

What kind of national champions Poland needs



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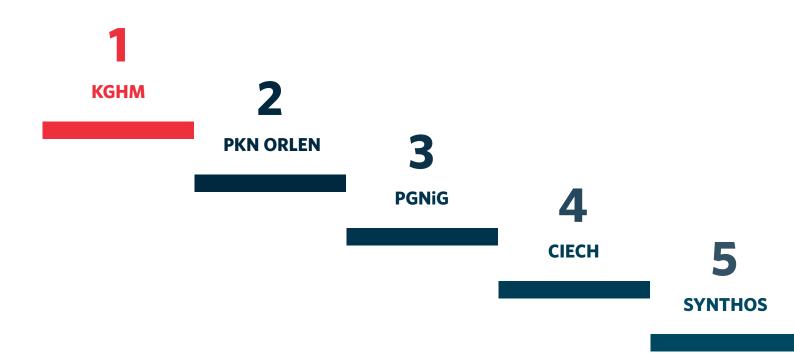
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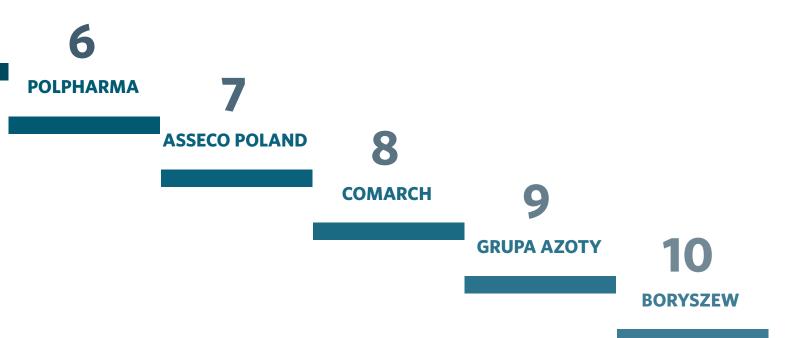


- CEO\*
- O Headquarters
- **★** Staff
- ♦ Value added\*\*
- O ROA
- ★ Share of sales on foreign markets
- Main sector

Ra	do	sła	w

	Domagalski-Łabędzki	Daniel Obajtek	Piotr Wozniak	Maciej Tybura	Zbigniew Warmuz
O	Lubin	Płock	Warszawa	Warsaw	Oświęcim
×	33370	19730	25056	3855	1524
<b>•</b>	9249	4880	8985	803	1065
0	-11,4	12,4	6,5	13,9	5,9
*	74%	58%	12%	62%	46%
	Extraction	Production	Production of gas fuels;	Production	Production
	of non-ferrous metal ores	and processing	distribution and trade	of basic inorganic	of synthetic rubber
		of refined	in gaseous fuels in network	chemicals	in primary forms
		petroleum products	system		

## Top ten in the ranking of national champions



Markus Sieger	Adam Góral	Janusz Filipiak	Wojciech Wardacki	Piotr Szeliga
Starogard Gdański	Rzeszów	Kraków	Tarnów	Warszawa
4303	22364	5475	14173	9138
808	4004	641	2292	1088
8,7	5,6	7,3	4,4	5,8
45%	79%	46%	43%	67%
Production	Software-related activities	Software-related activities	Production of fertilizers	Aluminum production

Production of pharmaceutical and IT consulting

and IT consulting

Production of fertilizers and nitrogen compounds

substances and medicines



# The national champions paradox



National champions are like money: we do not talk about them, but they are worth having. In highly developed countries' official political and economic narrative, the term is practically absent. The Germans focus on the Mittelstand, mediumsized family companies building a social market economy, the French want to build European champions, while the Brits and the Koreas support strategy industries and build ecosystems fostering the development of a specified group of entrepreneurs, regardless of their source of capital. Yet in each of these countries, national champions are the beneficiaries of government policy. As Henryk Chołaj writes in his Ekonomia polityczna globalizacji (Political economy of globalisation), the world's top hundred corporations do not include a single company whose national identity would be unclear, even to a person uninterested in economist policy.

States' euphemistic policy towards big domestic companies is justified in both political and political-symbolic terms, as best illustrated by analysing the term "national champion" itself. As an economic category, it is not a rigid term with a single, universal definition. Its connotation varies depending on the context and speaker. For politicians, national champions are big corporations in sectors deemed strategic for the state's domestic or international policy. From politicians' perspective, the realisation of public interest, broadly understood, trumps economic effectiveness.

For lawyers, especially those working on competition law, "national champion" can be a pejorative term. It stigmatises business that owe their leading position to state protectionism, with their market operations often accompanied by public aid - indirectly by creating a favourable institutional environment, or directly through injections of capital. National champions are even described as "lame ducks", indicating that their economic survival is ensured and that they do not need to work on their market position themselves.

For ordinary people, a national champion is the object of boasting and a source of pride. It is usually associated with a national brand and used in that context. In everyday language, "national champion" tends to be applied to companies providing consumer goods, spanning cars, furniture, mobile phones and televisions. The average citizen of every countries can name a series of national champions, usually from among the world's top 100 corporations. Asked why a champion has a national character, though, there is no single coherent reply. Companies' national character can be defined by their headquarters' location, the owner's nationality, where the senior management comes from, where production is based or even the organisation's corporate culture.

Nevertheless, the concept of national champions is applied to companies with very concrete characteristics, regardless of the semantic context, industry or country where it is based. Their common denominator is their significance for the economy, understood as high input into the country's economic and political potential, and its considerable role in social and economic development. National champions bind a society's culture, motivate business development and act as a busi**ness card abroad**. They are highly active in the international arena, occupy an oligopolistic or even monopolistic position in their industry and tend to fund research on innovation.

## Why national champions are worth having

## (but not talking about)

The East India Company was probably the first national champion. It was founded in the heyday of the British Empire, building its position trading goods with China and India. It fitted all the criteria of a national champion; pursuing political interests, strong foreign expansion commercially and culturally, major economic and political significance for Britain. It could even be said that the East India Company helped make Britain a global power for over three centuries.

The East India Company was a model for many aspiring national champions from the French Revolution until the Second World War. Following the Brits' example, many developed countries started to support the strongest domestic companies, developing their potential in the international arena. This policy found strong support in economic theory. Economists at the time, with John Stuart Mill at the helm, argued that **an economic policy focused on national champions could boost socioeconomic welfare**, for two reasons.

Firstly, bigger companies recorded bigger economies of scale – unit costs of production fell, so big companies could produce more and cheaper, while their ability to fund investments, especially the riskiest, including R&D, grew. Secondly, **only national champions could effectively compete on the international arena**. In an increasingly globalised economy, only a few companies could survive on many markets at once. As a result, the costs resulting from the monopolisation of a branch of the domestic economy

were compensated by the benefits stemming from the revenue generated by the national champion abroad.

The policy of educational protectionism described above was viable if two conditions were met: if state support were by definition temporary and restricted to the national champion's maturation period, and if the combined socioeconomist costs of supporting the aspiring champion were lower than the future benefits of its share in the global market. In line with this paradigm, highly developed states promoted a series of national champions – from automotive to energy companies, via heavy industry.

Keynesian protectionist policy was conducted after the Second World War, too. Western powers continued to strongly promote national champions, who, in return, helped build up French nuclear power, the German automotive industry or the British pharmaceutical one. Yet progress in economic theory forced politicians to change their narrative – they ceased to praise their support for national champions in public. It had turned out that the main benefits of having national champions, their ability to compete in the international arena, had been obtained at the cost of developing countries, which did not have their own champions yet.

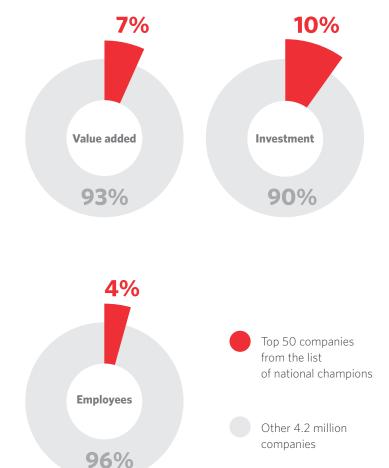
Advanced economic models showed that the **increase** in welfare of countries with national champions was lower than the decrease in welfare in countries that had not developed their own. As a result, more national champions meant lower global welfare.



Moreover, the protectionist educational policy – especially during the interwar years – had the character of a currency war, which none of the countries protecting its national champions did not benefit from, and all lost on. For this reason, the World Trade Organisation has been combating aggressive protectionism since its founding.

The trouble is, even now, national champions - though they are rarely described as such - from highly developed countries continue to play a primary role in the economy. With their brand, they support states' export power, leading the way for smaller companies on foreign markets. Ecosystems and the longest supply chains are built around them. Moreover, through investment in R&D and effective management, national champions build up national economies' competitiveness.

Restrictions on protectionist educational policy result in the retracted ladder effect, whereby countries that bred national champions before the Second World War using state support defend themselves from competition in developing countries. For this reason, politicians in developed countries rarely use the term "national champion", although they have many and continue to actively defend them.





# How developed countries support national champions today

Most often, protectionist policy towards national champions is manifested in the face of hostile takeover threats. The spectre of mass layoffs caused by optimisation, cutting spending on research and development, moving R&D centres or company headquarters abroad forces states to react. A further factor is social dissatisfaction caused by the perceived loss of national identity built, in part, on big brands that citizens are aware of. In other words, the benefits associated with national champions will be transferred abroad, and only the costs remain.

The financial crisis of 2008 and growing economic competition between states have shown that national champions remain important. The biggest corporations and financial institutions closed factories abroad to save jobs at home or changed their subsidiaries' policy to make them support the struggling parent company. This made the series of big mergers and acquisitions, especially involving the loss of national champions, was a major blow to crisis-ridden countries. Politicians decided to control ownership changes through solutions safeguarding national interest. The need to obtain approval to sell shares was introduced, regulators' prerogatives to control investments and domestic markets, along with provisions on running enterprises after acquisition, were strengthened. The latter concerned keeping representatives of the acquired company in its top management (and/or keeping headquarters in the country of origin), or ensuring continuity in spending on R&D.



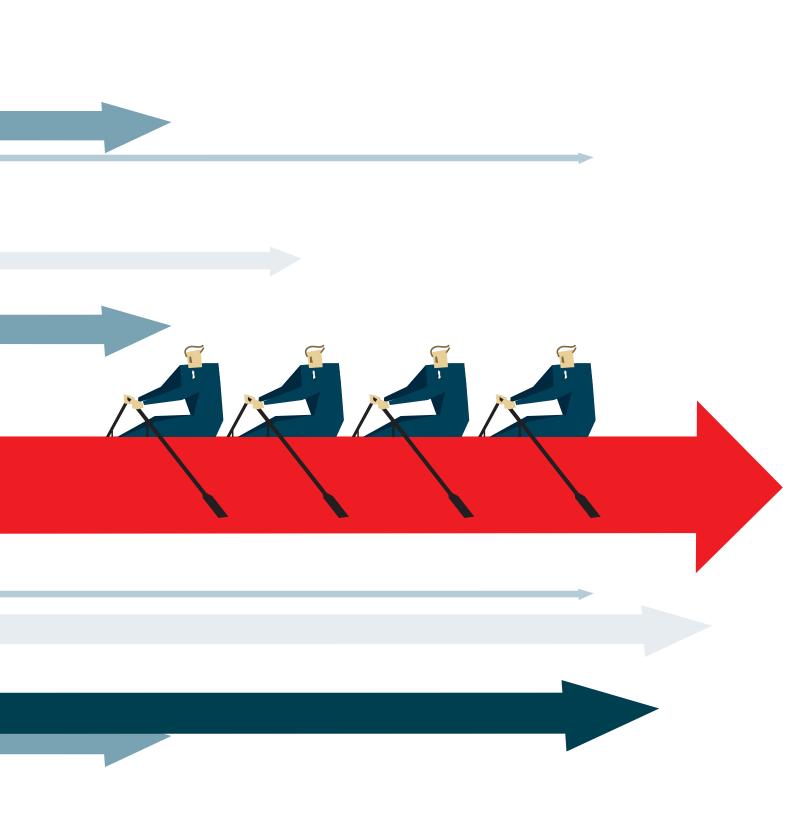
Meanwhile, ideas for supporting national champions burgeoned, but rarely made it into official government documents. To this day, soft instruments are used; from the regulatory side, the biggest European companies cooperate with governments and politicians (for example, in the European Parliament), to secure their interests in Brussels, while regulators often create friendly rules. They promote the biggest domestic companies, sometimes turning a blind eye on native companies' excessive strength. Consolidation enabling the merging of the biggest domestic companies is viewed more accommodatingly, too. Finally, countries seek to support their biggest companies on international markets, using proactive economic diplomacy or cooperation between various institutions, such as by involving the foreign branches of banks set on supporting exporters.

British white paper "The Industrial Strategy" emphasises five growth factors: ideas, people, infrastructure, the business environment and places. The British government is seeking opportunities for a rapid and effective increase in spending on R&D to develop key sectors, where national champions have the biggest share. These include finance, concentrated in the City. British banks still have a very big impact on state policy.

Meanwhile, France has emphasised the development of European champions in cooperation with other countries to compete effectively on global markets. This means that they accept the partial loss of the benefits associated with national champions, but increase the benefits resulting from the high share of French companies in the globalised economy. The French accept the sale of national champions' assets to foreign companies, such as the acquisition of Alstom's energy division by GE and the railway division's merger with German Siemens.

In the German political narrative, the economy is based on the Mittelstand - medium-sized family companies. Nevertheless, the key driver of the German economy are its biggest, flagship companies, which develop powered by exports. The domestic market is too small for them to approach their desired scale. The biggest companies have a major influence on Germany's industrial and energy policy. Cooperation between businesses and the administration is close and well organised, benefiting companies such as Daimler, Volkswagen and BMW, which managed to force the German government to support people replacing their cars with new ones. The top ten German national champions also include pharmaceutical, chemical and medical companies. These have considerable influence over Germany's industrial policy, helping shape Berlin's ambitious energy and climate agenda.





## How the transformation taught Poles to take care of national champions

At the time of the transition from communism, most state-owned companies urgently required restructuring and capitalisation, without which they would have fallen into ruin. The only way to save them was through privatisation, with foreign capital acquiring a majority stake, as Poles had practically no savings that could have been used to buy and rescue companies. Savings did not start being amassed until the 2000s.

As a result, most potential national champions were bought up by big foreign companies, while a handful of companies in strategic sectors of the economy – energy, finance and heavy industry - remained in Polish hands (mainly state ones). In the early 2000s, state-owned companies started to become more professionalised, but were still far from national champions.

The term "national champions" entered the Polish public debate for good during the PO-PSL government's second term, after 2011. Prime Minister Donald Tusk and his trusted adviser Jan Krzysztof Bielecki, once an advocate of the free market who opposed state involvement in the economy, started to change their approach to economic policy. They started to view three instruments more positively: tailored investment programmes, strengthened ownership supervision of state-owned companies, and support for unprofitable but strategic state-owned enterprises.

The repercussions of the financial crisis of 2008 convinced Poles that capital has a nationality - foreign champions that had previously supported Poland's economic development started to focus business policy on rescuing parent companies, often at the cost of Polish subsidiaries. This strengthened the conviction in Poland that big companies are needed for an active economic policy and foreign expansion.

PKN Orlen led the way for national champions, buying the Lithuanian refinery in Mažeikiai as early as 2006. The fashion for foreign investment began in the 2010s. Bielecki rooted strongly for KGHM, which bought a majority stake in the Chilean Sierra Gorda mine. Lotos, Orlen and PGNiG sought investment opportunities in commodity companies abroad. As globalisation advanced and new markets opened, private companies went abroad with their own products - and their own capital. Clothing, shoe, chemical processing and IT companies started to expand to neighbouring markets, especially eastwards.

"National champion" was mostly used to describe **state-owned companies**. In the PO-PSL government's narrative, a national champion was string at home and expanding abroad, exporting Polish products and acquiring foreign companies. Above all, it was supposed to look after the state's strategic interests, funding huge infrastructural projects (such as the Opole power plant or Poland's first nuclear power plant) and caring for Poles' security. The latter argument was particularly strong during the attempted takeover of state-owned Azoty by Russian company Acron.

The Russians' overtures towards the Polish chemical champion sparked strenuous government efforts, which resulted in a list of 22 strategic companies that cannot be privatised, published by the ministry of the treasury in 2014. Alongside energy, financial and food companies, they included Totalizator Sportowy and KGHM, companies that have a major market share, pay high taxes and pay dividends into the budget. At the same time, the Sejm adopted an MPs' law on controlling certain investments. The rules were to enable the government to oppose the purchase of major share packages in companies of strategic importance for the state. The list was based on "market share, scale of operations and the necessity to control investments to ensure the protection of public order or security".



# The Polish government's approach to national champions

There is a rare continuity in how Polish politicians think about the biggest state companies. For PiS, national champions are supposed to look after the country's strategic interests. Unlike the PO-PSL coalition, Jarosław Kaczyński's party places less emphasis on state companies' foreign presence. Companies should ensure the financial system's **stability and security**, or support the country's energy security. They can get involved in **foreign projects**, but those must matter to Poland, not just the company. In addition, they are supposed to support the government's big investment projects, such as building a nuclear power plant, the Central Transport Hub or the Baltic Pipe gas pipeline.

The term "national champion" rarely appears in the government's strategy for responsible development. The authors write that "almost 25 years of the dynamic development of entrepreneurship in Poland have not led to the emergence of many national champions with a recognised brand and an important role in global value chains". Nevertheless, even in his previous role as minister of development, Prime Minister Mateusz Morawiecki increasingly referred to national champions. The term was mostly used in the context of economic patriotism, internationalisation and the construction of ecosystems that will foster the development of smaller partners or the biggest companies' subcontractors.

Morawiecki emphasises that the government's economic policy does not focus on building *chaebols*, huge eastern-style companies, but rather on active support for Polish enterprises, especially SMEs. His attitude to state-owned companies is ambivalent. On the one hand, he understands their usefulness in managing the state and conducting investment and economic policy. One the other hand, he believes in building strength and value through smaller, privately owned Polish companies.

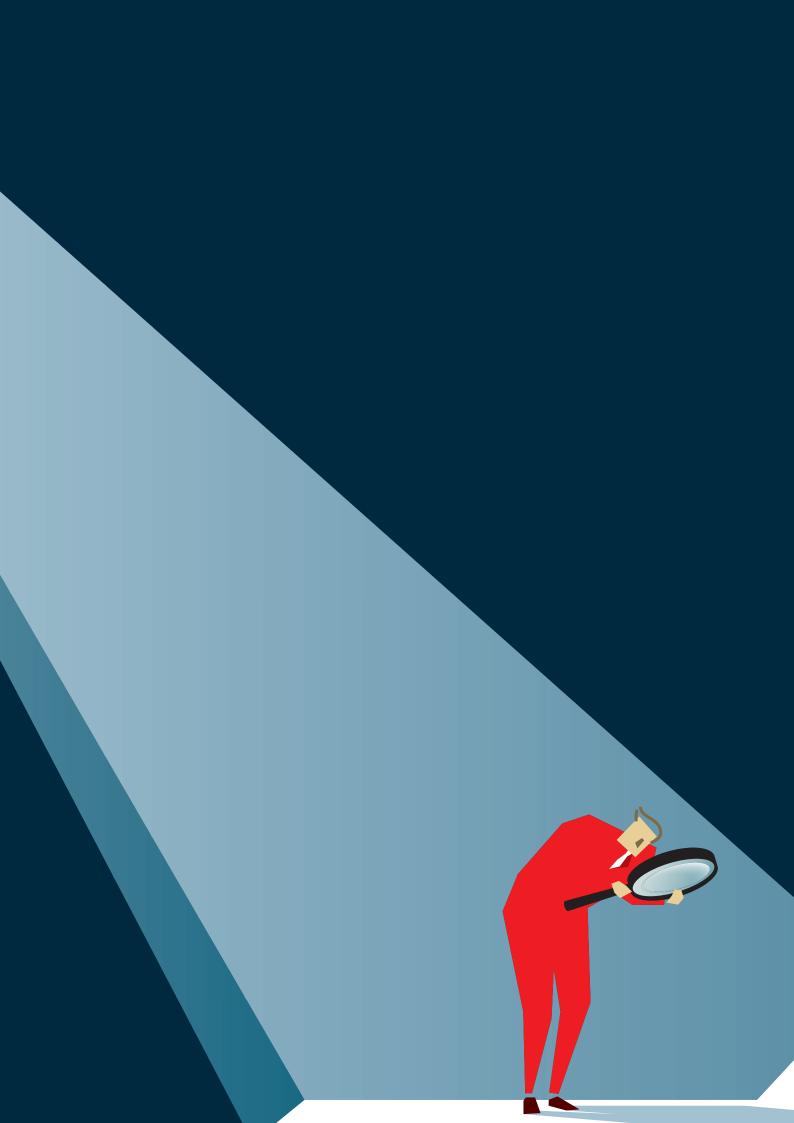
The current Polish government's policy is therefore similar to the German one's; its narrative places considerable emphasis on supporting medium-sized enterprises, but in practice, economic policy is mainly based on national champions. The government's strategy also highlights the need to increase companies' innovation and increase spending on R&D. According to economic theories, these aims can only be achieved by companies with high economies of scale, even if they fund spending on research conducted by small start-ups. This is why

there are more and more signals that the **government** intends to consolidate state-owned companies.

First in line to merge are companies in the financial and fuel sector. In January 2018, chairman of the Polish Development Fund Paweł Borys spoke of the need to establish a pan-European Polish bank. Meanwhile, CEO of PKO BP commented on speculations in December that his bank would merge with Pekao by saying that "the centenary of Poland's independence should be a time of great projects". The new bank would be the 59th biggest creditor in Europe, with enough capitalisation to develop corporate activities in western Europe and to takeover other smaller institutions in the region. It could become a rival of Austrian RBI or Erste Group. In February, Orlen and the ministry of energy signed a letter of intent on the takeover of Lotos. In theory, the merger would give the companies more funds to take over smaller fuel companies in the region, as well as support the government's strategic projects. The idea of merging the biggest Polish companies to increase their scale and strengthen national champions is not limited to state-owned companies. In December 2016, Famur started the procedure of taking over Kopex and consolidating the companies. This resulted in a Polish champion producing and selling mining machinery. The transaction enabled the new, bigger Famur to limit competition on the domestic market and increase its presence on foreign markets.

Nevertheless, there are actions that recall the French approach to national champions, namely building regional companies capable of competing with ones from western Europe. The government and the country's biggest companies are seeking opportunities for synergy between Polish champions and their current competitors in the Visegrad countries. Orlen's purchase of Unipetrol and PKP Cargo's acquisition of Czech carrier AWT signals that this approach could dominate economic policy in coming years. Bydgoszcz-based rolling stock producer PESA also has the potential to build a Visegrad champion. Ultimately, though, the state's Polish Development Fund (PFR) decided to invest in the company, obtaining an exclusive right to negotiations. On the home straight, PFR overtook Škoda, which many politicians had considered the perfect investor to help the Polish company's development. Seeking synergy with the Polish company, the Czechs intended to compete with European champion Siemens-Alstom, which was being formed then.





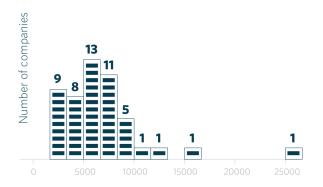
# Characteristics of a Polish national champion

Most company rankings prepared in Poland focuses solely on the size of a company or capital group, measured using basic macroeconomic indicators such as revenue, profit, export or staff. Yet this is just one of the dimensions emphasised in Polish public discourse on national champions. Apart from size, companies' productivity, role in the industry, presence on the international market and investment in development and innovation matters, too. Each of these dimensions is outlined below, with attention given to aspects usually overlooked in rankings.

#### Impact on the economy

The basic criterion allowing a national champion to be distinguished is its size. Smaller innovative companies that export a lot or monopolists in niche sectors are very significant for the economy, but are usually described as hidden champions. Their brands are rarely recognised by the public and consumers do not associate their products with the producer. This makes annual revenue the basic criterion distinguishing companies that can be considered national champions from those unlikely to become them. In Poland, the threshold is around PLN 1 billion a year. Almost 200 capital groups registered in Poland, with a controlling stake directly or indirectly in Polish entrepreneurs' hands, exceed this threshold. This is not a sufficient criterion to define a given company's actual size and its significance for the economic, as simply comparing revenue alone leads to numerous inaccuracies. For example, the revenue of retail or financial groups is disproportionately high compared to their size, so companies in these sectors with a few hundred employees can be higher in rankings than big industrial processing companies that employ thousands of people.

Distribution of 50 national champions according to: Average monthly gross salary (PLN)



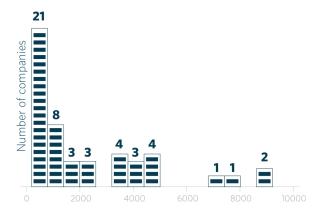
To compare the size of companies across sectors, other criteria need to be considered alongside revenue. The most important is value added; revenue from sales minus intermediate consumption in the production process, or, in other words, the value of all the goods, materials and commodities used to generate revenue, excluding the cost of labour. Value added thereby accounts for differences in production costs between sectors. The next criterion is the number of employees; a national champion not only produces a lot, but also provides many citizens with jobs.

Apart from a company's size, a series of other characteristics are significant for the economy. A company that pays its employees poorly, is not financially stable and sends profits abroad to tax havens, rather than investing it, cannot be described as a national champion. National champions

are characterised by high wages, along with high liquidity and sufficient solvency for timely payment of liabilities. Champions care about sustainable development and employees' and contractors' economic well-being.

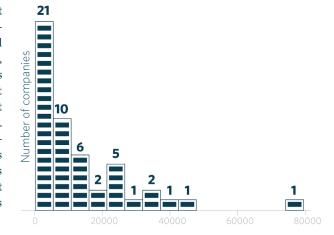
Capital groups should also invest actively, accumulating physical (factories, cars, machines) and non-material capital (trademarks, patents, computer software) that determines a country's economic potential. Ideally, the company fosters the country's development by supporting the capital market; it is listed on the stock exchange and attracts funds from domestic and foreign investors.

Distribution of 50 national champions according to: Value added (PLN millions)



The last important economic characteristic of a national champion is its contribution to the state budget. National champions cannot engage in active tax optimisation. They should consolidate their profits in the country, paying taxes in proportion to their size. This includes both income tax and VAT, plus sector-specific taxes.

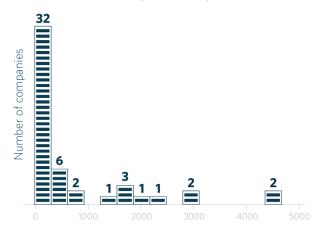
Distribution of 50 national champions according to: Number of employees



#### **Innovation and productivity**

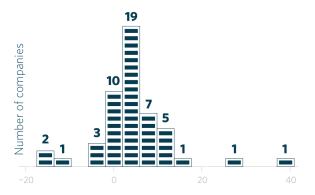
In recent years, considerable space in the Polish public discourse has been dedicated to productivity, innovation and the position in the value-added chain, often understood as how technologically advanced the products are. This dimension therefore needs to be included when identifying national champions. This should be a two-track process; firstly, by analysing a company's spending on R&D in the financial and personal dimension, and secondly, by measuring its productivity and actual innovation in terms of the number of patents, trademarks and the value added generated by a single employee.

Distribution of 50 national champions according to: Value of investment (PLN millions)



A national champion should have many innovative products, use the newest production technology, management methods and marketing techniques, increasing the business's productivity. Profits should be invested in further technological development, independently and in cooperation with Polish and foreign universities.

> Distribution of 50 national champions according to: **ROA**

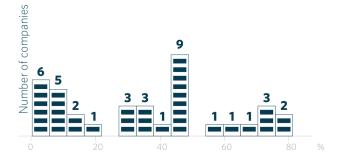


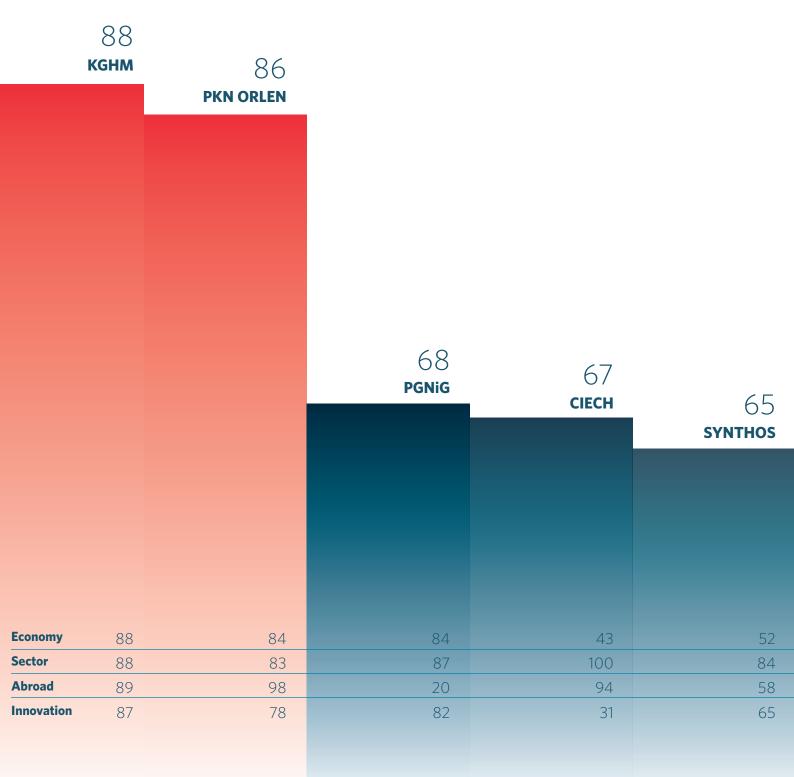
#### Significance in the sector, Poland and abroad

According to the Polish approach, the title "national champion" can only be bestowed on a company that is a leader in its sector in terms of value added, the number of employees or spending on investment. In addition, it should use efficient technology and generate profits.

An equally important designator is the company's foreign activity, in two dimensions: business conducted abroad and foreign demand for its goods or services. The first of these defines where the goods and services are created - a national champion tries to be as close as possible to its final customer, optimising the geographical allocation of production throughout the supply chain, taking into account labour costs, transport, the exchange rate risk and the availability of materials. National champions not only sell goods abroad, but also activity enter foreign markets, building factories or service centres that compete against local rivals. Secondly, national champions try to conquer as many markets as possible to diversify sales and minimise dependent on political or economic risk at the country level. A national champion is a global company that has its base in Poland, but sells most of its products around the world.

Distribution of 50 national champions according to: Exports as a percentage of sales





## **International Champions (NC indicator: >75 points)**

The ranking of Polish national champions was topped by KGHM Polska Miedź, with 88 out of 100 points, slightly ahead of Polski Koncern Naftowy ORLEN, which has 86. Both were far ahead of the other big companies. PGNiG came third with 68 points. Orlen and KGHM owe their success to their very high score in each of the four categories

and their significance for the Polish economy: their high value added, high salaries, and high investment and contributions to the budget. This is why they were classified as International Champions – very big companies that satisfying the requirements for national champions. They are innovative, active abroad and leaders in their sectors.

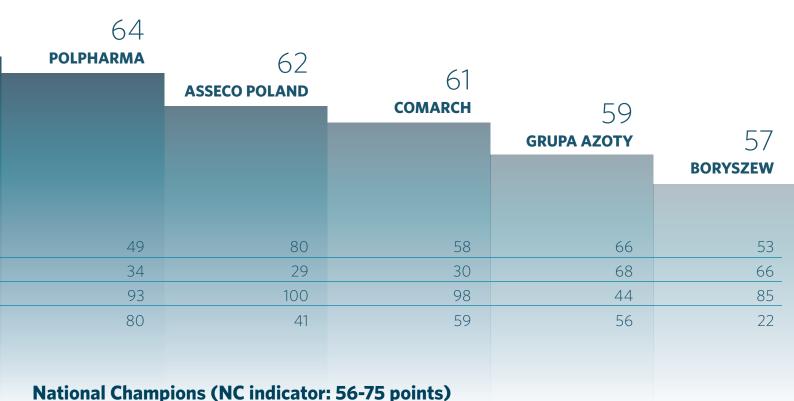
## **Ranking of Polish** national champions

Based on the assumptions above, we prepared a national champion (NC) indicator, an average of four key categories: the economy, the sector, activity abroad and innovation. For our calculations, we used public data for 2016 on the business activity of Polish capital groups with at least 100 employees and over PLN 1 billion in revenue.

To classify the companies, we also used surveys filled out by parent companies, which were specially prepared for this

Each indicator was calculated in a way that reflects the Polish approach to national champions; the technical details are in the methodological appendix.

Based on these calculations, we identified 44 Polish companies that can be considered national champions. We grouped them into four categories: International Champions, National Champions, Aspiring National **Champions** and **Local Champions**.



This group of companies consists of leaders in a few categories that rank well in the others. Some, like PGNiG and Asseco Poland, are very big, but this is not a necessary condition for this category. The group includes just one state-controlled company, PGNiG; the others are privately owned, predominantly by major Polish capitals. Despite their considerable significance for the economy, some of the National Champions only rank among the top twenty, or even thirty, Polish

companies in terms of size (Ciech, Polpharma, Synthos, Boryszew). These companies satisfy most of the conditions to qualify as National Champions, but there is scope for improvement, to become International Champions, Leaders in the "impact on the economy" category need to boost their investment or activeness abroad, while smaller companies should continue investing in development by building new production plants and winning new contracts.

## **Aspiring National Champions** (NC indicator: 36-55 points)

These companies operate very effectively and display many characteristics of national champions, but need to improve their indicators in many areas to join the group above. Most of them have little impact on the economy, with few employees, low capital or low salaries. The only exception is Jastrzębska Spółka Węglowa, which has a major influence on the economy, but operates in a sector with low development potential and is not vertically integrated with companies higher in the supply chain. As a result, it does poorly in the foreign, sector and innovation categories.

Aspiring National Champions have a big chance of becoming full National Champions in the next few years. They may achieve this through vertical integration - taking over smaller companies higher in the value-added chain. They should also invest in innovation, which will boost their productivity, improve their position in their sector and become more competitive internationally.





Position in ranking	NC indicator	Economy	Sector	Abroad	Innovation
11 REMONTOWA HOLDING S.A.	50	46	39	80	34
12 GRUPA KĘTY S.A.	47	43	54	59	31
13 AMICA S.A.	44	45	34	52	44
14 CCC S.A.	43	47	59	56	13
15 GRUPA LOTOS S.A.	43	64	30	24	51
16 MLEKOVITA	42	37	11	80	41
17 JASTRZĘBSKA SPÓŁKA WĘGLOWA S.A.	41	73	25	32	35
18 WĘGLOKOKS S.A.	40	41	17	81	20
19 INTER CARS S.A.	39	35	42	41	40
20 STALPRODUKT S.A.	39	52	30	47	28
21 CERSANIT S.A.	39	42	59	36	18
22 SELENA FM S.A.	38	38	65	31	19
work service s.a.	37	35	29	46	37

#### **Local Champions (NC indicator: 26-35 points)**

Local Champions are leaders in just one category, usually their sector, and often have a major influence on the economy. They are, however, exclusively focused on the domestic market. Their business situation depends on the business climate in their sector. As a result, they score close to zero in the innovation and abroad categories, despite their considerable influence on the economy and high position within their sector. Poland's energy companies (Tauron, Energa, Enea, PGE), financial institutions (PKO BP, Pekao S.A., PZU), local monopolists (PLL LOT, the railway companies, Poczta Polska, Famur) and media companies (Cyfrowy Polsat and Agora) belong to this group.

Local National Champions do not usually aspire to become full National Champions, as they focus on their core business. To advance, they would have to leave their market niche or lead in their sector globally. The energy companies would need to make foreign acquisitions, the financial institutions develop their investment banking services, and the carriers serve passengers outside Poland.

	TAURON POLSKA ENERGIA S.A.  CYFROWY POLSAT S.A.	33				
	CVEDOVAVV DOLCATIC A		82	19	1	30
25	CYFROVVY POLSAT S.A.	33	61	32	N/A	39
26	PGE POLSKA GRUPA ENERGETYCZNA S.A.	33	89	19	0	24
27	ENERGA S.A.	33	66	5	N/A	60
28	FAMUR S.A.	32	37	27	20	46
29	AB S.A.	32	35	16	49	30
30	POCZTA POLSKA S.A.	32	62	44	N/A	20
31	PKP CARGO S.A.	32	59	50	4	14
32	PKP POLSKIE LINIE KOLEJOWE S.A.	31	68	37	N/A	21
33	POWSZECHNY ZAKŁAD UBEZPIECZEŃ S.A.	31	56	58	10	N/A
34	ENEA S.A.	30	73	15	N/A	33
35	POLSKIE LINIE LOTNICZE LOT S.A.	30	44	36	N/A	40
36	PKO BP	30	79	34	6	N/A
37	POLSKIE SIECI ELEKTROENERGETYCZNE S.A.	29	56	11	2	48
38	POLIMEX - MOSTOSTAL S.A.	29	45	20	13	36
39	POLSKA GRUPA GÓRNICZA SP. Z O.O.	29	73	16	14	12
40	PBG S.A.	28	41	27	9	35
41	AGORA S.A.	28	49	39	5	18
42	IMPEL S.A.	27	49	48	2	11
43	PEKAO S.A.	27	76	32	N/A	N/A
44	PRZEWOZY REGIONALNE SP. Z O.O.	27	49	51	N/A	8

### Other big companies (NC indicator: <26 points)

These 70 companies also have over PLN 1 billion in revenue and over 100 employees, but lack the potential to have a major influence on the economy (compare tables in appendix). Nevertheless, some have found a niche and become hidden champions, known under other brands or the brand of their products, often as monopolists for European retail chains.

## Classification of champions in individual categories

## **Economy**

The top company in the economy category, which measures a company's contribution to Poland's economic development, is a Local Champion – PGE Polska Grupa Energetyczna. It was just ahead of two International Champions, Orlen and KGHM. PGE owes its success to its very high position in all the subcategories, with 95 or more points when assessing the value added it generates, liquidity and solvency, investment activity, contribution to the budget and effectiveness in attracting portfolio investors. The top ten in the economy ranking consisted of five Local Champions, three electricity producers, two banks and just one Aspiring National Champion – Jastrzębska Spółka Węglowa.

The economy ranking is clearly dominated by companies owned by the state treasury, especially in the energy sector at all levels of the supply chain, from commodity extractors to electricity providers. The only private company in the top ten is Asseco Poland. The rest of the top 50 companies with the biggest influence on the economy are mostly Aspiring National Champions.

- 1 PGE POLSKA GRUPA ENERGETYCZNA S.A.
- 2 KGHM POLSKA MIEDŹ S.A.
- 3 POLSKI KONCERN NAFTOWY ORLEN S.A.
- 4 POLSKIE GÓRNICTWO NAFTOWE I GAZOWNICTWO S.A.
- 5 TAURON POLSKA ENERGIA S.A.
- 6 ASSECO POLAND S.A.
- 7 PKO BP
- 8 PEKAO S.A.
- 9 ENEA S.A.
- 10 JASTRZĘBSKA SPÓŁKA WĘGLOWA S.A.
- 11 POLSKA GRUPA GÓRNICZA SP. Z O.O.
- 12 PKP POLSKIE LINIE KOLEJOWE S.A.
- 13 GRUPA AZOTY S.A.
- 14 ENERGA S.A.
- 15 GRUPA LOTOS S.A.



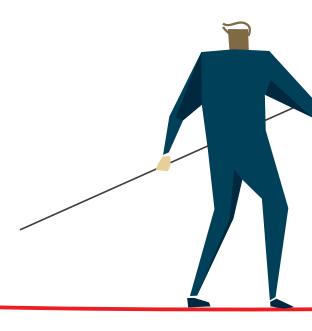
Economy	Value added	Number of employees	Wage fund	Average salary	Liquidity and solvency	Contribution to state budget	Investments and fixed assets	Capitalisation
89	95	89	58	69	98	100	100	100
88	100	87	51	100	52	100	95	65
84	86	79	45	100	64	100	95	99
84	99	83	29	57	79	100	97	100
82	84	83	71	100	61	75	95	67
80	82	81	96	100	99	82	41	47
79	96	85	35	70	76	100	36	100
76	85	77	40	89	93	100	28	100
73	77	75	45	50	98	90	89	58
73	82	83	71	84	66	53	57	35
73	83	91	100	70	51	50	46	6
68	79	86	72	13	23	56	99	27
66	69	74	57	54	95	71	52	43
66	72	67	34	60	98	61	80	47
64	56	58	54	100	57	100	50	47

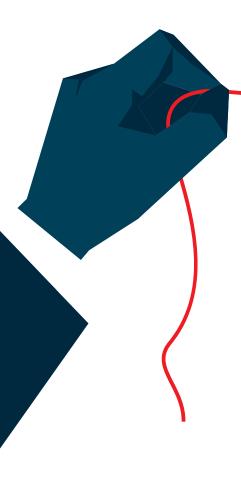
International Champions Aspiring National Champions National Champions Local Champions

### **Sector**

The top companies in the sector category were dominated by National Champions, capital groups that are leaders in their sectors and have very good results in them. Apart from that, they are active in other segments of the economy, with a share of over 1 per cent in them. It is worth noting the relatively low position that ranked highly in the economy category, especially National Champions. In many cases, this results from unfavourably comparing their results to the average profitability and earning power of other companies in the sector. This is nothing exceptional, though, as big companies usually suffer from disadvantages of scale – a fall in productivity and low earning power per unit of accumulated capital.

Disadvantages of scale also affect banks classified in the ranking. All are leaders in the sector, but have lower ROA and ROE than smaller, more aggressive financial institutions. Energy companies did not score highly in this category, either, due to too much competition in the sector.





- 1 CIECH S.A.
- 2 KGHM POLSKA MIEDŹ S.A.
- 3 POLSKIE GÓRNICTWO NAFTOWE I GAZOWNICTWO S.A.
- 4 SYNTHOS S.A.
- 5 POLSKI KONCERN NAFTOWY ORLEN S.A.
- 6 GRUPA AZOTY S.A.
- **7** BORYSZEW S.A.
- 8 SELENA FM S.A.
- 9 CERSANIT S.A.
- **10** CCC S.A.
- 11 POWSZECHNY ZAKŁAD UBEZPIECZEŃ S.A.
- 12 GRUPA KĘTY S.A.
- 13 PRZEWOZY REGIONALNE SP. Z O.O.
- 14 PKP CARGO S.A.
- 15 IMPEL S.A.

International Champions



Aspiring National Champions



National Champions



Local Champions

If production and distribution of electricity were concentrated in one or two capital groups, this entity would automatically have a much greater chance of becoming a leader in the sector category and move from the Local Champion to the National Champion category. This kind of company could even become an International Champion in the future, if it embarked on international acquisitions and started generating electricity from renewable sources.

A National Champion is a company that, despite its size, can retain flexibility, high productivity and provides investors with a high return on capital invested. To achieve this, a company must deftly balance between an increase in mass and operating structure – in many cases, share in the domestic market is increased at the expense of productivity and profitability. Often, a better strategy – adopted by most of the National Champions – is to look for markets abroad and take over companies in other countries.



Sector	Share in the value added of all sectors and in the employment of the main sector	Profitability and earning power in the main industry	Name of main sector (PKD number)	Number of other important sections of the business
100	100	100	Production of basic inorganic chemicals (20.13)	2
88	100	50	Mining of non-ferrous metal ores (07.29)	0
87	91	72	Production of gas fuels; distribution and trade in gas fuels in network system (35.2)	2
84	100	34	Production of synthetic rubber in primary forms (20.17)	1
83	92	57	Production and processing of refined petroleum products (19.20)	0
68	82	25	Production of fertilizers and nitrogen compounds (20.15)	0
66	77	35	Production of aluminium (24.42)	5
65	68	58	Production of glues (20.52)	1
59	62	50	Production of ceramic tiles and plates (23.31)	1
59	45	100	Retail sale of footwear and leather goods (47.72)	0
58	66	33	Insurance (65.1)	
54	38	100	Production of aluminium (24.42)	0
51	51	50	Intercity passenger rail transport (49.10)	0
50	49	50	Rail transport of goods (49.20)	0
48	48	50	Specialised cleaning of buildings and industrial facilities (81.22)	1



### **Abroad**

The leader in the abroad category is Asseco, which provides services on every continent, both through foreign subsidiaries and by exporting services to countries which it lacks its own representation. As a result, it scored the maximum number of points in both subcategories: foreign activity and export. Comarch, Ciech and Polpharma did well, too. Orlen, which has most of its production located outside Poland, also made it into the top five. The other International Champion, KGHM, remained somewhat behind. Despite companies in Chile, the US

and Canada, most of its production is in Poland, lowering the scale of its foreign activity.

The foreign ranking is closed by Local Champions. Indeed, their low rank in this category gives them their name. They are mostly focused on the local market; they do not have companies abroad or sell their products outside Poland. Many companies in our ranking (such as Poczta Polska, PKP Przewozy Regionalne, Cyfrowy Polsat, Enea and Alior Bank) do not provide data on the export of goods or services at all, due to their minimal significance. We gave them zero points in this category.

	Abroad	Foreign activity	Export
1 ASSECO POLAND S.A.	100	100	100
2 COMARCH S.A.	98	89	100
3 POLSKI KONCERN NAFTOWY ORLEN S.A.	98	88	100
4 CIECH S.A.	94	70	100
5 POLPHARMA S.A.	93	64	100
6 KGHM POLSKA MIEDŹ S.A.	89	44	100
<b>7</b> BORYSZEW S.A.	85	79	87
8 WĘGLOKOKS S.A.	81	4	100
9 REMONTOWA HOLDING S.A.	80	0	100
10 MLEKOVITA	80	0	100
11 GRUPA KĘTY S.A.	59	72	55
12 SYNTHOS S.A.	58	66	56
13 CCC S.A.	56	88	48
14 AMICA S.A.	52	28	58
<b>15</b> AB S.A.	49	92	38



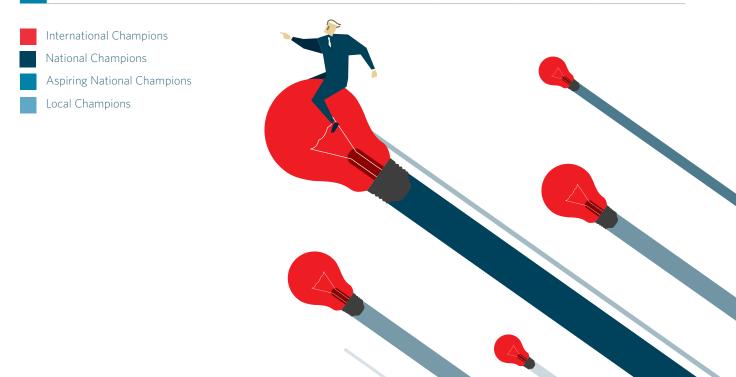
### **Innovation**

KGHM came first in the innovation category. It has one of the highest value added per worker, relatively high spending on R&D and many registered patents. Only Orlen, Azoty, PGNiG and Polpharma, which among the top ten companies in the innovation category, have more patents and trademarks. Comarch and Orlen spend the most on R&D. Many companies do not publish or collect data on this subject, often lacking information on how many employees are developing innovative products. This results from regulations that did not encourage companies to single out spending out on R&D. The ranking shows that few big Polish companies emphasise innovation.

This is one of Polish champions' shortcomings; they should not only display high productivity per worker, but constantly invest in developing their productivity. Companies that do not collect or publish this type of data therefore received zero points in the R&D subcategory.

It is worth noting that the innovation category ranking contains a mix of Aspiring National Champions and Local Champions, especially further down. This reflects both groups' very low engagement in innovation. This is important information for the Aspiring National Champions, as without boosting their innovation indicators they will not become full National Champions.

	Innovation	Intellectual property	Activity R&D	Labour productivity
1 KGHM POLSKA MIEDŹ S.A.	87	88	74	100
2 POLSKIE GÓRNICTWO NAFTOWE I GAZOWNICTWO S.A.	82	91	50	100
3 POLPHARMA S.A.	80	91	85	61
4 POLSKI KONCERN NAFTOWY ORLEN S.A.	78	100	34	94
5 SYNTHOS S.A.	65	56	43	100
6 ENERGA S.A.	60	76	N/A	100
7 COMARCH S.A.	59	39	100	44
8 GRUPA AZOTY S.A.	56	95	N/A	61
9 GRUPA LOTOS S.A.	51	55	N/A	97
10 POLSKIE SIECI ELEKTROENERGETYCZNE S.A.	48	45	N/A	100
11 FAMUR S.A.	46	75	N/A	54
12 AMICA S.A.	44	81	N/A	39
13 ASSECO POLAND S.A.	41	16	47	68
14 MLEKOVITA	41	37	51	36
15 INTER CARS S.A.	40	25	N/A	100



## Classification of champions according to key sectors

The top 50 companies in the ranking of national champions includes 15 industrial processing companies; one International Champion, five National Champions, eight Aspiring National Champions and one Local Champion. Their average NC indicator is 51; in the foreign category, it was 60. This shows that the Polish economy's competitive advantage is based on industry, which is highly oriented towards foreign activity.

The highest average score (53 points) was obtained by mining and extraction companies, which resulted from KGHM being classified in this category. The other two mining companies in the top 50, Jastrzębska Spółka Węglowa and Polska Grupa Górnicza, scored much less and were classified as Aspiring National and Local Champions, respectively. Capital groups working in mining and extraction topped the economy category, even scoring better than the energy champions.

Companies involved in construction and assembly production did worst. Although their foreign and research activity was somewhat bigger than financial and retail companies', they had less influence on the economy and a low share in the sector due to high competition from international construction companies. Retail companies, which generate the largest part of Polish GDP, are well represented among the top 50 national champions. It includes seven companies involved in retail (Dino, CCC), wholesale (Węglokoks, AB) or both (Inter Cars and Pelion). They sell a wide range of goods, from FMCGs to parts, shoes and pharmaceutical products, via coal and electronics. These companies' average score was relatively low, though – just 31 out of 100 points. They did averagely in all the categories; best in the foreign one and worst in innovation.

#### Ranking in key sectors of the economy

	Number of companies	NC indicator	Economy	Sector	Abroad	Innovation
INDUSTRIAL PROCESSING	15	51	50	52	60	43
ENERGY	7	34	70	22	5	41
RETAIL	7	31	40	28	47	22
INFORMATION & TELECOMMUNICATIONS	5	41	59	28	68	35
TRANSPORT	5	30	56	44	4	21
FINANCE	4	34	66	39	8	N/A
MINING AND EXTRACTION	3	53	78	43	45	45
CONSTRUCTION	2	28	43	24	11	36
WORK INTERMEDIATION	1	37	35	29	46	37
PROPERTY SERVICES	1	27	49	48	2	11



Processing	NC indicator	Economy	Sector	Abroad	Innovation
1 POLSKI KONCERN NAFTOWY ORLEN S.A.	86	84	83	98	78
2 CIECH S.A.	67	43	100	94	31
3 SYNTHOS S.A.	65	52	84	58	65
4 POLPHARMA S.A.	64	49	34	93	80
5 GRUPA AZOTY S.A.	59	66	68	44	56
6 BORYSZEW S.A.	57	53	66	85	22
7 REMONTOWA HOLDING S.A.	50	46	39	80	34
8 GRUPA KĘTY S.A.	47	43	54	59	31
9 AMICA S.A.	44	45	34	52	44
10 GRUPA LOTOS S.A.	43	64	30	24	51
11 MLEKOVITA	42	37	11	80	41
12 STALPRODUKT S.A.	39	52	30	47	28
13 CERSANIT S.A.	39	42	59	36	18
14 SELENA FM S.A.	38	38	65	31	19
15 FAMUR S.A.	32	37	27	20	46

National Champions International Champions Aspiring National Champions Local Champions

ı	Mining and energy	NC indicator	Economy	Sector	Abroad	Innovation
1	KGHM POLSKA MIEDŹ S.A.	88	88	88	89	87
2	POLSKIE GÓRNICTWO NAFTOWE I GAZOWNICTWO S.A.	68	84	87	20	82
3	JASTRZĘBSKA SPÓŁKA WĘGLOWA S.A.	41	73	25	32	35
4	TAURON POLSKA ENERGIA S.A.	33	82	19	1	30
5	PGE POLSKA GRUPA ENERGETYCZNA S.A.	33	89	19	0	24
6	energa s.a.	33	66	5	N/A	60
7	ENEA S.A.	30	73	15	N/A	33
8	POLSKIE SIECI ELEKTROENERGETYCZNE S.A.	29	56	11	2	48
9	POLSKA GRUPA GÓRNICZA SP. Z O.O.	29	73	16	14	12
10	ELEKTRIM S.A.	14	42	2	0	12

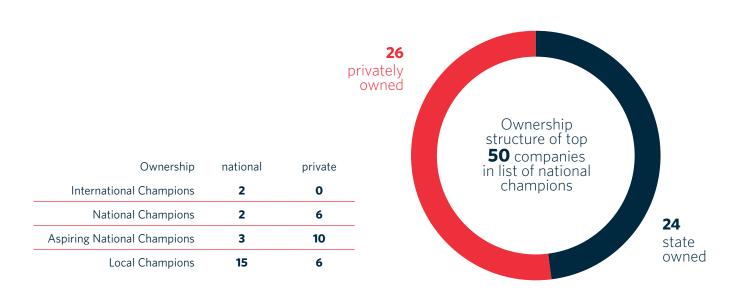
	Retail and transport	NC indicator	Economy	Sector	Abroad	Innovation
1	CCC S.A.	43	47	59	56	13
2	WĘGLOKOKS S.A.	40	41	17	81	20
3	INTER CARS S.A.	39	35	42	41	40
4	AB S.A.	32	35	16	49	30
5	POCZTA POLSKA S.A.	32	62	44	N/A	20
6	PKP CARGO S.A.	32	59	50	4	14
7	PKP POLSKIE LINIE KOLEJOWE S.A.	31	68	37	N/A	21
8	POLSKIE LINIE LOTNICZE LOT S.A.	30	44	36	N/A	40
9	PRZEWOZY REGIONALNE SP. Z O.O.	27	49	51	N/A	8
10	PELION S.A.	23	43	19	10	21
11	DINO POLSKA S.A.	21	44	33	N/A	9
12	NEUCA S.A.	18	38	13	N/A	20

	<b>Professional services</b>	NC indicator	Economy	Sector	Abroad	Innovation
1	ASSECO POLAND S.A.	62	80	29	100	41
2	COMARCH S.A.	61	58	30	98	59
3	Work service s.a.	37	35	29	46	37
4	CYFROWY POLSAT S.A.	33	61	32	N/A	39
5	POWSZECHNY ZAKŁAD UBEZPIECZEŃ S.A.	31	56	58	10	N/A
6	PKO BP	30	79	34	6	N/A
7	AGORA S.A.	28	49	39	5	18
8	IMPEL S.A.	27	49	48	2	11
9	PEKAO S.A.	27	76	32	N/A	N/A
10	ALIOR BANK S.A.	20	54	25	N/A	N/A
11	TELEWIZJA POLSKA S.A.	19	48	12	N/A	17



## Classification of champions according to ownership

In terms of ownership structure, the companies in the ranking of top 50 national champions are almost evenly split - 26 are privately owned and 24 state-controlled (directly or indirectly, via a consortium of other companies with state capital). Significantly, they were not evenly split between individual categories of champions. State-controlled companies won all the places on the podium, but after that private companies prevailed.



The ranking shows that the state decided to raise a few international champions with particular political support. Fortunately, though, private companies, which are often in a worse position when competing with public companies, prevailed in the National Champions category and the aspiring one. Not all of them developed in the same way; at least three routes to becoming a privately-owned National Champion can be identified.

The largest group of private companies classified as National Champions were brought up to be big companies by the state and then privatised. They are now developing overseen by private investors. Most national champions in other countries followed this path, too. It is also one of the most effective ways of creating international champions. A group of national champions characteristic of post-communist countries are companies bought from the state by private capital when they were declining local champions or smaller companies on the verge of bankruptcy, then restructured and expanded in a series of reinvestments, mergers and acquisitions. Initially, there companies received

state support, but lost privileges as they developed, often facing detailed checks and legislative restrictions that made it more difficult for them to operate.

A small group of private national champions remained without state support or just a minimal amount, via loans, contracts from public companies or strategic advice when entering foreign markets. Above all, these are IT, retail or professional services companies. They owe their success to their talented management and good investment policy.

State-controlled companies dominated the Local Champions category, where there were 2.5 as many of them as private companies. These are predominantly what are described as "lame ducks" in the literature - companies of considerable importance for public interest institutionally supported by the state, the survival of which is dictated by socio-political considerations, which therefore lack motivation to expand abroad or fund research. This means that they are unlikely to advance in the ranking of national champions.

## Complete results of the study

	NC indicator	Economy	Sector	Abroad	Innovation
KGHM POLSKA MIEDŹ S.A.	88	88	88	89	87
POLSKI KONCERN NAFTOWY ORLEN S.A.	86	84	83	98	78
POLSKIE GÓRNICTWO NAFTOWE I GAZOWNICTWO S.A.	68	84	87	20	82
CIECH S.A.	67	43	100	94	31
SYNTHOS S.A.	65	52	84	58	65
POLPHARMA S.A.	64	49	34	93	80
ASSECO POLAND S.A.	62	80	29	100	41
COMARCH S.A.	61	58	30	98	59
GRUPA AZOTY S.A.	59	66	68	44	56
BORYSZEW S.A.	57	53	66	85	22
REMONTOWA HOLDING S.A.	50	46	39	80	34
GRUPA KĘTY S.A.	47	43	54	59	31
AMICA S.A.	44	45	34	52	44
CCC S.A.	43	47	59	56	13
GRUPA LOTOS S.A.	43	64	30	24	51
MLEKOVITA	42	37	11	80	41
JASTRZĘBSKA SPÓŁKA WĘGLOWA S.A.	41	73	25	32	35
WĘGLOKOKS S.A.	40	41	17	81	20
INTER CARS S.A.	39	35	42	41	40
STALPRODUKT S.A.	39	52	30	47	28
CERSANIT S.A.	39	42	59	36	18
SELENA FM S.A.	38	38	65	31	19
WORK SERVICE S.A.	37	35	29	46	37
TAURON POLSKA ENERGIA S.A.	33	82	19	1	30
CYFROWY POLSAT S.A.	33	61	32	N/A	39
PGE POLSKA GRUPA ENERGETYCZNA S.A.	33	89	19	0	24
ENERGA S.A.	33	66	5	N/A	60
FAMUR S.A.	32	37	27	20	46
AB S.A.	32	35	16	49	30
POCZTA POLSKA S.A.	32	62	44	N/A	20
PKP CARGO S.A.	32	59	50	4	14
PKP POLSKIE LINIE KOLEJOWE S.A.	31	68	37	N/A	21
POWSZECHNY ZAKŁAD UBEZPIECZEŃ S.A.	31	56	58	10	N/A
ENEA S.A.	30	73	15	N/A	33
POLSKIE LINIE LOTNICZE LOT S.A.	30	44	36	N/A	40
PKO BP	30	79	34	6	N/A
POLSKIE SIECI ELEKTROENERGETYCZNE S.A.	29	56	11	2	48
POLIMEX - MOSTOSTAL S.A.	29	45	20	13	36
POLSKA GRUPA GÓRNICZA SP. Z O.O.	29	73	16	14	12
PBG S.A.	29	41	27	9	35
		49	39		
	28	49		5	18
IMPEL S.A.	27		48	2	
PEKAO S.A.	27	76	32	N/A	N/A

International Champions

Local Champions

National Champions

Aspiring National Champions

		NC indicator	Economy	Sector	Abroad	Innovation
45	PELION S.A.	23	43	19	10	21
46	DINO POLSKA S.A.	21	44	33	N/A	9
47	ALIOR BANK S.A.	20	54	25	N/A	N/A
48	TELEWIZJA POLSKA S.A.	19	48	12	N/A	17
49	NEUCA S.A.	18	38	13	N/A	20
50	ELEKTRIM S.A.	14	42	2	0	12

Positions 51	

(alphabetical order)

ALUMETAL S.A.
CEDROB S.A.
COGNOR HOLDING S.A.
ELEMENTAL HOLDING S.A.
ERBUD S.A.
EURO - NET SP. Z O.O.
FABRYKI MEBLI FORTE S.A.
FARMACOL S. A.
FRAPO - DYSTRYBUCJA SP. Z O.O.
GRUPA PIOTR I PAWEŁ SP. Z O.O.
IGLOTEX S.A.
INDYKPOL S.A.
KRAJOWA SPÓŁKA CUKROWA S.A.
LPP S.A.
MLEKPOL
NEONET S.A.
OPERATOR GAZOCIĄGÓW PRZESYŁOWYCH GAZ - SYSTEM S.A.
P P H U SPECJAŁ SP. Z O.O.
PESA HOLDING SP. Z O.O.
PKP INTERCITY S.A.
POLENERGIA S.A.
POLSKA ŻEGLUGA MORSKA PRZEDSIĘBIORSTWO PAŃSTWOWE
PRZEDSIEBIORSTWO HANDLOWO PRODUKCYJNE POLSKI TYTOŃ S.A.
PRZEDSIĘBIORSTWO PAŃSTWOWE PORTY LOTNICZE
SOLARIS BUS & COACH S.A.
TELE-FONIKA KABLE S. A.
TERG S.A.
TRAKCJA PRKII S.A.
UNIBEP S.A.
WIELTON S.A.

ZESPÓŁ ELEKTROCIEPŁOWNI WROCŁAWSKICH

KOGENERACJA S.A.

#### Positions 81-114

Positions 81-114
(alphabetical order)
ABC DATA S.A.
AGROLOK SP. Z O.O.
ALTI PLUS S.A.
AMPOL-MEROL SP. Z O.O.
BLACK RED WHITE S.A.
DOM DEVELOPMENT S.A.
EUROPOL GAZ S.A. SYSTEM GAZOCIĄGÓW TRANZYTOWYCH
FERMY DROBIU WOŹNIAK SP. Z O.O.
GRUPA POLSKIE SKŁADY BUDOWLANE S.A.
HURTAP S.A.
INCOM S.A.
KOLPORTER SP. Z O.O. SPÓŁKA KOMANDYTOWA
KOMPUTRONIK S.A.
KONSORCJUM STALI S.A.
KRONOPOL SP. Z O.O.
MWS SP. Z O.O. SPÓŁKA KOMANDYTOWA
NOWA ITAKA SP. Z O.O.
OKRĘGOWA SPÓŁDZIELNIA MLECZARSKA W ŁOWICZU
OSADKOWSKI S.A.
PERN S.A.
PHUP GNIEZNO SP. Z O.O. HURTOWANIA SP. K.
PINI POLONIA SP. Z O.O.
POLMAX S.A. S.K.A.
POLMLEK SP. Z O.O.
POLOMARKET SP. Z O.O.
POLSKA GRUPA FARMACEUTYCZNA S.A.
PRZEDSIĘBIORSTWO DYSTRYBUCJI FARMACEUTYCZNEJ SLAWEX SP. Z O.O.
PUH CHEMIROL SP. Z O.O.

ZJEDNOCZONE PRZEDSIĘBIORSTWA ROZRYWKOWE S.A.

TORUŃSKIE ZAKŁADY MATERIAŁÓW OPATRUNKOWYCH S.A.

TOTALIZATOR SPORTOWY SP. Z O.O.

UNIMOT S.A. WIPASZ S.A.

X-KOM SP. Z O.O.

## **Economy**

- International Champions
- National Champions
- Aspiring National Champions
- Local Champions
- Other big companies

- 1 PGE POLSKA GRUPA ENERGETYCZNA S.A.
- 2 KGHM POLSKA MIEDŹ S.A.
- 3 POLSKI KONCERN NAFTOWY ORLEN S.A.
- 4 POLSKIE GÓRNICTWO NAFTOWE I GAZOWNICTWO S.A.
- 5 TAURON POLSKA ENERGIA S.A.
- 6 ASSECO POLAND S.A.
- 7 PKO BP
- 8 PEKAO S.A.
- 9 ENEA S.A.
- 10 JASTRZĘBSKA SPÓŁKA WĘGLOWA S.A.
- 11 POLSKA GRUPA GÓRNICZA SP. Z O.O.
- 12 PKP POLSKIE LINIE KOLEJOWE S.A.
- 13 GRUPA AZOTY S.A.
- 14 ENERGA S.A.
- 15 GRUPA LOTOS S.A.
- 16 POCZTA POLSKA S.A.
- 17 CYFROWY POLSAT S.A.
- 18 PKP CARGO S.A.
- 19 COMARCH S.A.
- 20 POWSZECHNY ZAKŁAD UBEZPIECZEŃ S.A.
- 21 POLSKIE SIECI ELEKTROENERGETYCZNE S.A.
- 22 ALIOR BANK S.A.
- 23 BORYSZEW S.A.
- 24 SYNTHOS S.A.
- 25 STALPRODUKT S.A.
- 26 POLPHARMA S.A.
- 27 AGORA S.A.
- 28 PRZEWOZY REGIONALNE SP. Z O.O.
- 29 IMPEL S.A.
- 30 TELEWIZJA POLSKA S.A.
- **31** CCC S.A.
- 32 REMONTOWA HOLDING S.A.
- 33 POLIMEX MOSTOSTAL S.A.
- 34 AMICA S.A.
- 35 DINO POLSKA S.A.
- 36 POLSKIE LINIE LOTNICZE LOT S.A.
- 37 GRUPA KĘTY S.A.
- 38 PELION S.A.
- 39 CIECH S.A.
- 40 ELEKTRIM S.A.
- 41 CERSANIT S.A.
- 42 WĘGLOKOKS S.A.
- 43 PBG S.A.
- 44 NEUCA S.A.
- 45 SELENA FM S.A.
- 46 MLEKOVITA
- 47 FAMUR S.A.
- 48 WORK SERVICE S.A.
- **49** AB S.A.
- 50 INTER CARS S.A.

Economy	Value added	Number of employees	Average salary	Wage fund	Liquidity and solvency	Contribution to state budget	Investments and fixed assets	Capitalisation
89	95	89	69	58	98	100	100	100
88	100	87	100	51	52	100	95	65
84	86	79	100	45	64	100	95	99
 84	99	83	57	29	79	100	97	100
82	84	83	100	71	61	75	95	67
80	82	81	100	96	99	82	41	47
79	96	85	70	35	76	100	36	100
76	85	77	89	40	93	100	28	100
73	77	75	50	45	98	90	89	58
73	82	83	84	71	66	53	57	35
73	83	91	70	100	51	50	46	6
68	79	86	13	72	23	56	99	27
66	69	74	54	57	95	71	52	43
66	72	67	60	34	98	61	80	47
64	56	58	100	54	57	100	50	47
62	77	100	0	95	3	52	39	4
61	86	63	90	15	66	1	60	54
59	64	82	1	81	89	50	41	33
58	41	60	95	100	100	61	17	27
56	79	65	0	11	67	100	3	100
56	59	29	100	11	100	76	74	32
54	68	68	18	30	59	87	14	53
53	53	68	39	72	53	55	29	29
52	52	41	100	23	100	64	31	30
52	38	62	40	90	83	65	27	30
49	46	59	92	71	60	15	28	5
49	30	51	86	83	88	52	20	28
49	53	76	0	36	64	50	59	1
49	53	75	0	65	81	50	10	26
48	30	50	100	100	52	50	19	1
47	36	72	0	97	52	55	22	28
46	41	31	100	47	97	64	10	1
45	41	57	45	61	53	52	17	26
45	25	51	61	87	68	55	16	27
44	32	71	0	79	50	56	23	27
44	54	42	91	17	5	50	27	0
43	26	57	19	100	60	50	23	29
43	49	68	0	57	18	57	22	2
43	46	55	44	41	71	6	40	29
42	43	63	29	72	17	10	41	4
42	37	64	0	63	58	56	25	3
41	34	61	0	58	100	55	24	6
41	42	49	51	34	37	53	17	26
38	44	56	0	34	39	55	16	26
38	16	43	48	74	99	52	10	26
37	26	53	0	66	94	55	17	2
37	28	48	19	49	83	51	17	27
35	61	20	0	13	74	51	15	26
35	38	14	97	5	55	53	8	26
35	42	48	27	28	58	10	17	29



ctor		and in employment in the main sector	power in the context of the main sector	
CIECH S.A.	100	100	100	
KGHM POLSKA MIEDŹ S.A.	88	100	50	
POLSKIE GÓRNICTWO NAFTOWE I GAZOWNICTWO S.A.	87	91	72	
SYNTHOS S.A.	84	100	34	
POLSKI KONCERN NAFTOWY ORLEN S.A.	83	92	57	
GRUPA AZOTY S.A.	68	82	25	
BORYSZEW S.A.	66	77	35	
SELENA FM S.A.	65	68	58	
CERSANIT S.A.	59	62	50	
CCC S.A.	59	45	100	
POWSZECHNY ZAKŁAD UBEZPIECZEŃ S.A.	58	66	33	
GRUPA KĘTY S.A.	54	38	100	
PRZEWOZY REGIONALNE SP. Z O.O.	51	51	50	
PKP CARGO S.A.	50	49	50	
IMPEL S.A.	48	48	50	
POCZTA POLSKA S.A.	44	59	0	
INTER CARS S.A.	42	26	90	
AGORA S.A.	39	36	50	
REMONTOWA HOLDING S.A.	39	28	72	
PKP POLSKIE LINIE KOLEJOWE S.A.	37	49	0	
POLSKIE LINIE LOTNICZE LOT S.A.	36	49	0	
AMICA S.A.	34	17	88	
PKO BP	34	45	0	
POLPHARMA S.A.	34	26	57	
DINO POLSKA S.A.	33	12	94	
PEKAO S.A.	32	40	9	
CYFROWY POLSAT S.A.	32	26	50	
GRUPA LOTOS S.A.	30	24	50	
STALPRODUKT S.A.	30	7	100	
COMARCH S.A.	30	12	81	
ASSECO POLAND S.A.	29	22	50	
WORK SERVICE S.A.	29	34	14	
PBG S.A.	27		50	
		20		
FAMUR S.A.	27	19	50	
ALIOR BANK S.A.	25	34	0	
JASTRZĘBSKA SPÓŁKA WĘGLOWA S.A.	25	28	15	
POLIMEX - MOSTOSTAL S.A.	20	27	0	
PELION S.A.	19	16	28	
TAURON POLSKA ENERGIA S.A.	19	25	0	
PGE POLSKA GRUPA ENERGETYCZNA S.A.	19	24	2	
WĘGLOKOKS S.A.	17	15	23	
AB S.A.	16	20	6	
POLSKA GRUPA GÓRNICZA SP. Z O.O.	16	21	0	
ENEA S.A.	15	19	1	
NEUCA S.A.	13	10	21	
TELEWIZJA POLSKA S.A.	12	16	0	
MLEKOVITA	11	10	12	
POLSKIE SIECI ELEKTROENERGETYCZNE S.A.	11	13	3	

Sector

Share invalue added of all sectors

and in employment in the main sector

Profitability and earning

 $power\ in\ the\ context$ 

## Name of main sector (PKD number)

## Number of other important sections of the business

Production of basic inorganic chemicals (20.13)	2
Mining of non-ferrous metal ores (07.29)	0
Production of gas fuels; distribution and trade in gas fuels in network system (35.2)	2
Production of synthetic rubber in primary forms (20.17)	1
Production and processing of refined petroleum products (19.20)	0
Production of fertilizers and nitrogen compounds (20.15)	0
Production of aluminium (24.42)	5
Production of glues (20.52)	1
Production of ceramic tiles and plates (23.31)	1
Retail sale of footwear and leather goods (47.72)	0
Insurance (65.1)	
Production of aluminium (24.42)	0
Intercity passenger rail transport (49.10)	0
Rail transport of goods (49.20)	0
Specialized cleaning of buildings and industrial facilities (81.22)	1
Postal and courier services (53)	0
Wholesale car parts and accessories (45.31)	1
Publishing (58.1)	5
Repair and maintenance of ships and boats (33.15)	1
Services supporting land transport (52.21)	0
Passenger air transport (51.10)	0
Production of electrical household appliances (27.51)	1
Banking (64.19)	
Production of pharmaceutical substances and medicines (21)	1
Non-specialised retail (47.11)	1
Banking (64.19)	
Telecommunications (61)	1
Production and processing of refined petroleum products (19.20)	0
Production of metals (24)	0
Software-related activities and IT consulting (62)	2
Software-related activities and IT consulting (62)	2
Activities related to job searches and recruiting employees (78.10)	0
Work relating to construction of transmission pipelines and distribution networks (42.21)	0
Production of machinery for mining, extraction and construction (28.92)	0
Banking (64.19)	
Extraction of hard coal (05.10)	1
Work relating to construction of telecommunication and power lines (42.22)	1
Wholesale of pharmaceutical and medical products (46.46)	0
Production, transmission, distribution and trading of electricity (35.1)	1
Production, transmission, distribution and trading of electricity (35.1)	0
Wholesale trade of energy carriers (46.71)	1
Wholesale computers, peripheral devices and software (46.51)	0
Extraction of hard coal (05.10)	0
Production, transmission, distribution and trading of electricity (35.1)	1
Wholesale pharmaceutical and medical products (46.46)	0
Broadcasting of public and subscription television programmes (60.20)	0
Manufacture of dairy products (10.5)	0
Transmission of electricity (35.12)	0
Production, transmission, distribution and trading of electricity (35.1)	0
Production, transmission, distribution and trading of electricity (35.1)	0

- International Champions
- National Champions
- Aspiring
  National
  Champions
- Local Champions
- Other big companies

# **Abroad**

ADroau	Abroad	Foreign activity	Export
1 ASSECO POLAND S.A.	100	100	100
2 COMARCH S.A.	98	89	100
3 POLSKI KONCERN NAFTOWY ORLEN S.A.	98	88	100
4 CIECH S.A.	94	70	100
5 POLPHARMA S.A.	93	64	100
6 KGHM POLSKA MIEDŹ S.A.	89	44	100
<b>7</b> BORYSZEW S.A.	85	79	87
8 WĘGLOKOKS S.A.	81	4	100
9 REMONTOWA HOLDING S.A.	80	0	100
10 MLEKOVITA	80	0	100
11 GRUPA KĘTY S.A.	59	72	55
SYNTHOS S.A.	58	66	56
CCC S.A.	56	88	48
AMICA S.A.	52	28	58
<b>15</b> AB S.A.	49	92	38
STALPRODUKT S.A.	47	2	58
WORK SERVICE S.A.	46	12	55
<b>18</b> GRUPA AZOTY S.A.	44	10	53
19 INTER CARS S.A.	41	64	36
CERSANIT S.A.	36	0	46
JASTRZĘBSKA SPÓŁKA WĘGLOWA S.A.	32	0	41
22 SELENA FM S.A.	31	50	26
GRUPA LOTOS S.A.	24	37	21
POLSKIE GÓRNICTWO NAFTOWE I GAZOWNICTWO S.A.	20	29	18
FAMUR S.A.	20	3	24
POLSKA GRUPA GÓRNICZA SP. Z O.O.	14	0	18
POLIMEX - MOSTOSTAL S.A.	13	20	11
POWSZECHNY ZAKŁAD UBEZPIECZEŃ S.A.	10	29	6
PELION S.A.	10	25	7
PBG S.A.	9	19	6
PKO BP	6	18	2
AGORA S.A.	5	0	6
PKP CARGO S.A.	4	0	5
MPEL S.A.	2	3	2
POLSKIE SIECI ELEKTROENERGETYCZNE S.A.	2	0	2
TAURON POLSKA ENERGIA S.A.	1	0	1
PGE POLSKA GRUPA ENERGETYCZNA S.A.	0	0	0
88 ELEKTRIM S.A.	0	0	0



National Champions

Aspiring National Champions

Local Champions

Other big companies

Innovation	Innovation	Intellectual property	R&D	Labour productivity
1 KGHM POLSKA MIEDŹ S.A.	87	88	74	100
POLSKIE GÓRNICTWO NAFTOWE I GAZOWNICTWO S.A.	82	91	50	100
3 POLPHARMA S.A.	80	91	85	61
4 POLSKI KONCERN NAFTOWY ORLEN S.A.	78	100	34	94
5 SYNTHOS S.A.	65	56	43	100
6 ENERGA S.A.	60	76	N/A	100
7 COMARCH S.A.	59	39	100	44
8 GRUPA AZOTY S.A.	56	95	N/A	61
9 GRUPA LOTOS S.A.	51	55	N/A	97
10 POLSKIE SIECI ELEKTROENERGETYCZNE S.A.	48	45	N/A	100
11 FAMUR S.A.	46	75	N/A	54
12 AMICA S.A.	44	81	N/A	39
13 ASSECO POLAND S.A.	41	16	47	68
14 MLEKOVITA	41	37	51	36
15 INTER CARS S.A.	40	25	N/A	100
16 POLSKIE LINIE LOTNICZE LOT S.A.	40	25	N/A	100
17 CYFROWY POLSAT S.A.	39	23	N/A	100
18 WORK SERVICE S.A.	37	15	5	100
19 POLIMEX - MOSTOSTAL S.A.	36	50	N/A	54
JASTRZĘBSKA SPÓŁKA WĘGLOWA S.A.	35	44	N/A	59
21 PBG S.A.	35	13	N/A	100
22 REMONTOWA HOLDING S.A.	34	10	N/A	100
23 ENEA S.A.	33	20	N/A	84
24 GRUPA KĘTY S.A.	31	58	N/A	27
25 CIECH S.A.	31	0	25	79
26 TAURON POLSKA ENERGIA S.A.	30	25	N/A	68
<b>27</b> AB S.A.	30	0	0	100
28 STALPRODUKT S.A.	28	42	N/A	35
29 PGE POLSKA GRUPA ENERGETYCZNA S.A.	24	6	N/A	72
30 BORYSZEW S.A.	22	21	N/A	45
31 PKP POLSKIE LINIE KOLEJOWE S.A.	21	21	N/A	43
32 PELION S.A.	21	23	N/A	38
33 WEGLOKOKS S.A.	20	28	N/A	30
34 POCZTA POLSKA S.A.	20	39	N/A	16
35 NEUCA S.A.	20	0	N/A	66
36 SELENA FM S.A.	19	13	N/A	45
37 CERSANIT S.A.	18	23	N/A	28
38 AGORA S.A.	18	6	N/A	50
39 TELEWIZJA POLSKA S.A.	17	6	N/A	50
40 PKP CARGO S.A.	14	13	N/A	29
41 CCC S.A.	13	20	N/A	
42 ELEKTRIM S.A.	12	0	N/A	41
			<u> </u>	
	12	0	N/A	39
44 IMPEL S.A.	11	6	N/A	28
<b>45</b> DINO POLSKA S.A.	9	13	N/A	14



National Champions

Aspiring National Champions



# Methodological appendix

The national champion indicator (NC indicator) is an arithmetic average of points obtained in four categories: the economy, the sector, activity abroad and innovation. The NC indicator was calculated for the top 50 capital groups (or "companies") in the economy category. That indicator had been calculated for 114 groups controlled by Polish capital that had over PLN 1 billion in revenue in 2016, over 100 employees and over PLN 100 million in capital. We used data consolidated for the entire capital group. For each company, the NC indicator was rounded up or down to an integer.

# Index: the economy

The indicator is calculated based on six subindexes, each representing another mechanism in which the company influences the economy.

The value added generated by a company in 2016 is calculated based on consolidated data from the company or - if there is no data - as the product of the sum of the added value quotients and the income for all relevant departments and PKD classes of a given company's activity and its income. The value of the subindex is then calculated using the formula:

$$G_i^1 = 100 * \frac{\log (VA_i)}{\log(VA_{MAX})}$$

where VA, is the added value of the i-th company, and VA, as the highest added value from all companies surveyed. Wherever we refer to logarithms in the appendix, we mean base 10 logarithms.

**Number of employees** is the total number of people employed at a given company at the end of 2016 in full-time equivalents from its annual report. The value of the subindex is then calculated using the formula:

$$G_i^2 = 100 * \frac{\log (E_i)}{\log(E_{MAX})}$$

where  $\boldsymbol{E}_{\!\scriptscriptstyle i}$  is employment at i-th company, and  $\boldsymbol{E}_{\!\scriptscriptstyle MAX}$  the highest employment at all the companies surveyed.

Average salary is calculated based on the average annual remuneration at a company, provided in the survey filled out by companies. If a company provides data on spending on employees, the quotient of this data and number of employees is calculated. In the absence of data, we use the average remuneration in the main PKD section. The value of the subindex is then calculated using the formula:

$$G_i^3 = \begin{cases} 100 & if \ w_i \ge 2\overline{w} \\ 100 * \frac{w_i - \overline{w}}{\overline{w}} & if \ w_i \in (\overline{w}; 2\overline{w}) \\ 0 & if \ w_i \le \overline{w} \end{cases}$$

where  $w_i$  is the average salary at the i-th company, and  $\bar{w}$  is the average annual salary in the enterprise sector in Poland in 2016.

The wage fund is calculated based on data obtained for points 1-3 using the formula:

$$G_i^4 = Min \left\{ 100 * \frac{E_i * w_i}{VA_i}; 100 \right\}$$

Contribution to the state budget is calculated based on data on tax paid by a given company in 2016, obtained from surveys sent to the companies or - if it did not respond - data from its consolidated financial report for 2016, as the difference between gross and net profit, plus sectoral taxes paid by the company. The subindex is then calculated using the formula:

$$G_i^5 = Min\left\{10^4 * \frac{TAX_i}{BTAX}; 100\right\} - 25 * 1_A(Reg_i)$$

where TAX, is the tax paid by the i-th company, BTAX the state budget's total tax revenue in 2016 in thousands of złoty, A the set of all countries excluding Polamd, 1A the indicator for that set, and Reg, the country of registration of the dominant entity in the i-th capital group.

Fixed assets are calculated based on data for late 2016 from consolidated financial reports for 2016, and investments based on data on gross spending on fixed assets in 2016 obtained from the survey sent to the companies or - if it did not respond - based on an estimate analogous to that in point 2. The subindex is then calculated using the formula:

$$G_i^6 = 50 * \frac{\log(GFCF_i)}{\log(GFCF_{MAX})} + 50 * \frac{\log(K_i)}{\log(K_{MAX})}$$

where  $\mathsf{GFCF}_{\scriptscriptstyle i}$  is spending on fixed assets at the i-th company, GFCF<sub>MAX</sub> the highest GFCF among the companies studied. K, the fixed assets of the i-th company, and  $K_{\text{\tiny MAX}}$  the highest K among the companies studied.

**Liquidity and solvency** are calculated based on data on the solvency ratio and liquidity ratio, calculated based on assets (in accordance with Polish accounting recommendations), obtained from the consolidated financial report for 2016. The subindex is then calculated using the formula:

$$G_i^7 = 50 * F(x = SR_i, \mu = 20, s = 2) + 50 * F(x = LR_i, \mu = 1, s = \frac{1}{6})$$

where SR, is the solvency ratio at the i-th company, LR, the liquidity ratio at the i-th company, and F(x,u,s) the distribution of the logistic distribution with argument x and parameters u and s.

**Capitalisation** is calculated based on the nominal value of all shareholders' funds at the end of 2016, obtained from the company's financial report and information on whether a given company was listed on the stock exchange at the end of 2017. The subindex is then calculated using the formula:

$$G_i^8 = Min \left\{ 100 * \frac{Funds_i}{Funds_{10}}; 100 \right\} + 25 * \mathbf{1}_{GPW}(i)$$

where  $\mathsf{Funds}_{\scriptscriptstyle i}$  is the value of shareholders' funds at the i-th company, Funds, the lower limit of 10th decile of the Funds distribution among all companies studied, GPW the set of all companies listed on the Warsaw Stock Exchange's main stock market, and  $\mathbf{1}_{\text{\tiny GPW}}$ the indicator for that set.

The full index in the economy category is the weighted average of the components above using the formula:

This index is calculated based on two subindexes, one reflecting the company's position in its sector and other significant sectors\*, and the other showing its productivity and profitability compared to other companies in the same sector:

Share in the sector (excluding banks) is calculated based on data on revenue, employment and spending on investment from the consolidated financial report and on data on the segments of business activity, estimated from companies' annual reports and publicly available information. The subindex is then calculated using the formula:

$$B_{i}^{1} = Min \left\{ 60 * \frac{GO_{i}}{GO_{k}} + 20 * \frac{E_{i}}{E_{k}} + 10 * \frac{GFCF_{i}}{GFCF_{k}} + 10 * \sum_{i \in N} \mathbf{1}_{1\%} \left( \frac{GO_{ij}}{GO_{j}} \right) ; 100 \right\}$$

where GO, is the value of the i-th company's revenue from its main activity, GO, the value of revenue in the k-th PKD class that is the i-th company's main acitivity, E, is employment at the i-th company, Ε, employment in the k-th PKD class that is the i-th company's main acitivity, GFCF, is gross spending on fixed assets at the i-th company, GFCF, gross spending on fixed assets in the k-th PKD section that is the i-th company's main acitivity, N the set of all other PKD classes that the i-th company obtains at least 3 per cent of its revenue from, 1% is the set of all natural numbers greater or equal to 1 per cent, GO, is the i-th company's revenue in the j-th PKD class, and GO, the revenue in the j-th PKD class.

Share in the sector for banks is calculate based on data on assets, loans, deposits, employment and investment from the consolidated financial report for 2016. The subindex is then calculated using the formula:

$$B_{i}^{1} = Min \left\{ 60 * share_{i} + 20 * \frac{E_{i}}{E_{b}} + 10 * \frac{GFCF_{i}}{GFCF_{b}} + 30 \quad ; \quad 100 \right\}$$

where share, is the average of the i-th bank's share in the total value of assets, deposits and loans in the Polish banking sector operating in Poland, E, is employment at the i-th bank, E, is employment in the banking sector, GFCF, is the i-th bank's gross spending on fixed assets, and GFCF<sub>b</sub> gross spending on fixed assets in the banking sector.

 $G_i = 0.3 * G_i^1 + 0.2 * G_i^2 + 0.1 * G_i^3 + 0.1 * G_i^4 + 0.1 * G_i^5 + 0.1 * G_i^6 + 0.05 * G_i^7 + 0.05 * G_i^8$ 

<sup>\*</sup> By significant PKD sections and classes of a given capital group's activity, we mean the main section, from which it obtains the largest part of its revenue, as well as all sections and classes that generate at least 3 per cent of the company's overall revenue.

**Profitability in the context of the sector** is calculated based on data on ROA from the consolidated financial report for 2016 and the gross margin from the consolidated financial report for 2016 or, if that data is not provided, as the ratio of the value added (point 1 of the index in the economy category) minus the value of the wage fund (point 4 of the index in the economy category) and the company's revenue. The subindex is then calculated using the formula:

$$B_i^2 = Min\{Max\{10 * (ROA_i - ROA_k) ; 0\} ; 50\} + Min\{Max\{5 * (GM_i - GM_k) ; 0\} ; 50\}$$

where  ${\rm ROA_i}$  is the i-th company's ROA,  ${\rm ROA_k}$  the ROA in the k-th PKD class that constitutes the i-th company's main activity,  ${\rm GM_i}$  is the i-th company's gross margin and  ${\rm GM_k}$  the gross margin in the k-th PKD class that constitutes the i-th company's main activity.

The full index in the sector category is the weighted average of the components above using the formula:

$$B_i = 0.75 * B_i^1 + 0.25 * B_i^2$$

#### Index: abroad

This index is calculated based on two subindexes, one describing the scope of the company's foreign ctivity, the other the significance of exports for the company's size:

**Foreign activity** is calculated based on data on the number of entities from the capital group registered outside Poland and the share of revenue generated by entities abroad in total revenue, obtained from the survey filled out by companies or, if it was not provided, based on our own estimates based on annual reports for 2016 and publicly available information. The subindex is then calculated using the formula:

$$Z_i^1 = 100 * \frac{\log (A_i + 1)}{\log (A_{Max})}$$

where  $A_{\text{Max}}$  is the highest A value for companies in the top 50 in the ranking of national champions, with  $A_i$  counted in the following way:

$$A_i = 100 * FE_i * FR_i$$

where  $FE_i$  is the percentage of a capital group's entities registered abroad, and  $FR_i$  the share of revenue from entities abroad in a capital group's total revenue.

The **export** subindex is calculated based on data on the number of countries that a given company's goods and services are exported to, from the survey filled out by companies or, if it was not provided, from public sources on the company's activity, including annual reports. Data on the share of revenue from exports in total revenue, obtained from financial reports for 2016 or, if there is no data, from Wprost weekly's Polish Ambassadors ranking, is taken into account too. The subindex is then calculated using the formula:

$$Z_i^2 = Min \left\{ 100 * \frac{x_i + \bar{x}}{2\bar{x}} * ER_i ; 100 \right\}$$

where  $x_i$  is the number of countries where the i-th company sells its goods and services,  $\bar{x}$  the median number of countries where companies in the top 50 in the ranking of national champions sell their goods and services, and ER, the share of export sales in the i-th company's revenue.

The full index in the abroad category is the average of these two subindexes.

#### **Index: innovation**

This index is calculated based on three subindexes, each reflecting another dimension of innovation at a given capital group:

**Intellectual property** is calculated based on data on a given capital group's current number of patents and trademarks in the Polish patent office's Espacenet base. The subindex is then calculated using the formula:

$$I_i^1 = 0.75*Min\left\{100*\frac{\log(P_i+1)}{\log(P_{10})} \;\; ; \;\; 100\right\} + 0.25*Min\left\{100*\frac{\log\left(ZT_i+1\right)}{\log\left(ZT_{10}\right)} \;\; ; \;\; 100\right\}$$

where  $P_i$  is the number registered by the i-th company,  $P_{10}$  the lower limit of the tenth decile of the distribution of patents registered by companies in the top 50 in the ranking of national champions,  $ZT_i$  the number of trademarks registered by the i-th company, and  $ZT_{10}$  the lower limit of the tenth decile of the distribution of trademarks registered by companies in the top 50 in the ranking of national champions.

**R&D** is calculated based on data on the number of research staff and spending on research on development, provided by companies in the survey. Missing data was collected from public sources, including annual reports for 2016. For many capital groups, the data was not available; as a result, it was assumed in further calculations that that company's R&D subindex is 0. When data was available, the subindex was calculated using the formula:

$$I_i^2 = 0.5*Min \left\{ 100* \frac{\log(E_i^{BR}+1)}{\log(E_{Max}^{BR})} \;\; ; \;\; 100 \right\} + 0.5*Min \left\{ 100* \frac{\log(BR_i+1)}{\log(BR_{Max})} \;\; ; \;\; 100 \right\}$$

where  $E_{_{i}}^{\ BR}$  is the number of R&D staff at the i-th company,  $E_{_{Max}}^{\ \ BR}$  the lower limit of the tenth decile of the distribution of the number of R&D staff at companies in the top 50 in the ranking of national champions,  $BR_{_{i}}$  spending on R&D at the i-th company (in thousands of złoty), and  $BR_{_{Max}}$  the lower limit of the tenth decile of the distribution of spending on R&D (in thousands of złoty) at companies in the top 50 in the ranking of national champions.

**Labour productivity** is calculated based on data on value added and employment at a capital group, obtained for the index in the economy category. The subindex is then calculated using the formula:

$$I_i^3 = Min \left\{ 100 * \frac{va_i}{va_4} ; 100 \right\}$$

where  $va_i$  is the value added per employee at the i-th company,  $va_4$  the lower limit value of the fourth quartile of the value added distribution per employee at companies in the top 50 in the ranking of national champions.

The full index in the innovation category is calculated as a weighted average of the components above using the formula:

$$I_i = 0.4 * I_i^1 + 0.3 * I_i^2 + 0.3 * I_i^3$$

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