Unemployment Insurance Schemes and Consumption: Evidence from Brazil

François Gerard (Columbia University) and Joana Naritomi (LSE)

Paris School of Economics

December 13, 2017

Main motivation: state-contingent vs. lump-sum

- There are different government-provided schemes around the world to financially support workers displaced from their job
- These schemes can be broadly categorized based on how benefits are disbursed to workers (this is the categorization we focus on)
  - **State-contingent schemes**: schemes that transfer some benefit amount periodically (e.g., weekly or monthly) to displaced workers under the condition that workers remain non-employed
    - ★ Typical Unemployment Insurance (UI) programs
    - ★ Some Unemployment Insurance Savings Accounts (UISA) programs (e.g., Chile where monthly benefits first come from a worker's own forced/illiquid savings account)
  - **Lump-sum schemes**: schemes that transfer some benefit amount upon displacement
    - ★ Government-mandated Severance Pay (SP) programs
    - ★ Most UISA programs (e.g., Brazil where workers can access all of their forced/illiquid savings account upon layoff)

Main motivation: state-contingent vs. lump-sum

- Key trade-off in the debate on the optimal design of such schemes:
  A. Incentive: welfare loss from distorting incentives to find a new job
  B. Insurance: welfare gain from helping workers to smooth consumption if cannot fully insure against the risk of displacement and the risk of remaining non-employed for quite some time afterward

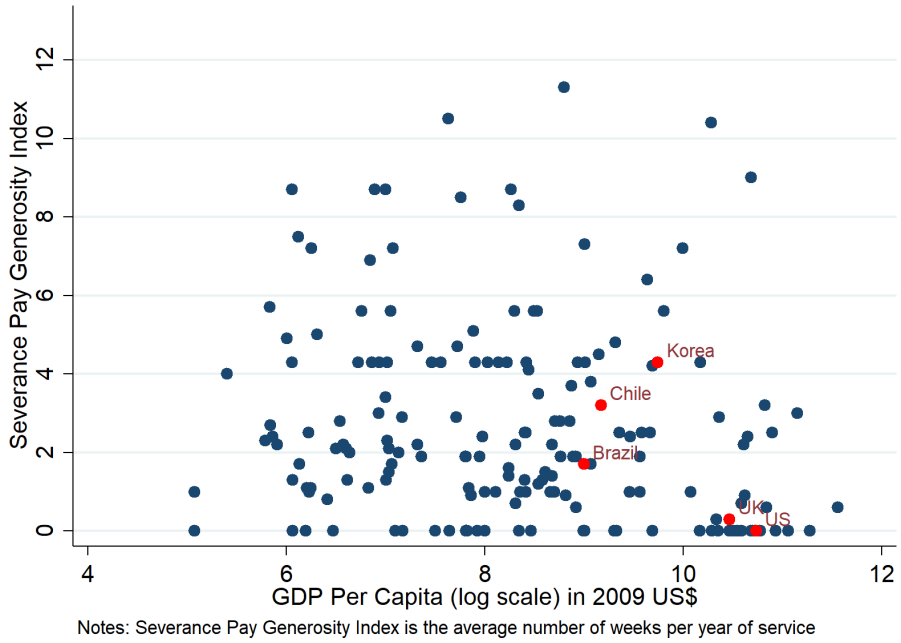
- **State-contingent schemes**:
  - Worse for incentives: create distortions as benefits are contingent on remaining non-employed ("substitution" effect; Chetty, 2008)
  - Better for insurance: insure against the risk of remaining non-employed for longer

- **Lump-sum schemes**:
  - Better for incentives: less distortionary as only create "liquidity" effect (Chetty, 2008; wealth effects always small in this context)
  - Worse for insurance: do not differentiate between workers who are non-employed for longer vs. those quickly re-employed

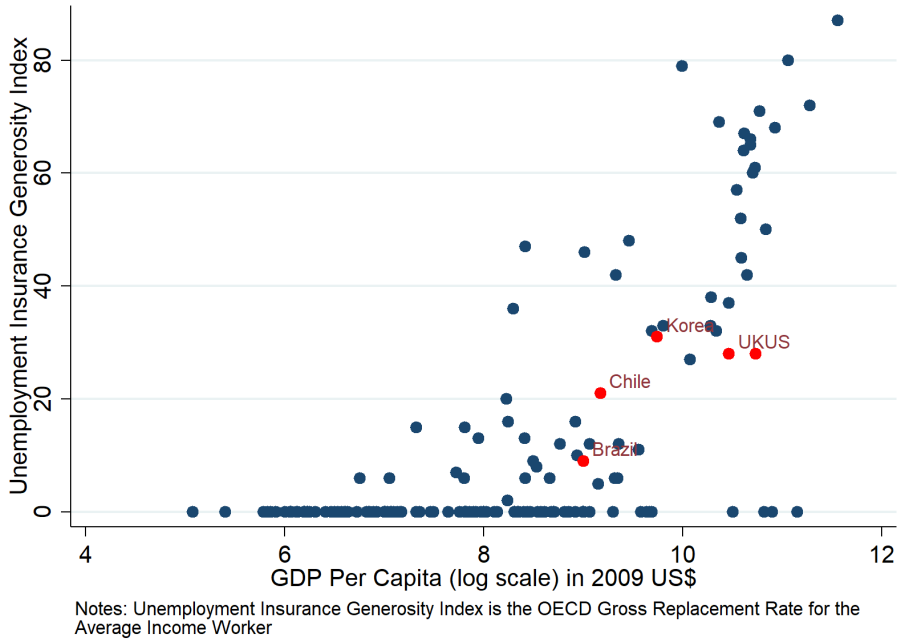
Main motivation: state-contingent vs. lump-sum

- There is a large empirical literature on state-contingent/UI programs
- There is little on lump-sum schemes even though they are common
  - See next few slides
  - Even more common than UI in developing countries
- There is some work on re-employment effect of lump-sum schemes (e.g., Card, Chetty and Weber, 2008)
- But there is no evidence on the insurance value of lump-sum schemes
- This is important because it is not obvious how much consumption smoothing gains they provide: evidence from other contexts that individuals' may not smooth resources very well (e.g., Shapiro, 2005)

Figure: Government-mandated SP and UI programs across countries



Notes: Severance Pay Generosity Index is the average number of weeks per year of service



Notes: Unemployment Insurance Generosity Index is the OECD Gross Replacement Rate for the Average Income Worker

Source: Holzmann and Vodopivec (2012)

Takeaway: (i) Government-mandated Severance Payment programs are quite common overall; (ii) UI programs are much less common in developing countries

Figure: Within countries along the development path

Unemployment Insurance	Chile USA	Chile USA	Chile USA	Chile USA	Chile USA	Brazil Chile USA	Brazil Chile USA	Korea Brazil Chile USA	Korea Brazil Chile USA
Lump Sum Schemes (Severance Payment or UISA)	Chile Mexico	Brazil Chile Mexico	Brazil Chile Mexico	Korea Brazil Chile Mexico	Korea Brazil Chile Mexico	Korea Brazil Chile Mexico	Korea Brazil Chile Mexico	Korea Brazil Chile Mexico	Korea Brazil Chile Mexico
	1930	**1940**	**1950**	**1960**	**1970**	**1980**	**1990**	**2000**	**2010**

Data in progress Gerard and Naritomi (2017)

Takeaway: we are still working on creating the dataset but we want to see if countries typically adopt lump-sum schemes before they adopt UI along the development path (within country time-series to support the cross-country pattern in the previous slide)

Other motivation: developing country context

- Debate particularly interesting for developing countries as lump-sum schemes relatively more common
- Relatively low prevalence of UI programs in developing countries could be due to the state's capacity to administer such schemes
  - Lump-sum schemes are easier to implement
- In developing countries, there is also less enforcement capacity and thus higher labor market informality. This matters for:
  1. Eligibility criteria
     - ★ Only displaced *formal* worker eligible for unemployment insurance schemes (lost job cannot have been hidden from government)
     - ★ To remain eligible for UI benefits need to remain non-*formally*-employed (can still draw UI benefits if new job hidden from government)
  2. Typical tradeoff:
     - A. Incentive: distorting incentives to find a new *formal* job
     - B. Insurance: helping *formal* workers to smooth consumption if cannot fully insure against the risk of displacement and the risk of remaining non-*formally*-employed for quite some time afterward

Other motivation: developing country context

- Limited literature on incentive side for developing countries:
  - Some policy papers worried that typical incentive problem of UI programs worse because of possibility to work informally
  - Gerard and Gonzaga (2016) show that not obvious that efficiency cost from typical incentive problem worse in a context of high informality
- Even more limited literature on need for insurance or insurance value:
  - Idea that insurance gains could be substantial if less traditional means of self-insurance (Chetty and Looney, 2007)
  - Yet, informality could decrease need for insurance among displaced formal workers if informal jobs provide a good mean of self-insurance
- Why is evidence so thin on the insurance side? Data limitations!
  - Usual empirical approach to assess need for insurance: measuring drop in consumption upon dismissal multiplied by coefficient of relative risk aversion (e.g., Gruber, 1997; Kolrsud et. al, 2017)
  - Developing countries: no good panel data on consumption

This paper

- Is the first paper of our consumption and employment data project: exploiting novel high-frequency longitudinal data on consumption matched with administrative employment data
  - New source of consumption data: VAT receipts linked to individual ids
  - Combined with matched employer-employee administrative data
  - Context: state of São Paulo, Brazil (population: 42 million; informality: 35% of private-sector employment)

- This paper:
  - Exploit high-frequency administrative longitudinal data on both consumption and employment
  - Workers eligible for both UI and lump-sum schemes upon layoff, with some variation across workers that we can exploit
  - To study consumption profile of displaced workers and assess their need for insurance and the insurance value of UI and lump-sum schemes

Main results

1. Highlight new trade-off between state-contingent and lump-sum schemes based on the timing of transfers (*disbursement policy*) and workers' imperfect consumption smoothing
   - Lump-sum schemes: worse insurance value also because displaced workers' consumption profile is over-sensitive to the timing of transfer
     - ★ Consumption *increases* upon layoff for displaced formal workers eligible for lump-sum schemes *despite* long-term consumption loss
     - ★ Effect robust across consumption categories: e.g. not due to difference between expenditure and consumption (i.e., not due to durables)
   - UI: better insurance value because periodic payment smooths workers' consumption when consumption over-sensitive to timing of transfer
   - This is relevant beyond our context because no evidence on the insurance value of lump-sum schemes in developed countries neither

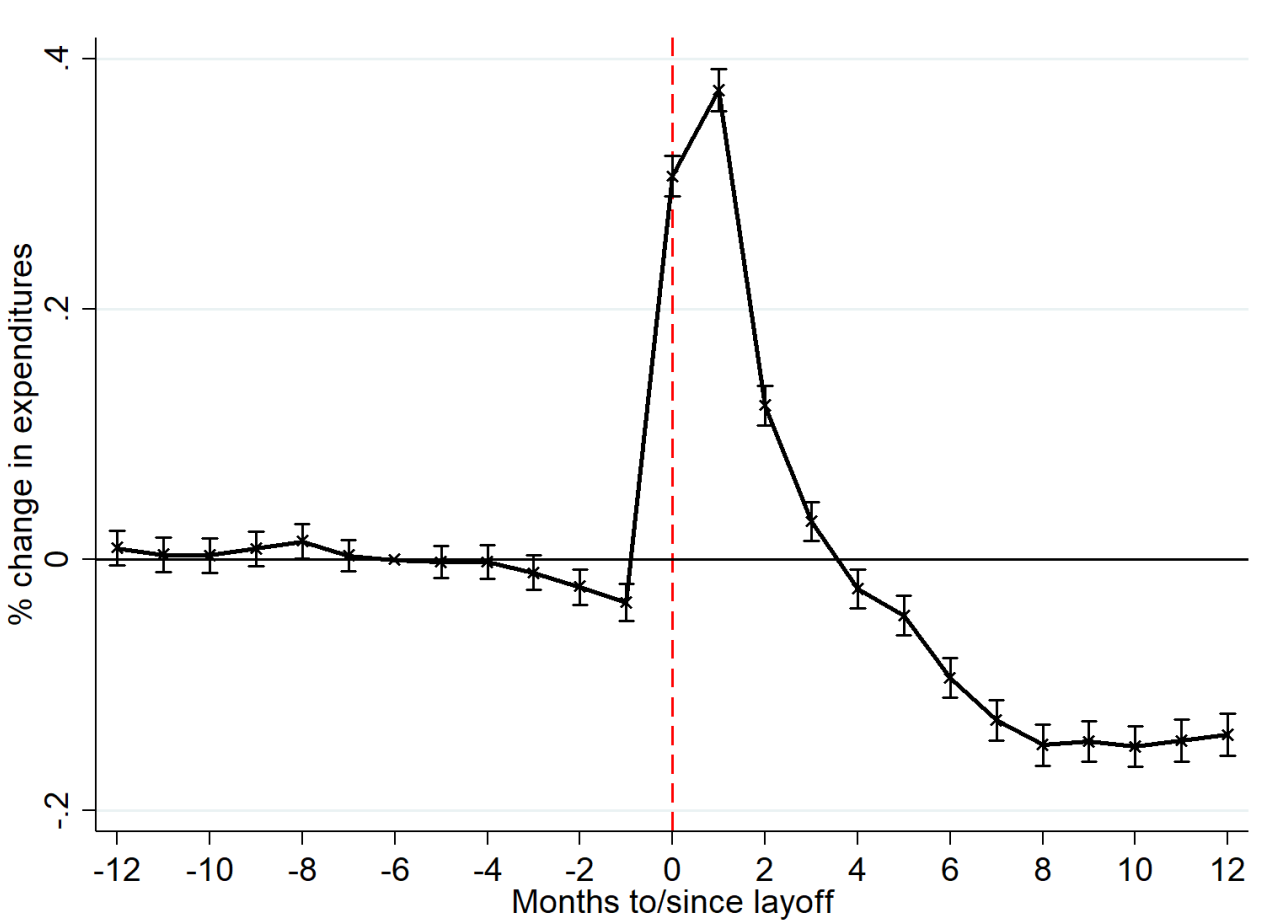
Main results

1. Highlight new trade-off between state-contingent and lump-sum schemes based on the timing of transfers (*disbursement policy*) and workers' imperfect consumption smoothing
   - Lump-sum schemes: worse insurance value also because displaced workers' consumption profile is over-sensitive to the timing of transfer
     - ⋆ Consumption *increases* upon layoff for displaced formal workers eligible for lump-sum schemes *despite* long-term consumption loss
     - ⋆ Effect robust across consumption categories: e.g. not due to difference between expenditure and consumption (i.e., not due to durables)
   - UI: better insurance value because periodic payment smooths workers' consumption when consumption over-sensitive to timing of transfer
   - This is relevant beyond our context because no evidence on the insurance value of lump-sum schemes in developed countries neither

2. Need for insurance sizable even in context of high informality
   - Consumption much lower in the long-run when not eligible anymore for any scheme (consumption drop comparable as in developed countries)
   - Consumption much lower immediately if not eligible for any scheme

Preview of the results

Many graphs like this one coming up



Takeaway: we find a substantial increase in consumption at layoff for workers eligible for both lump-sum schemes and UI, despite a long-term loss when no more transfer available

Outline

1. Institutional background
2. Data
3. Consumption smoothing and unemployment insurance schemes
   1. Consumption around dismissal event
      - (i) Exploit variation in benefits
      - (ii) Mechanisms
   2. Consumption around UI exhaustion and UI extension
      - (i) UI exhaustion
      - (ii) UI extension
4. Implications & Next steps

Outline

1. **Institutional background**
2. Data
3. Consumption smoothing and unemployment insurance schemes
4. Implications & Next steps

Institutional details

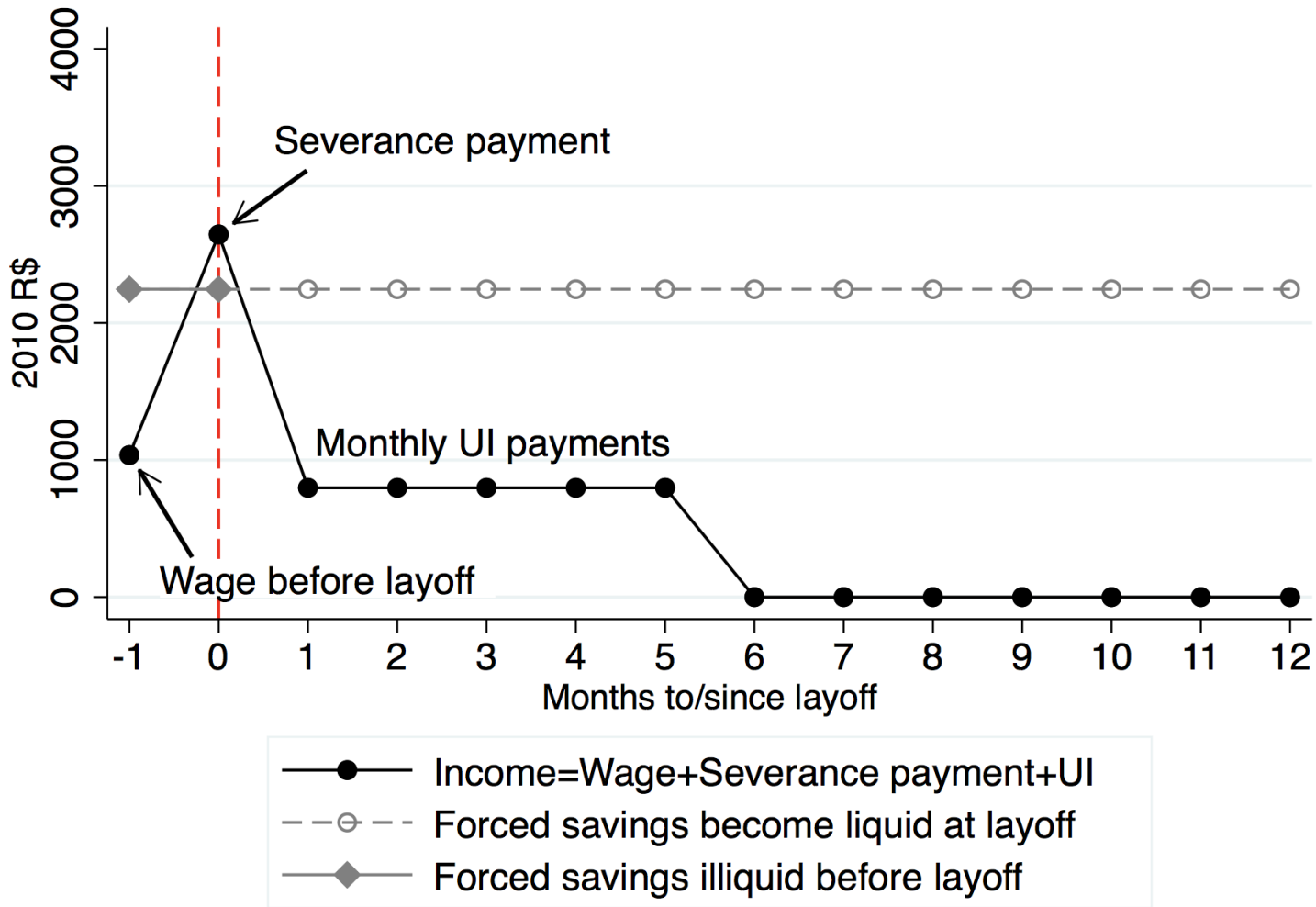
- In Brazil, formal workers who are **laid off** have 2 potential sources of "social insurance" to smooth consumption after layoff

1 State-contingent scheme: UI program
   - Must apply within 4 months of layoff
   - No UI payments in the first 30 days after layoff; paid monthly afterward
   - Eligible for 3, 4, or 5 months of UI if more than 6, 12, or 24 months of formal employment in the 36 months prior to layoff
   - Benefit level: between 100% and 187% of the minimum wage

2 Lump-sum schemes
   - UISA program (called FGTS)
     - ★ Employer deposits 8% of monthly wage in employee's UISA account
     - ★ Employee can withdraw everything within 15 to 90 days after layoff (and they do; otherwise account becomes illiquid again until retirement)
   - Severance Payment (SP):
     - ★ At layoff, employer must pay a "fine" equal to 40% of the FGTS amount + a monthly wage as "advance notice" of layoff

- Workers who are **fired** (for cause) do not get any of these benefits

Figure: Median statutory benefits for laid-off workers in São Paulo

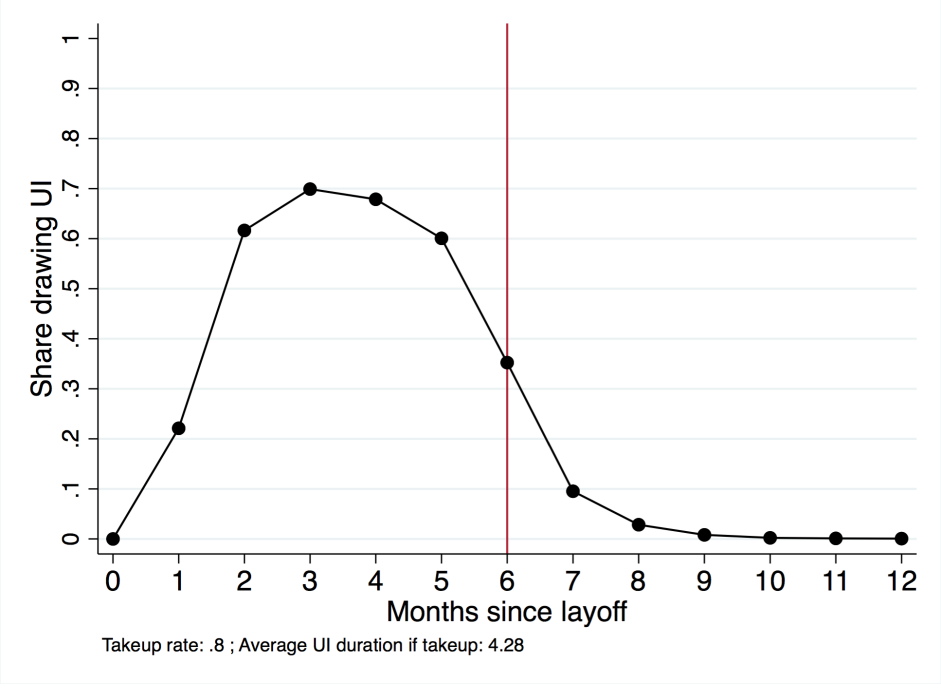


▸ average and fired

Share actually drawing UI in São Paulo

Raw data; same pattern as in Gerard and Gonzaga (2016)

Figure: Share drawing UI in each month since layoff

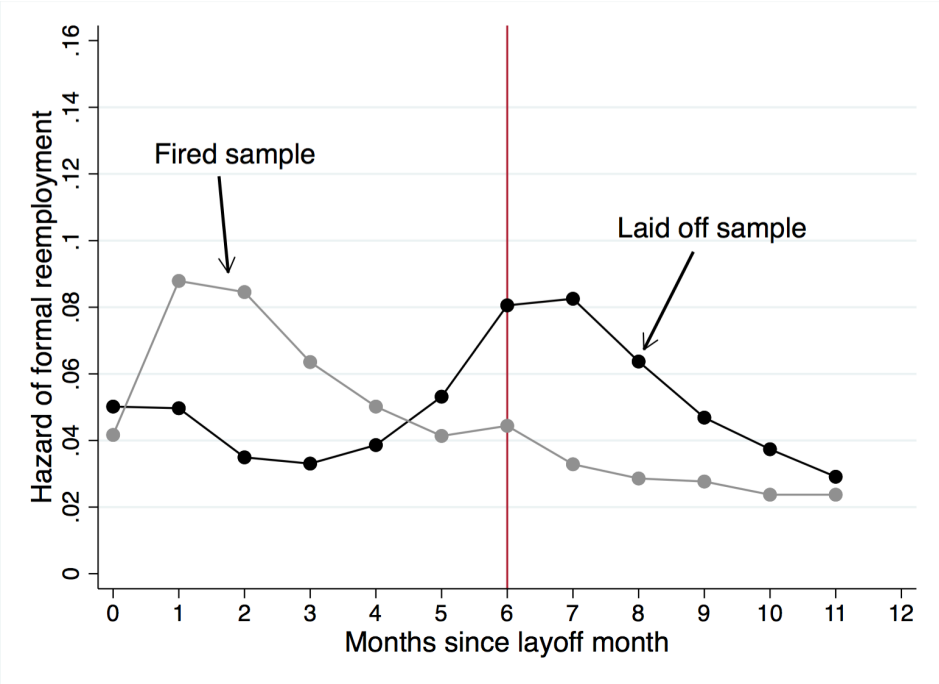


Takeaway: In practice, not everybody draw UI as soon as eligible (some delay), but nobody draws any UI benefit beyond month 8 after layoff

Formal reemployment outcomes in São Paulo

Raw data; same pattern as in Gerard and Gonzaga (2016)

Figure: Hazard rates of formal reemployment and survival in non-formal-employment



Takeaway: Some clear delay in formal reemployment for laid off workers (disincentive effect), but share remaining without a formal job 12 months after layoff high in general

Outline

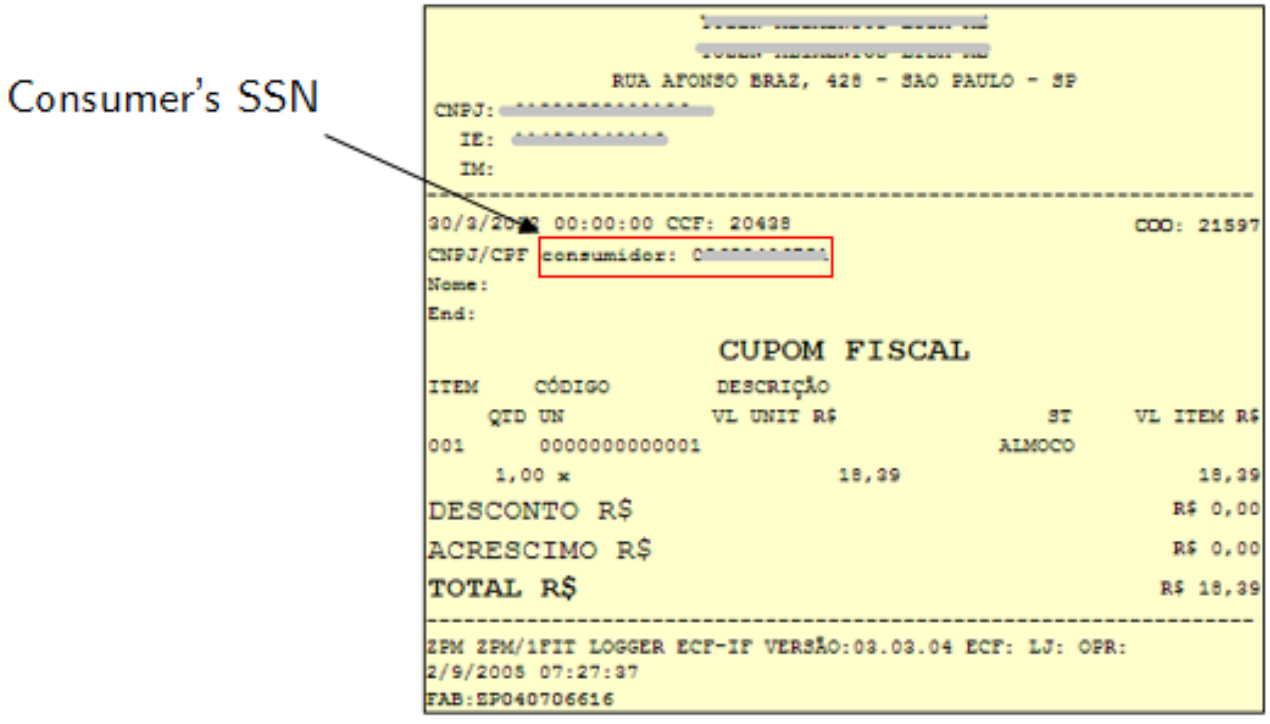
1. Institutional background
2. **Data**
3. Consumption smoothing and unemployment insurance schemes
4. Implications & Next steps

Data

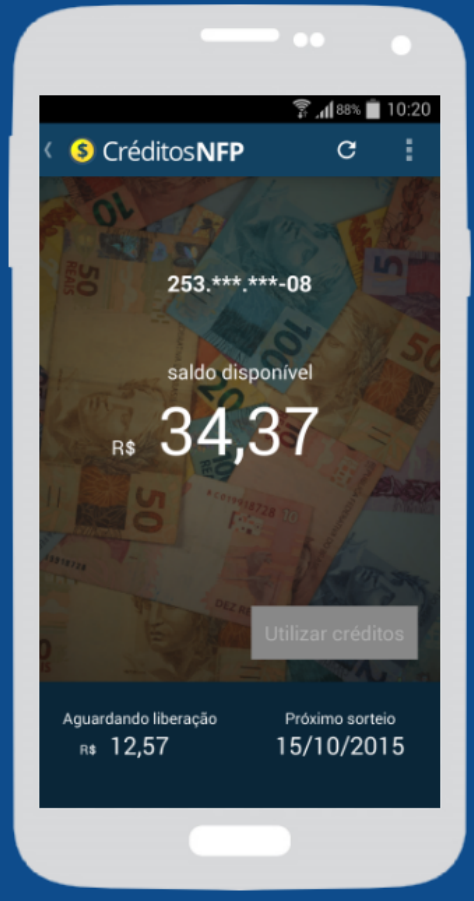
This work uses **anonymized** data, and does not necessarily reflect the views of PRICED LTDA.

- *Big data*: new sources of consumption data (Pistaferri, 2015)
- Consumption data for this project:
  - Nota Fiscal Paulista program in São Paulo (Naritomi, 2016):
    - ★ VAT at the state level in Brazil (income tax at federal level)
    - ★ Consumers are incentivized to give their SSN when shopping in state of São Paulo (receive state lottery ticket + get some of the VAT back)
    - ★ Sellers must report all transactions to state tax authority, including SSN
    - ★ Individuals can set up online accounts at state tax authority to see and monitor all transactions with their SSN
    - ★ Substantial take up: 20 million people with online accounts
    - → System creates high-frequency expenditure data
  - Data for this project from Smartphone App collecting and organizing data from those online accounts for their users
    - ★ Anonymized sample made available for this project
    - ★ High frequency panel for $> 400,000$ individual users (2010-2015)

Figure: Receipt example



CréditosNFP



Acompanhe e saque seus Créditos na Nota Fiscal Paulista

Receba notificações diretamente em seu celular dos novos créditos e sorteios da Nota Fiscal Paulista. Monitore e saque seus créditos.

DISPONÍVEL NO Google play

Baixar no Windows Store

DISPONÍVEL NA App Store

Data

- Key variables of consumption data (2010 - 2015)
  - Date, total value, number of items for each transaction
  - Detailed sectoral code of seller (to identify type of purchases)

47	Retail
472	Retail of food, beverages, tobacco
4722-9	Retail of meat and fish
4722-9/01	Retail of meat (butchery)

- Other key datasets matched to App data (anonymized):
  - RAIS: matched employee-employer dataset for universe of formal employees in Brazil (2005-2014)
  - UI registry: universe of UI payments (2009-2012)
- Matched data for $> 400,000$ individuals
- For this paper, we focus on a subsample of this data

Sample criteria for main analysis sample

- Full time private-sector formal workers displaced in the state of São Paulo between 2011 and 2013 who are also App users
  - Such that we have consumption and employment data for at least one year before and at least one year after displacement
- At least 12 months of tenure at layoff (some prior attachment)
- At most 72 months of tenure (such that we can use employment history to calculate the statutory amount for lump-sum schemes)
- Final layoff (resp. fired) sample: 67,437 events (resp. 1,727 events)
- Before showing results, we benchmark the data in two ways:
  - Compare UI/reemployment outcomes and demographics to a random sample of all displaced formal workers in São Paulo (from RAIS)
  - Describe the coverage of the expenditure data and discuss the assumption needed for this project ("proportionality")

Representativeness of our main sample

- Compare our sample to 5% random sample of all displaced formal workers in São Paulo (using similar sampling criteria; 132,594 events)
- There are some differences:
  - Slightly more in the metropolitan area of São Paulo, older, richer, more females, more educated, more whites
  - Draw slightly fewer months of UI, and are formally reemployed faster
- But most differences are not very large

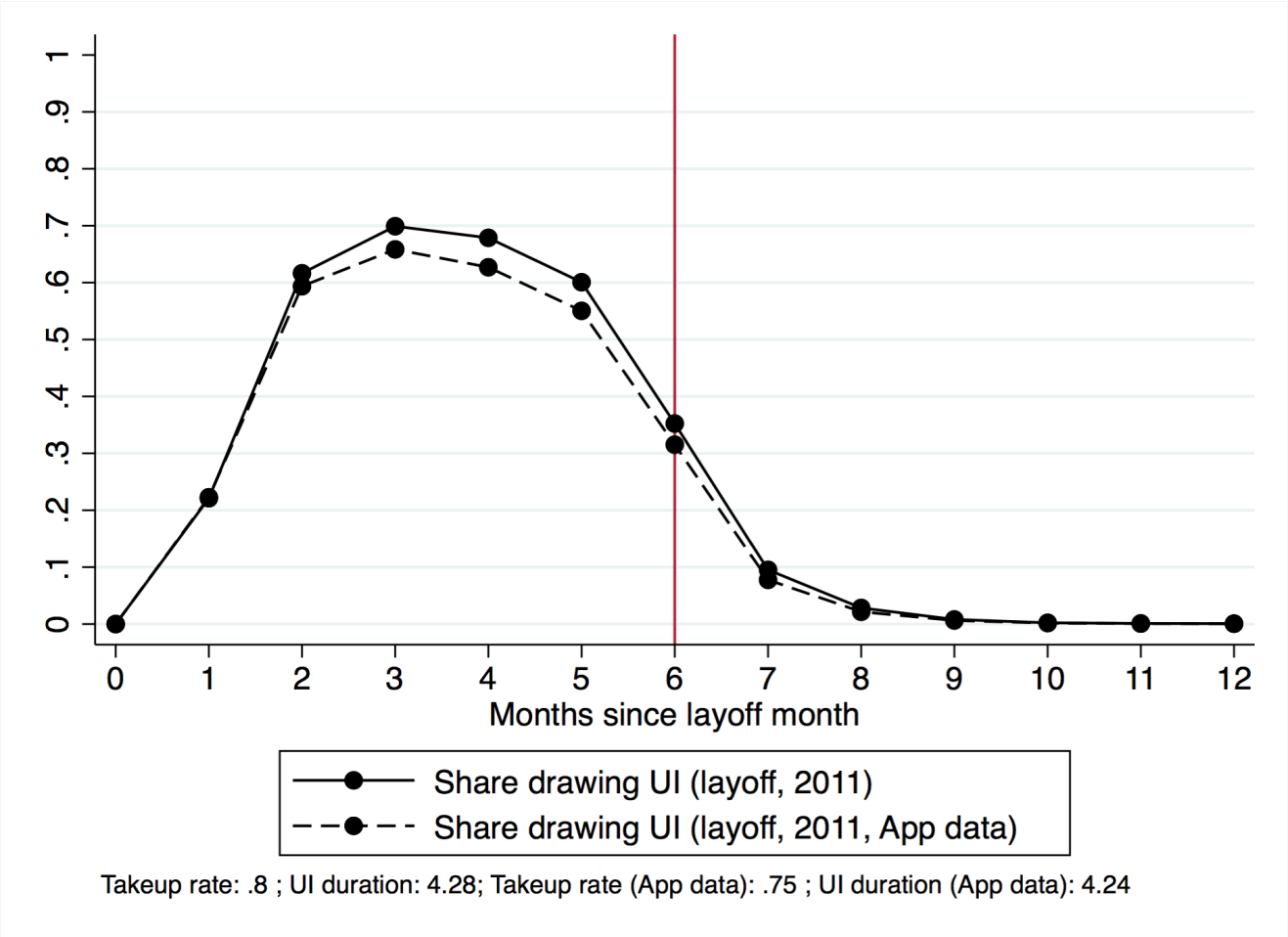
Descriptive Statistics

	Layoff Sample (65,710 obs.)				Fired Sample (1,727 obs.)			
(variables at or before layoff)	mean	median	sd	Δ SP	mean	median	sd	Δ SP
Share in metropolitan area	0.56	1	0.50	0.02*	0.70	1	0.46	0.03*
Share female	0.43	0	0.50	0.04*	0.33	0	0.47	0.04*
Share completed high school	0.72	1	0.45	0.07*	0.66	1	0.47	0.11*
Share white	0.71	1	0.46	0.01*	0.61	1	0.49	0.02
Tenure (in months)	30.1	25.8	14.70	0.87*	29.8	25.2	14.7	1.68*
Age (in years)	32.7	32.0	7.88	0.24*	32.1	31.0	7.5	0.1
Monthly wage (R$2010)	1,540	1,060	1,190	74*	1,138	939	879	13
Severance payment (R$2010)	3,670	2,646	3,388	204*	0	0	0	0
FGTS account balance (R$2010)	3,158	2,246	3,265	183*	0	0	0	0
Statutory UI benefit level (R$2010)	801	796	173	22*	0	0	0	0
Monthly expenditure (R$2010)	449	321	512	n.a.	397	275	488	n.a.

Takeaways: (i) most differences are significant but not so large, (ii) lump-sum transfers are large relative to the wage at layoff, and (iii) the monthly expenditure in our data is about 1/3 of the monthly wage (mean and median)

Share drawing UI: our sample vs. São Paulo

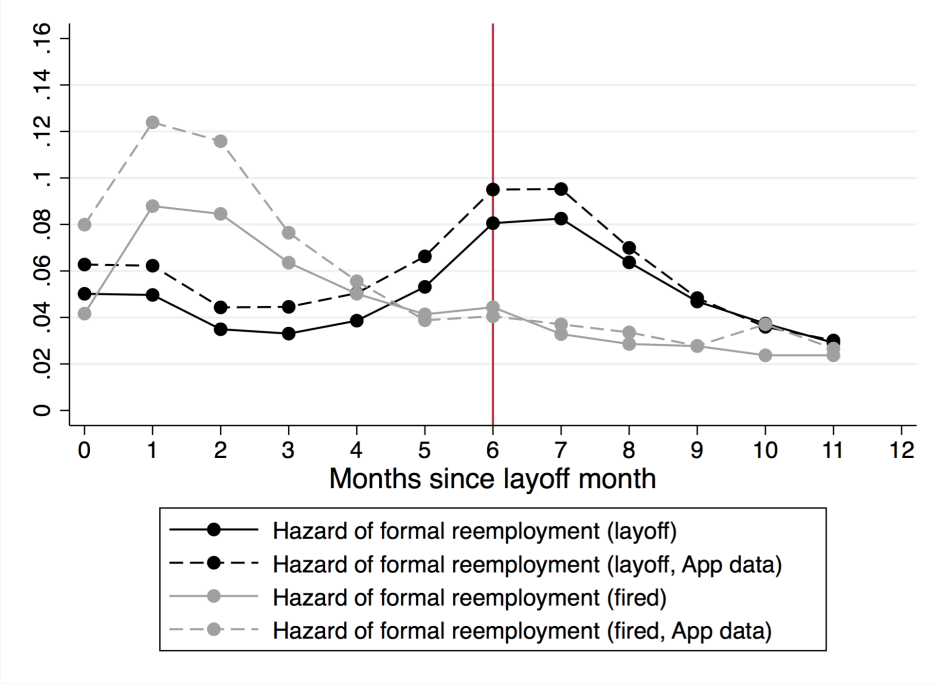
Figure: Share drawing UI in each month since layoff

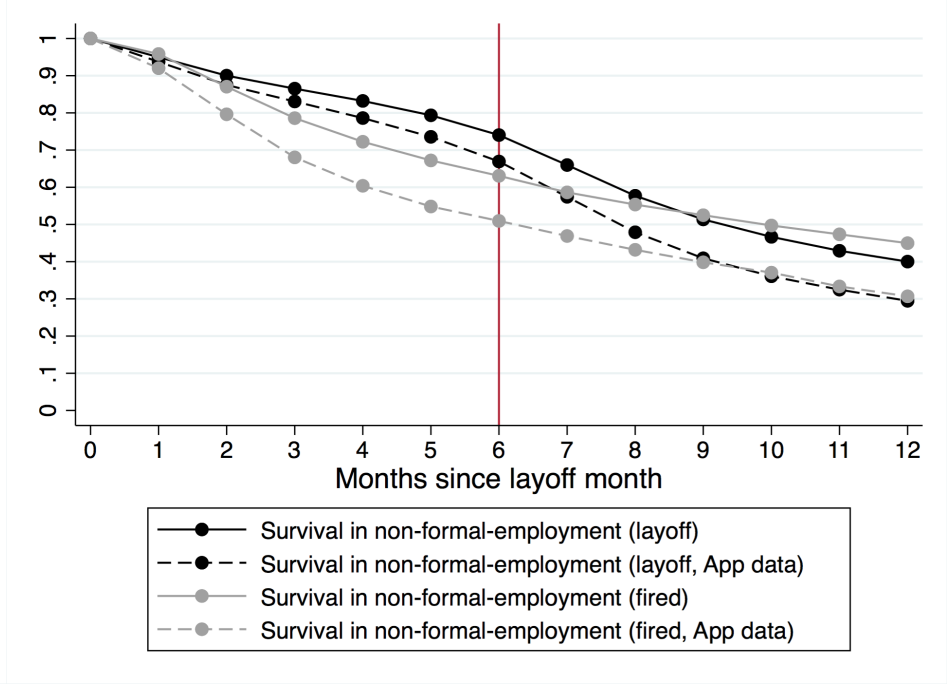


Takeaway: our sample draws slightly fewer UI benefits

Formal reemployment outcomes: our sample vs. São Paulo

Figure: Hazard rates of formal reemployment and survival in non-formal-employment





Takeaway: our sample is formally reemployed a bit faster but the share formally reemployed after 1 year remains very similar for laid-off vs. fired workers

Expenditure coverage and proportionality assumption

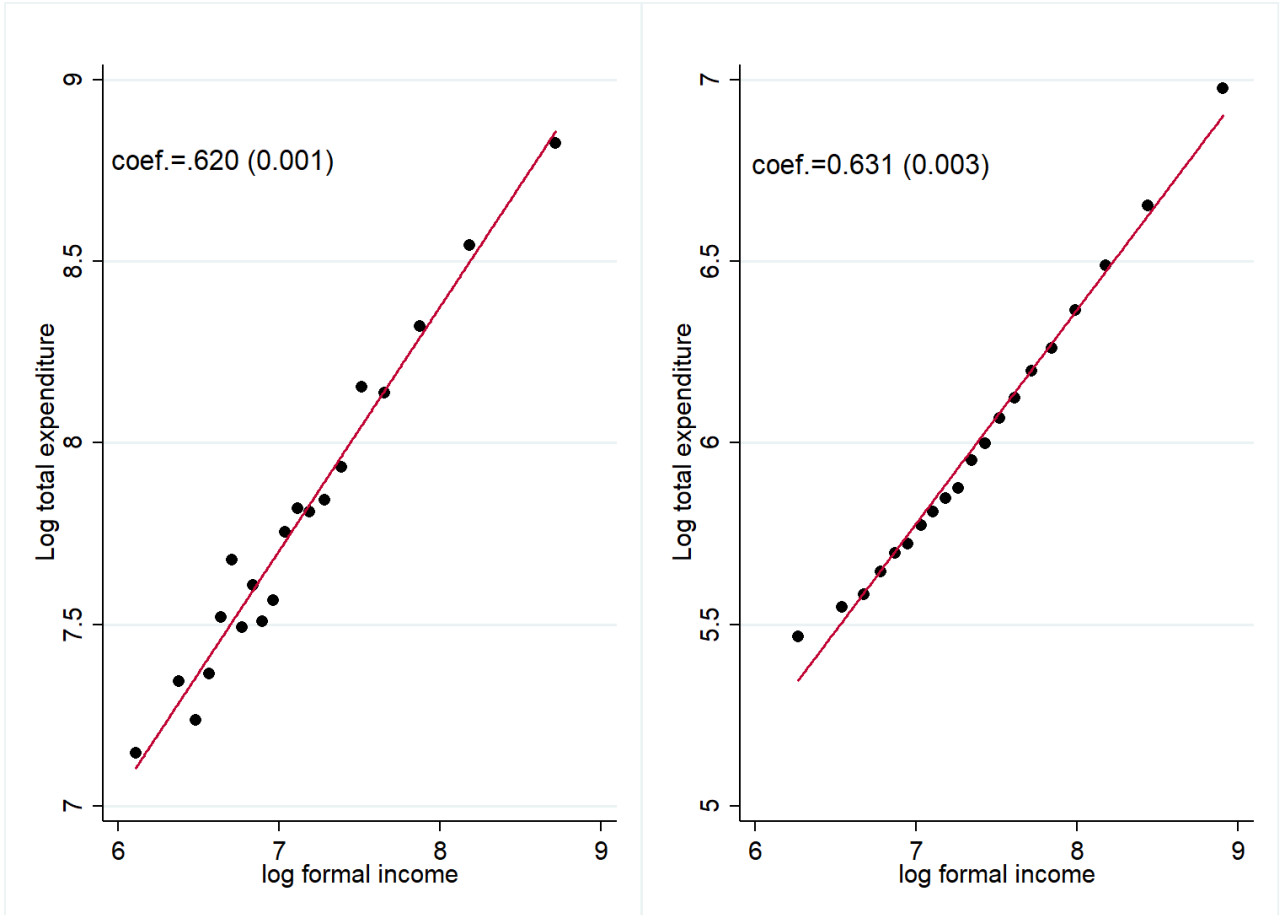
- VAT receipts cover rich set of consumption categories and purchases from any means of payment (important for developing countries)
- Yet, the VAT is only levied on goods, so the data cannot cover VAT-excluded items such as services and rental costs
- Among purchases taxed by the VAT, we certainly don't observe all expenditures because individuals must voluntarily provide their SSN
- The fact that average (median) monthly expenditures prior to layoff in our sample amount to 30% of their average (median) wages suggests that our data have quite good coverage of what it could cover
- Nevertheless, coverage incomplete so we must rely on a "proportionality" assumption: % changes in expenditure levels in our sample must be informative of % changes in expenditure levels overall

Validity of our expenditure data

- We try to support the validity of the expenditure data for our purpose in two ways:

1. Compare the level of expenditure and the expenditure-income gradient for formal workers in our sample and in a household survey data for Brazil (controlling for the same set of observables: age, gender and education)
2. Look for empirical regularities that have been found in other contexts

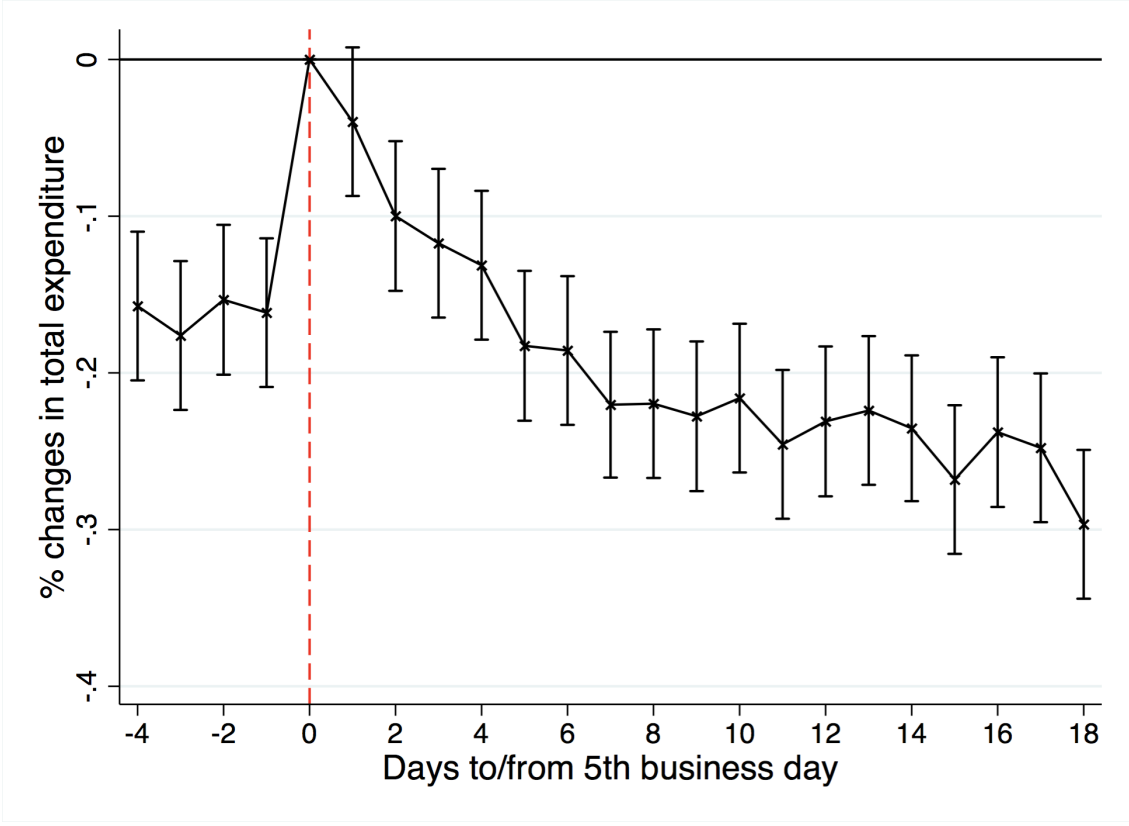
Figure: Benchmarking: Household Survey (left) vs App data (right)



Takeaway: For formal workers, (i) total expenditure in our sample is about 1/3 of total household expenditure in survey, but (ii) the expenditure-income gradient is very similar

▸ restrict to goods

Figure: Excess sensitivity & payday effect



Takeaway: we document a clear payday effect as in Olafsson and Pagel (2017) for public employees whom we know must be paid by the 5th business day of each month

Outline

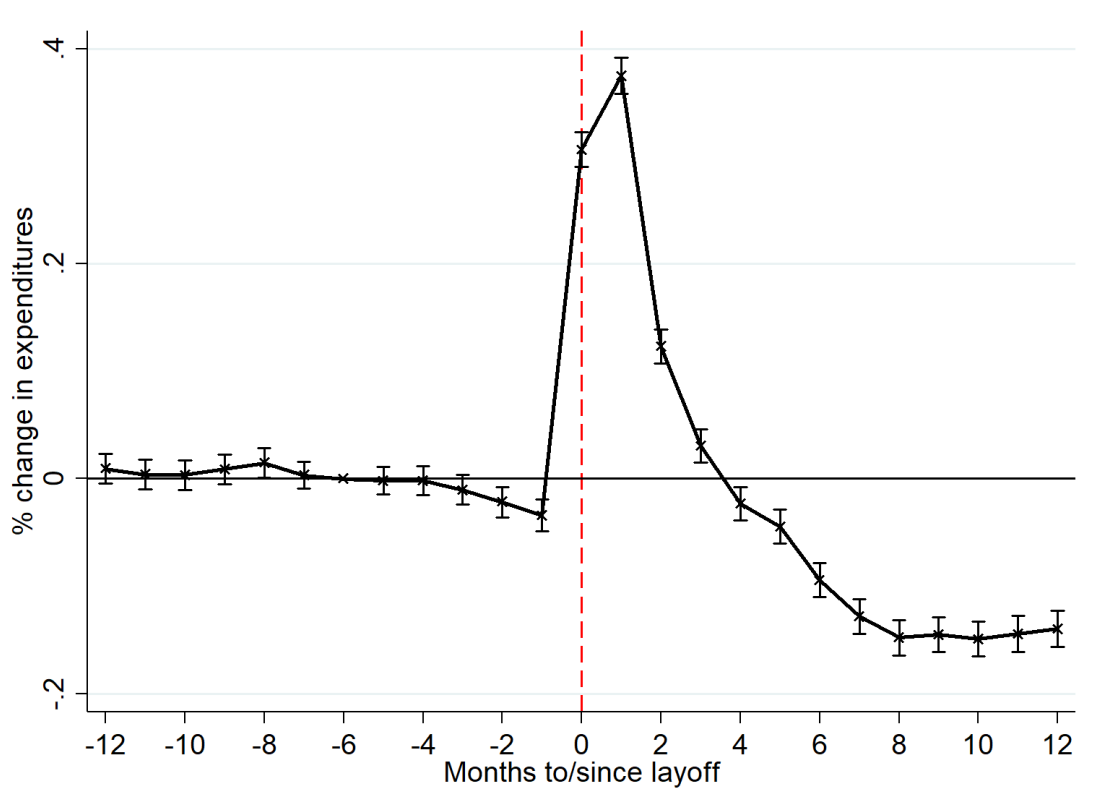
1. Institutional background
2. Data
3. **Consumption smoothing and unemployment insurance schemes**
    1. Consumption around dismissal event
    2. Consumption around UI exhaustion
4. Implications & Next steps

Empirical analysis: consumption around dismissal event

- Research design: event analysis measuring changes in expenditure levels in 25-month window around formal job displacement events
- Compare "Treatment" group: workers affected by a dismissal (e.g.: layoff or firing)...
- ... to a "Placebo" group: workers who remain in their formal job for the whole 25-month window (we assign them a "placebo" layoff month; 177,607 events)
- In particular, we use the following specification:
  $y_{ikt} = \alpha_t + \beta \cdot JobLossSample_i + \gamma_k + \delta_k \cdot JobLossSample_i + \varepsilon_{ikt}$,
  - for worker i observed k month after the event (negative values correspond to pre-event months) in calendar month t;
  - s.e. clustered by individual; reference=month -6;
  - separate regressions for different events (layoff or firing);
  - we report $\widehat{\delta_k}$ divided by outcome in reference month (% change)

Layoff event – reference result

Figure: Layoff event (unconditional sample, mean effect, total expenditure)



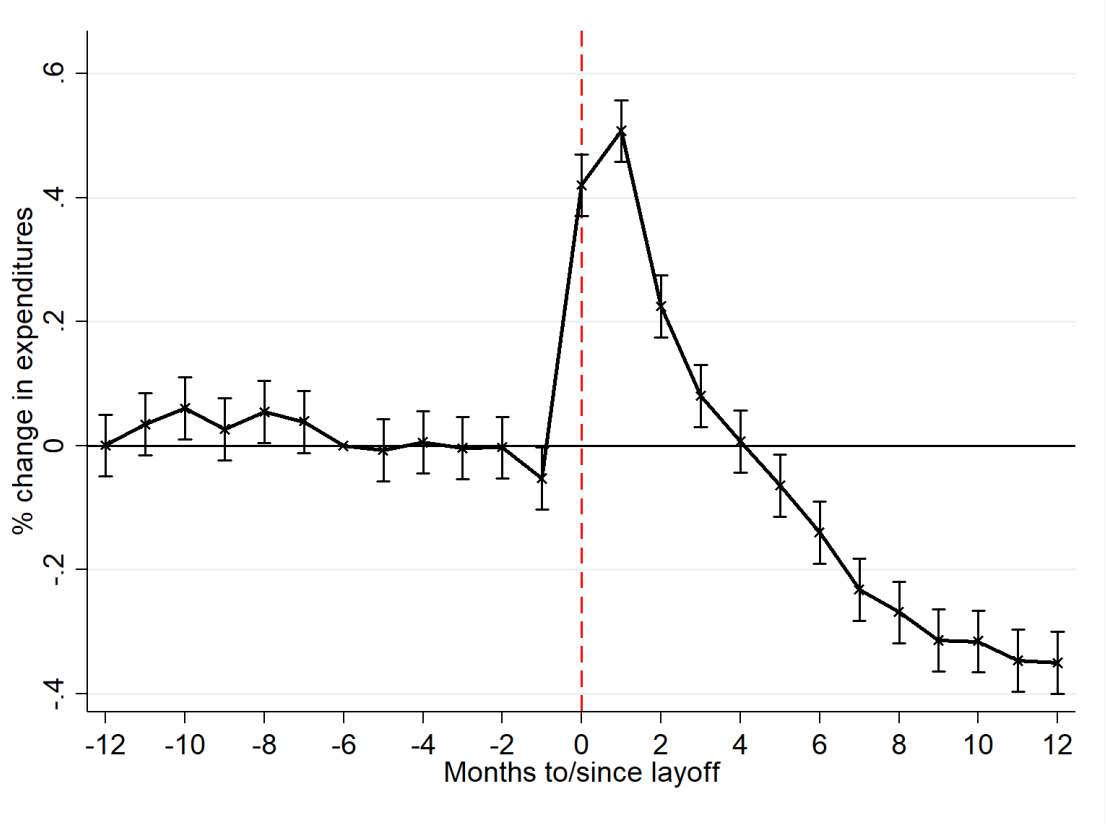
Unconditional sample includes all workers irrespective of reemployment status

Takeaways: Large spike in expenditures at layoff (+35%) despite long-term loss (-15%)

▸ raw data

Layoff event – median effect

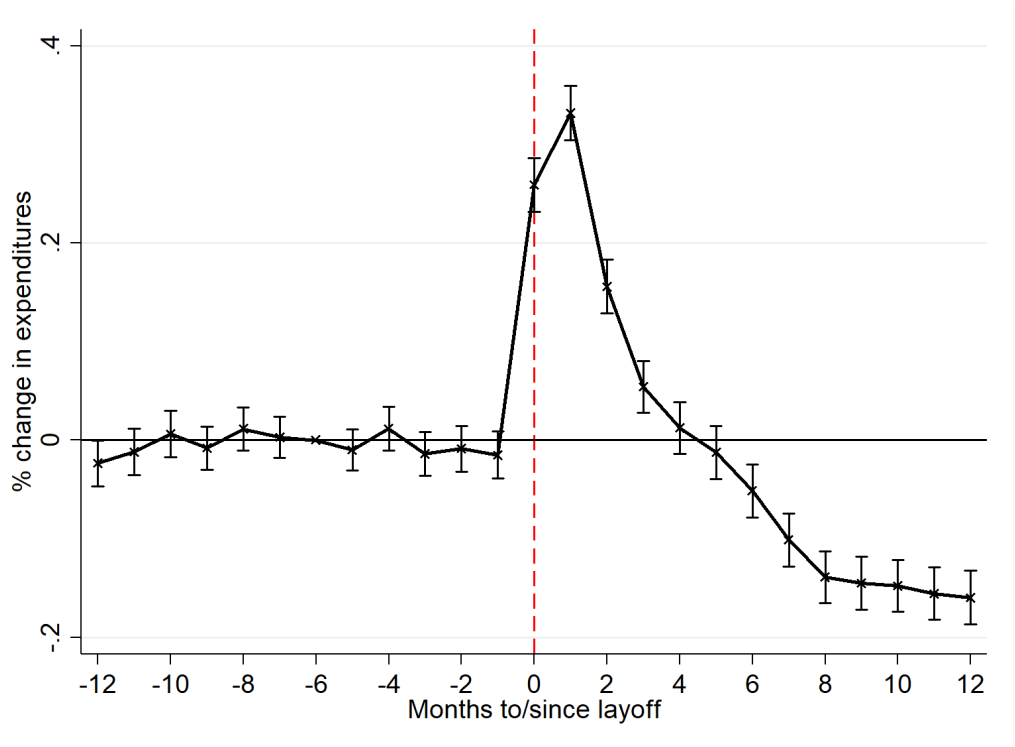
Figure: Layoff event (unconditional sample, median effect, total expenditure)



Takeaway: patterns even stronger for the median so not driven by outliers

Layoff event – *conditional sample*

Figure: Layoff event (conditional sample, median effect, total expenditure)



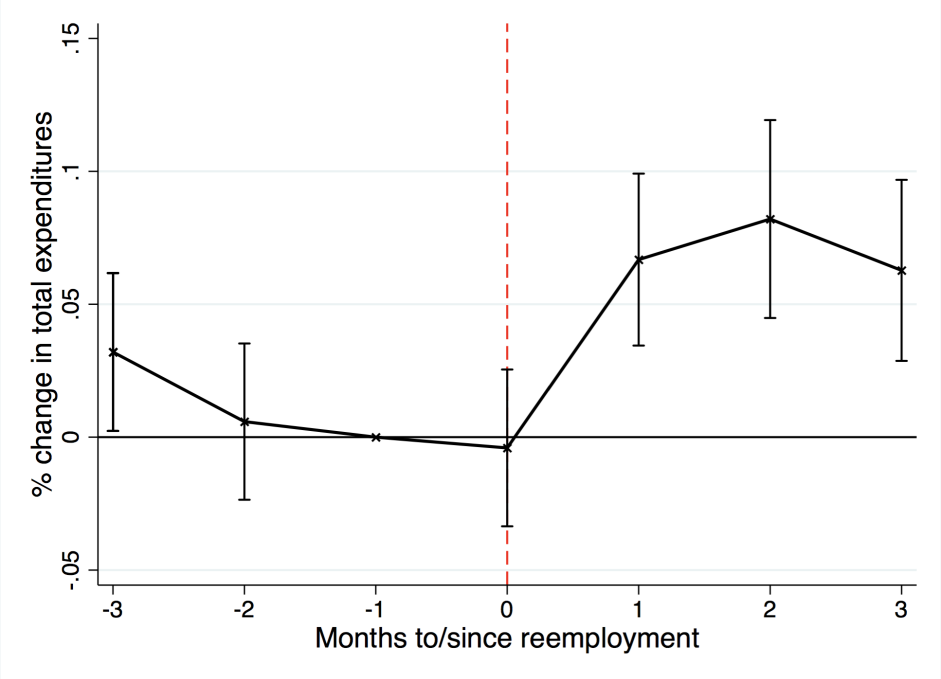
In *conditional sample*, displaced workers restricted to those who remain without a formal job for at least 12 months after layoff

Takeaway: (i) pattern not driven by composition effect as still large spike and long term loss in this sample and (ii) 17% drop after 12 months without a formal job

Formal re-employment event

Result from similar event study around formal reemployment
(placebo group used indirectly to de-trend the outcome)

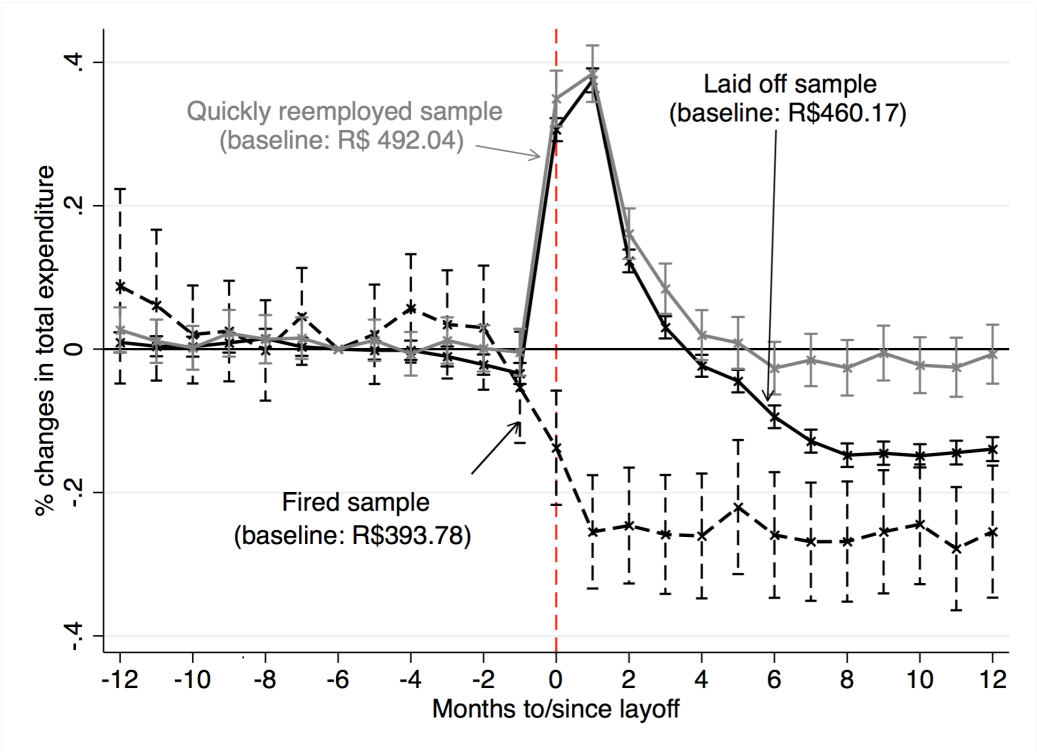
Figure: Re-employment event (mean effect, total expenditures)



Sample: re-employment event taking place between months 9 and 12 after the layoff event (such that pre-trend in the graph not too affected by spike after layoff)
Takeaway: expenditures increase upon reemployment (not obvious in previous graphs)

Dismissal event – groups with different benefits

Figure: Dismissal event (mean effect, total expenditures)



Unconditional laid off sample (as before); laid off workers reemployed in months 0-1 after layoff (lump-sum schemes but no UI); unconditional fired sample (no benefits)
Takeaway: (i) immediate drop if no benefits (need for insurance); (ii) same spike if reemployed quickly and only lump-sum schemes ▸ median

Heterogeneity by lump-sum amounts

- We look at variation in lump-sum size across workers to provide further evidence that lump-sum is driving increase at layoff
- We interact the treatment effect in each event-time with the lump-sum amount that a worker would receive upon (placebo) layoff

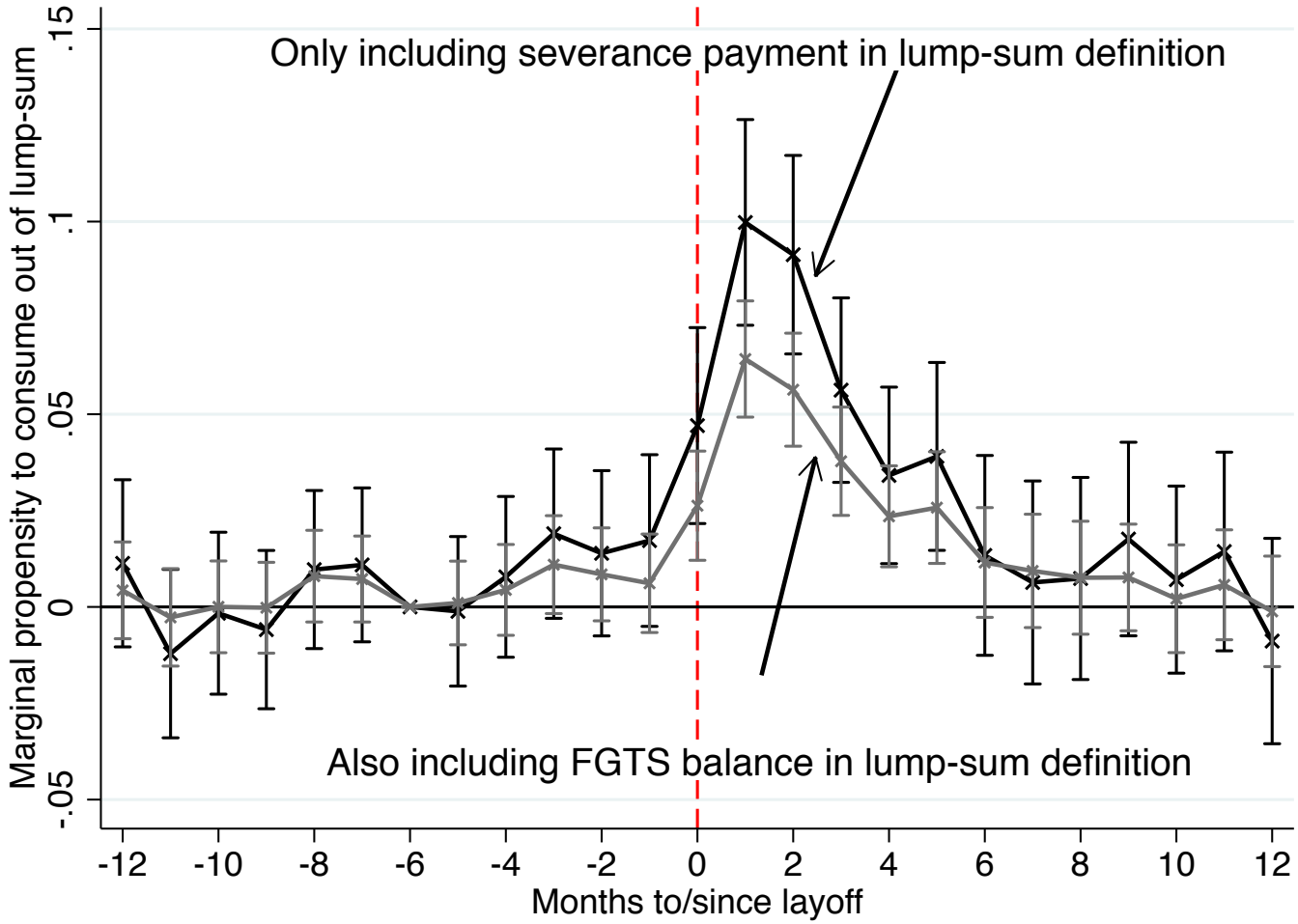
$\rightarrow$ trace differential effect of lump-sum on consumption over time

- We control for wage levels, so variation mostly coming from tenure
- Controlling for wages, we also control for UI benefit levels

$$y_{ikt} = \alpha_t + \beta \cdot JobLossSample_i + \gamma_k + \delta_k \cdot JobLossSample_i + \kappa_k \cdot (lumpsum_i - wage_i) + \theta_k \cdot (wage_i) + \phi_k \cdot (lumpsum_i - wage_i) \cdot JobLossSample_i + \nu_k \cdot (wage_i) \cdot JobLossSample_i + \epsilon_{ikt}$$

  - Outcome is mean monthly expenditure in period k scaled by 0.34 (coverage ratio according to comparison with survey data)
  - As a result, coefficient ϕ_k can be interpreted as *MPC*

Figure: Estimated coefficients $\widehat{\phi_k}$



Takeaway: the size of the lump-sum matters to explain differences in consumption around the onset of layoff but not in the long run

Time aggregation matters

- Time aggregation matters for assessment of insurance value
  - If we re-do our DD analysis aggregating the months before and after layoff (yearly analysis), looks like perfect insurance: only 2% drop in consumption despite large drop in resources
  - But within the year the pattern is not at all smooth as shown previously

Figure: Aggregate change in total resources and expenditures (% change)

	Unconditional		**Conditional (no formal job for at least 12 months)**	
	mean effect	conf. int.	mean effect	conf. int.
Total expenditure	-0.02	[-.01, .04]	-0.02	[.02, -.05]
Wage+SP+UI	-0.35	[-.35, -.36]	-0.75	[-.73, -.77]
Wage+SP+UI+FGTS	-0.18	[-.17, -.19]	-0.58	[-.56, -.59]

- Other takeaway: workers who stay without a formal job must be relying on additional resources to sustain consumption

Mechanisms: Why does consumption increase at layoff?

Different (classes of) mechanisms could explain (part of) our results

1. Excess sensitivity
   - A behavioral response due to planning mistakes from self-control problems (DellaVigna and Passerman, 2005) or over optimistic beliefs of re-employment odds (Spinnewijn, 2014);
   - Spend the money to avoid an agency problem within the household (e.g., pressure from relatives to use the money).
2. Liquidity constraints: the increase in consumption can reflect a rational response driven by liquidity constraints
3. Investments in durables to smooth consumption (expenditures $\neq$ consumption; Attanasio and Pistaferri, 2016)
4. Complementarity or substitution between expenditures and time/leisure (e.g. Aguiar and Hurst, 2005, for substitution)

Mechanisms: Why does consumption increase at layoff?

to disentangle different explanations we will look into the anatomy of the response

1. Excess sensitivity could explain results
   - Similar patterns for non-durables, food or entertainment expenditures
   - No large increase at layoff, but still a long-term loss, for "non bingeables" like pharmaceuticals (less likely to increase with lump-sum)

2-3. Liquidity constraint and investments in durables
   - Strong pattern for durables so these mechanisms could be at play
   - But still cannot explain the evidence above, so cannot be the full story

4. Complementarity with leisure
   - Substitution with leisure cannot explain increase at layoff
   - Strong pattern for home improvement so complementarity possible
   - But increase at layoff also for workers reemployed immediately (see earlier), so complementarity with leisure cannot be the full story
   - Moreover, no increase at layoff for fired workers (see earlier), so complementarity with leisure cannot be the full story

Figure: Excess sensitivity: similar pattern for non-durables, entertainment, and food, but almost no spike for pharmaceuticals (mean effects)

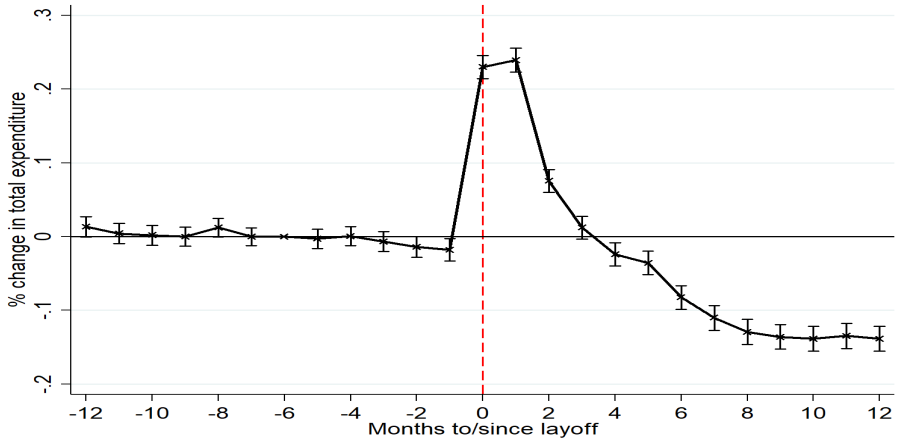


Figure: Non-durables

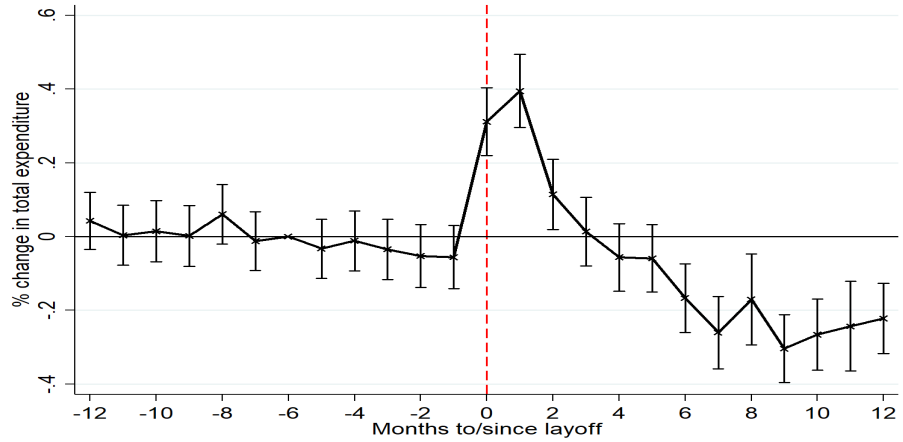


Figure: Entertainment

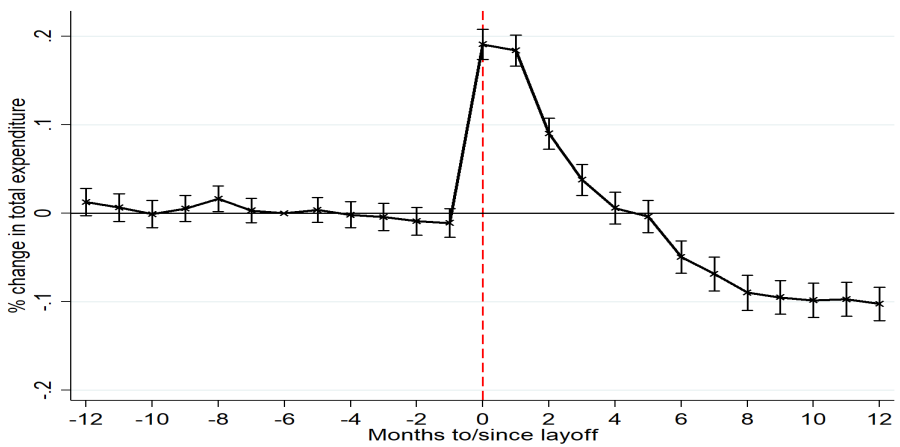


Figure: Food

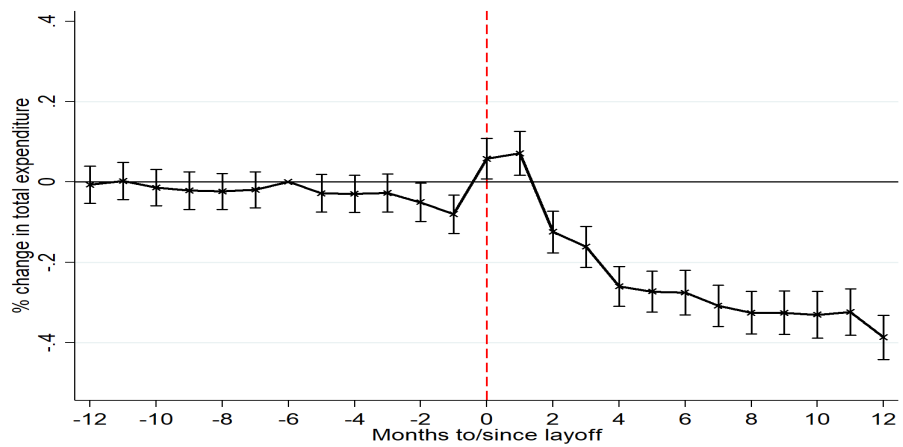


Figure: Pharmaceutical

Figure: Other mechanisms: durables and home improvements (mean effects)

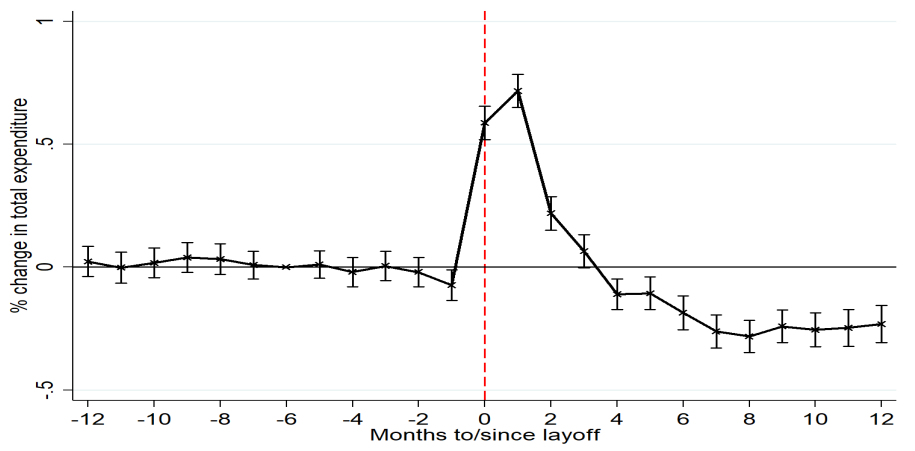


Figure: Durables

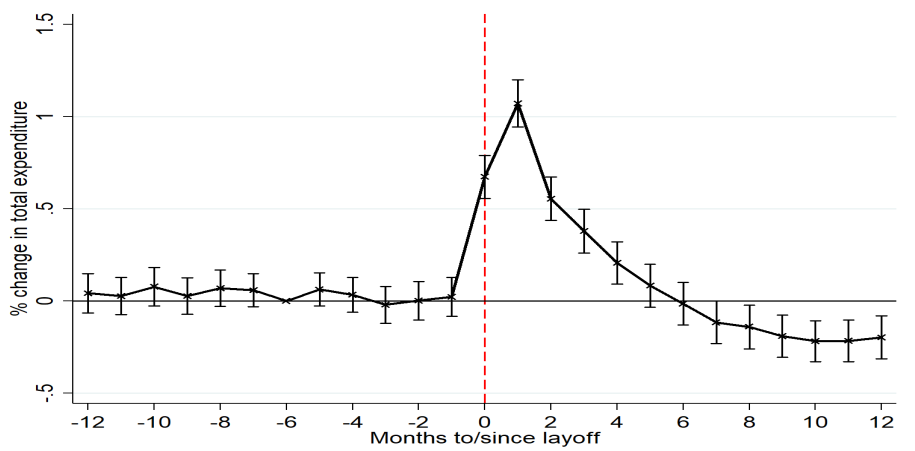


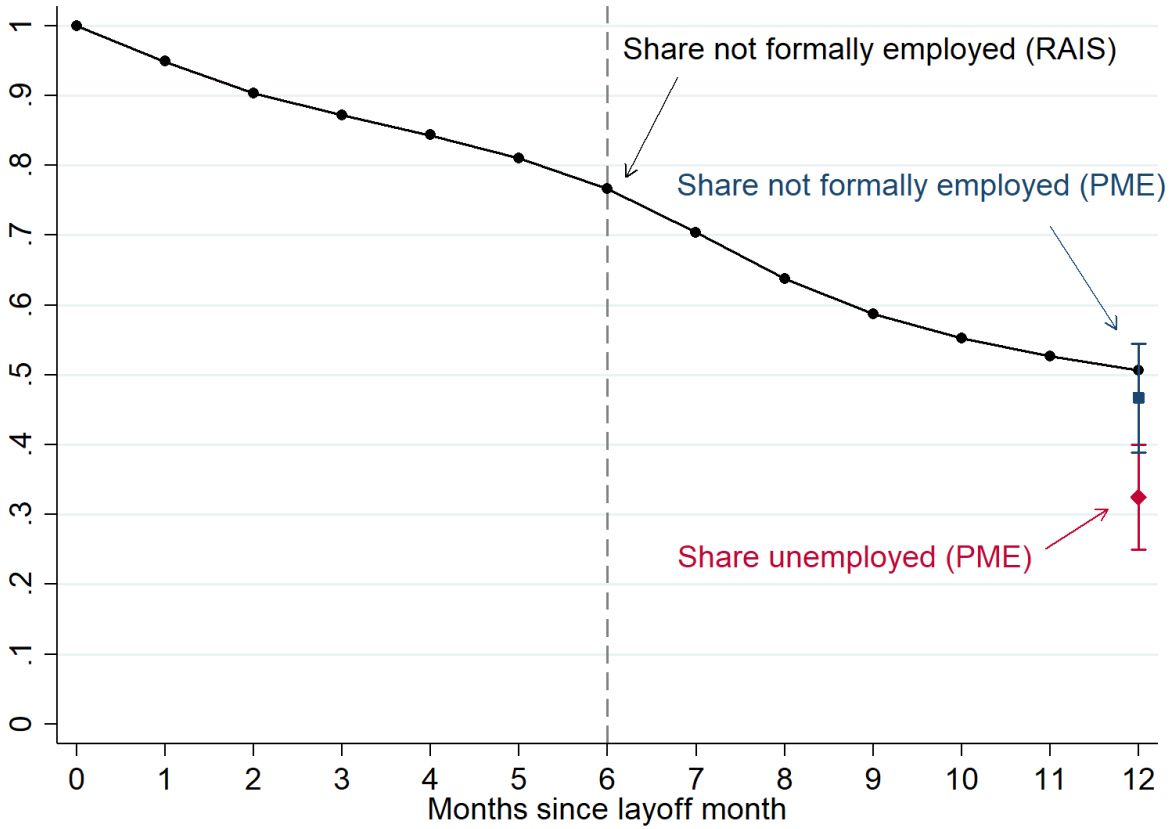
Figure: Home improvement

Key results so far

1. Evidence in support for excess sensitivity
   - **Consumption smoothing**: expenditure levels *increase* at layoff (incl. non-durables); seem inconsistent with optimal consumption smoothing
   - **Need for insurance and insurance value**:
     - ⋆ Workers who remain without a formal job experience lower levels of consumption when no more social insurance benefits (after month 8)
     - ⋆ Drop immediate for workers with no benefit at all (fired workers)
2. Despite other margins of self-insurance - e.g., informal jobs - evidence of a substantial need for insurance (17% cons. drop after one year)
   - Long-term loss comparable to recent findings for Europe/US
     - ⋆ Kolsrud et al. (2016) and Ganong and Noel (2017)
   - Very little evidence on the need for insurance in developing countries
3. Credit constraints could still explain part of response to lump-sum

   $\Rightarrow$ Therefore, we look at changes in consumption around UI exhaustion
   - Predictable drop in income that agents could save for (Ganong and Noel, 2017) $\rightarrow$ this should not be affected by credit constraints

Why long-term loss despite possibility of informal work?

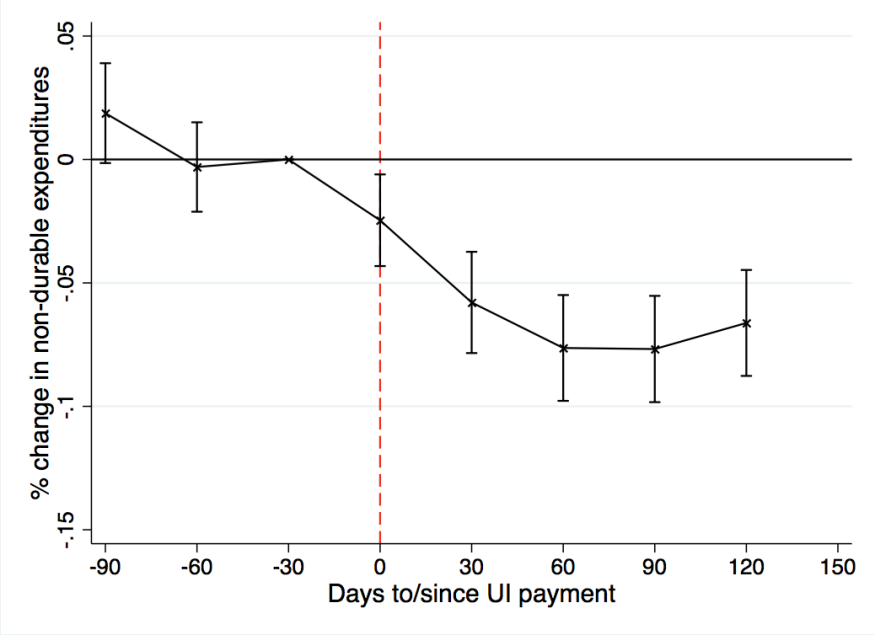


PME: longitudinal labor force survey covering metroarea of São Paulo. Important caveat: fewer than 400 obs. when following workers from comparable layoff to 12 months after. Takeaway: not much evidence of persistent self-insurance through informality as most non-formally employed 12 months after layoff appear to be unemployed ▸ Survival

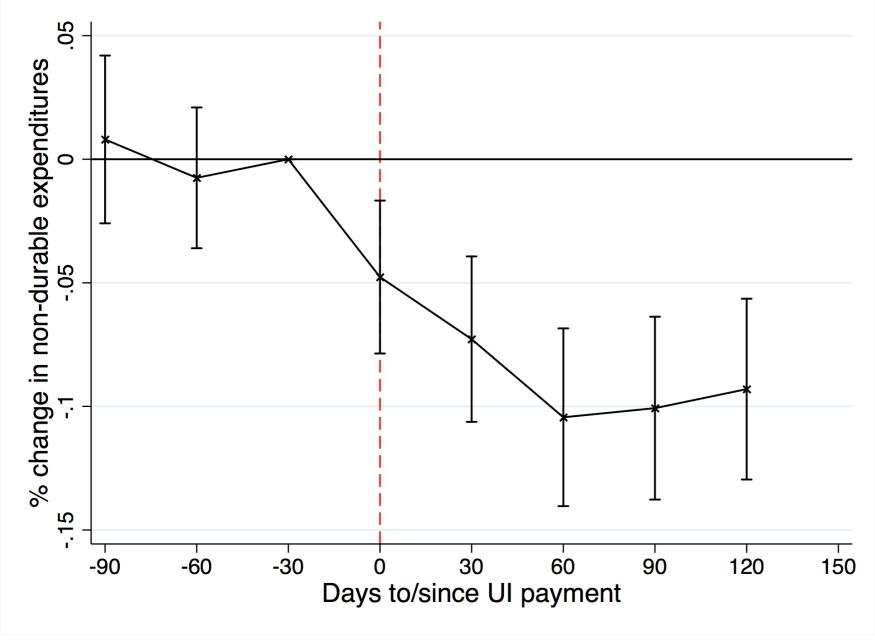
Empirical analysis: consumption around UI exhaustion

- **Research design I**: event analysis around UI benefit exhaustion to estimate changes in expenditures
  - Liquidity constraints cannot explain sensitivity to expected drop in income
- Sample:
  - Workers laid off in years for which we have UI data (2011)
  - Workers that draw all 5 months of UI
  - All the outcomes are de-trended using the placebo sample
- Main analysis:
  - Estimate expenditure changes for 30-day windows centered around last UI payment: variation in expenditures after exhaustion

I. UI exhaustion - Non-durables



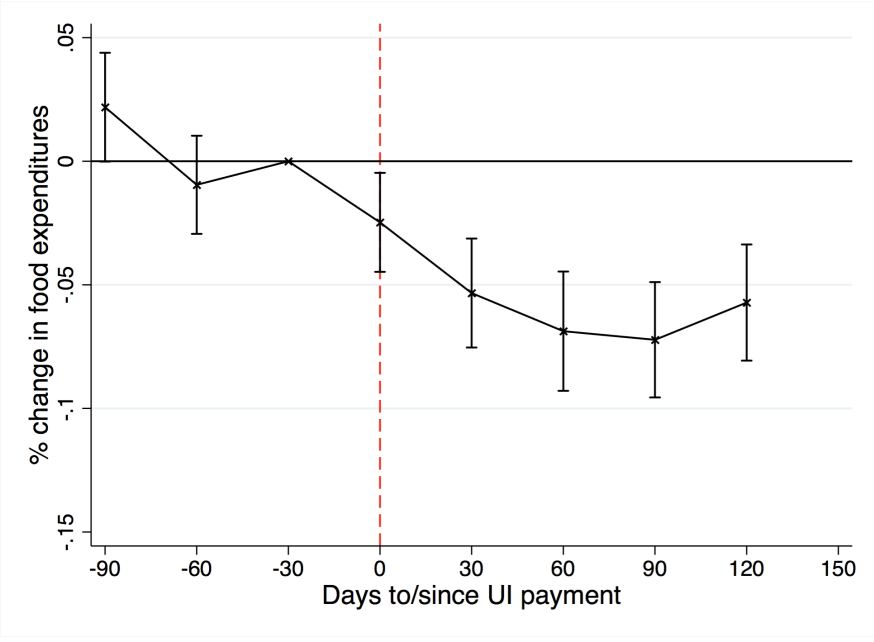
(a) Full sample



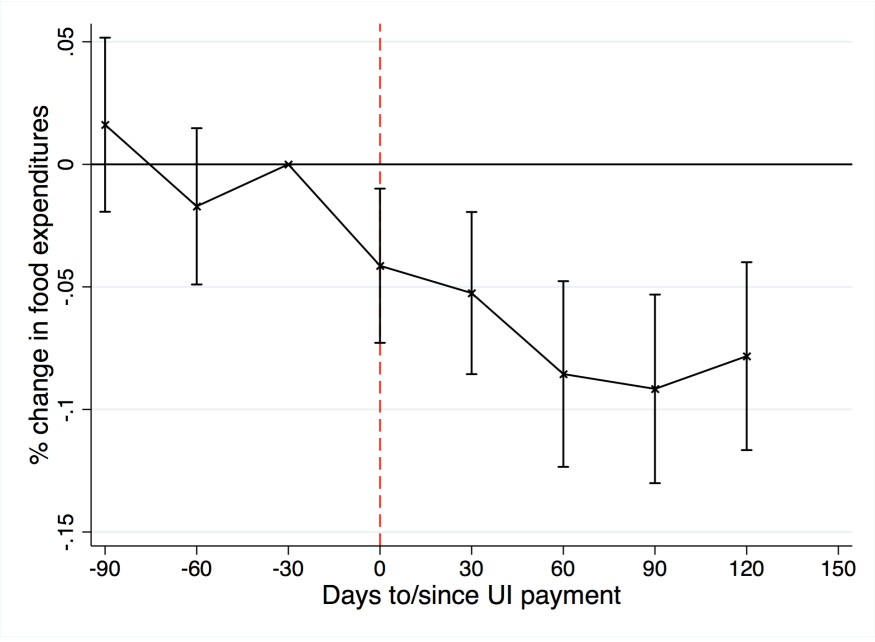
(b) Conditional on remaining without a formal job 12 months after layoff

Takeaway: clear drop at UI exhaustion but smoother than in Ganong and Noel (2017)

I. UI exhaustion - Food



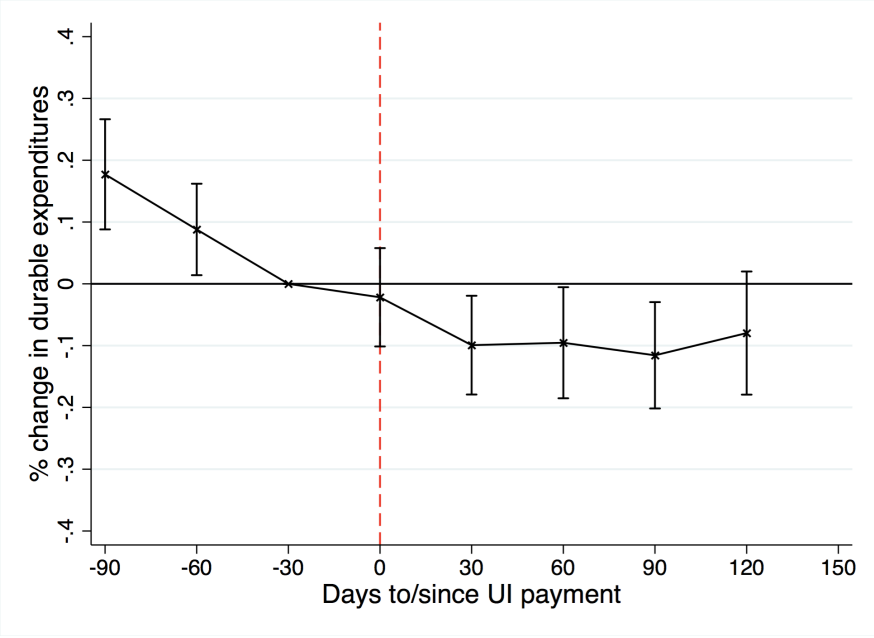
(a) Full sample



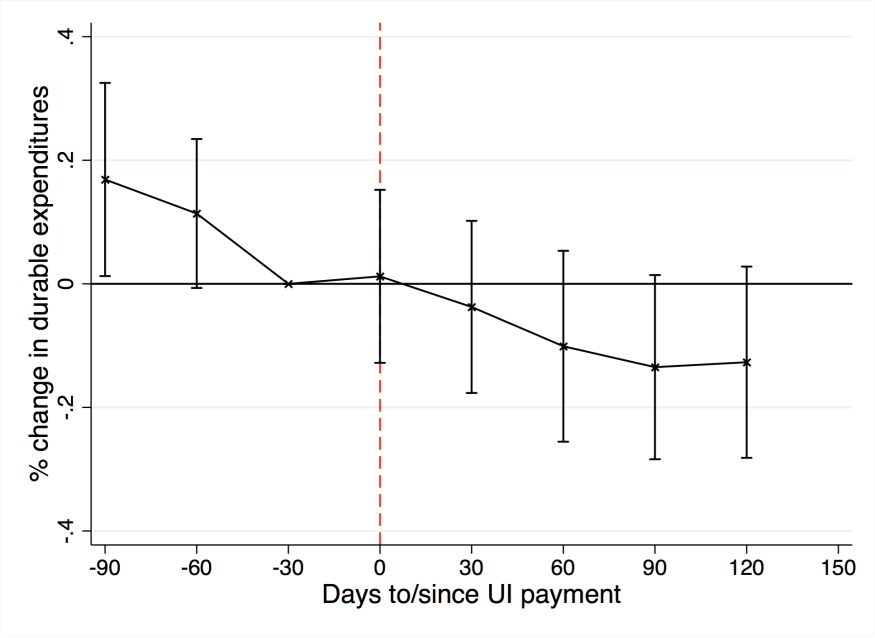
(b) Conditional on remaining without a formal job 12 months after layoff

Takeaway: clear drop at UI exhaustion but smoother than in Ganong and Noel (2017)

I. UI exhaustion - Durables



(a) Full sample

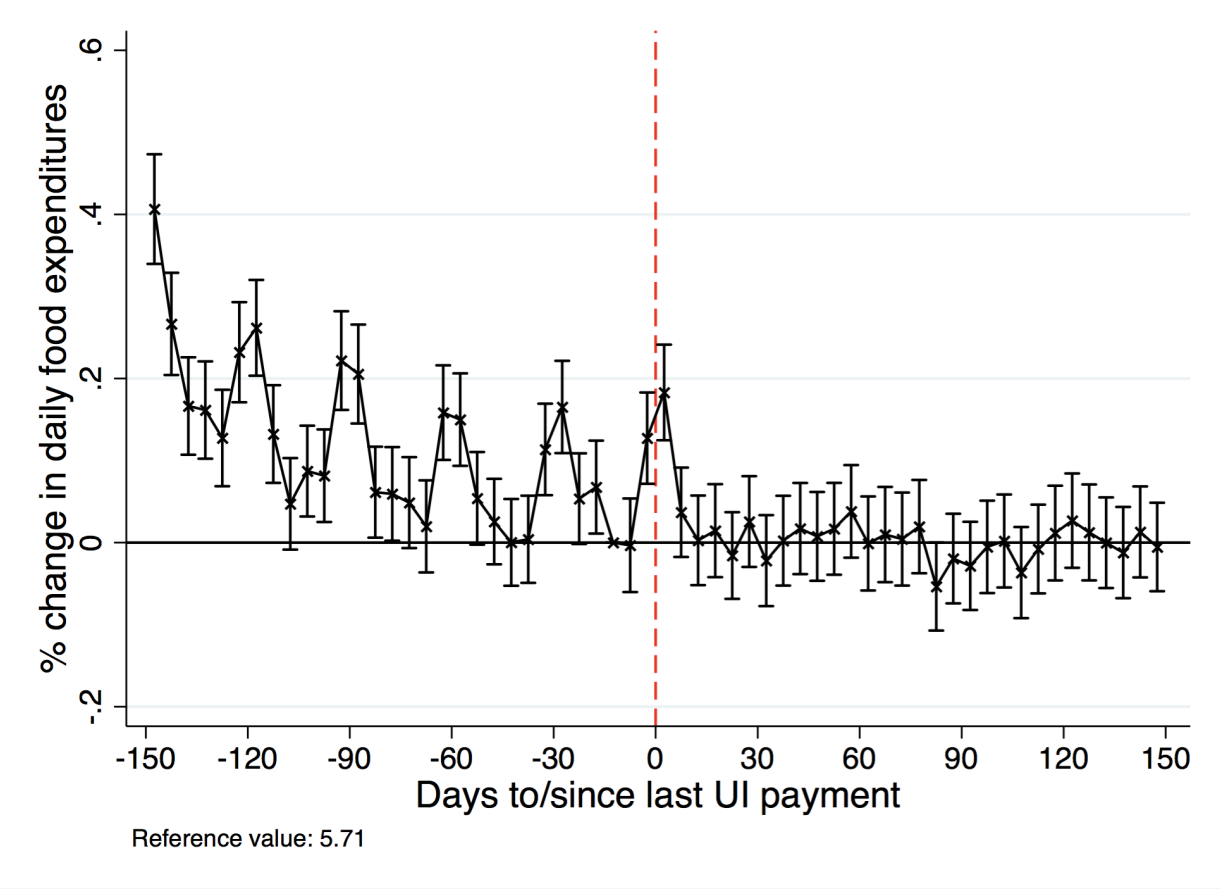


(b) Conditional on remaining without a formal job 12 months after layoff

Takeaway: pre-trend strong and seems to continue for durables

▸ Total expenditure

I. UI Exhaustion – Within-month analysis



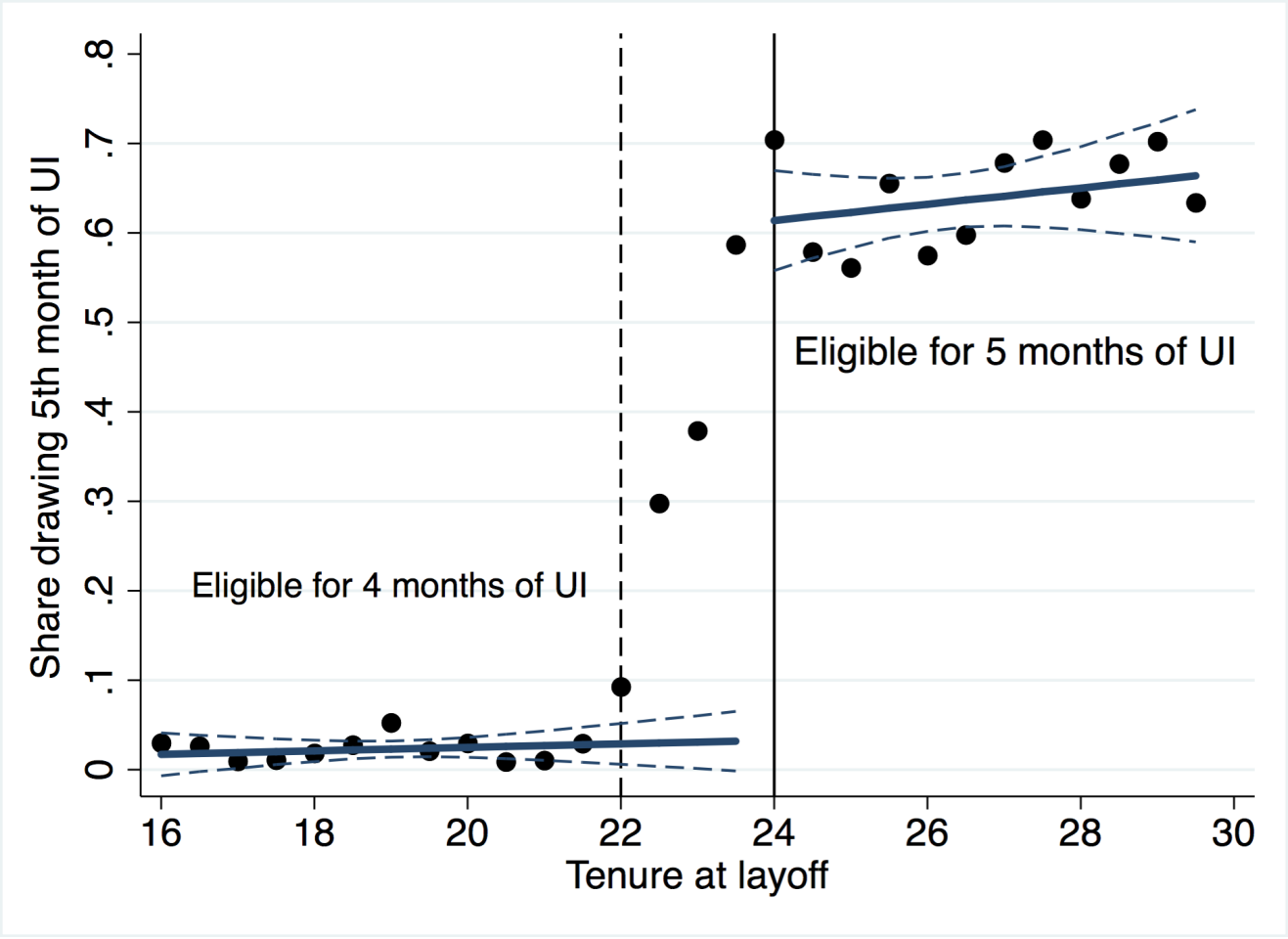
Takeaway: (i) UI checks are paid around -120, -90, -60, -30, and 0 and expenditures seem to follow the payment of UI checks within month; (ii) the level of expenditure after exhaustion is similar to the level at the end of the month while receiving UI

▸ total expenditure ▸ UI payments

Empirical analysis: consumption around UI exhaustion

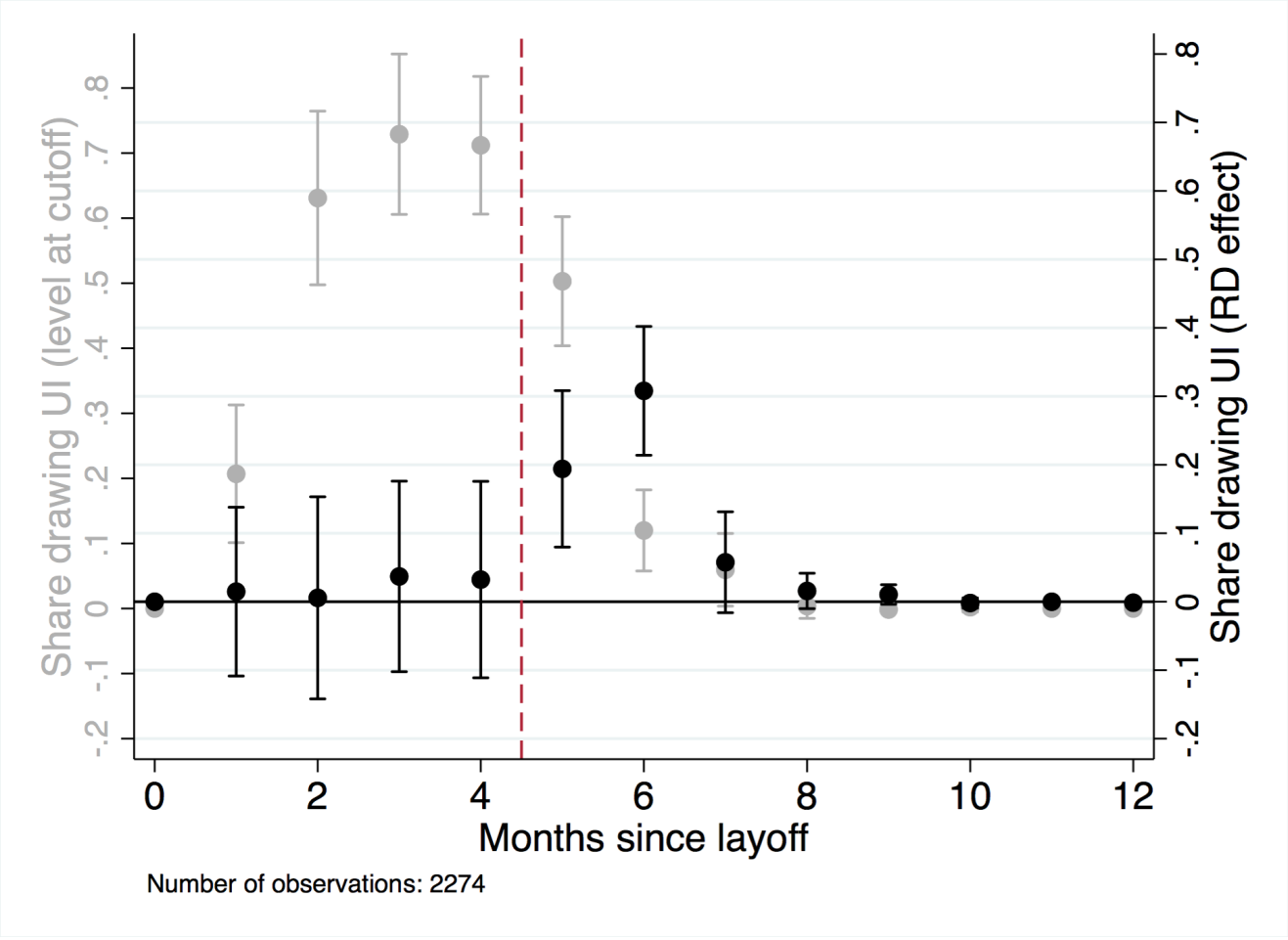
- **Research design II**: Same quasi-experimental variation in potential UI duration as in Gerard and Gonzaga (2016)
  - Workers with more than 24 months of tenure at layoff are discontinuously eligible for a 5th month of UI
  - We restrict attention to workers that only had one job in the last 36 months (tenure in this job determines UI)
    - ⋆ Workers with more than 24 months of tenure are eligible for 5 months of UI; workers with less than 22 months of tenure are eligible for 4 months of UI (between 22-24 there is ambiguity)
  - Same lump-sum at the discontinuity so design avoid issue of pre-trend at UI exhaustion due to increase in expenditures at layoff
  - Use layoffs in 2011 for the first stage (observe UI) and use layoffs in 2011-2013 for expenditures and re-employment outcomes
  - Unfortunately, sample relatively small...

II. RDD benefit duration: RD graph for first stage



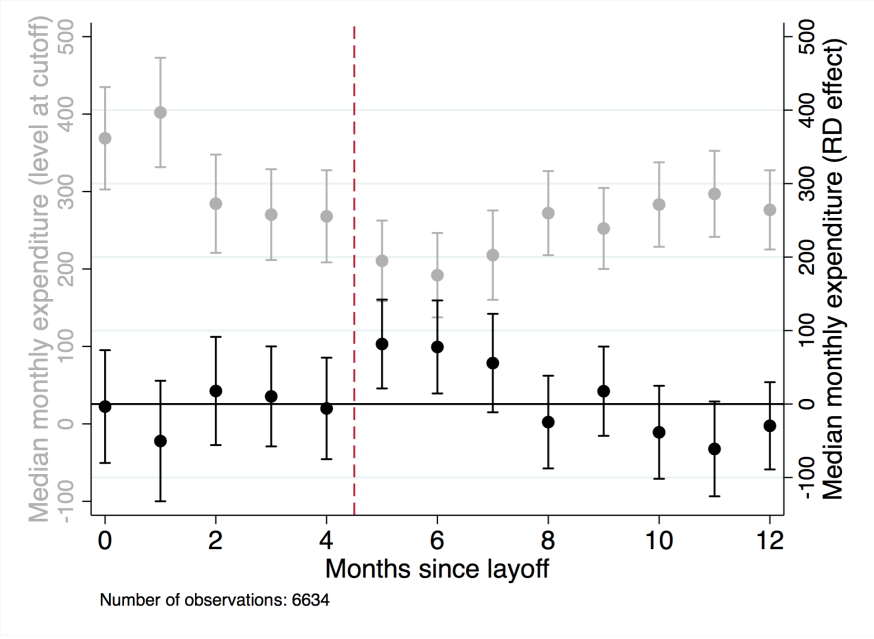
Takeaway: workers eligible for a 5th month of UI are more likely to draw a 5th month of UI (Gerard and Gonzaga, 2016)

II. RDD benefit duration: RD estimate for each month

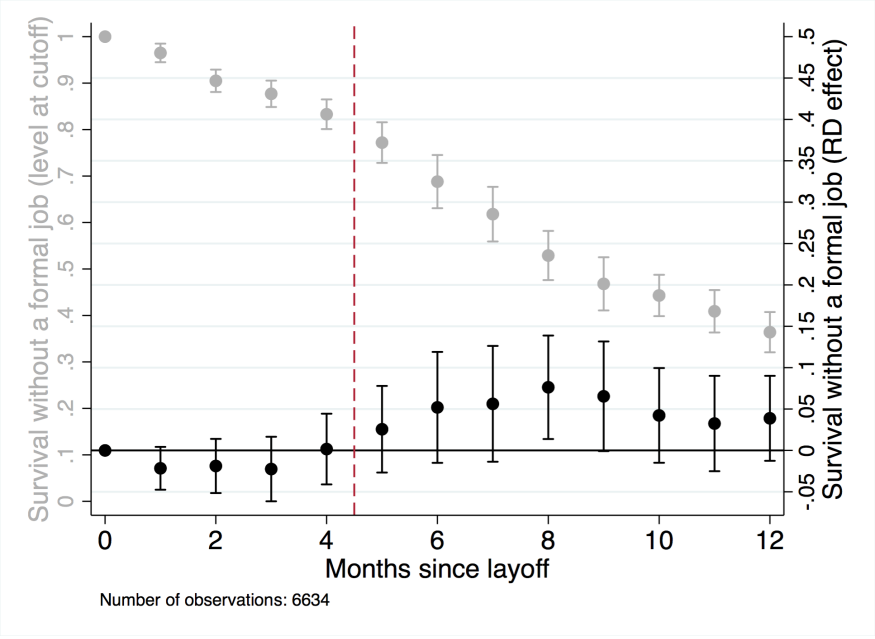


Takeaway: workers eligible for a 5th month of UI are more likely to draw UI benefits in month 5 and 6 after layoff (when share drawing UI among those eligible for 4 months decreases)

II. RDD benefit duration: RD estimate for each month



(a) median expenditure



(b) survival in non-formal employment

Takeaway: workers eligible for a 5th month of UI are more likely to consume more in month 5, 6, and 7 after layoff when consumption decreases for those eligible for 4 months (effect too noisy for the mean but always there if median or non-linear function)

▸ mean and binary

Key results - UI exhaustion

1. **Consumption smoothing**:
   - Expenditure levels decrease more rapidly at UI exhaustion
     - ⋆ But decrease more smoothly than in Ganong and Noel (2017)
   - Expenditure levels also increase at UI payday
     - ⋆ UI payday effect comparable to salary payday effect in our data and to food stamp evidence (e.g. Hastings and Washington, 2008)
2. **Insurance value**: displaced formal workers who obtain an additional month of UI delay the drop in expenditures at UI exhaustion
   - There is actually little well-identified evidence in general of the consumption response to variation in UI benefits
   - There is no effect in earlier months

- All in all, evidence again in support for excess sensitivity

Outline

1. Data and Institutional background
2. Consumption smoothing and unemployment insurance schemes
3. Mechanisms
4. **Implications & Next steps**

Implications

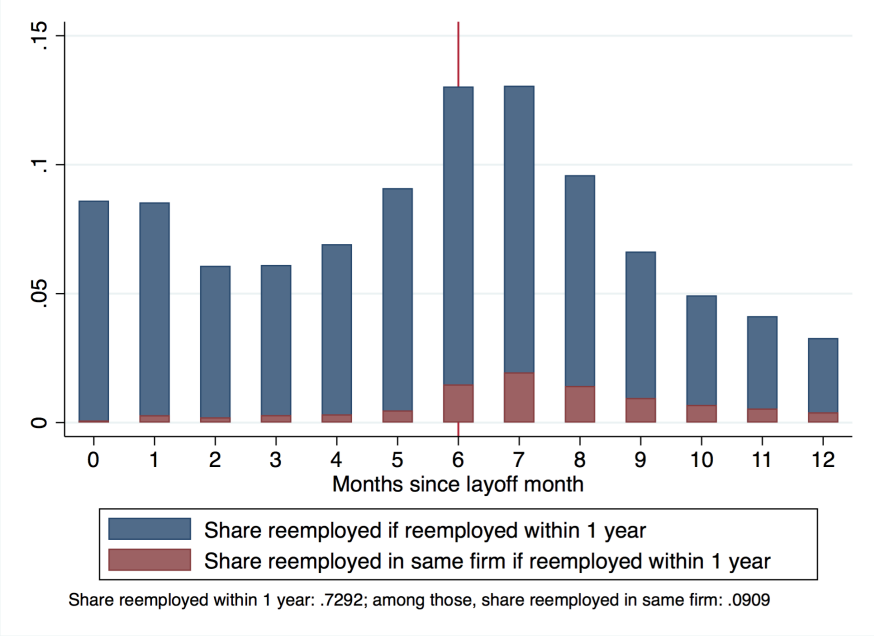
- Implications for policy design: new trade-off
  - Usual trade-off between UI and lump-sum is between insurance against the risk of remaining unemployed longer and job-search incentives
  - New trade-off based on the timing of disbursement:
    - ★ The periodic disbursement of UI - which is the source of moral hazard - helps with consumption smoothing
    - ★ Potentially similar trade-off within UI system: pay weekly vs. biweekly vs. monthly (although lack of smoothing within a month likely less of a problem –everything is durable at high-frequency)
  - Overall, timing of disbursement is not a policy instrument that is studied within the UI context but it could have implications for the insurance value of UI (and maybe incentives)
- Implications for assessment of the insurance value of UI schemes
  - Aggregation matters for the consumption implementation
  - Revealed preference approaches problematic if not fully optimizing

Next steps

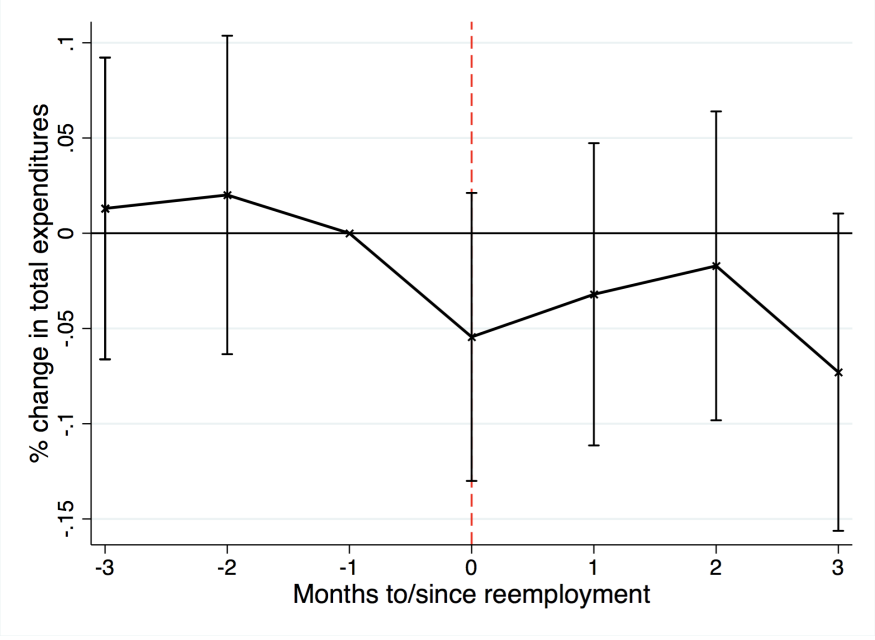
- Estimate partial-equilibrium models of job-search and consumption
  - Using reemployment data as in DellaVigna et al. (2017)
  - Using expenditure data as in Ganong and Noel (2017))
  - Benchmark model: perfectly optimizing consumer-saver
  - Alternate models that better fit our data: think about which moments may distinguish different models (e.g. biased beliefs, beta-delta, etc.)
- Use the estimated models to show consumption and reemployment responses to variations in disbursement policies
  - Lump-sum vs. UI
- Exploit other dimensions of the data:
  - Construct measures of consumption quality
  - Construct individual-level measures of excess sensitivity and correlate them across contexts (salary/UI payday, UI exhaustion, spike at layoff)
- Do more forensic analysis to shed more light on role of informal sector

Example of "forensic" analysis

Are temporary layoff real or "fake layoffs"?



(a) Share re-employed in the same firm vs. in a different firm

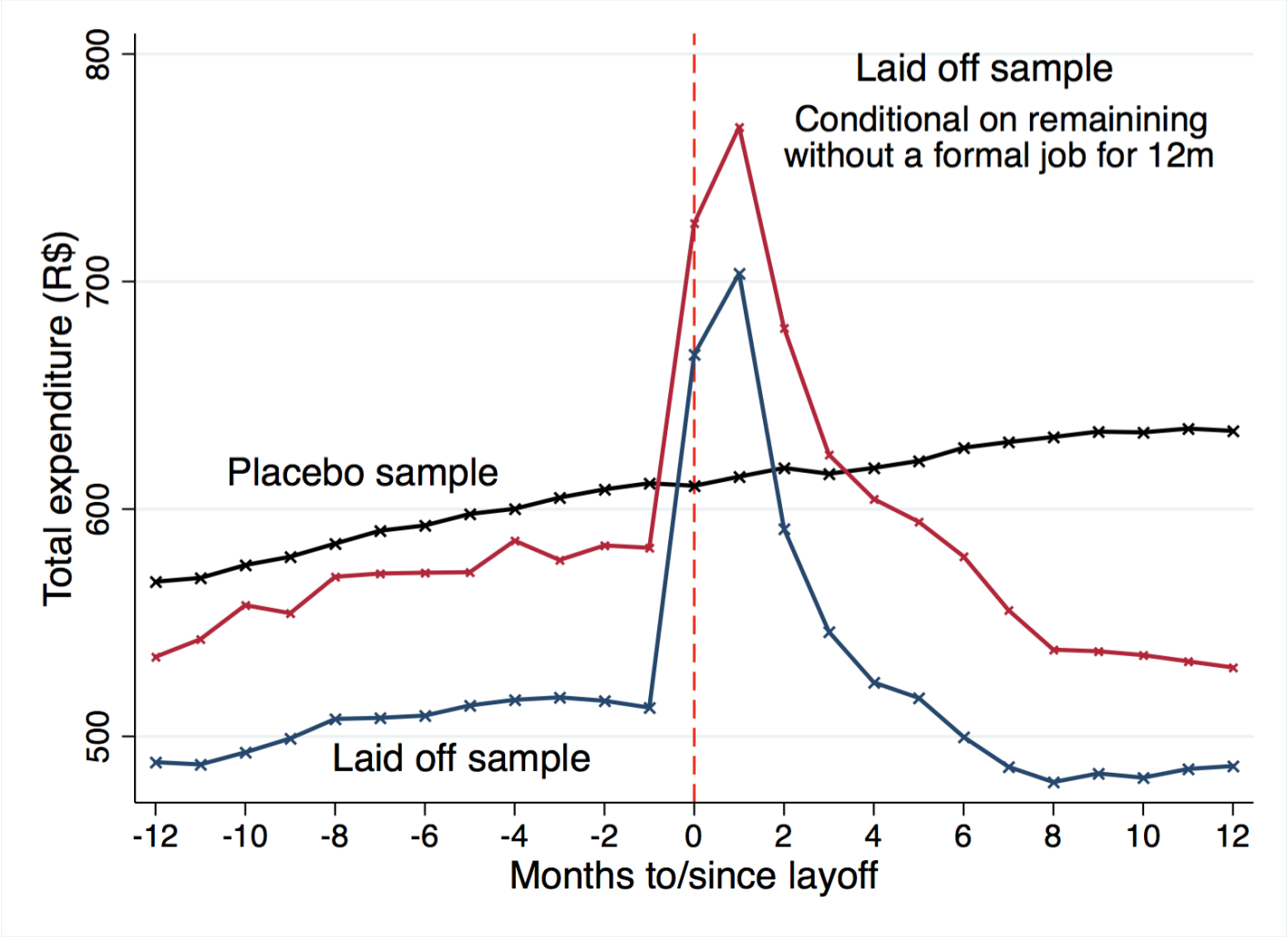


(b) Re-employment event analysis if reemployed in the same firm

Takeaway: a small share of workers are re-hired in the same firm but they experience no change in consumption when reemployed (already working and just formalization?)

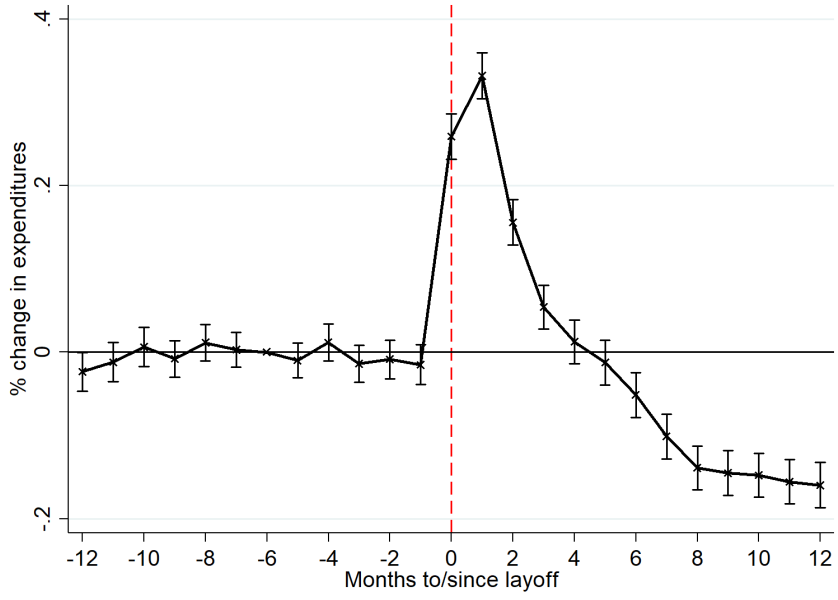
Thank you!

Figure: Average expenditure for layoff and placebo

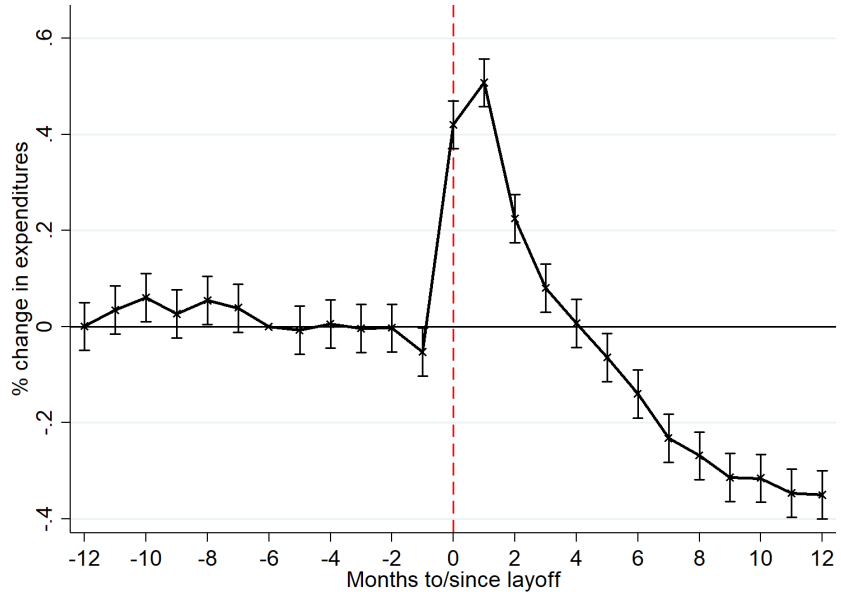


back

Figure: Conditional on staying without a formal job for 12 months



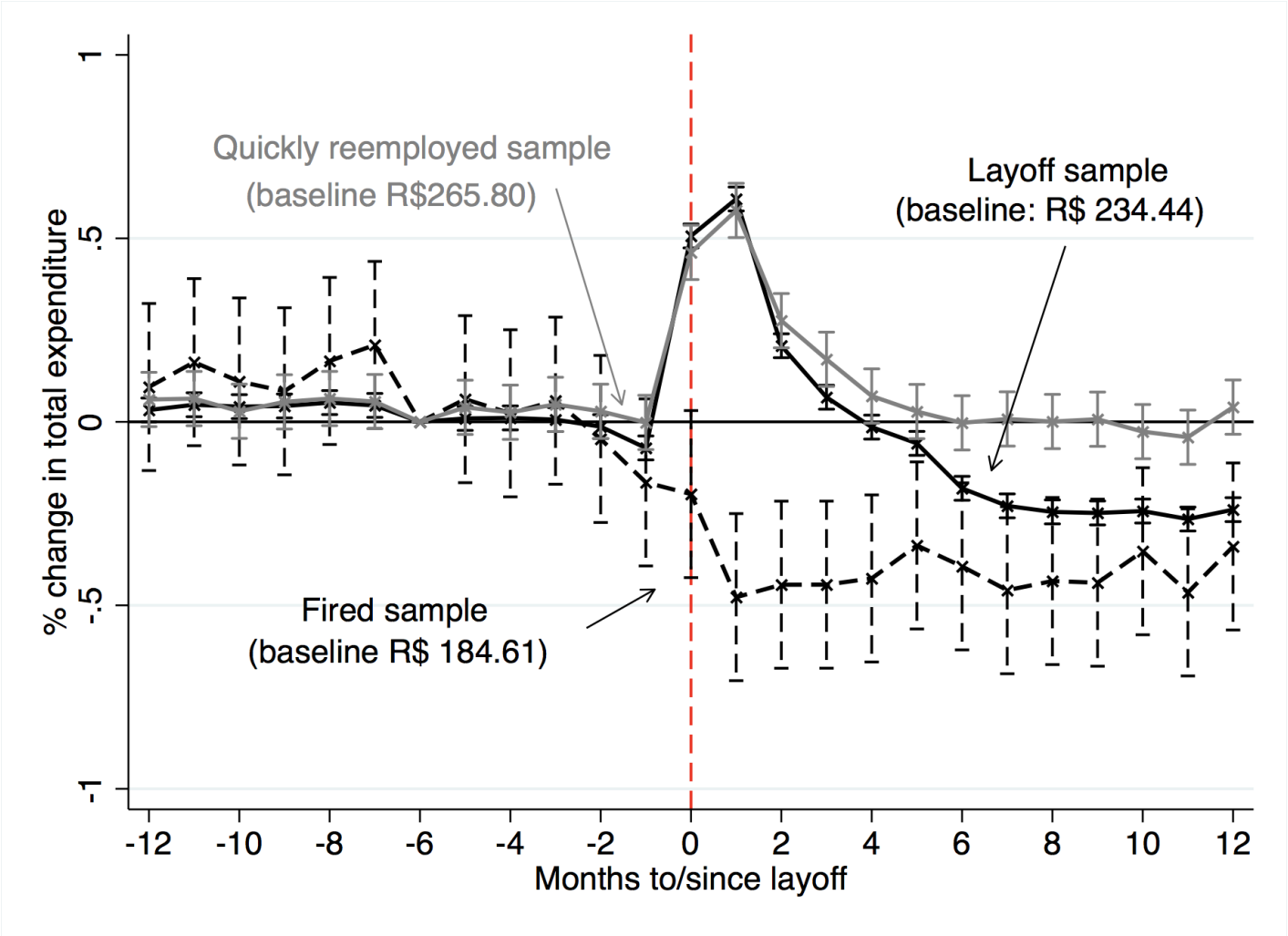
(a) % changes in mean expenditures



(b) % changes in median expenditures

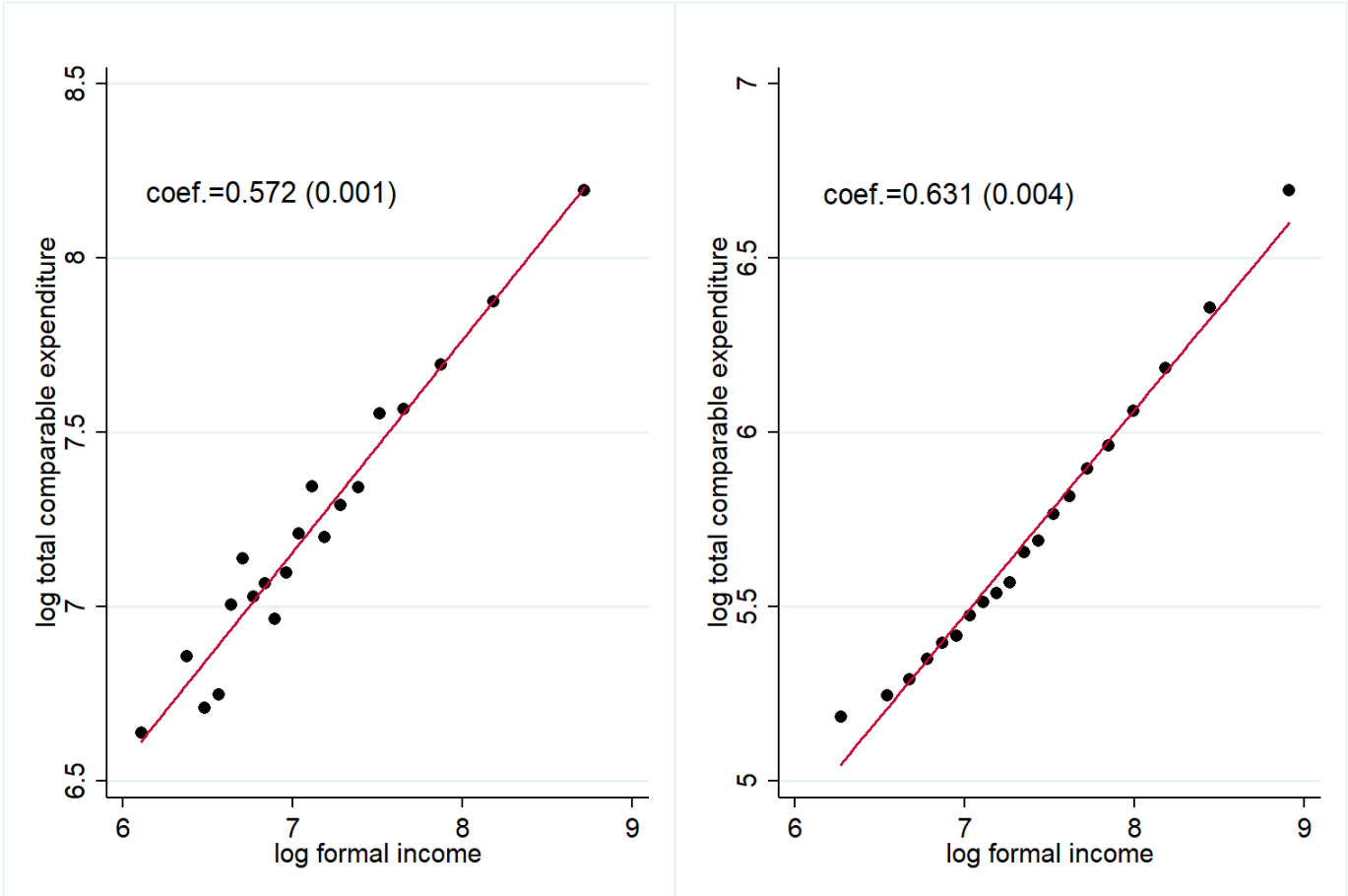
back

Figure: % changes in median expenditure for laid-off, fired and quickly re-employed - median



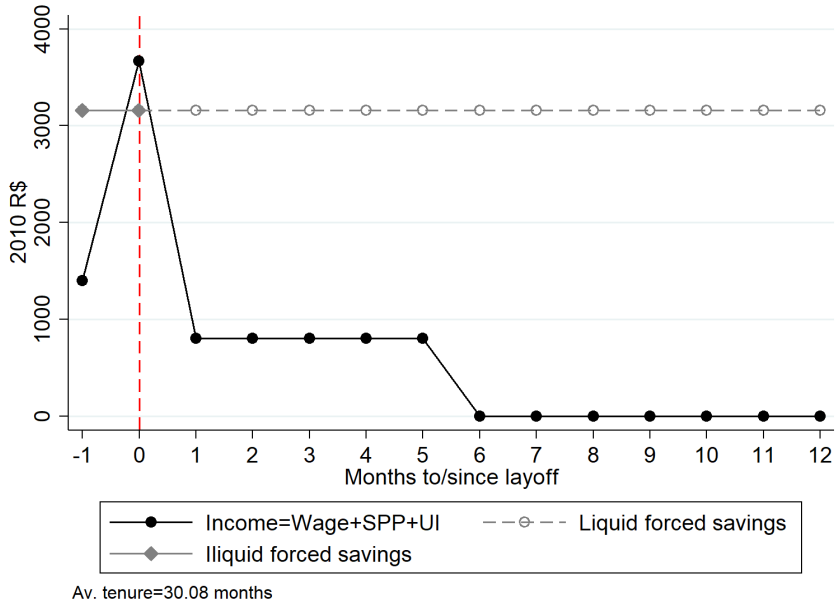
back

Figure: Benchmarking our expenditure data: Household Survey vs App data (comparable categories)

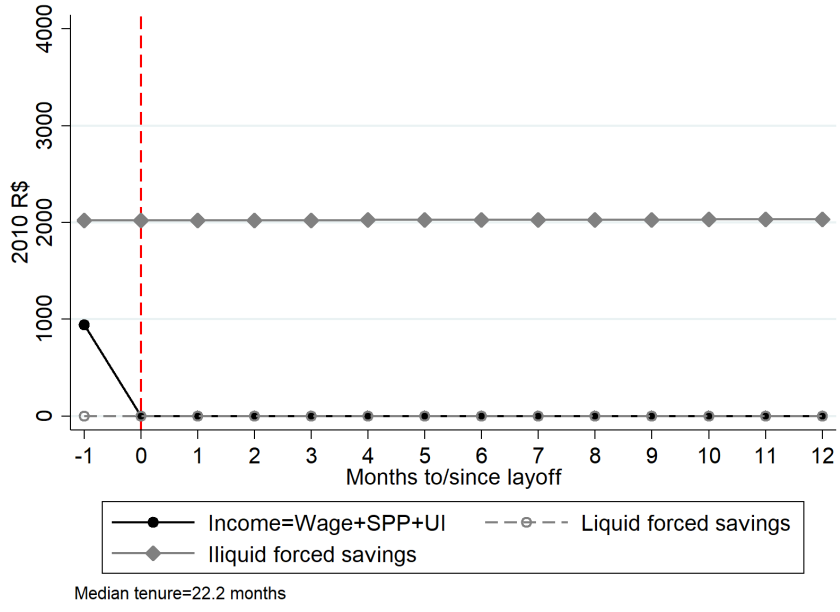


Comparable: Durables; Temptation Goods; Personal non-essencial consumption;Food at home; Food away from home; Home improvement; Health care

back



(a) average benefit for laid-off



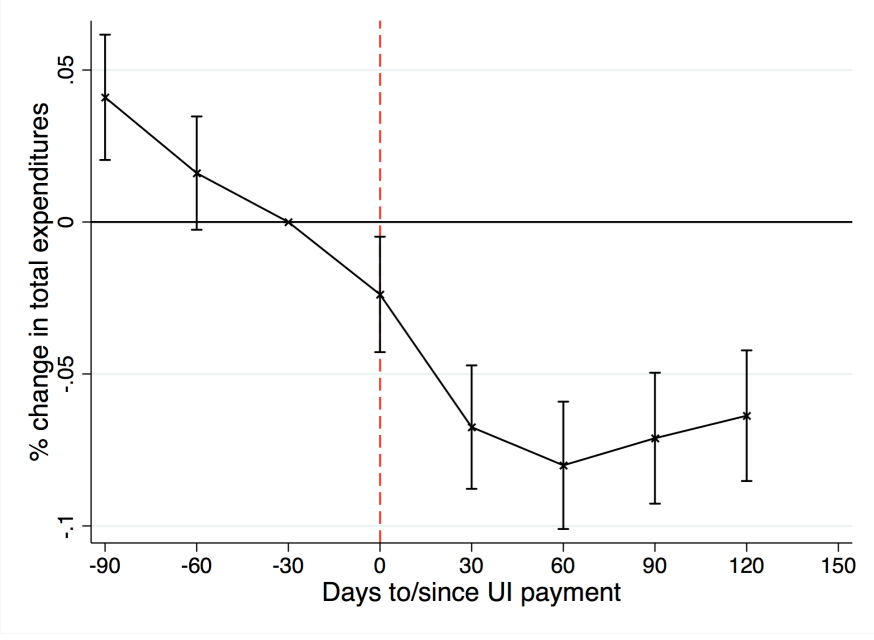
(b) median benefit for fired

back

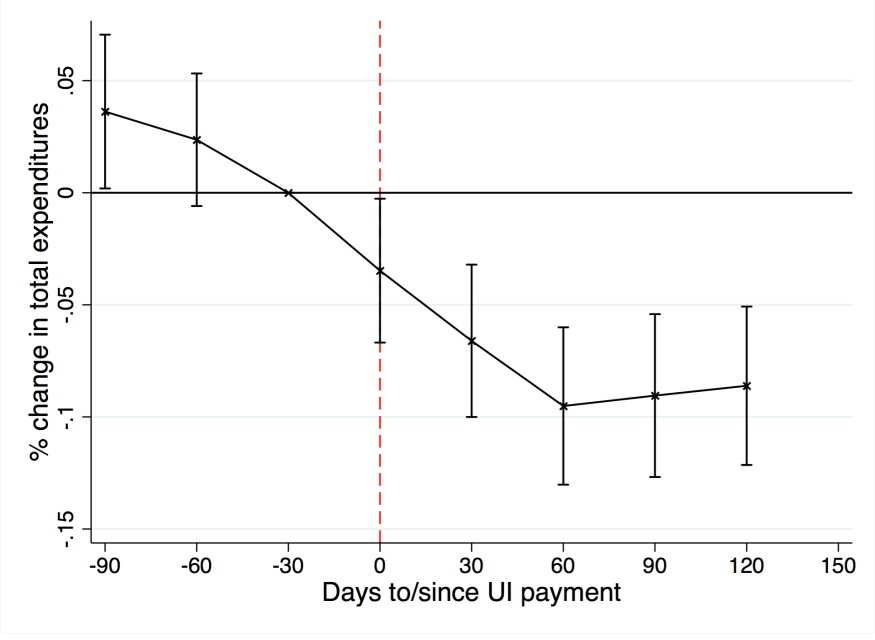
Figure: Share not formally employed

back

UI exhaustion - monthly



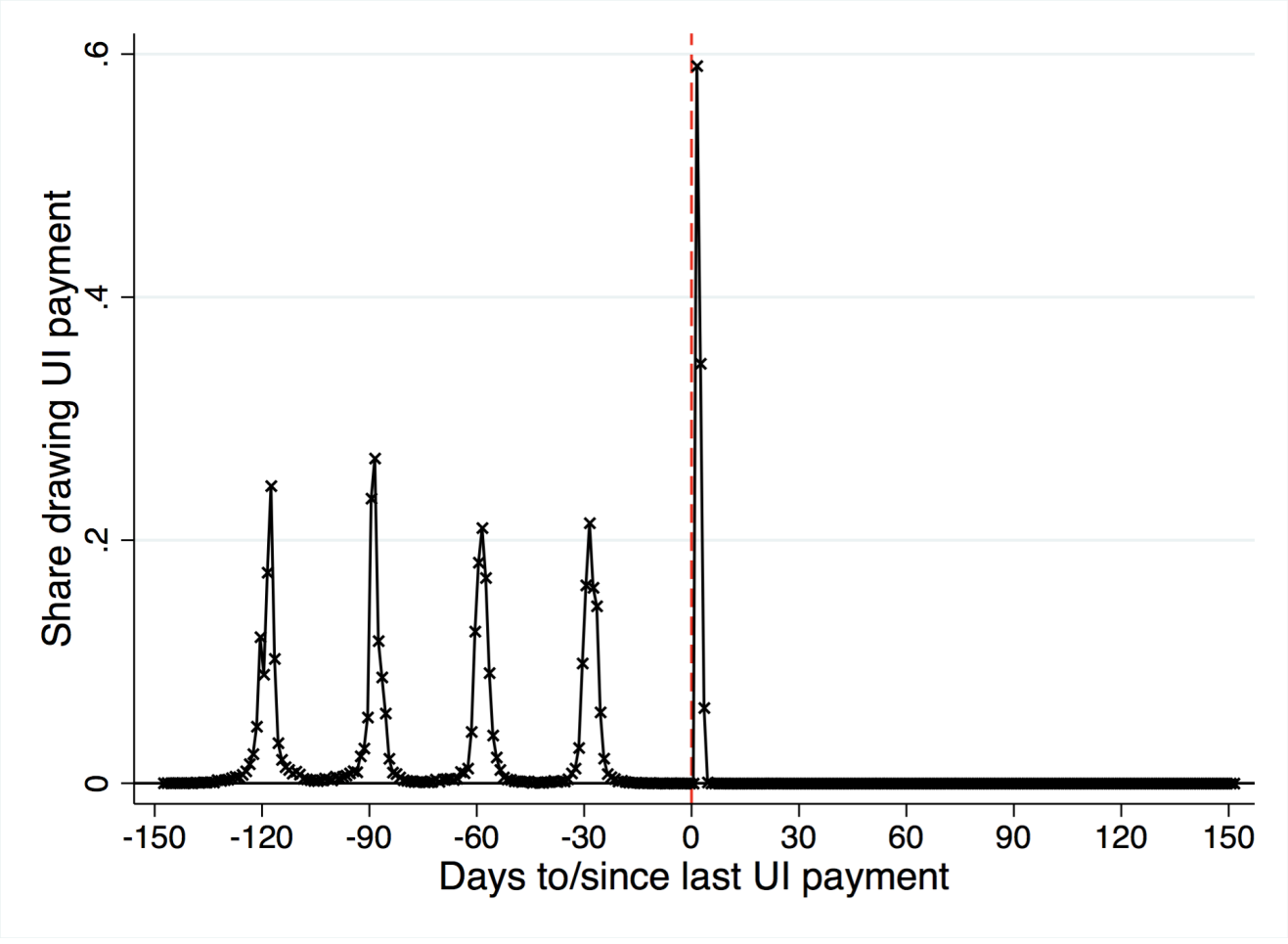
(a) All laid-off



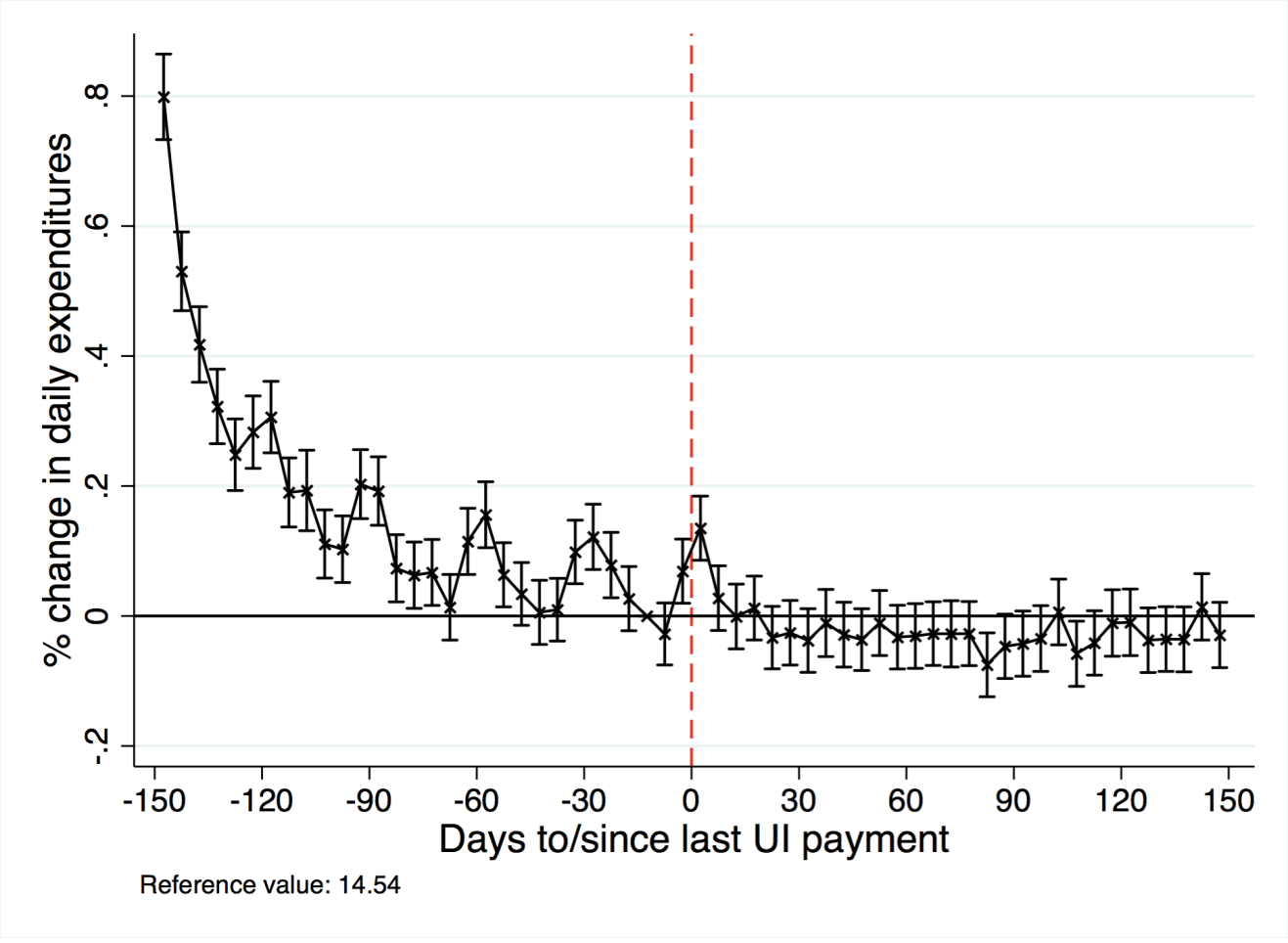
(b) Conditional on remaining without a job

Takeaway: for total expenditures drop at exhaustion hard to estimate because strong pre-trend. This is why we use RDD analysis later. back

UI Exhaustion - UI payday

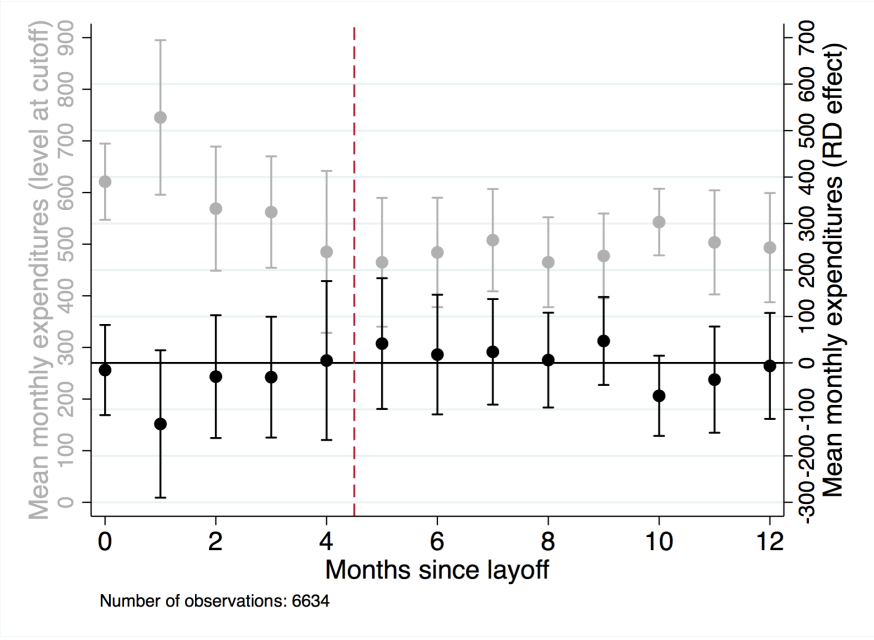


UI Exhaustion - food expenditures

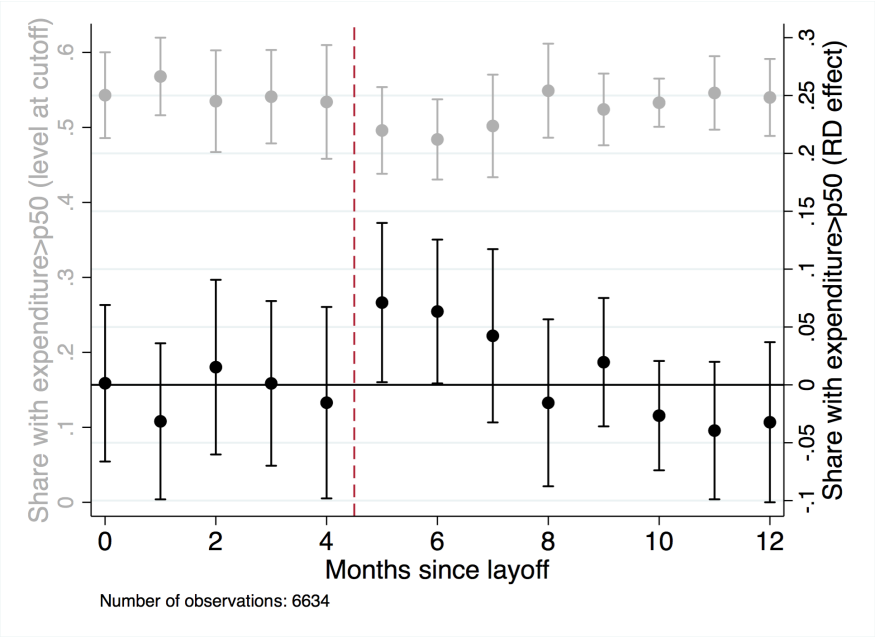


II. RDD benefit duration

RD for each month since layoff



(a) mean effect



(b) binary: more than the median below the cutoff

back