“The lighthouse effect or dual labor markets? Evidence from informal workers in Greece”

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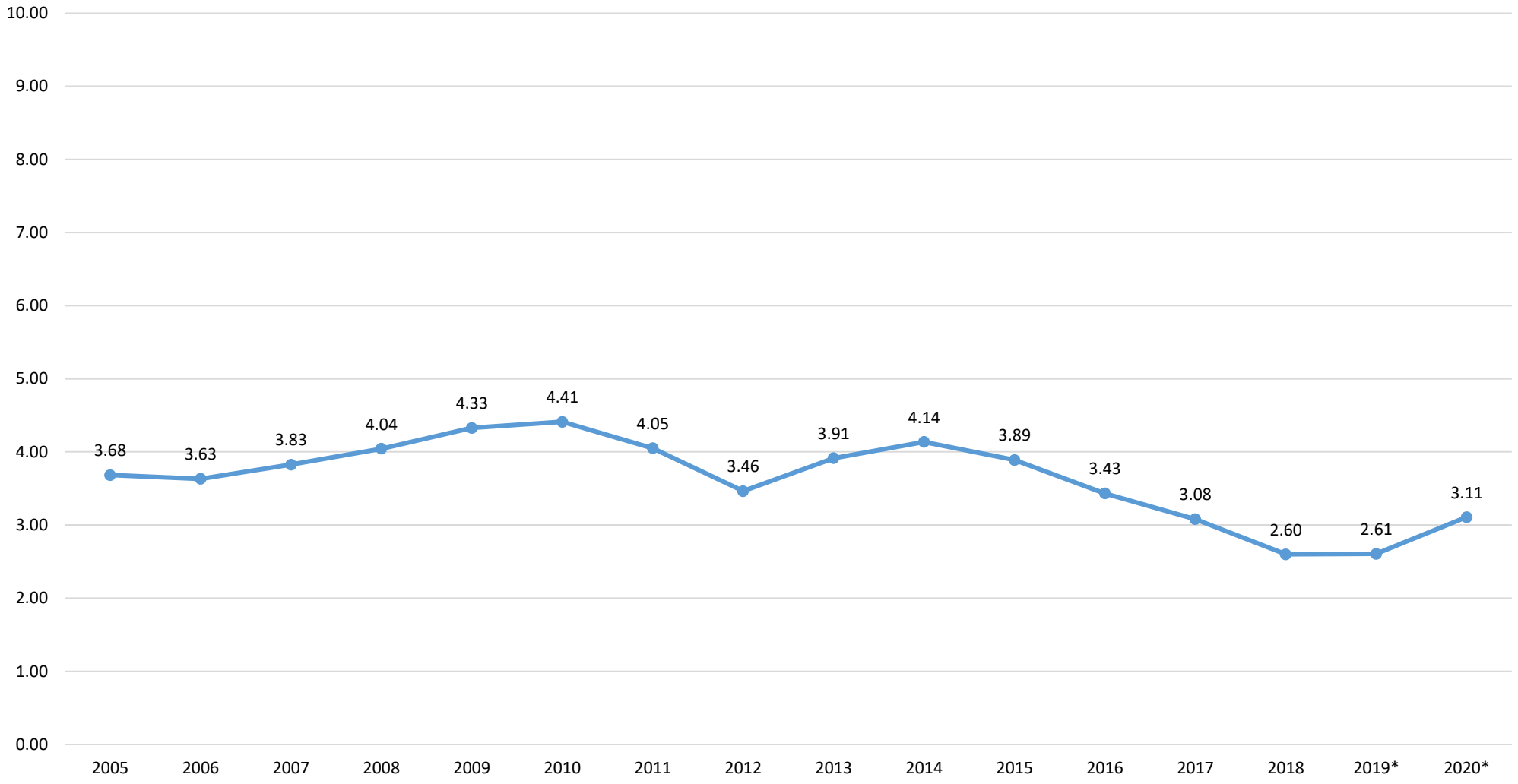
Lighthouse effect of minimum wage in informal employment in Greece

- While the conventional view states the wages of the formal and informal sectors have a negative relationship: **two sector theory**, researchers have shown that wages in the formal and informal sectors could move together and rise when the minimum wage rises.
- This phenomenon is called the **«lighthouse effect»** and first appeared in the paper by Souza and Baltar (1979) for the Brazilian labour market. According to the argument of “Efeito Farol”, minimum wage effect went beyond the predetermined role and guided the wages of workers of small enterprises that are mainly undeclared labour and self-employed workers.
- Lighthouse effect found mainly in Brazil and other LAC countries: Mexico, Argentina, Uruguay, Chile, Honduras,Colombia (Lemos, 2009; Maloney and Nunez (2004); Gindling and Terrell (2004); Perez (2020). Also in India (Menon and Rodgers,2017) and Turkey (Yunkuler and Yunkuler, 2016).
- In this section we test the lighthouse effect in Greek labour market.

Informal labour in Greece

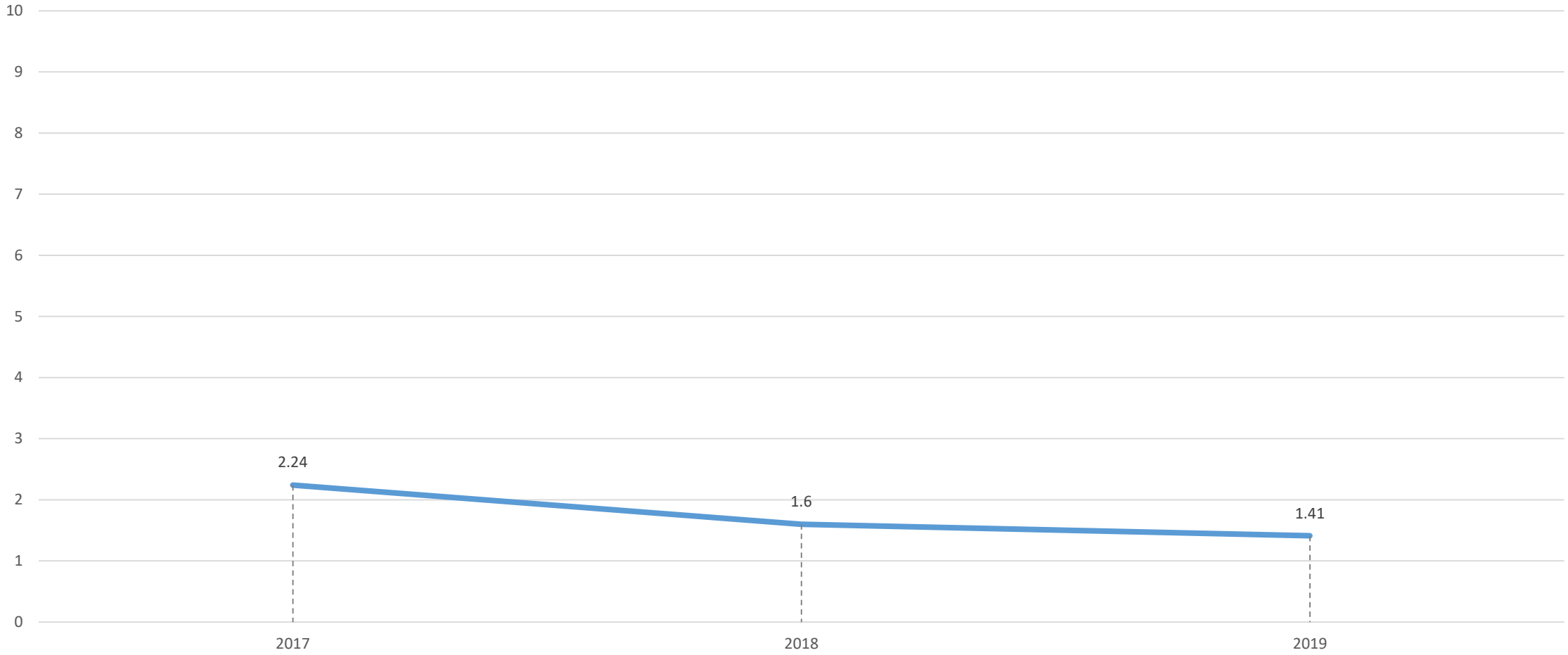
- There is profoundly lack of data regarding the informal labour in Greece. Certain information have been extracted from the results of labour inspections and more specific from the data released by the Hellenic Labour Inspectorate (SEPE) and Special Service of Insurance Inspections of IKA. From September 2013 to January 2016 SEPE found that 14.6% were undeclared employees that correspond to 17,058 employees. (ILO, 2019, p.23).
- Kanellopoulos (2012) used 2009 social insurance data and found that while 4.5 million were insured for the pension system, 1 million were uninsured.
- IOBE (2012) argued that in 2011 30% of enterprises were inspected for informal workers
- Kapsalis (2015) reported that in 2013 40.5% of inspected enterprises had informal workers.
- Matzaganis and Flevotomou (2010) reported that in 2008 10% of the firms inspected by inspectors of IKA have not paid social contributions, while 27% of their workers were not had a work contract.
- While we use data extracted from EU-LFS to estimate the number of undeclared employees in each time period we found that the corresponding number of undeclared employees is low probably because they don’t report their situation.

Percentage of undeclared labour in Greece (2005-2020)



Source: EU-LFS, author's calculations *From 2019, the survey question regarding the undeclared employment has been changed.

Percentage of undeclared workers in private firms, Greece (2017-2019)

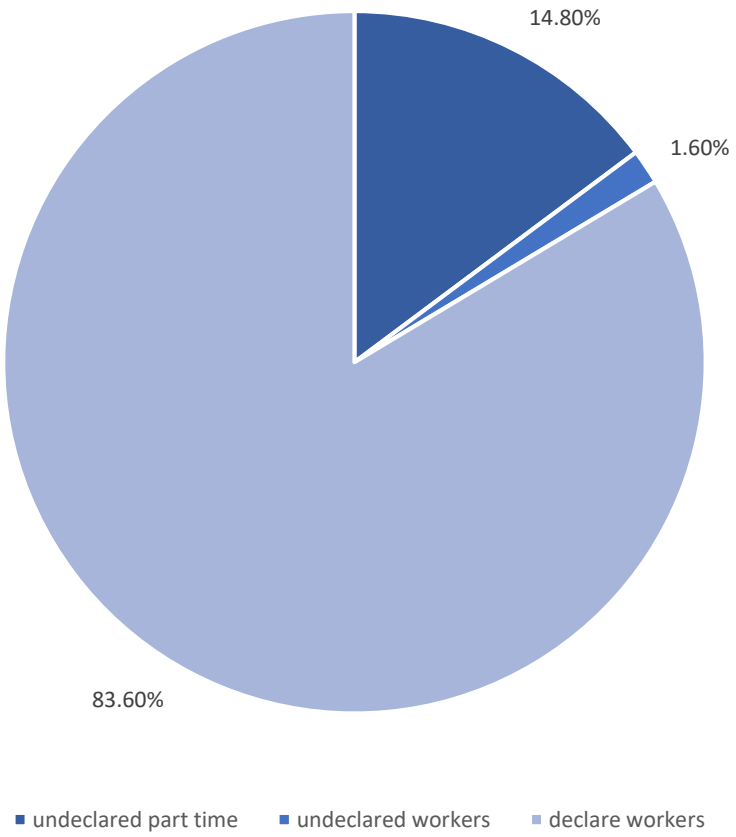


Source:EU-LFS, author’s calculations.

Percentage of full time workers declare as part time workers

Year	% of part time workers EU-LFS	% of part time workers EFKA	Difference
2003	3.71%	14.11%	10.40%
2004	4.36%	13.88%	9.52%
2005	4.64%	12.90%	8.26%
2006	5.03%	15.10%	10.07%
2007	4.96%	14.23%	9.27%
2008	4.48%	14.34%	9.86%
2009	5.59%	14.60%	9.01%
2010	6.11%	16.56%	10.45%
2011	6.56%	18.40%	11.84%
2012	8.32%	19.33%	11.01%
2013	9.91%	25.93%	16.02%
2014	11.32%	24.67%	13.35%
2015	11.50%	25.65%	14.15%
2016	12.58%	27.31%	14.73%
2017	12.26%	27.46%	15.20%
2018	11.49%	26.29%	14.80%
2019	11.85%	25.53%	13.68%
2020	9.77%	30.01%	20.24%

Percentage of employees in private firms according to their status, Greece 2018



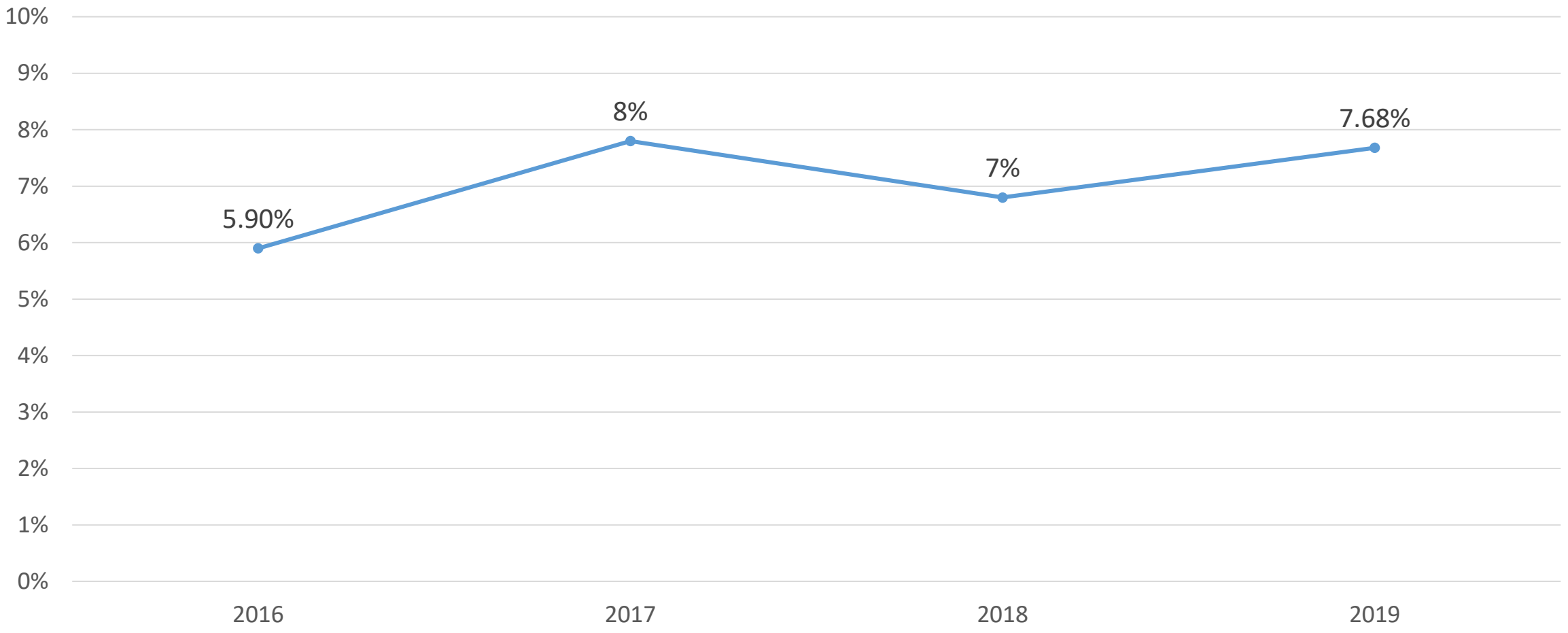
Source:EU-LFS, EFKA, own calculations

Number of declared and undeclared workers allocated per sector in Greece, 2019

Code	Sector	Declared workers	Undeclared workers
01A	Agriculture, forestry and fishing	44,669	5,771
02B	Mining and quarrying	11,872	201
03C	Manufacturing	299,721	2,669
04D	Electricity, gas, steam and air conditioning supply	28,097	0
05E	Water supply; sewerage, waste management and remediation activities	31,804	0
06F	Construction	86,056	2,940
07G	Wholesale and retail trade; repair of motor vehicles and motorcycles	442,280	2,026
08H	Transportation and storage	144,312	1,446
09J	Accommodation and food service activities	267,146	4,792
10K	Information and communication	89,249	101
11L	Financial and insurance activities	72,535	333
12M	Real estate activities	2,473	0
13N	Professional, scientific and technical activities	96,689	562
14O	Administrative and support service activities	73,904	658
15P	Public administration and defence; compulsory social security	341,343	150
16Q	Education	290,704	1,116
17R	Human health and social work activities	290,704	1,304
18S	Arts, entertainment and recreation	199,063	946
19T	Other service activities	50,684	850
20Y	Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	9,988	11,616
21Z	Activities of extraterritorial organisations and bodies	4,329	0

Source: EU-LFS

Hour wage less than minimum hour wage, Greece, 2016-2019.



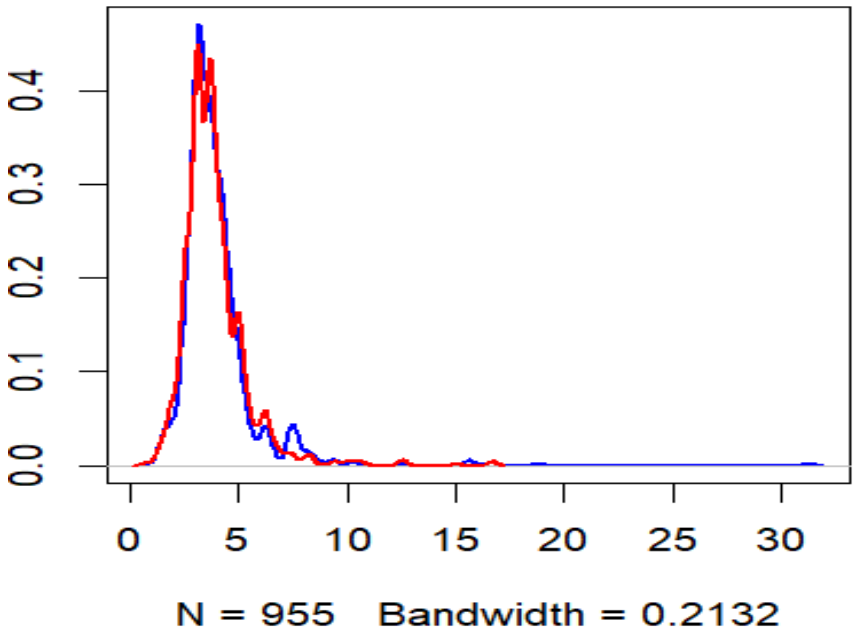
Source: EU-LFS

Labour Implementation in Greece

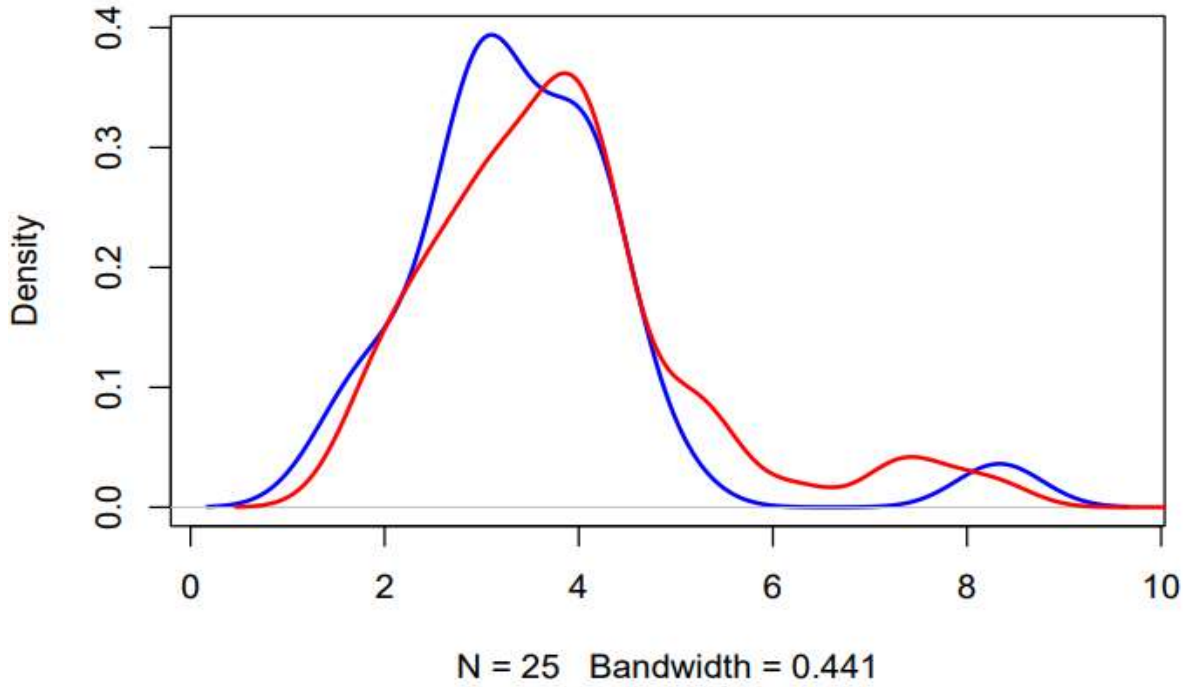
- Implementation induced significant changes in labour market institutions: the collapse of collective wage bargaining, the suspension of favorability principle in the collective agreements and the introduction of non-union wage bargaining actors
- Also the minimum wage would set out from the Greek government and not through a collective agreement between the General Confederation of Greek Workers and employers' associations
- In 2012 the Greek government, following the recommendation of TROIKA, decreased the minimum wage 22% for the employees above 25 years old. Besides, through the creation of subminimum wage for the employees under 25 years old, the minimum wage decreased 32%.Also the three years experience premium was frozen
- A major increase of minimum wage (11%) and the abolition of subminimum wage implemented at February of 2019
- We evaluate this reform in terms of labour market informality

Kernel Density Estimations

Hourwage for declared workers under 25 years old in Greece



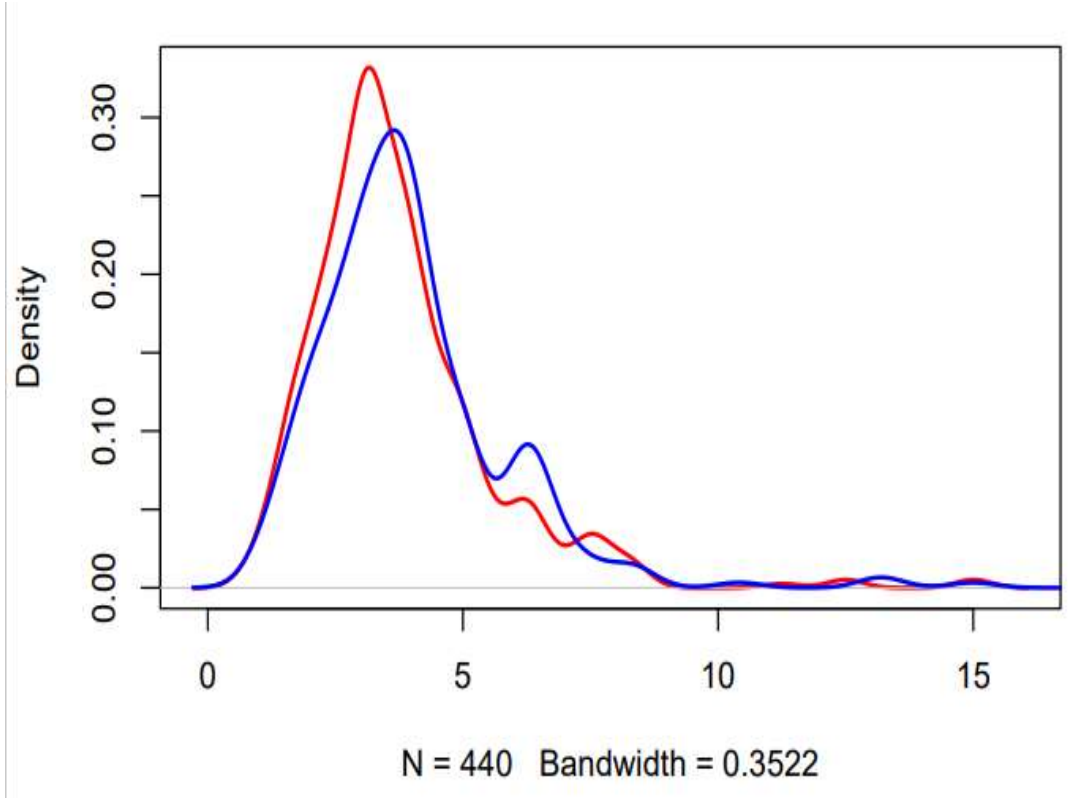
Hourwage for undeclared workers under 25 years old in Greece



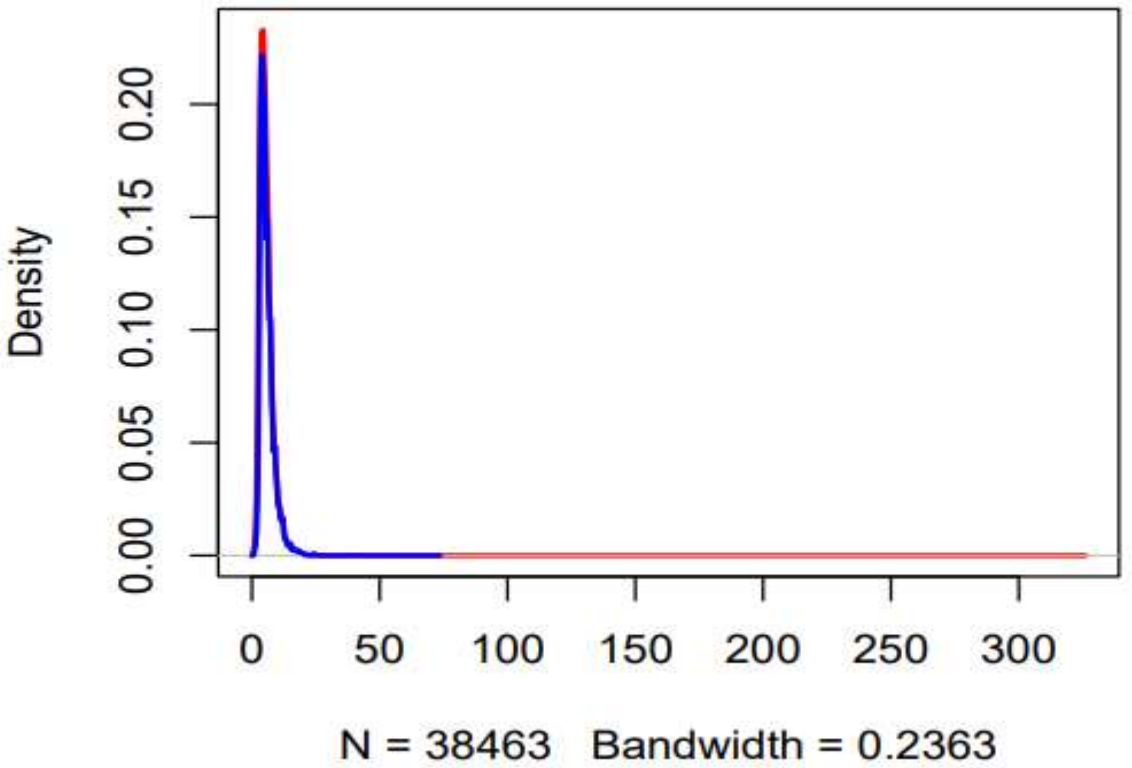
2:2018- 4:2018 :red line
2:2019- 4:2019 : blue line
Source: EU-LFS.

Kernel Density Estimations

Kernel density of hourwage of undeclared workers in Greece



Kernel density of hourwage of declared workers in Greece



2:2018- 4:2018 red line
2:2019- 4:2019 blue line
Source: EU-LFS.

Declared and Undeclared Employment: Difference-in-Difference analysis

lm(formula = Worker_Status ~ treated + time + did)

Residuals:

Min	1Q	Median	3Q	Max
-0.99868	-0.03574	0.00132	0.03420	0.99914

Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)	
(Intercept)	0.998680	0.001268	787.867	<2e-16	***
treated	-0.032884	0.001426	-23.057	<2e-16	***
time	0.002178	0.001802	1.209	0.227	
did	0.067766	0.002032	33.355	<2e-16	***

Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 0.1636 on 154723 degrees of freedom
(308697 observations deleted due to missingness)
Multiple R-squared: 0.03468, Adjusted R-squared: 0.03466
F-statistic: 1853 on 3 and 154723 DF, p-value: < 2.2e-16

Conclusions

- We use the increase of minimum wage of 2019 as a case study to reveal the present of lighthouse effect on the Greek labour market
- Moreover, we provide evidence that an increase in the minimum wage might act as a lighthouse for the informal labour and partially affect the flows to undeclared employment.
- Other issues: employees force to become self-employed by employers
- For this reason, we want to emphasize that a mix of centralized wage bargaining, strong trade unions and a higher minimum wage may be an appropriate policy to increase employment and workers' well-being and to enforce the coherence and the stability of the Greek labour market.