The Perverse Effect of Flexible Labor Regulation on informality

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VisitINPS, July 9, 2020

Motivation

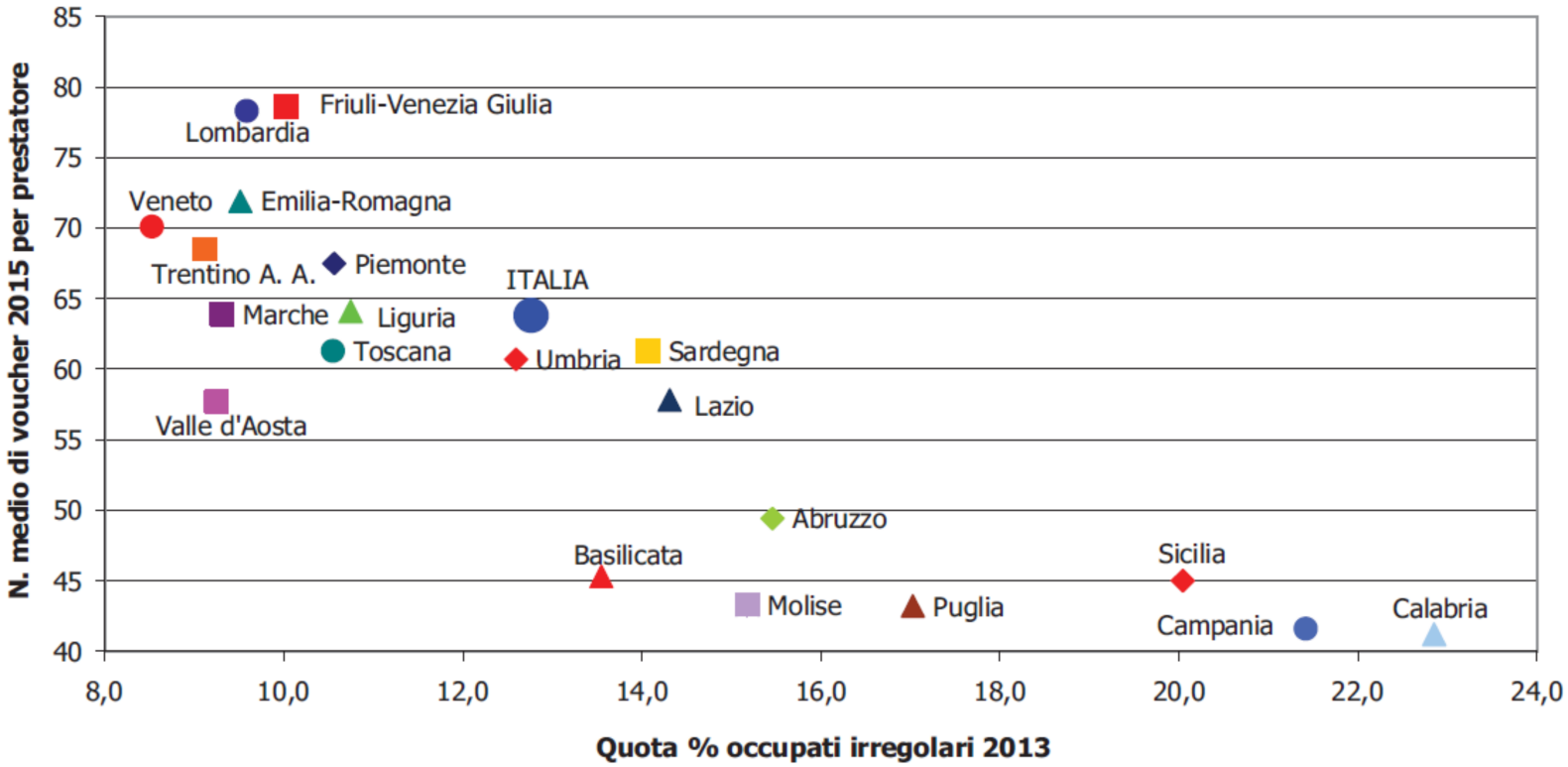
- Over the last 20 years more and more countries are introducing flexible labor market contracts.
- Technological change, digitalisation, gig-economy, etc. are reinforcing the use of very flexible jobs, often called Alternative Work Arrangements, or AWAs (Katz and Krueger 2019).
- AWAs around the world: Germany's mini-jobs, UK's zero-hours contracts, Belgium's Titre de service, Frances's Cheque de emploi etc. (Adams 2018).

Motivation

- Since there are no guaranteed working hours, these contracts are seen as a way for firms to quickly adjust labor demand and for workers to have more flexible work schedules.
- These work arrangements lower bureaucracy and push hiring and firing costs towards zero. **Policy makers see these flexible labor contracts as a way to lure undeclared work out of the shadow**.

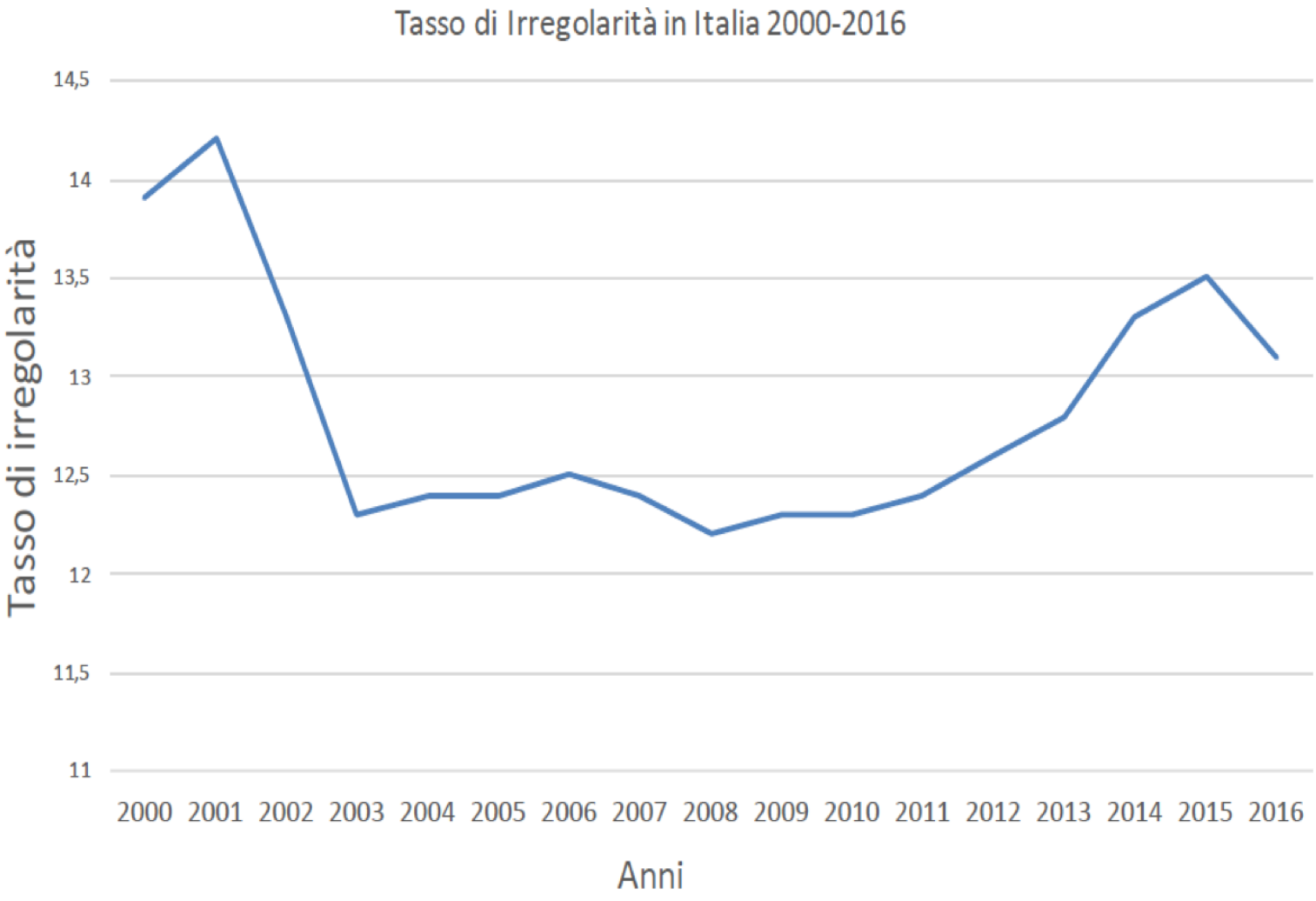
AWA (Vouchers) and Undeclared Work: Italy 2015

Fig. 2 – N. medio di voucher per prestatore (2015) e quota di occupati irregolari (2013), per regione



Fonte: Inps (dati sui prestatori) e Istat/contabilità nazionale (dati sulla quota di occupati irregolari)

Undeclared labour: Italy



Source: ISTAT

Contribution

- We build a unique dataset crossing info on vouchers (extremely flexible labor contracts) and labor inspections.
- We analyse the relationship between vouchers and the shadow economy using a quasi-experimental approach,
- and identify the "dark" side of this relation, the *ill-use* of flexibility, that so far attracted surprisingly little attention.

The Italian AWA

- In 2008 Italy introduced one of the most flexible alternative work arrangement (AWA): Vouchers.

What is a voucher?

- It is a way to compensate a worker for occasional jobs.
- It could be purchased from the Italian Social Security Admin (INPS)...later also from banks, tobacco shops, etc.
- Every 10 euro paid in vouchers the worker would get 7.50, the rest covered:
  1. social security contributions (1.30),
  2. health insurance (0.7, cheapest health insurance ever...more later)),
  3. and administrative costs (0.5).

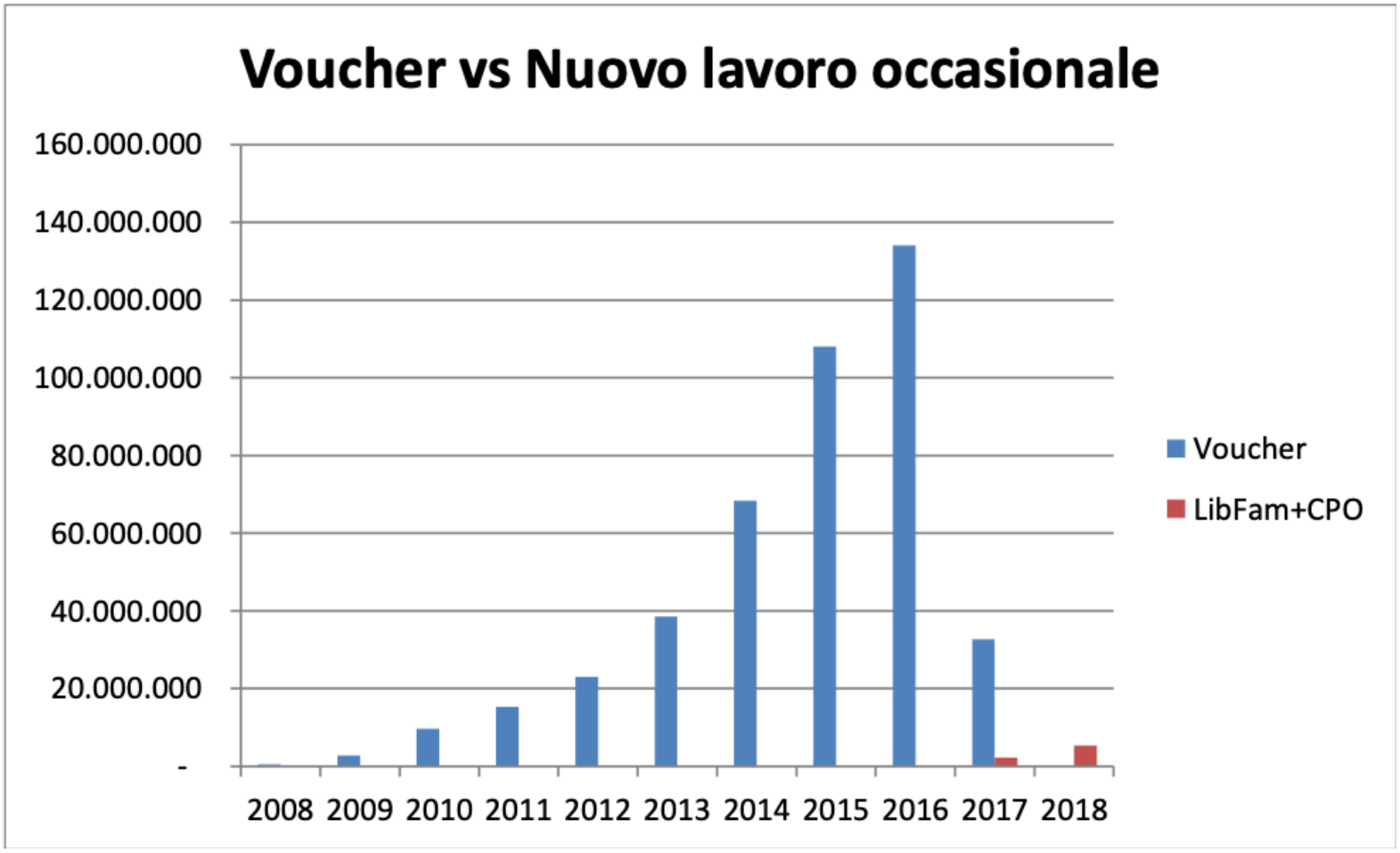
Institutional Framework: many policy changes in 10 years

- 2003: Berlusconi's government introduced "vouchers" (the Biagi law, decreto legislativo 276/2003) to pay for occasional work. But only 5 years later employers were finally allowed to use it.
- 2008: Prodi's government, employers could only spend a maximum of 5000 euro in vouchers for each employee; only students and retirees were allowed to receive vouchers, and only in the agricultural sector.
- 2008: the new Berlusconi's government extended vouchers to all workers in the agricultural sector, not just students and retirees. More changes followed.
- 2009 (legge 33/2009) vouchers became available in the retail sector, tourism and service sector, and for house keepers.
- 2010: vouchers were completely liberalized, and became open to all sectors and all workers.

Institutional Framework: many policy changes in 10 years

- 2012: The Fornero law (legge 92/2012) the 5000-euro limit became more stringent, as the sum of vouchers for a single worker across employers was not allowed to exceed 5000 euro.
- 2015: the "Jobs Act", vouchers *do not have to be related to occasional work anymore*, and the limit increased to 7000 euro. But an important novelty is that employers must sign up workers online before the work related to a voucher starts.
- **2016: the d.l. 185/2016 they also need to send an SMS at least 60 minutes before the job starts.**

Vouchers 2008-2018



Vouchers sold

Tav. 1 – Numero di voucher venduti per anno di vendita e modalità di distribuzione. Valore del singolo voucher: 10 euro

Anno di vendita	Modalità di distribuzione					Totale	
	Banche	Sedi INPS	Tabaccai	Uffici postali	Procedura telematica	val. ass.	var. % sull'anno precedente
2008	-	511.951	-	-	24.034	535.985	
2009	-	2.502.309	-	-	245.459	2.747.768	413%
2010	-	8.082.535	440.671	-	1.176.297	9.699.503	253%
2011	64.007	11.562.669	1.864.000	8.449	1.848.038	15.347.163	58%
2012	651.174	13.269.565	5.649.788	1.523.850	2.719.601	23.813.978	55%
2013	2.359.095	12.435.656	16.962.893	4.736.218	4.293.955	40.787.817	71%
2014	4.934.347	9.262.610	37.303.093	11.289.671	6.391.354	69.181.075	70%
2015	8.237.617	6.805.967	78.139.845	11.366.442	10.529.842	115.079.713	66%
Totale 2008-2015	16.246.240	64.433.262	140.360.290	28.924.630	27.228.580	277.193.002	

Fonte: Inps

AWA and undeclared work: virtuous circle

- Since there are no guaranteed working hours, these contracts are a way to:
  1. quickly adjust labor demand,
  2. lower bureaucracy,
  3. push hiring and firing costs towards zero.
- Policy makers see these flexible labor contracts as a way to lure **undeclared work** out of the shadow.

AWA and undeclared work: vicious circle

- AWA may lead to: the exploitation of workers, dead-end jobs, more job insecurity.
- Unions have traditionally been against AWA.
- Typical limitations:
  1. Firms are not allowed to sign AWA with their employees.
  2. Work has to be occasional.
  3. Firms are not allowed to pay AWA workers more than a fixed amount per year.
- Unions have also argued that extremely flexible labor contracts may actually hide **undeclared work**.

AWA and Undeclared in the Economic Theory

- In economic models more flexible jobs are associated with lower hiring and/or firing costs, and this is expected to reduce the amount of undeclared work (Albrecht et al 2009, Bosch, 2012, Boeri-Garibaldi, 2005).
- The literature **overlooked** that very flexible labor arrangements may interfere with labor inspections.
- Expected Fine is the main deterrent for undeclared work.

The Economics of ill-use of AWA

- If contracts are allowed to be very flexible, firms may simply underreport the number of hours worked by their *occasional* employees.
- For an inspector it is more difficult to prove and report evasion in a firm with flexible work arrangements.
- In this setting the AWA may be seen as an *insurance* mechanism against the event of a labor inspection.

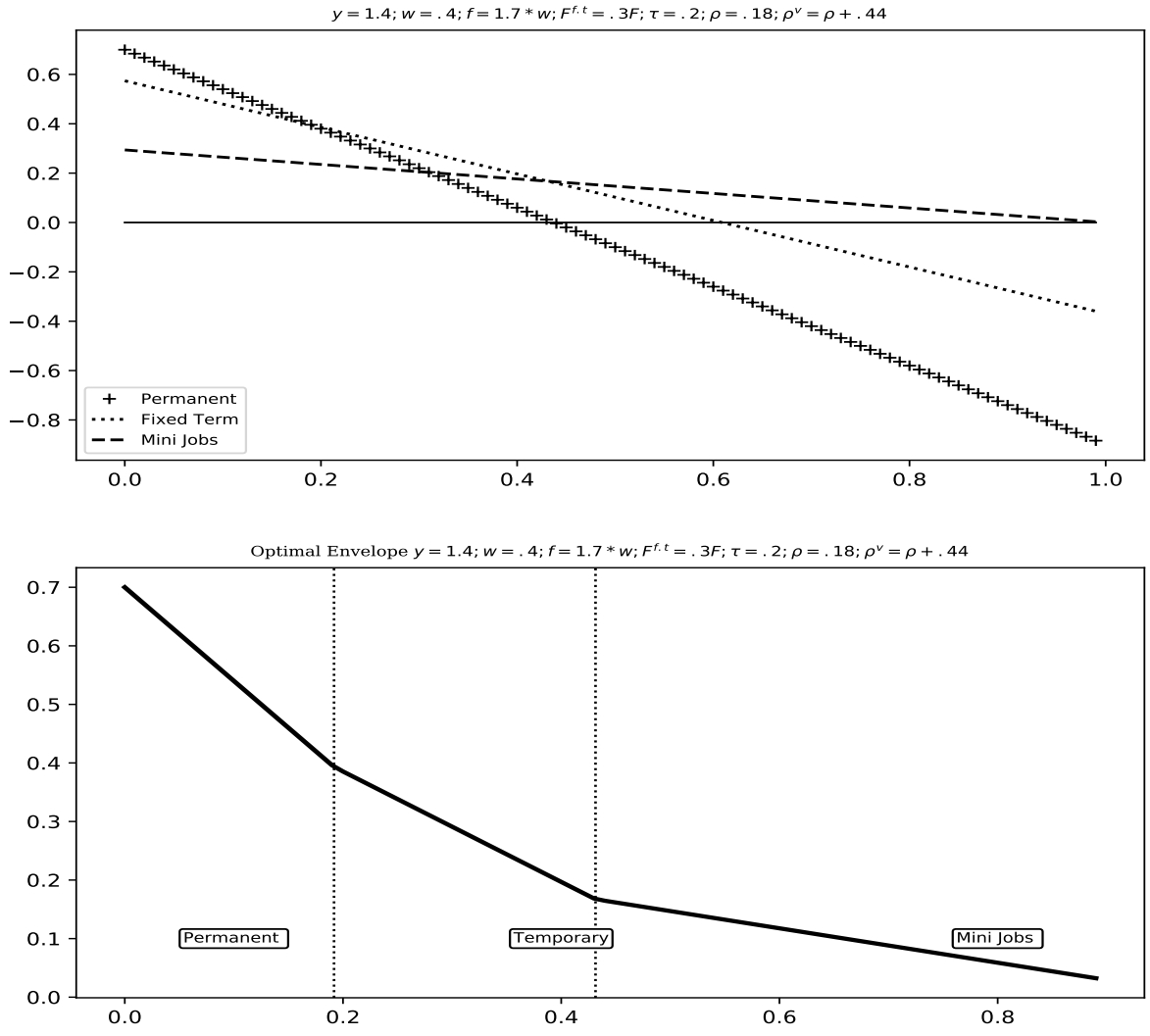
The economics of AWA a simple framework

- We consider a stylized labor market where workers and firms go through a round of matching for one period only.
- Static version of the Diamond-Mortensen-Pissarides model + contracts that have different destruction probability (as in Cahuc et al., 2017)
- Wage fixed at ω, and the question is about labor demand for different contracts. Posting a job vacancy is costly.

Without illegality

- **Open ended jobs** have lower destruction probability, but when a job becomes unproductive (which happens with probability λ), firms have to pay firing costs.
- **Fixed term jobs** will be preferable when λ is particularly large, as firms only have to pay workers for the remaining part of the period. The downside is a larger destruction probability.
- Finally, when λ is even higher, firms may prefer **AWAs**, though they come with the largest destruction probability.

Figure: Job values against λ



With illegality

- In a shadow job the firm is evading the tax τ.
- We let γ be the probability of an audit, τ is the tax, that can be evaded, and C is fine imposed conditional on inspection.
- The decision to go shadow is simply

$$\tilde{J}^i(\lambda) = (1-\gamma)(J^i(\lambda)+\tau)+\gamma(J^i(\lambda)-C) > J^i(\lambda) \quad i = \{o.e.; f.t.; awa\}$$

- which implies the standard conditions found in most of the economic evasion literature.

$$\underbrace{(1-\gamma)\tau}_{expected\ \ tax\ \ evaded} > \underbrace{\gamma C}_{expected\ \ fine}$$

Shadow Decision with AWA as Insurance

- If vouchers exist and can be activated upon inspection, firms have the option to declare that the irregular job is covered by a voucher (intuition: firms use vouchers as insurance).
- Let $\hat{J}^i(\lambda)$ the value of a shadow job that has the option to misuse voucher, the existence of vouchers adds an extra decision for the firm stand-point regarding shadow employment.
- The decision to go shadow with misuse of vouchers solves

$$\hat{J}^i(\lambda) = (1-\gamma)(J^i(\lambda)+\tau)+\gamma \underbrace{\left(Max[J^i(\lambda) - C; J^{awa}(\lambda)]\right)}_{option\ to\ misuse\ vouchers} > J^i(\lambda)$$

- We thus have that if

$$J^{awa}(\lambda) > J^i(\lambda) - C \tag{1}$$

firms activate vouchers upon inspection.

Shadow Decision with AWA as Insurance

- This implies:

$$\underbrace{(1-\gamma)\tau}_{expected\ tax\ evaded} > \underbrace{\gamma(J^i(\lambda) - J^{m.j}(\lambda))}_{expected\ cost\ of\ mis-using\ voucher} \quad (2)$$

- We know that $J^i(\lambda) - J^{awa}(\lambda) < C$, *the possibility of misusing voucher makes more profitable exercising the option to go shadow.* Three results follow.
  1. Vouchers are mis-used;
  2. Shadow work (through misuse of vouchers) goes up;
  3. Regular employment increases when vouchers are abolished;

The ill-use of vouchers: data

- Identifying the ill-use of vouchers is by no means easy.
  1. Undeclared work is by nature unobserved.
  2. The empirical literature on AWA is scarce, lack of data being the main obstacle.
- This study overcomes the data limitations by merging three separate Italian administrative records:
  1. firm level data on all firms covering the period 2008-2017,
  2. data on all individual vouchers used between 2008 and 2017,
  3. and, finally, data on the universe of labor inspections between 2008 and 2017.
  4. high frequency (daily!) data on vouchers

Summary Stats: inspected firms using at least one voucher over the entire period

About 5 percent of firms use at least one voucher in a given day.

	Workers	Part Time	FTE	Permanent	Temporary	Seasonal	Age
Mean	21.4	9.5	17.4	15.8	4.8	0.7	10.1
P50	5.0	2.0	3.0	3.0	1.0	0.0	6.0
SD	111.8	66.6	90.9	87.0	30.6	4.8	10.2
Max	3417.0	2787.0	2632.0	2527.0	1218.0	146.0	57.0

Note: number of firms 3313

	Manuf	Construction	Retail	Hotel	Other services
Mean	0.12	0.07	0.16	0.45	0.18

Note: number of firms 3313

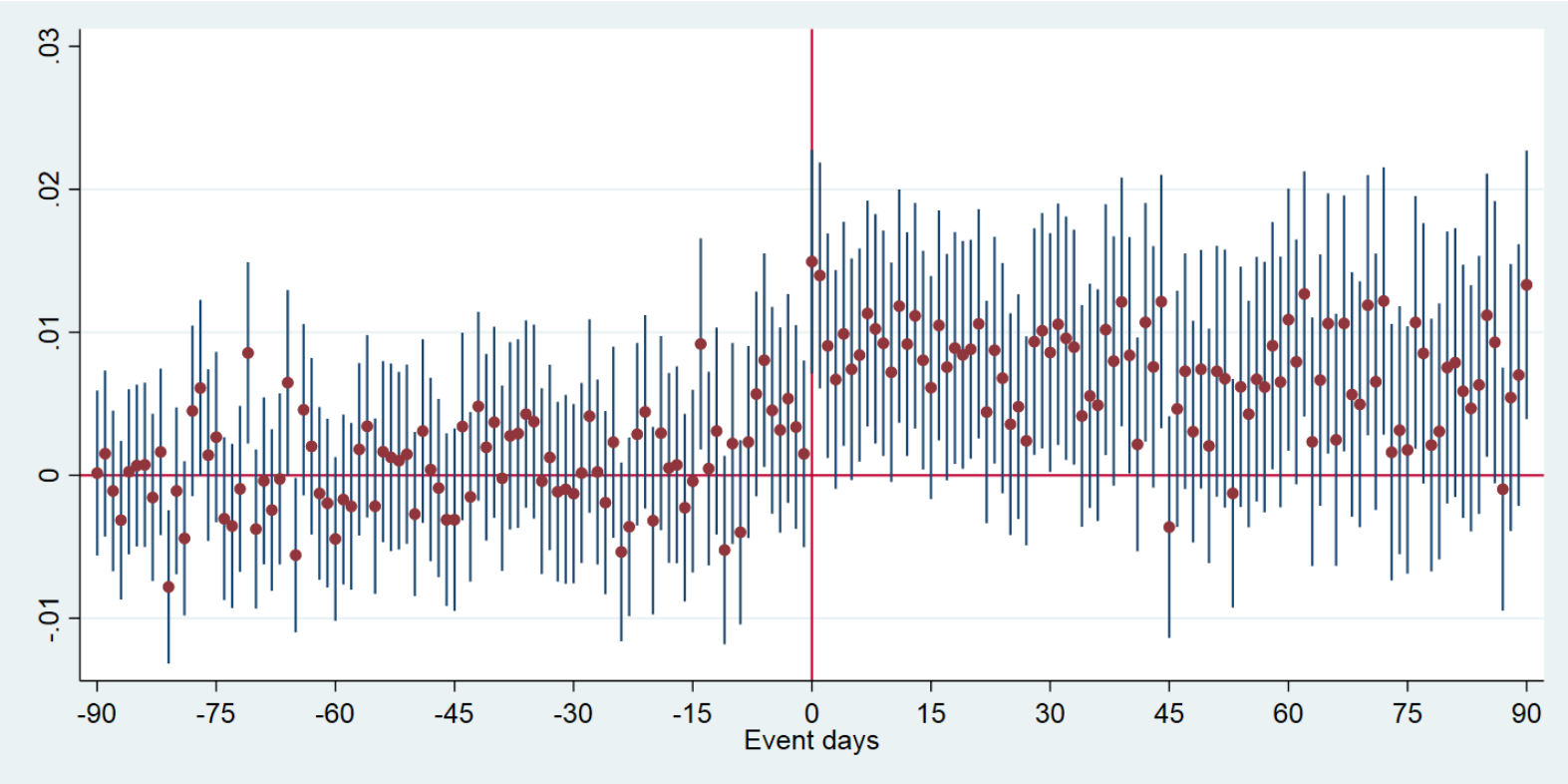
The Misuse of AWAs: Evidence from Labor Inspections

- Since a single voucher would be sufficient to avoid the fine, we use an event study approach, where the main outcome is the use of at least one voucher by firm j on day t:

$$DV_{j,t} = \sum_{k=-90}^{90} \beta_{t-\tau_j+k} D_{t-\tau_j+k} + \alpha_j + f(t) + \epsilon_{j,t} \, . \qquad (3)$$

- $D_{t-\tau_j+k}$ is a dummy variable equal to one for day $t - \tau_j + k$ and zero otherwise.
- The reference days are between -180 and 91 days from the day of inspection.
- The function of time $f(t)$ controls for year, month, day of the month, and day of a week fixed effects. The results are also robust to using date fixed effects instead of $f(t)$.

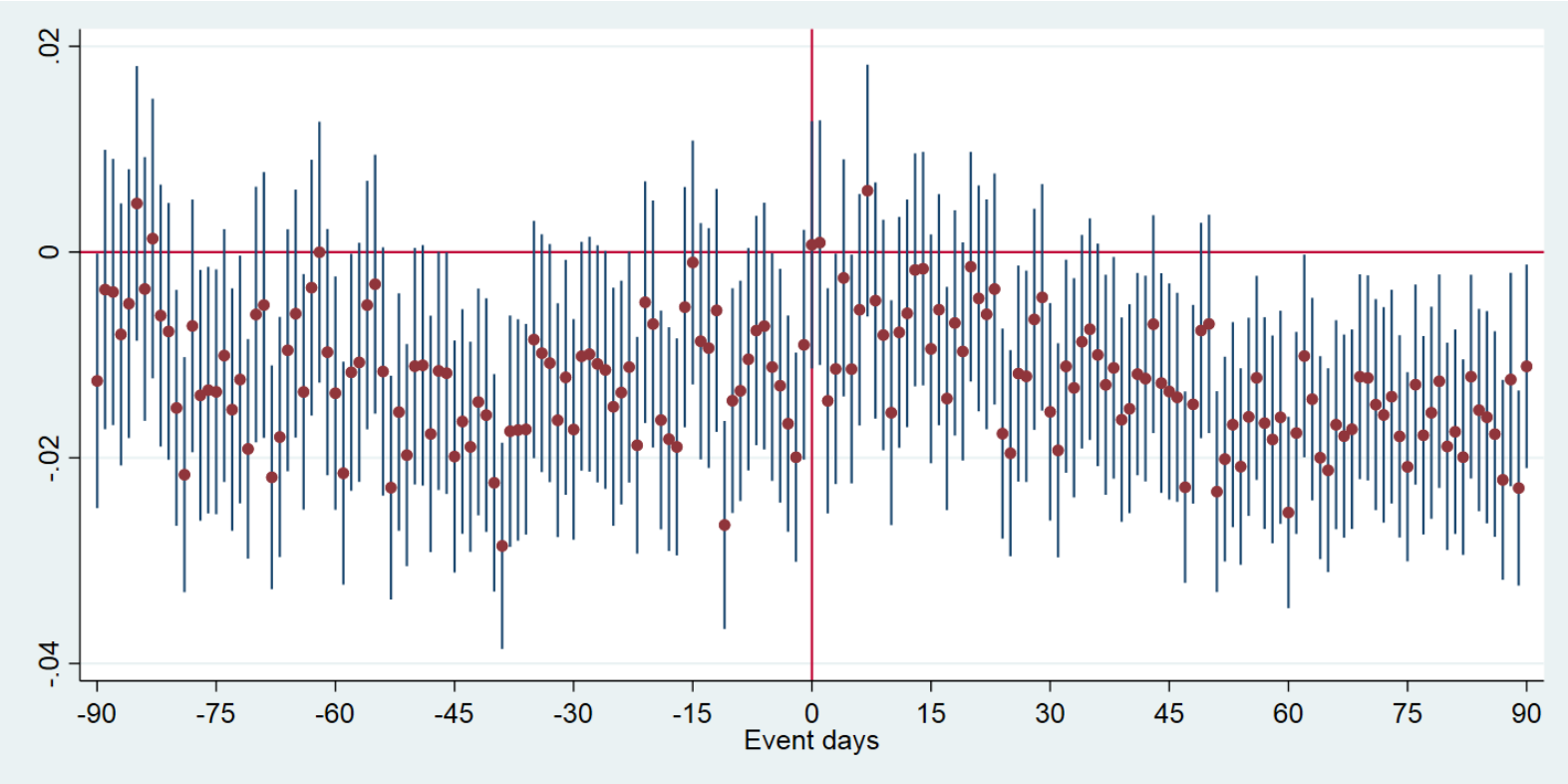
Evidence from Labor Inspections: pre TXT



Evidence from Labor Inspections: pre compulsory TXT

- There is a clear increase in the use of vouchers as soon as a labor inspection starts.
- The likelihood of using at least one voucher is 4.9 percent, thus the average increase of 0.88 (SE 0.16) percentage points represents an 18 percent increase in the likelihood of using at least one voucher.
- The largest effects are on the day of the inspection and the day after, respectively 1.5 and 1.4 percentage points. If we consider that firms may also have the option to put "gray" jobs on hold these are large effects.
- These effects persist for at least 90 days.

Evidence from Labor Inspections: post compulsory TXT



Evidence from Labor Inspections: pre compulsory TXT

	(1)	(2)	(3)	(4)	(5)
Sector	Manufacturing	Construction	Retail	Tourism	Other Services
Post-Inspection	0.013^{***}	-0.002	0.012^{**}	0.011^{***}	0.006^{*}
	(0.003)	(0.003)	(0.006)	(0.002)	(0.003)
Constant	0.032^{***}	0.021^{***}	0.030^{***}	0.054^{***}	0.051^{***}
	(0.003)	(0.003)	(0.002)	(0.002)	(0.004)
Observations	157,329	98,087	208,194	614,758	255,718
R-squared	0.014	0.013	0.010	0.022	0.016
Mean dep. var.	0.0381	0.0201	0.0352	0.0592	0.0541

Evidence from Labor Inspections: pre compulsory TXT

Subsample	South	Center	NE	NW	Young	Medium-aged	Old	Small	Medium-sized	Large	Above-median PT
Post-Inspection	0.009**	0.008**	0.010***	0.011***	0.009***	0.011***	0.008**	0.006***	0.008***	0.012***	0.014***
	(0.004)	(0.003)	(0.004)	(0.003)	(0.002)	(0.004)	(0.003)	(0.002)	(0.003)	(0.004)	(0.003)
Constant	0.047***	0.046***	0.047***	0.043***	0.045***	0.048***	0.044***	0.035***	0.044***	0.058***	0.057***
	(0.003)	(0.003)	(0.002)	(0.003)	(0.002)	(0.002)	(0.003)	(0.001)	(0.002)	(0.003)	(0.002)
Observations	255,262	256,735	409,649	347,459	581,120	414,932	273,053	461,643	373,953	433,509	446,903
R-squared	0.015	0.015	0.015	0.014	0.014	0.014	0.018	0.012	0.016	0.018	0.006
Mean dep. var.	0.0504	0.0496	0.0512	0.0478	0.0485	0.0529	0.0478	0.0381	0.0482	0.0637	0.0636

Do AWA crowd out regular jobs?

- We look at how "misusers," firms whose use of vouchers is larger after the labor inspection compared to before, behave once AWAs were abolished (March 2017).

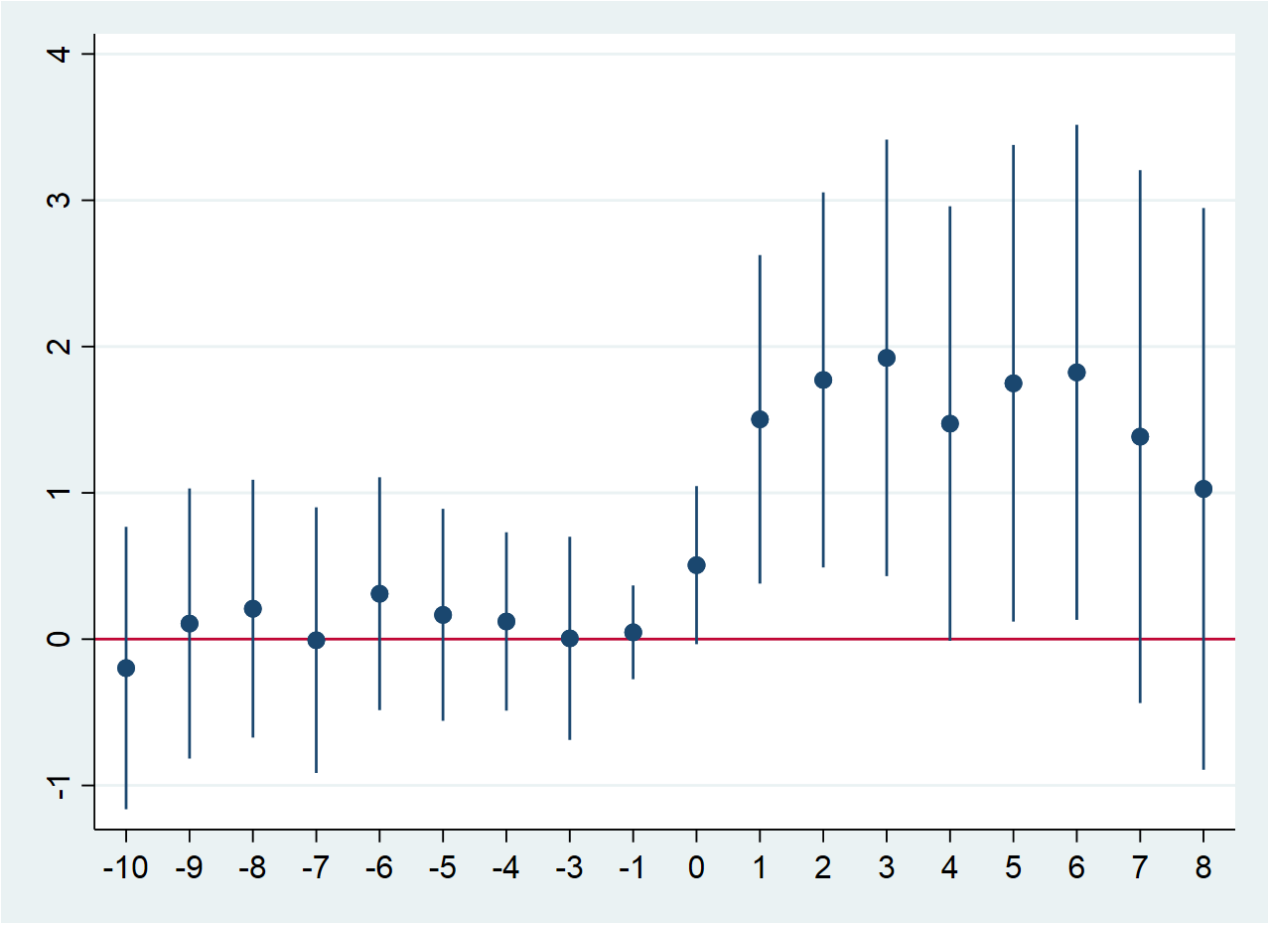
Difference-in-difference

- We use a double difference between two groups of firms: those who presumably misused AWAs and those who did not.
- Before and after March 2017 for firms.
- In order to test for the parallel trend assumption we estimate differences for up to 8 lags and 10 leads. The number of lags are constrained by the period spanned by the data, and we exclude January 2017, that is two months before the abolition.
- We have 6 different outcomes ($m = 1, ..., 6$) measured at the monthly level: total number of workers, part-time workers, full-time workers, fixed term workers, indefinite term works, and seasonal workers. We also control for firm fixed effects and time (year/month) fixed effects:

$$L_{j,t}^{m} = \sum_{k=-10}^{8} \beta_k D_k + \lambda_j + \lambda_t + \varepsilon_{j,t} \ . \tag{4}$$

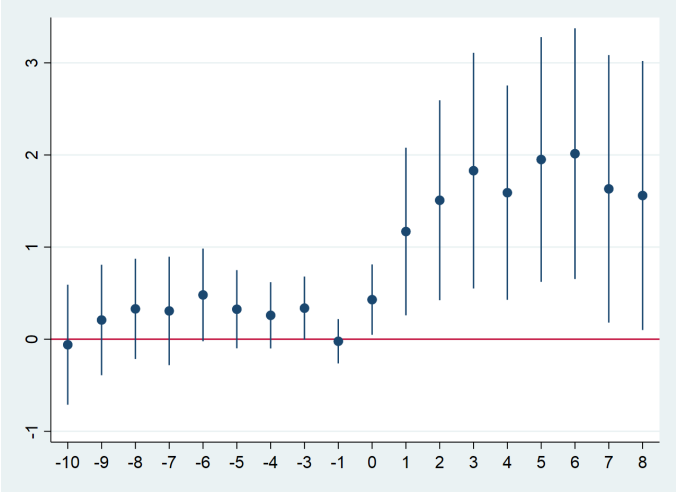
DID around the Abolition of Vouchers

All workers

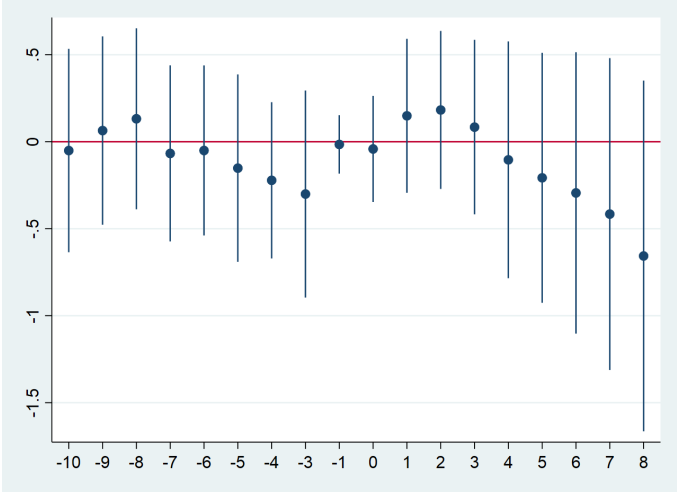


DID around the Abolition of Vouchers

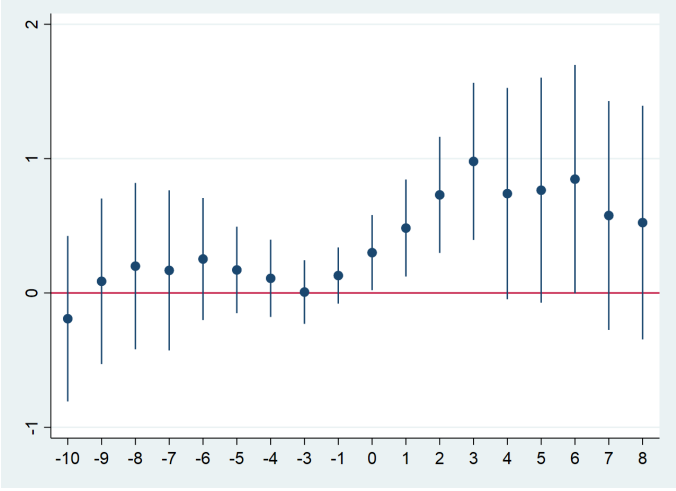
Temporary workers



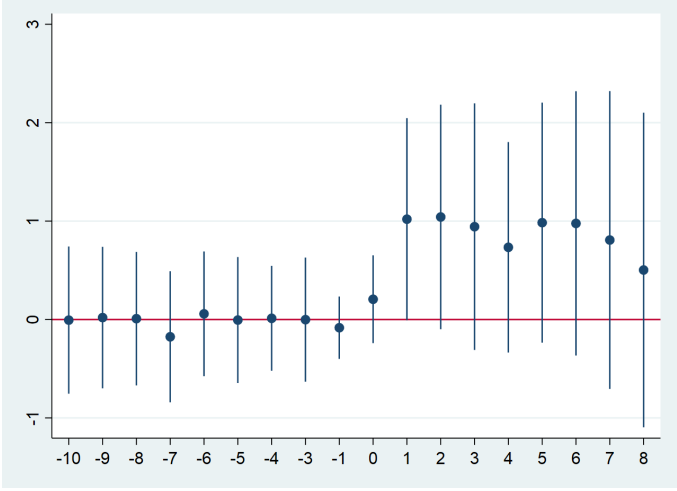
Permanent Workers



Part-time workers



Full-time Workers



How do misusers behave after the abolition of vouchers (March 2017)?

- The difference in the total number of employees is flat in the months leading to abolition and then starts to go up in March 2017.
- The average effects are close to 1.5 additional workers. The average number of workers is 21, thus this is a small 7 percent increase.
- This masks a much larger relative effects for temporary workers. For them the effects 1.5-2. But firms employ just 4.8 temp workers (on average), thus the relative effect is above 30 percent.
- There are no effects on open-ended contracts.

Is there a relation between the use of voucher and the shadow economy?

- The unique way to detect somehow the shadow economy is to exploit labor inspections.
- Unfortunately, we cannot the same DID approach used so far, as it is very unlikely that "misusers" are inspected again within a short period of time.

- Work in progress...

Conclusion

- There is clear evidence that some firms misused vouchers (we are working on getting a better sense of the size of "the compliers").
- Our theoretical model tells us that this implies that AWA led to an increase in undeclared work.
- Firms misusing AWA increase temporary jobs after the abolition of AWA (second best evasion strategy?).

Thanks