Consumption Effects of the Alaska Permanent Fund

Residents of Alaska are eligible for large payments from the Alaska Permanent Fund, a government organization created to distribute oil revenues. In 2015, 86% of the population received the dividend, $2072. If consumers deviate from perfect consumption smoothing, we might think that such a large payment would affect their purchase behavior. Somewhat surprisingly, Hsieh (2003) found that consumption was smoothed out in Consumer Expenditure Survey (CEX) data from 1980–2001. I'm hoping to do two things in my second-year paper: extend Hsieh's analysis of consumers and expand the scope to firms.

Extending Hsieh's analysis is straightforward. There's a decade more CEX data, including the recent financial crisis and substantial variation in the Permanent Fund payments, and it would be interesting to see if the original conclusions still hold. Additionally, Hsieh's identification is a difference-in-differences between Alaska and the other 49 states. I won't be able to fundamentally improve on the underlying assumption of parallel trends, but I will be able to apply slightly newer methods, like synthetic controls.

Expanding the scope of analysis to firms is more interesting. I have data on used wholesale car auctions from 2002 to 2014, where the buyers and sellers are auto dealerships and other players in the wholesale market. In those data Alaskan firms buy vehicles from other states, presumably to sell in Alaska. If consumers are actually smoothing their consumption, even of large purchases like cars, I would expect the Permanent Fund payments to have no effect on Alaskan wholesalers' behavior. If I make the same diff-in-diff assumptions about wholesalers, I can test the hypothesis of consumption smoothing with the used car data, since wholesalers' auction behavior should be unchanged if their end-consumers' behavior has been smoothed out.

But I can go further. If the consumption smoothing hypothesis didn't hold, I would expect auto wholesalers to smooth out consumers' behavior. (But I wouldn't expect wholesalers to be totally unaffected by Permanent Fund timing, since it's costly to hold extra cars in inventory.) That's to say, if consumers weren't smoothing their auto purchases, I'd expect to find that:

- Alaskan wholesalers would increase their auction *purchases* (and be willing to pay higher prices) in the days and weeks before the Permanent Fund payouts, bringing more cars to Alaska.
- Alaskan wholesalers would decrease their auction *sales* (or require higher sale prices) in advance of the payouts, keeping cars in Alaska.
- Alaskan wholesalers would preferentially accumulate cars of the type that would be bought by people using their Permanent Fund dividends.[1]

I need to think a bit more about the implications here. Consumer spending and the permanent-income hypothesis are a big deal, and it probably matters how local firms act to smooth out consumers' behavior, but I'm not up enough on macro to know why.

1. I think this will be too noisy to measure, and it's not clear to me whether consumers would tend toward lower-price cars, since that's what they can afford, or higher-price cars, pooling together the dividend and their own savings to get a nicer used car.

There are, of course, a lot of caveats. Alaska is different than other states. For one thing, shipping cars there is probably expensive, and that cost probably varies by time of year, possibly violating the diff-in-diff assumptions.

I don't observe wholesalers' inventory or final prices, so if wholesalers (temporarily) draw down their inventory instead of buying in the auctions, I wouldn't be able to observe any behavior changes and it would look like consumers were smoothing their consumption, even if they weren't. On the other hand, if wholesalers are credit constrained and unable to respond to consumers' changes in demand, I would again see little change in the auctions, regardless of consumers' smoothing behavior.

References

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

		Applications			
Year	State pop.	Received	Paid	Dividend ($)	State total (mm$)
2015	737 625	672 741	637 014	2072.00	1272.841 340 00
2014	735 601	670 053	631 306	1884.00	1189.289 748 00
2013	736 399	668 362	631 470	900.00	568.323 000 00
2012	732 298	673 978	610 633	878.00	536.135 774
2011	722 190	672 237	615 122	1174.00	722.153 228
2010	710 231	663 938	611 522	1281.00	783.359 682
2009	692 314	654 462	621 146	1305.00	810.595 530
2008	679 720	641 291	610 096	2069.00	1262.288 624
2007	676 987	628 895	595 237	1654.00	984.521 998
2006	670 053	623 792	594 029	1106.96	657.566 341 84
2005	663 253	627 595	596 936	845.76	504.864 591 36
2004	656 834	625 535	599 243	919.84	551.207 681 12
2003	647 747	619 552	595 571	1107.56	659.630 616 76
2002	640 544	612 377	589 420	1540.76	908.154 759 20
2001	632 241	608 600	586 230	1850.28	1084.689 644 40
2000	627 533	607 910	583 098	1963.86	1145.122 838 28
1999	622 000	589 738	572 877	1769.84	1013.900 629 68
1998	617 082	581 803	565 256	1540.88	870.991 665 28
1997	609 655	573 057	554 769	1296.54	719.280 199 26
1996	605 212	564 362	546 045	1130.68	617.402 160 60
1995	601 581	563 020	541 842	990.30	536.586 132 60
1994	600 622	557 836	534 599	983.90	525.991 956 10
1993	596 906	549 066	527 946	949.46	501.263 609 16
1992	586 722	542 263	522 636	915.84	478.650 954 24
1991	569 054	533 692	512 098	931.34	476.937 351 32
1990	553 171	531 494	497 608	952.63	474.036 309 04
1989	538 900	524 272	507 547	873.16	443.169 738 52
1988	535 000	532 227	518 150	826.93	428.473 779 50
1987	541 300	535 578	529 478	708.19	374.971 024 82
1986	550 700	540 202	532 294	556.26	296.093 860 44
1985	543 900	525 145	518 479	404.00	209.465 516
1984	524 000	490 413	481 349	331.29	159.466 110 21
1983	499 100	465 567	457 209	386.15	176.551 255 35
1982	464 300	484 344	469 741	1000.00	469.741 000