



Ministry of  
Development Funds  
and Regional Policy

 **PARP**  
PFR Group

# Subsidies from PO IR and PO PW and counteracting the economic effects of COVID19 pandemic in 2020-2024

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# Model VESPA

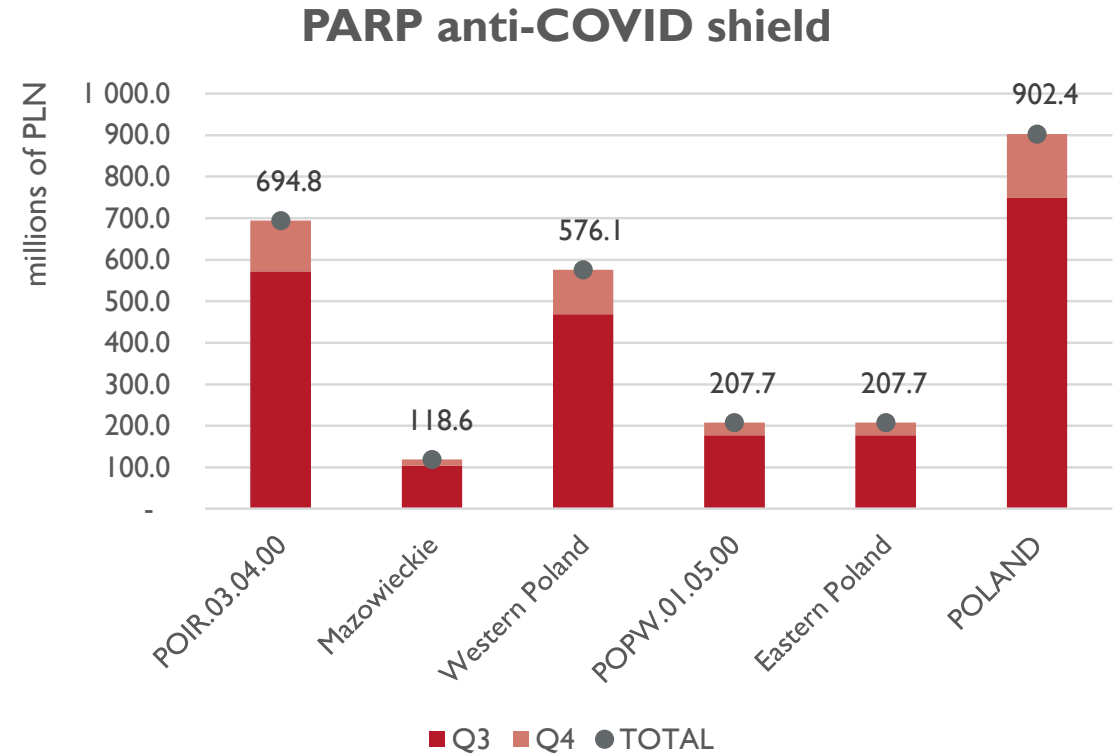
- The VESPA model is a DSGE model, i.e. a compound of:
  - Several associated optimization problems
  - Interconnecting markets (labor, capital, product)
- Model is parameterized on data for Poland (including IO, labor, public sector) and literature (elasticities)
- It is a large scale (over 1000 variables) multi-sector model, equipped with the SAM matrix,
- The model was written, solved and simulated in DYNARE
- The model is divided into blocks:
  - **Households:** consumption, labor supply, human capital, saving,
  - **Firms:** final, importing, intermediary
  - **Entrepreneurs:** creation of capital for production and R&D, demand for credit
  - **Banks:** demand for savings, loan supply
  - **R&D:** demand for researchers, creation of innovation
  - **Government:** taxes (PIT, CIT, VAT), expenses,
  - **EU:** spending on human capital, investment, investment support and innovation

# Analitical goals

- The major goal of the exercise was to assess the economic efficiency of the Direct Support from PO PW (OP EP) and PO IR (OP IE) provided by PARP in the peak of COVID19 pandemic i.e. summer and autumn 2020
- Therefore model had to be modified to reflect the quaterly dynamic of economy
- The simulations were based on the reference scenario covering historical (2007-2020) and forecasted (2021-2024) behavior of the analyzed variables
- The forecast is based on long-term trends (assumption of convergence with the EU), it includes the national and regional dimension
- The results were analyzed for effects on:
  - GDP and productivity
  - Labor market (unemployment)
- The simulation results are presented as a **deviation from this scenario** (in%) and their subject was the **reaction of the model variables** to the spending of EU funds (**conditional forecast**)

# The instrument

- The whole intervention was concentrated **in the third and fourth quarter of 2020** totalling 0.9 billion PLN or 0.04% GDP
- **POIR** – Total sum of 695 million PLN was spent to support enterprises primarily located in Western Poland (83%) and Mazowieckie Region (17%)
- **POPW** – Resources equal to 208 million PLN were used to support entities located in Eastern Poland

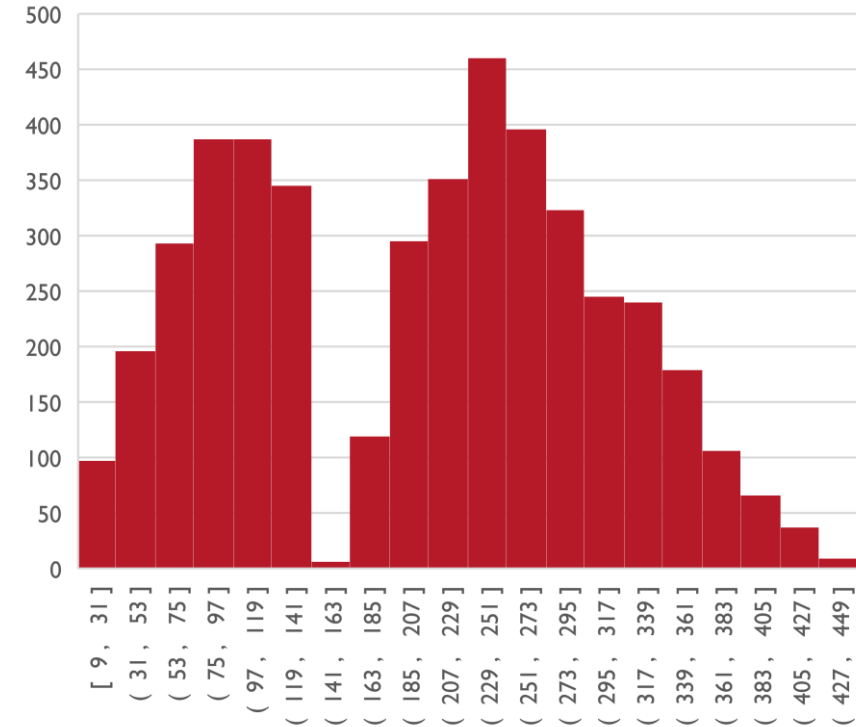


Source: PARP database

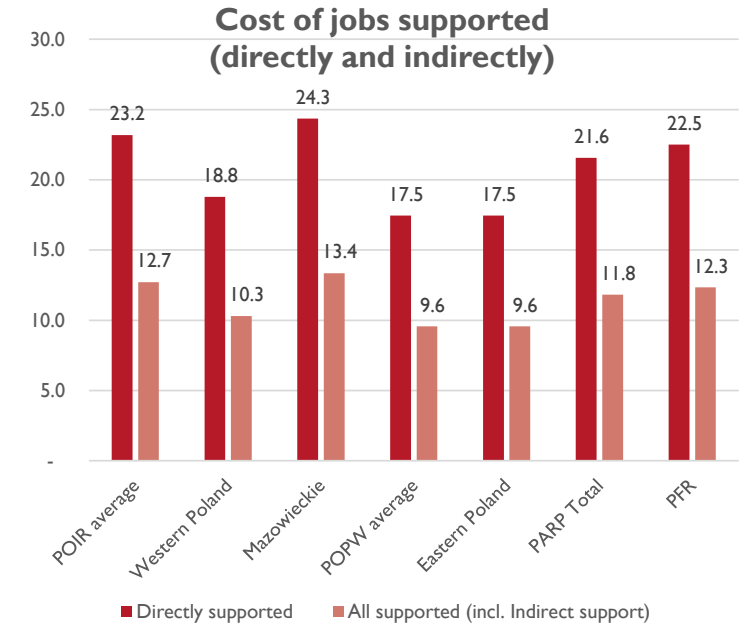
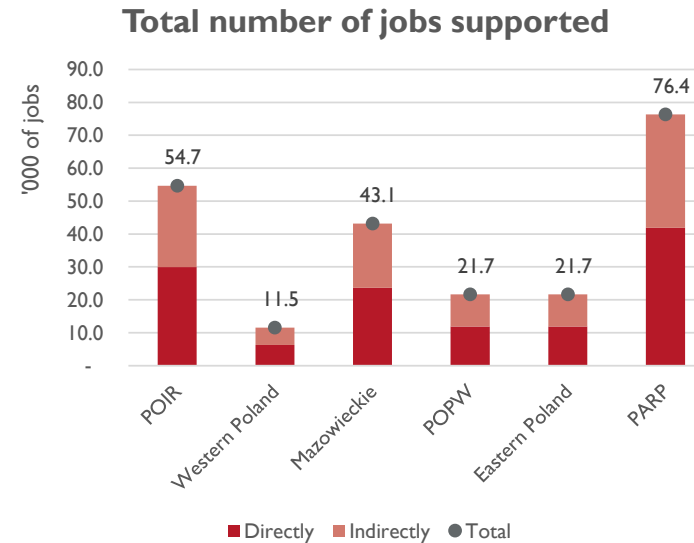
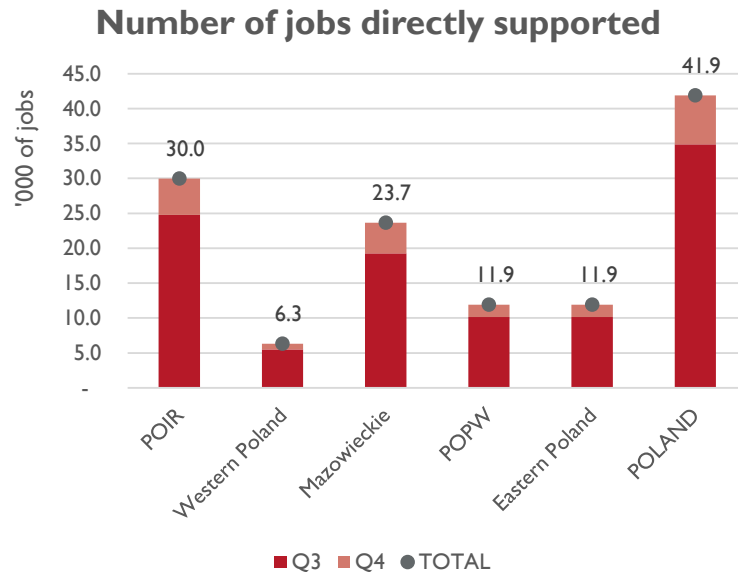
# The instrument

- Almost **4500 individual firms** received support
- **Support was unconditional** – targetting all enterprises that suffered significant drop in sales due to COVID pandemic
- **Two categories of beneficiaries appear in the database**
  - **average subsidy was close to 200 000 PLN** although several enterprises received more than 400 000 PLN and many, less than 100 000 PLN, with the smallest grant equal to 8K.
- In **Western Poland and Mazowieckie** region support in the 4th quarter was visibly smaller than in the 3rd quarter, which was not the case of Eastern Poland .

**Distribution of PARP anti-COVID financial support**



# Impact on the labor market – jobs supported



Source: VESPA model simulations, WiseEuropa

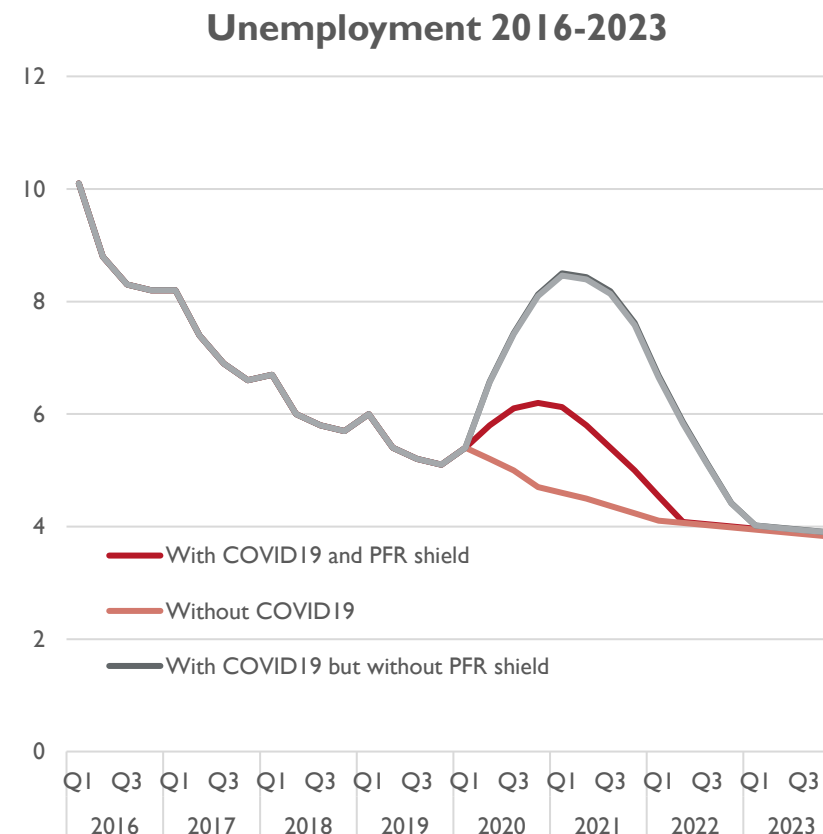
- **About 42 000 jobs were supported directly** by both instruments (3/4 of them in Q3 and 1/4 in Q4 of 2020)
- Indirectly (model estimate) **about 35000 jobs** were also **supported indirectly** through the commercial links to the Programs' beneficiaries (via improved financial position) **totalling in around 76 000 jobs** that benefited from the programme
- Therefore the cost of supporting one workplace equalled to about **21 600 PLN (directly)** and **11 800 PLN in total**

# Impact on unemployment

- Due to limited scale of the programme (0.04% of GDP) **its impact on unemployment was small**
- Model estimates that about **7100 jobs were prevented from liquidation** (compared to about 470 000 prevented by the total government support provided under the umbrella of the PFR group)

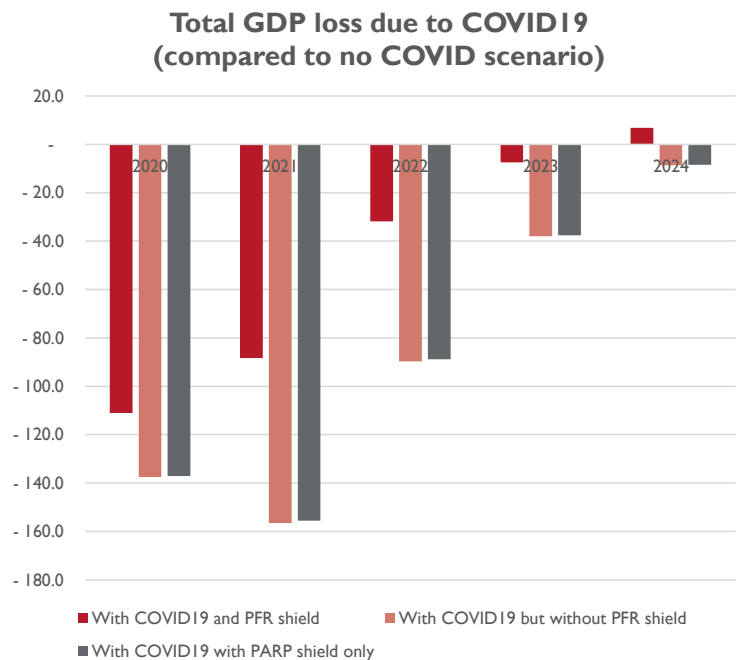
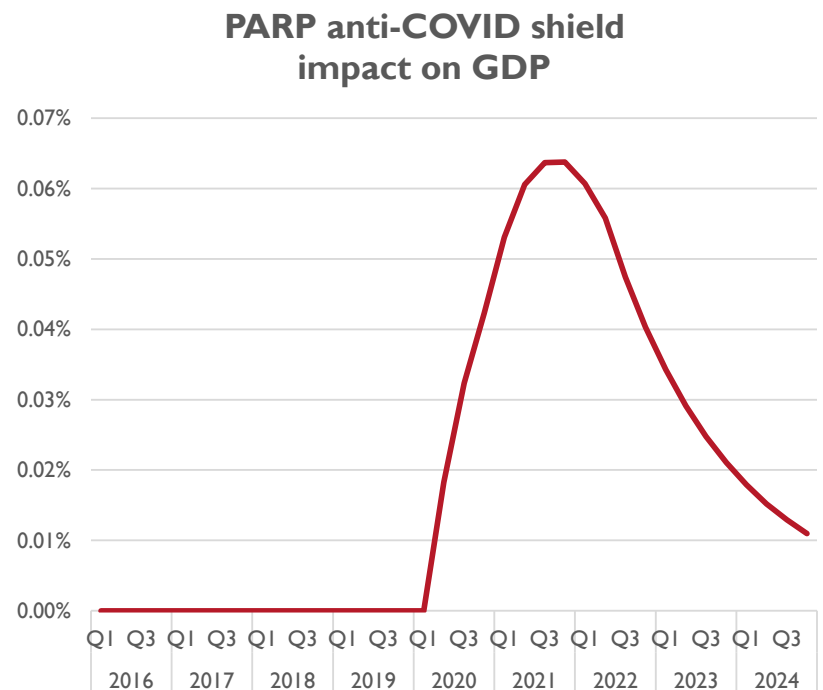
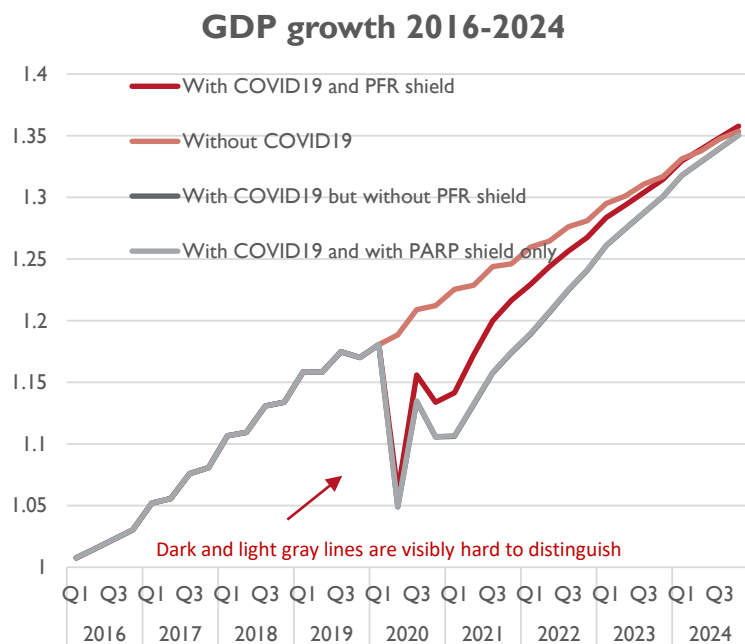
Unemployment prevented (000 persons)			
	Directly	Indirectly	Total
<b>POIR</b>	<b>2.8</b>	<b>2.3</b>	<b>5.1</b>
Western Poland	0.6	0.5	1.1
Mazowieckie	2.2	1.8	4.0
<b>POPW</b>	<b>1.1</b>	<b>0.9</b>	<b>2.0</b>
Eastern Poland	1.1	0.9	2.0
<b>PARP</b>	<b>3.9</b>	<b>3.2</b>	<b>7.1</b>

Source: VESPA model simulations, WiseEuropa



Source: VESPA model simulations, WiseEuropa

# Impact on GDP



Source: VESPA model simulations, WiseEuropa

1. The impact of OP IE on Polish GDP of the PARP anti-COVID shield is **limited by the size of the support** and its nature (jobs directed/not-investment subsidy) – VESPA model estimates that in 2020 Polish GDP should be by almost 0.02% larger due to the Programme (0.06% in 2021)
2. At the same time however the total gain from the programme implementation is positive – in total between 2020 and 2024 Polish GDP would be by about **3 billion PLN smaller without the PARP support** (compared to 0.9 billion upfront cost of the Programme => net gain = 2.1 billion)
3. In case of the whole **PFR group the net gain** between 2020 and 2024 can be estimated at **130 billion PLN**



## Other results and summary

- **The intervention**, despite the relatively low value compared to macroeconomic aggregates, **brought benefits at the macro level** (cumulative GDP growth during the intervention period equal to PLN 3 billion, number of unemployed smaller by 7K etc.)
- **The largest effects** (mainly due to the largest outlays) programme *had on Western Poland where GDP should be higher by almost 0.14% in 2021* (compared to the no – support scenario with COVID19) although outlays on Eastern Poland and Mazowsze also had a lasting effect on GDP,
- PARP anti-COVID shield **had also small negative impact on productivity that should fall by about 0.04% in 2021-2022 years**, due to the nature of the programme that tried to protect jobs and enterprises against the bankruptcy, forsaking their productivity for several years
- **Fiscal effect** - as a result of interventions, the **Treasury should obtain around PLN 1.2 billion of revenues – therefore the support will pay itself back** between 2021-2024 mostly thanks to higher contributions to Social Security and the Tax Office (PIT and VAT)



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**Thank you**

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