

WORLD, EUROPEAN AND POLISH MACHINERY AND EQUIPMENT MARKET DURING THE ENERGY CRISIS

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Abstract: The global energy crisis initiated significant changes on the market of capital goods, in particular on the market of machinery and equipment. The article presents the machine industry and fluid power market and its main shareholders. Increases (decreases) in the production and sales of machinery and equipment were analysed in relation to important macroeconomic indicators such as: GDP (GNP), industrial production and unemployment. Based on the latest data obtained on the basis of CETOP, VDMA, OECD publications and data from selected countries, the situation in various branches of the machine industry in the World, Europe and Poland, in particular in the area of fluid power, was presented.

Keywords: Fluid power market, energetic crisis, conditions of fluid power companies, forecast of the future.

1. The global engineering industry in times of the energy crisis

The COVID-19 pandemic and the ongoing war in Ukraine have caused a global energy, financial and related economic crisis. This situation affects the markets for industrial (investment) goods and services, and in particular the markets for machinery and equipment (Fig. 1 and 2).



Source: cpb, J.P.Morgan, S&P Global, Macrobond, VDMA

Fig. 1. World: industrial production and Purchasing Managers' Index manufacturing (PMI) [1]

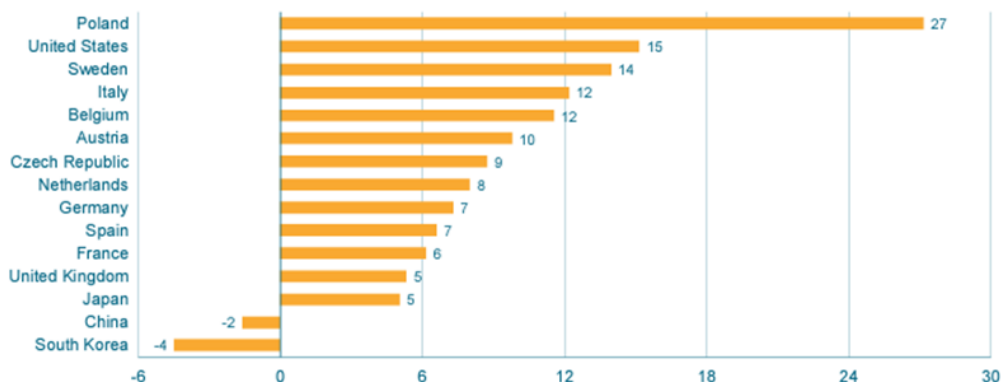


Source: S&P Global, Macrobond, VDMA

Fig. 2. Purchasing Managers' Index in manufacturing [1]

The situation faced by European countries during the COVID-19 pandemic, in particular the inability to manufacture the simplest products such as masks, significant increases of labour costs (in particular in China and other Asian countries) and political conditions - resulted in decisions of entrepreneurs to move production back to Europe. These decisions are in most cases supported by the governments of individual European countries, e.g. for strategic reasons - especially after the negative experiences related to the war in Ukraine and the related perturbations on the energy and food markets.

January - June 2022, yoy, %, values



Source: Eurostat, Nat. Statistics, Macrobond, VDMA

Fig. 3. Top machinery locations: current turnover development [1]

The above graphic shows the economic position of Poland at the moment. The largest increases in locating the transferred production are recorded in Poland (increase by 27%). This is undoubtedly influenced by: the competitiveness of the economy (low taxes), well-qualified staff at all levels and the growing geopolitical position in Europe (the Three Seas Initiative) and the world (an increasingly larger and more important US ally in Europe).

One of the factors having the greatest impact on the situation on the machinery and equipment market is the energy crisis - gradually intensified by Russia for over a year. As can be seen from

the graphs in Fig. 4, as many as 70% of respondents have problems related to increases in energy prices.

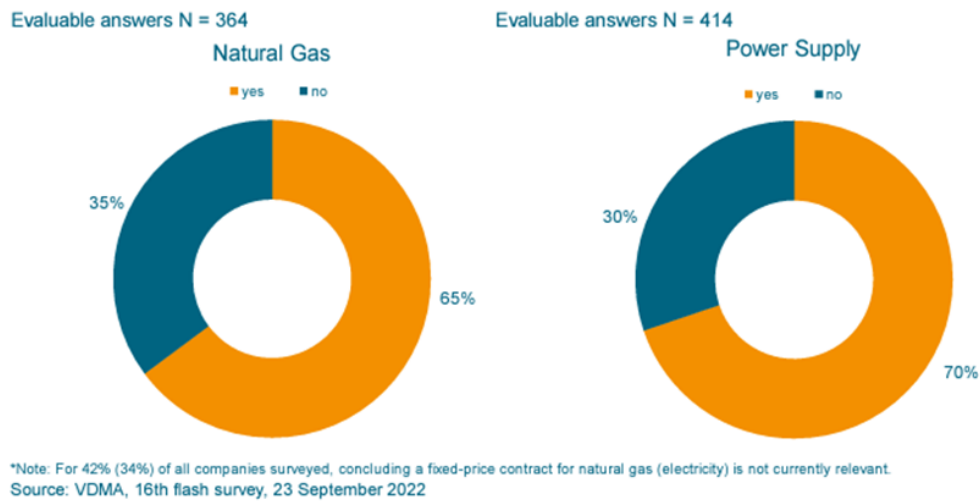
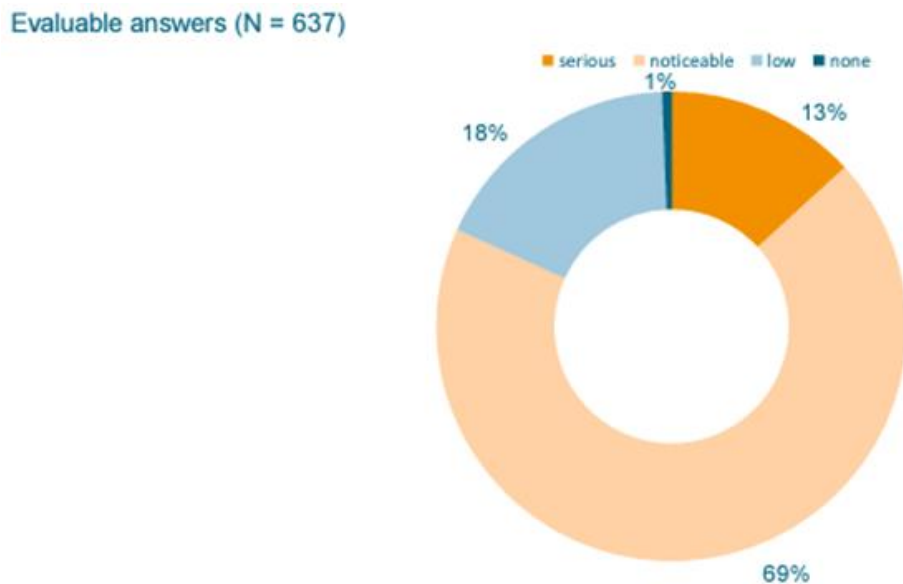


Fig. 4. Problems in obtaining fixed- price contracts for own company's energy supply [1]

The effect of the increase in energy and raw material prices is shown in Fig. 5. It shows that as many as 82% of respondents see the related problems as critical.



Source: VDMA, 16th flash survey, 23 September 2022

Fig. 5. Effects of rising prices for Energy and raw materials on companies [1]

Some companies are trying to reduce their energy bills. Even 85% of respondents from enterprises implement energy saving, 35% intend to use other sources than those used so far, 32% change the way energy is ordered and 16% ban very energy-intensive production (e.g. artificial fertilisers).

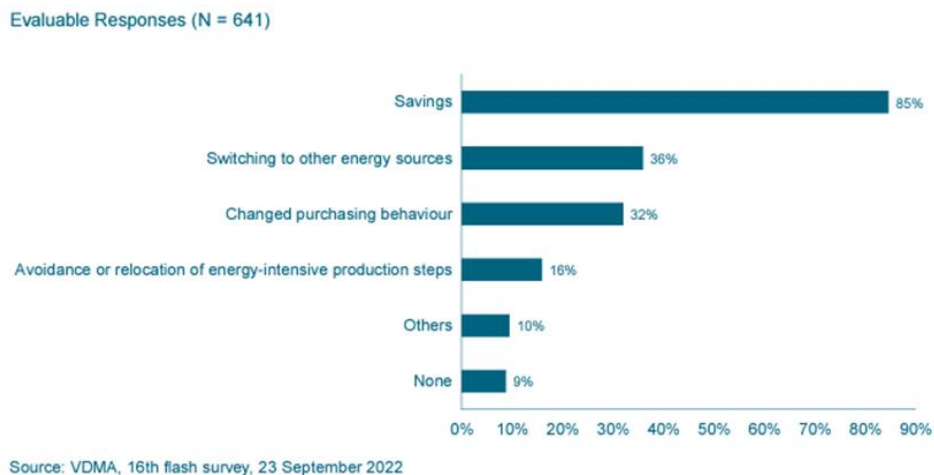


Fig. 6. Evasive actions regarding energy supply [1]

The survey on Expected nominal turnover development 2022 and 2023 (prior-year comparison) is presented in Fig. 7. As you can see, most of the respondents assume an increase in production orders.

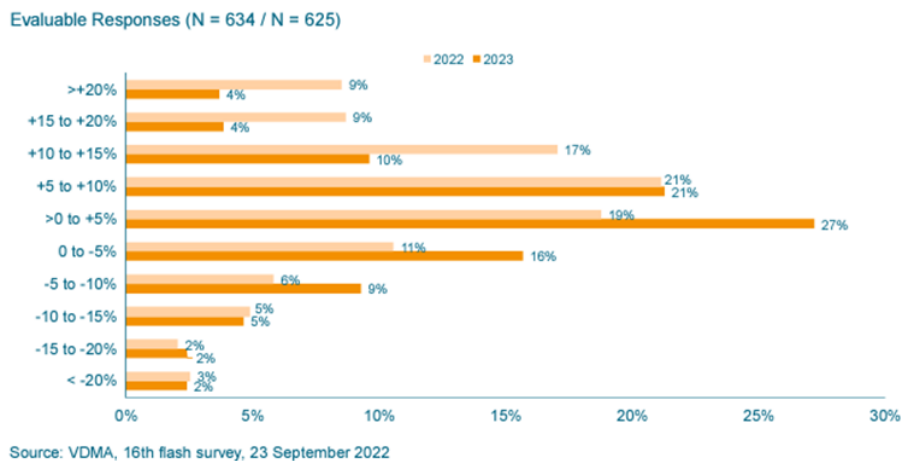


Fig. 7. Expected nominal turnover development 2022 and 2023 (prior-year comparison) [1]

Similarly happens, in the area of investment plans, Fig. 8.

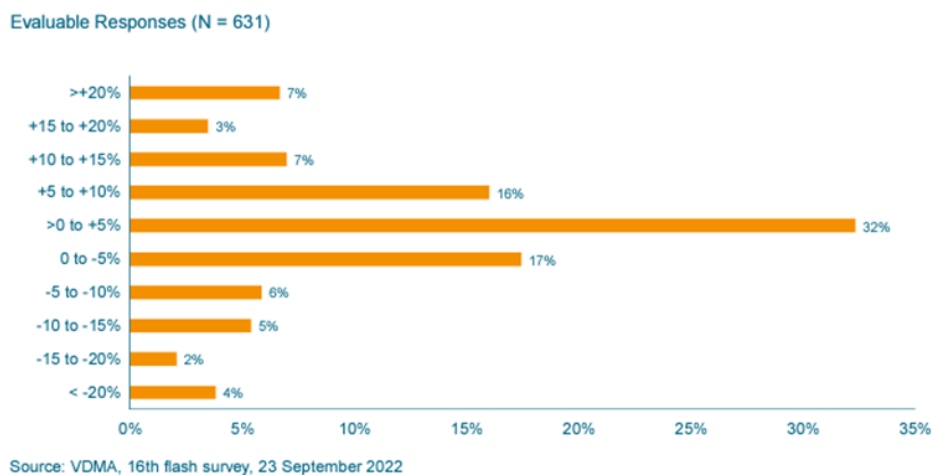
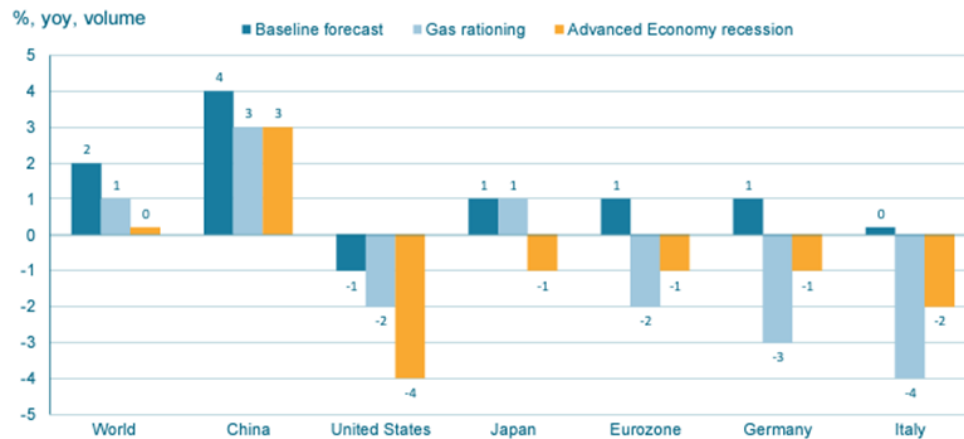


Fig. 8. Investment plans in 2023 (prior-year comparison) [1]

However, the situation on the global market next year is not so optimistic. Outside of China, the outlook for next year is worrying (Figure 9). Recession is forecast in the USA, Japan, the EU zone, Germany and Italy.



Source: Oxford Economics (September 2022)

Fig. 9. Machinery turnover forecast for 2023 (selected countries by scenarios) [1]

Inflation is another factor that has a very large impact on the situation on the machinery and equipment market. In the countries of the European Union, the average inflation is currently at the level of 10.7% (Fig. 10).

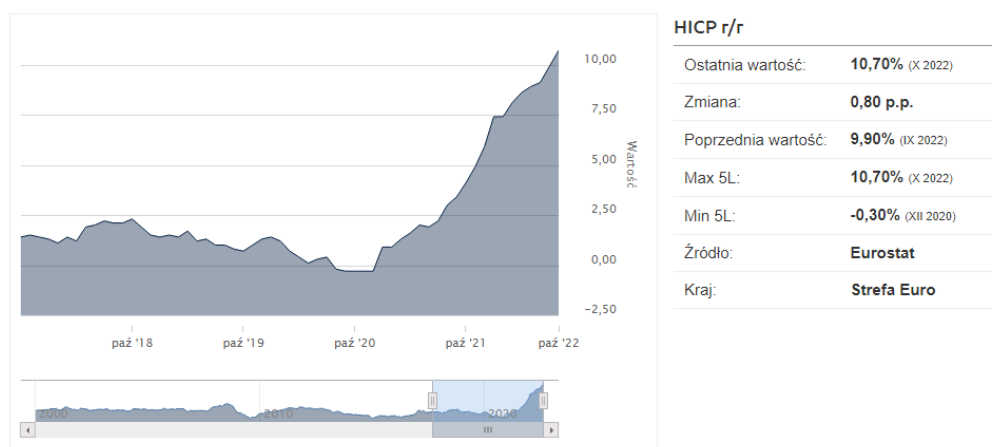


Fig. 10. Inflation in European zone [3]

2. Situation in the area of fluid power in selected European countries.

The situation in the broadly understood area of fluid power in selected countries associated in CETOP is extremely interesting.

In Belgium, sales growth in the hydraulics area was 13.51% through August. In September, -6% was recorded, the forecast for next year is -5%. In pneumatics, 1.38%, -0.8%, 0.5% and -5%, respectively (Tab. 1).

Table 1: Situation in fluid power in Belgium [1]

Hydraulics national home sales

- January to August 2022/2021 + 13.51 %
- Trend for September - 6 %

- Forecast for the year 2022 + 3.5 %
 - Outlook for the year 2023 - 5 %
- Pneumatics national home sales
- January to August 2022/2021 + 1.38 %
 - Trend for September - 0.8 %
 - Forecast for the year 2022 + 0.5 %
 - Outlook for the year 2023 - 5 %

In the Czech Republic, the current situation as well as predictions for the next year in hydraulics and pneumatics are more promising. The good condition of industry in the Czech Republic is related to the unemployment rate. Currently, it is the lowest among the countries associated in the EU (Poland is ranked second in this ranking).

Table 2: Situation in fluid power in the Czech Republic [1]

Hydraulic Industry

- National Home sales 152.500 T EUR
- Recorder trend Jan/Aug. 2022 + 13%
- Trend for September 2022 + 9% (Mobile +10%, Industrial +8%)
- Forecast 2022 + 6%
- Outlook 2023 + 4%

Pneumatic Industry

- National Home sales 66.500 T EUR
- Recorder trend Jan/Aug.2022 + 9%
- Trend for September 2022 + 7%
- Forecast 2022 + 5%
- Outlook 2023 + 3%

In France, the situation in fluid power is also positive (fig. 11, fig. 12) - however, the Czech and French markets are significantly different in terms of market size. Last year, the French market rebuilt to the value of production revenues from 2017.

Hydraulics

- 2021/2020: + 17%
- January-August 2022: +9%
- September Trend: Good
- 2022: +9%
- 2023: +5% (Mobile + 6%, Industrial + 3%)

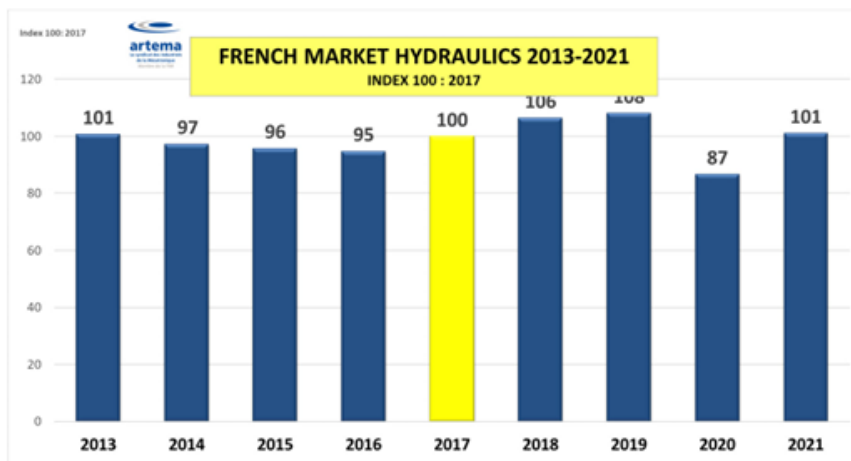


Fig. 11. French market in hydraulics from 2013 to 2021 [1]

Pneumatics	
National Home Sales:	312 560 K€
2021/2020:	+14%
January-August 22/21:	+7%
September Trend:	Good
2022:	+ 8%
2023:	+4%

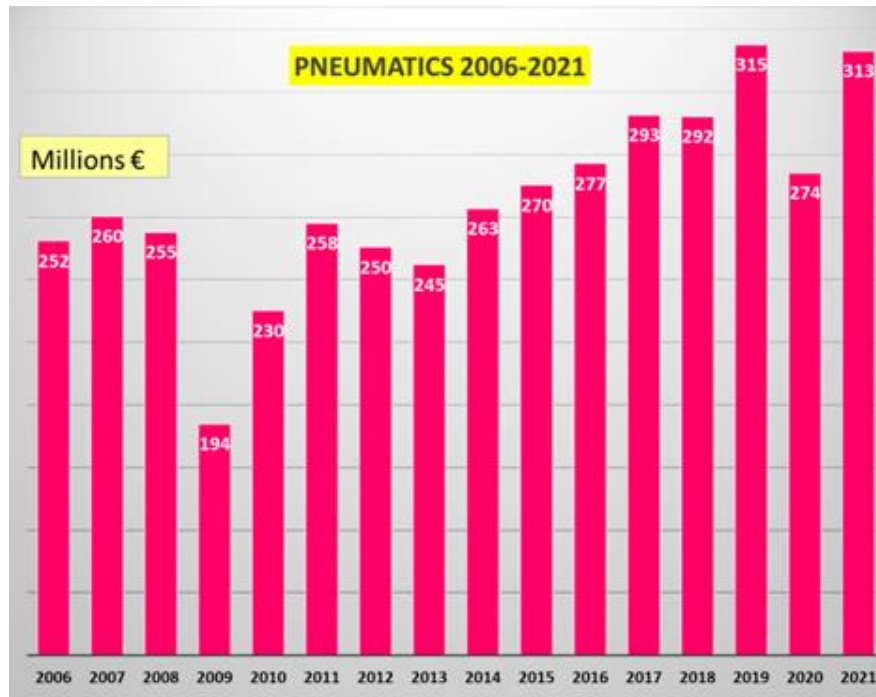


Fig. 11. French market in pneumatics from 2006 to 2021 [1]

Germany is the largest European producer in the field of hydraulics and pneumatics. The CETOP Association in Germany - brings together 232 member companies. The history of sales and orders in the fluid power industry in Germany is shown in Figures 13, 14.

General data about fluid power in Germany:

– Turnover:	8.5 Billion Euro
» Hydraulics:	5.6 Billion Euro
» Pneumatics:	2.9 Billion Euro
– Export ratio:	61%
– Sealings–Turnover:	1.3 Billion Euro

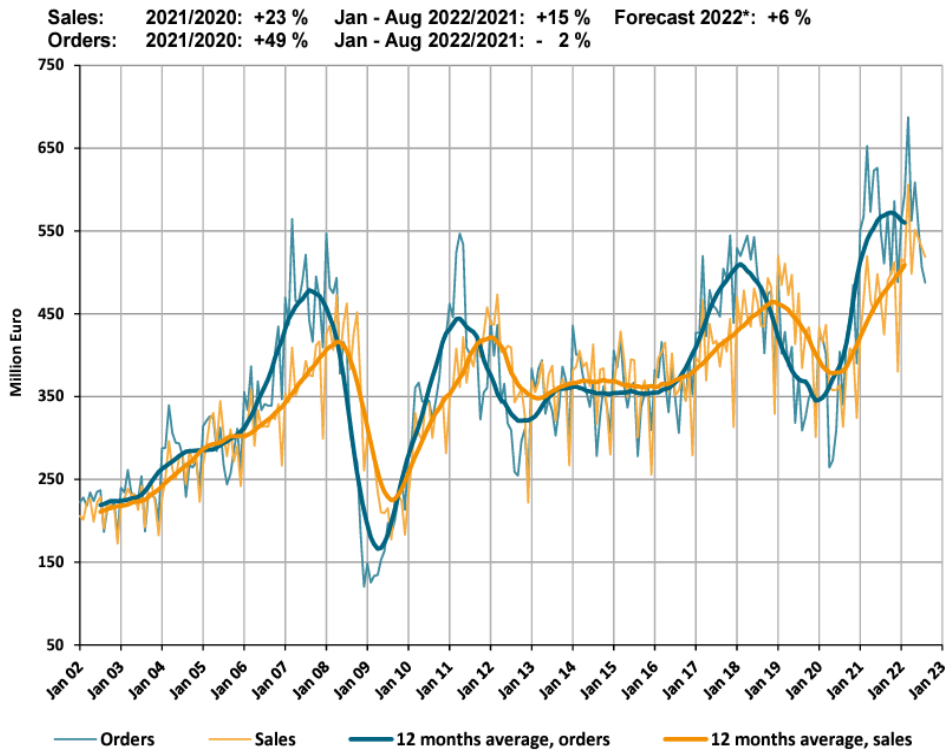


Fig. 12. German sales and orders in hydraulics from 2002 to 2022 [1]

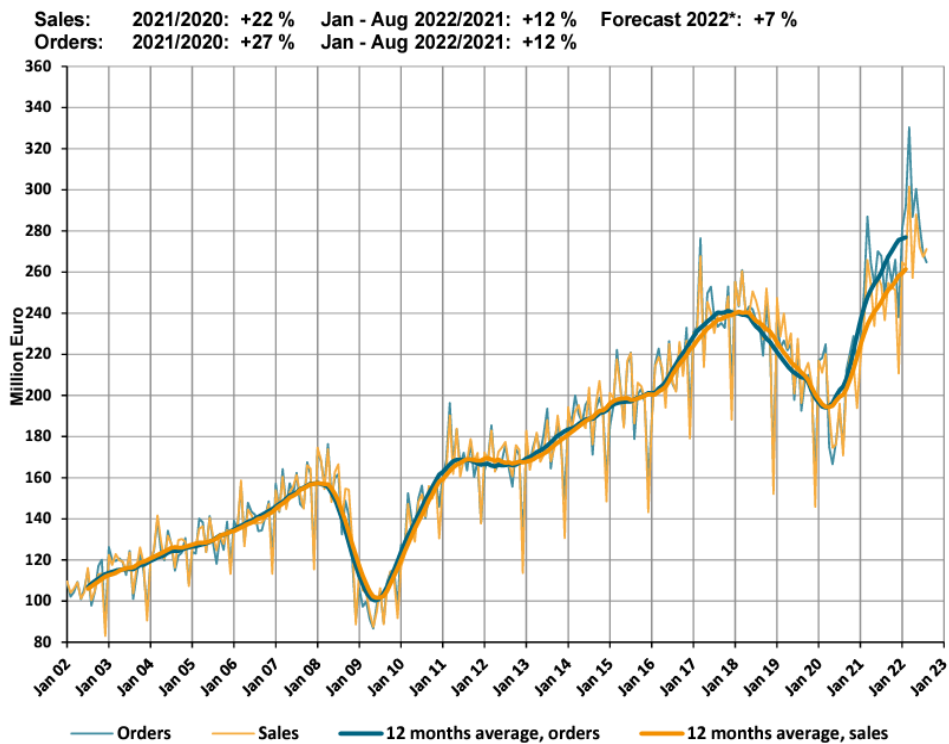


Fig. 13. German sales and orders in pneumatics from 2002 to 2022 [1]

The situation in fluid power in Italy is as follows (table 3, fig. 15).

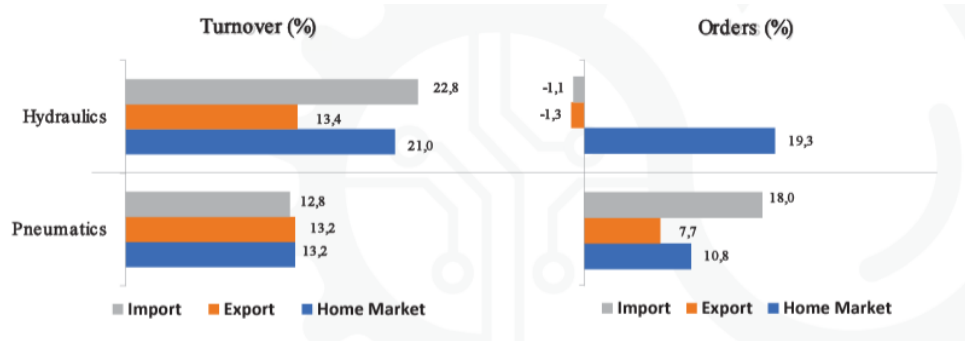


Fig. 14. Italian turnover and orders in fluid power (January –June 2022/ January –June 2021) [1]

Table 3: Italian fluid power market

	Hydraulic	Pneumatic
Total Home Market Sales 2021 (Million of euro)	1.851.000	982.000
Home Market Sales January to August 2021/2022	+17,4%	+12,4%
Trend for August	Sales - down Orders - down	Sales - down Orders – down

3. Polish machinery industry

The Polish machinery industry - less than other industries in Poland (e.g. construction) - felt the energy crisis, very high inflation (17.8%) and the effects of restrictions caused by the COVID-19 pandemic. This applies in particular to products constituting investment (industrial) goods. Figure 16 shows Poland's gross domestic product (GDP). Figure 17 shows the rate of inflation.

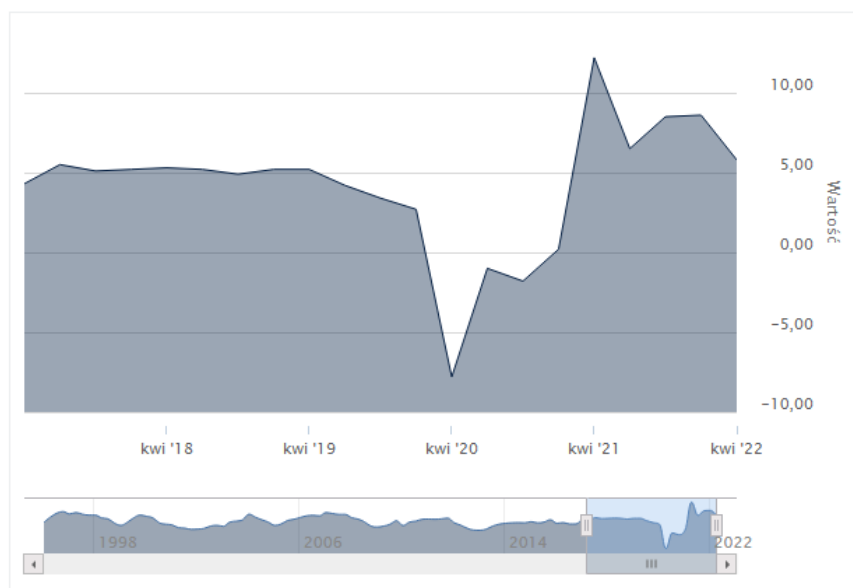


Fig. 16. Indices of gross domestic product (GDP) in current prices (5.8%) [2]

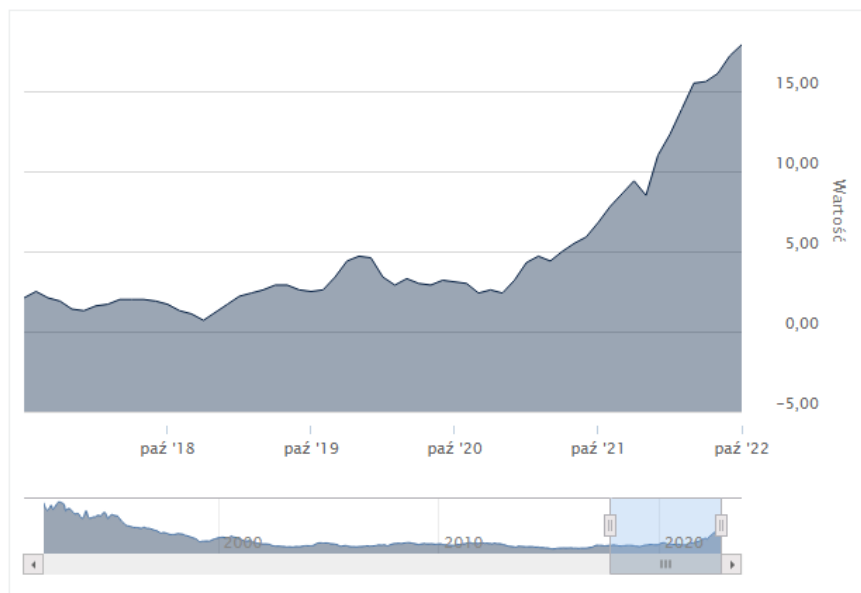


Fig. 15. Inflation in Poland (17.8%) y/y [2]

The domestic machinery industry consists of 50-60 large companies producing a wide range of machinery and equipment, ranging from engines of various power, including marine, cranes, agricultural machinery (tractors, combine harvesters and others) to many types of machine tools (including CNC) and machines and equipment for the mining, chemical, food, textile, paper, etc. industries. The PMI for Poland is shown in Fig. 18.

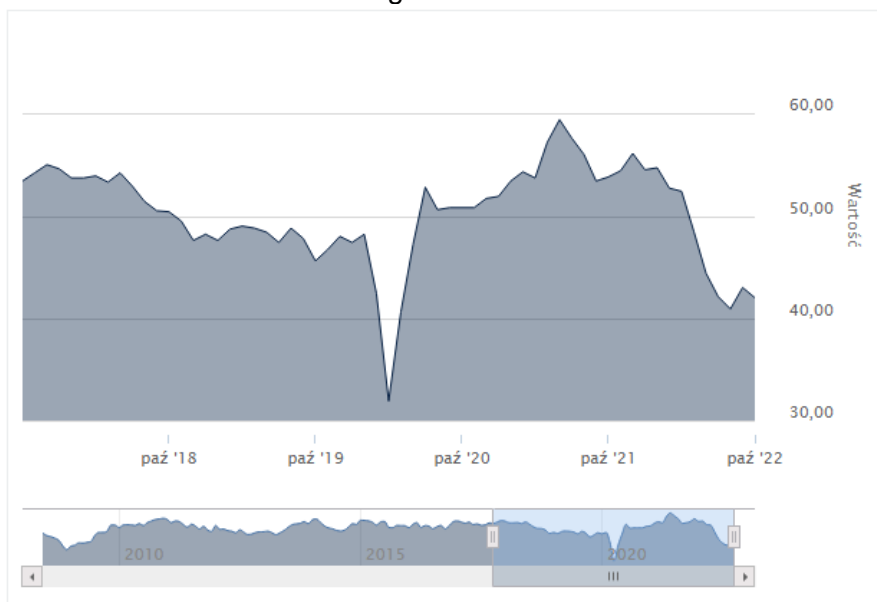


Fig. 16. Purchasing Managers' Index for Poland (42) [2]

Analyzing the unemployment rate (Fig. 19), it can be said that despite the very high inflation and the turmoil caused by the pandemic and the war in Ukraine, the labor market in Poland is still looking for employees.

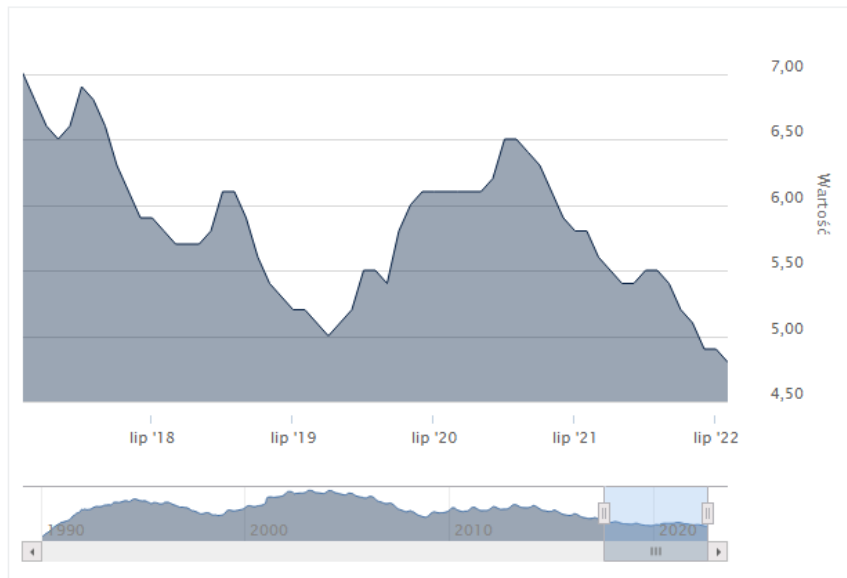


Fig. 17. Unemployment rate for Poland (4.8%) [2]

Industrial production, despite of many turbulences and macro and microeconomic problems, as well as preparations of European countries "for worse times", still fluctuates around 10%, which is a very good result (Fig. 20).

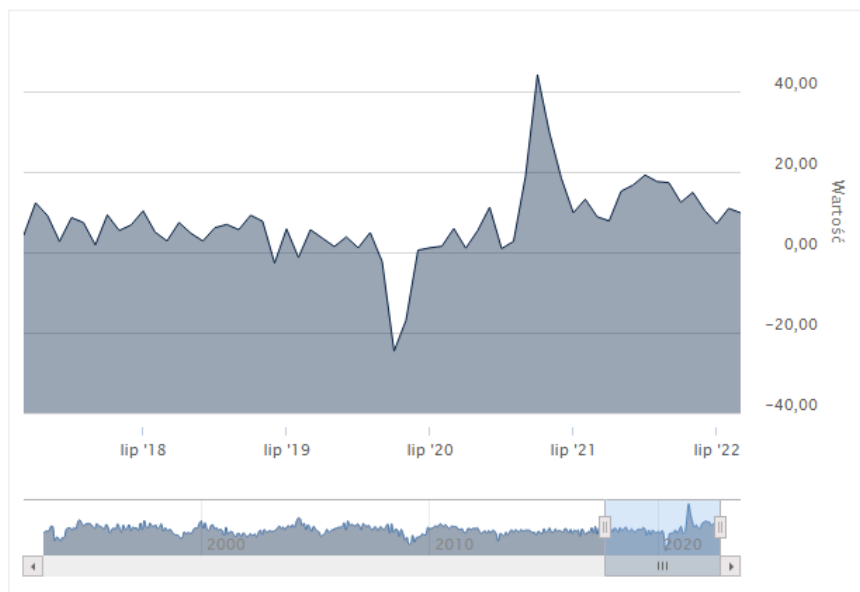


Fig. 18. Industrial production in Poland (9.80%) y/y [2]

4. Conclusions

The moods in the global, European and Polish machinery industry, where the indicators of the general economic climate were below the levels of the deep economic downturn in 2012-2013, do not look too good. A similar situation applies to construction and wholesale trade. Slightly better – but also below the line – indicators for the transport, catering and hotel industries. Only IT and communication, as well as the financial and insurance sectors, were on the plus side.

All these indicators suggest a hard autumn and a difficult winter 2022 for the Polish economy, but also for the European and global ones. So far, the downturn is not yet visible on the labour market, but it will probably change in the coming months and quarters. So before it gets better, it will clearly get worse. Currently, macroeconomic forecasts assume that the bottom of the business cycle will fall at the turn of the year (2022). However, it is not certain whether this will happen ...

References

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- [3] Economic Monitor September 2022. Polish Market 2022.