 | 43.5 | 58.3 | 58.9 |
| AIAN (%) | 27.6 | 36.9 | 40.5 | 13.8 | 0.6 |
| Black (%) | 3.2 | 4.3 | 1.7 | 3.2 | 12.1 |
| Asian (%) | 3.7 | 2.6 | 2.4 | 7.6 | 5.8 |
| Other (%) | 7.3 | 6.9 | 8.6 | 9.6 | 4.0 |
| Hispanic (%) | 3.3 | 4.2 | 2.6 | 7.5 | 18.6 |
| Urban (%) | 52.0 | 54.4 | 49.8 | 84.8 | 92.1 |
| Family size (median) | - | - | - | 3 | 3 |
| HH income (median) | - | - | - | 100,309 | 88,612 |
| **Panel B: Primary Payer** | | | | | |
| Government (%) | 70.0 | 62.9 | 53.5 | - | - |
| Commercial (%) | 24.7 | 23.6 | 33.9 | - | - |
| Self-pay (%) | 5.4 | 9.9 | 10.7 | - | - |
| Other (%) | 0.9 | 3.5 | 1.8 | - | - |
| **Panel C: Health Insurance Coverage** | | | | | |
| Government (%) | - | - | - | 35.3 | 36.2 |
| Commercial (%) | - | - | - | 66.3 | 66.9 |
| No insurance (%) | - | - | - | 11.3 | 9.0 |
| Observations | 477,123 | 2,228,227 | 8,480,077 | 33,065 | 15,721,123 |

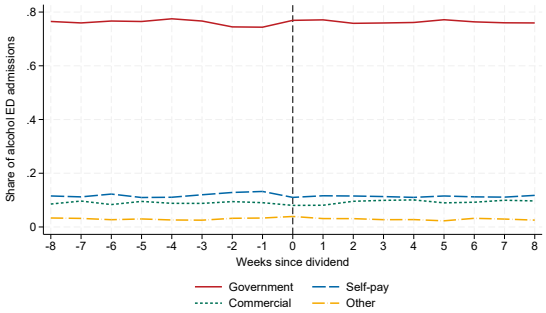
Note: Each cell reports variable's mean value unless otherwise specified.. The first three columns are from the 2016-2023 Alaska Health Analytics and Vital Records hospitalization data. The fourth and fifth columns are from the 2018-2022 5-year American Community Survey. Race categories exclude Hispanics: respondents of Hispanic ethnicity are coded as Hispanic irrespective of race, while non-Hispanics are classified by the reported race. Urban is defined as being from a city of 10,000 or more in the hospitalization data and as being from a metro area using ACS data.

# Appendix

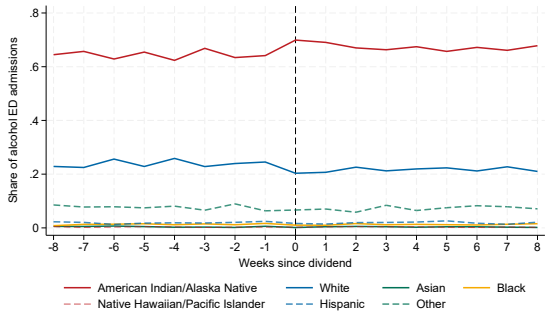
Figure 15: Alcohol ED admissions – hetereogeneity



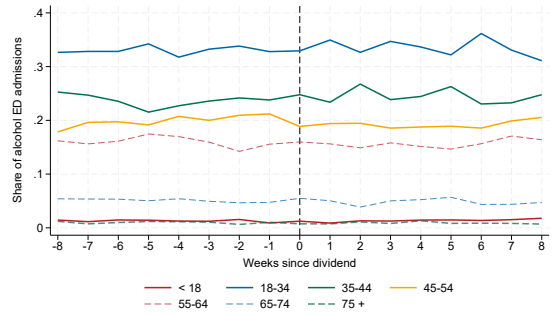

(a) Sex




(b) Insurance




(c) Race




(d) Age