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Navigating Reversed Valuation Dilemmas: SME Enterprises Nationalized in 1950s Poland - A Case Study

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1. Introduction

In its post-war history, Poland went through a period of intense nationalization of the entire economy (Izdebski, 1989, Toplišek, 2020). Since the end of World War II, the Polish economy has entered the period of building a socialist system, both in the political, economic and social dimensions. An enduring outcome of this strategic orientation was the incremental nationalization of the economy, coupled with the curtailment of the private sector's role in national income generation. Central to the execution of economic policies were development plans devised by the central government.

The first of these initiatives, commonly called the three-year plan and spanning from 1947 to 1949, was remarkably effective making substantive strides in the restoration of Poland's economic prowess following the ravages of war. This plan operated on the foundation of a three-sector economic model, fostering the coexistence of the public (Robson, 2022), cooperative, and private sectors (Kalinski, 1977). Yet, by the year 1948, the commencement of the 'battle for trade' signaled a series of measures orchestrated for the expeditious dismantling of the private sector. The ensuing period, from 1949 to 1950, witnessed a heightened impetus in the reconfiguration of the Polish economic landscape in alignment with the Soviet model of industrialization (Winiarski, 2023).

In the subsequent initiative, known as the 6-year plan spanning the years 1950-1955, the centrally planned collective economy underwent consolidation and fortification, characterized by the following key attributes (Skodlarski, 2012; Flade & Kamosinski, 2021):

- seizing control of the majority of means of production, excluding agriculture,
- ensuring the paramount role of the party in shaping economic directives,
- conceiving the economy as a singular national enterprise, subject to governance through resolutions of the authorities,
- curtailing the influence of market forces and regulatory financial mechanisms in favor of tangible objectives and administrative standards,
- divesting enterprises of the autonomy to make pivotal decisions and employ economic calculations,
- substituting economic incentives with administrative edicts and moral-political appeals, contributing to the proliferation of bureaucratic apparatus and resource misallocation,
- manifesting low economic efficiency on both macro and micro scales, coupled with a dearth of incentives for innovation and technological progress.

Between 1946 and 1954, economic advancement predominantly materialized through a surge in employment, albeit accompanied by a minimal rise in labor productivity. Owing to the persisting global arms race, the economy progressively gravitated towards a heightened emphasis on armaments and the expansion of heavy industry. This strategic shift occurred at the cost of forgoing other critical investments, notably in the production of machinery and equipment for the consumer industry, transportation, and agriculture, concurrently imposing restrictions on overall consumption.

The economy grappled with supply shortages (which could partially explain nationalization of existing enterprises to let the country invest in them and quickly increase production of basic goods (Bognetti, 2020, Voszka, 2021) and escalating inflationary pressures, as illustrated in Table 1. Various administrative measures, including the enforcement of rigid card prices, were undertaken in attempts to curb these challenges. To address these issues, the government implemented the monetary reform in October 1950, involving the exchange of old zlotys for new Polish zlotys at a ratio of 100:1 (where

100 old zlotys equated to 1 new zloty). This ratio was uniformly applied to convert prices, wages, pensions, and public debt. The repercussions of this non-equivalent and restricted exchange resulted in the nullification of approximately 60% of the monetary circulation. The exchange imposed a substantial burden on society, with authorities attempting to rationalize it on “class” grounds, asserting its primary focus on kulaks, namely wealthy peasants and speculators. In reality, the impact was widespread, and from that point until the conclusion of the Polish People’s Republic, intermittent rumors about another currency exchange kept the populace on edge. Consequently, people anxiously purchased goods and divested themselves of cash. The blow was exacerbated by the realization that the exchange failed to meet expectations for price stabilization. Inflation persisted, compelling the retention of the card system. It was only through a drastic price hike of 40-60% in January 1953 that prices stabilized and rationing could be discontinued (Morawski, 2023).

Table 1. Retail Price Index 1950-1955 (previous year = 100)

Specification	1950	1951	1952	1953	1954	1955
General price index of goods and services purchased by the population	108	110	114	143	94	98
Prices of consumer goods in socialized trade	108	109	112	147	93	96
Market prices	121	130	153	112	99	106

Source: Luszniewicz , J. (2014). Inflation processes in Poland in 1945-1955 - manifestations, phases, conditions, consequences. A contribution to research on inflation in the Polish People’s Republic. Quarterly of the Economic and Social College “Studia i Prace”, 18(2), p. 118

In 1950, the basic exchange rates were established, incorporating the parity of the Polish zloty: 1 USD = 4 PLN and 1 ruble = 1 PLN. This resulted in the derived exchange rate of 1 PLN = 0.25 USD, commonly referred to as the foreign exchange zloty (Central Statistical Office, 2018).

Notably, as per information from the PKO SA bank, “from the end of the war until 1956, the possession of foreign currencies, valuables, and gold was prohibited, with violations subject to imprisonment. Penalties for engaging in foreign exchange transactions were markedly severe”. Nevertheless, these measures did not eradicate the existence of the ‘black market,’ where the value of the dollar averaged five times more than the officially announced rates. This exorbitant price rendered the dollar inaccessible for the majority of Poles, as even a well-earning individual's entire salary was scarcely sufficient to procure a dozen or so dollars (PKO, 2004).

In summary, the operational landscape for private entities during the period from 1946 to 1951 proved exceedingly challenging, marked by concerted efforts from authorities to shape a model of a centrally planned and socialized economy, resulting in a successive curtailment of the private sector's involvement. The economy witnessed a relentless march towards nationalization, notably in heavy industry, where the prospects for private owners to retain control of their enterprises dwindled each passing year. Numerous private entrepreneurs faced the loss of their companies annually. The nationalization process, guided partly by legal mandates necessitating the transfer of large plants to the state, was often subjective, justified under the banner of the "general good." Over 60 years since these events transpired, some owners or their descendants are still alive, vividly recalling these events and actively seeking compensation from the State Treasury (Gelpern, 1993; Marcuse, 1996; Rondinelli & Yurkiewicz, 1996).

This paper seeks to elucidate the challenges associated with the valuation of damages incurred during this period and proposes specific solutions, focusing particularly on the valuation of nationalized small and medium-sized enterprises (SMEs) in the 1950s. It introduces a novel perspective by offering a valuation proposal for a small-scale wine producer. The subsequent sections provide a literature review, introduce the company under consideration along with the associated valuation challenges, and ultimately propose a universally applicable solution for analogous cases in the future.

2. Literature review

The problem of compensation for expropriation (which may be due to nationalization) is very common in a modern economy. In almost every country there were periods where, for various reasons, the state performed to a greater or lesser degree the expropriation. However, there is no single procedure for calculating subsequent compensation, as it is considered that each case is different and requires an individual approach. Nevertheless, the analysis of actual cases of payment of compensation for expropriation and bilateral investment treaties gives a certain picture of the most common approaches and solutions, both in terms of the construction of the treaties and the actual compensation.

A valuable overview of tribunal decisions can be found in the publication by Juliyanti and Wibowo (Juliyanti, Wibowo, 2020). The article describes the methods of calculating compensation in various actual cases. In the first case, in 1977 the Kuwaiti authorities nationalized the branch of the American Independent Oil Company (Aminoil) (and the deprived the company of the license to produce oil). The company sought compensation for lost profits it could have earned during the term of the license. The UN International Court of Justice has ruled that compensation cannot be calculated on the basis of the net asset value at the date of nationalization, as the company has the right to recover the fair value of the capital investment it made in the project. The tribunal rejected the company's claims for a valuation of damages based on discounted cash flows but accepted Aminoil's second request that compensation be calculated as the value of the assets plus lost profits for a realistic period of time, consistent with the reality of the time. The tribunal used crude oil prices as the basis for indexation, as this was the subject of the contract. As part of the valuation of compensation, a balance sheet of assets, receivables and liabilities of the nationalized branch was created and the assets were measured as replacement value minus accumulated depreciation and amortization as of the date of nationalization. Liabilities were then subtracted and the remaining amount was capitalized at a rate equal to the interest rate plus inflation. The capitalization covered a period of five years, i.e. from nationalization to the trial before the Court.

Another example described in the same publication concerned Libya's nationalization and decommissioning of the Libyan American Oil Company (LIAMCO). LIAMCO sought compensation not only for the assets taken away, but also for lost profits. In this case, the compensation included the market value of the lost assets and the average profit that similar companies to LIAMCO made in the period since the nationalization on the concessions taken away from them (i.e. compensation for lost concessions was calculated as the profits that the average company would have earned on these concessions after capitalization at the rate of 5% until the time of the lawsuit). LIAMCO lost several concessions, but only those that would have generated revenue were valued, the rest were considered to have zero value and no compensation was due for them.

Mc Cosker's 1973 publication (Mc Cosker, 1973) also analyzed the methods of valuing compensation for nationalized firms. The first case that Mc Cosker writes about was the nationalizations carried out in Cuba during the Castro regime. The legal system in Cuba allowed nationalized companies or branches to be measured in four ways: (1) fair value, (2) book value, (3) going concern value, and (4) the replacement value.

In the case of early expropriations, e.g. the case of the Sherwin-Williams Company (1960), the compensation was measured based on the balance sheet value of the assets. The same was true for the Bewind-White Coal Mining Company (1968), although for two valuable tracks of land the committee agreed to a higher valuation than the historical book value. The situation was similar in subsequent cases, the valuation was based on historical balance sheet values, but in the case of strong evidence, the commission agreed to increase the compensation. It was not until 1969 that the First National Bank of Boston was assessed on a "going concern basis," but the committee continued to maintain that the basis for the valuation was book value.

Another case discussed by Mc Cosker pertains to Chile, where until 1967 the Kennecott Copper Corporation (Kennecott) through a wholly owned subsidiary owned and operated El Teniente Mine (copper mine). In 1967, Braden transferred its assets and liabilities in Chile to a Chilean company, Sociedad Minera El Teniente, S.A. (El Teniente). In return, Braden received all of the stock of El Teniente. Later on in 1967 Braden sold 51% of stock in El Teniente to the Chilean government. When in 1971 Chile passed the law that provided for the nationalization of large foreign-owned copper companies, the compensation was determined based on the book values of nationalized companies, with prescribed adjustments, while explicitly excluding remuneration for any mineral rights. The act also provided for the deduction of any excess profits.

One more case that Mc Cosker writes about concerns the Gulf Oil Corporation in Bolivia. For 10 years, the Gulf invested $95 million before it could start extracting oil, a total of $150 million was invested. The company didn't make any profit during the entire period, and it still paid $18 million in taxes and royalties. When in 1969 Bolivia nationalized the properties and operations of the Gulf Oil Corporation, the amount of indemnification was based on the net book value of assets plus certain assets which had previously been written off. Valuation based on the net book value of assets has also been used in cases seeking compensation for nationalization in Iran (Leigh, 1984).

An extensive study on expropriation compensation clauses included in Bilateral Investment Treaties in Asia is presented by Peters (Peters, 1995). From his analysis of 62 bilateral investment treaties in the case of expropriation, the amount of compensation determined would be calculated as follows:

- in 14 cases as the value of the investment,
- in 21 cases as the market value of the investment,
- in 10 cases as the fair value,
- in 15 cases as the real value of the investment.

As regards the date on which the value of the investment would be determined, the distribution was as follows:
- in one case, the valuation would be at the date when the value of the investment was measured,
- in 2 cases just before or at the time of expropriation,
- in 12 cases at the time when the authorities would announce expropriation,
- in 13 cases before the expropriation would be announced,
- finally in 27 cases before the decision on expropriation would become public.

In addition, nine treaties used the term "replacement value," five mentioned compensation for exchange rate movements, and one case mentioned goodwill. In more than 80% of treaties signed before 1982, compensation did not include interest, while in cases after 1990 63% of them included an interest clause which required interest to be charged on the value of the investment from the moment of expropriation until the payment of compensation, with interest to be calculated based on the ordinary commercial interest rate, sometimes mentioning that the interest rate should be for the currency of the country in which the investment was made. and sometimes the interest rate for the currency of the investor's home country. In most cases, the currency in which the compensation was paid was to be convertible into other currencies and allow the transfer of funds abroad.

Another valuable study is the publication "Compensation for Expropriation – Best Practices" published in 2013 by the International Institute for Sustainable Development (Nikièma, 2013). In this study, the author suggested that in the case of many Bilateral Investment Treaties, the parties agreed that the injured investor should recover the investments incurred plus interest, which, depending on the treaty, was determined in three different ways: the cost of the investor's capital, the cost of lost opportunities, and finally the cost at which the investor could obtain additional financing, usually the cost of the loan.

In other cases, the treaties only provided for the recovery of the fair value of the investment without additional interest. When it comes to the valuation of investments, three methods are most often used in treaties: the market value for which the investment could be sold at the time of expropriation, the net asset value (if the company was not profitable), and finally the discounted cash flow method, which is also sometimes mentioned in treaties, but which is inherently accompanied by the opinion of the tribunals that such clauses contain "a speculative element" (Wälde, Sabahi, 2007) and that this method remains a speculative method "dressed up in the appearance of a mathematical equation" and is therefore challenged by tribunals as unreliable.

According to McDonald (2020), in some cases, companies were nationalized without any compensation, namely in situations when nationalization was a temporary bailout of failed privately owned enterprises.

Summing up the literature review, most of the cases of nationalizations in recent years concerned industries associated with natural resources (Arisaputra et al., 2021, Bravo 2022) and the majority of compensations were established based on the net asset value (Yildiz, 2022).

In Poland, the problem of compensation for expropriation (mostly due to nationalization) is particularly relevant to small and medium-sized enterprises nationalized in the 1950s. Since the democratization of Poland, the former owners have been suing for compensation for lost property.

A scrutiny of court rulings indicates the prevalence of the replacement cost method for valuing such damages. However, alternative approaches also emerge, potentially giving rise to additional claims and legal disputes in the future.

The most common method of valuing nationalized SME is the replacement method of their assets, assuming that unless specific products are currently on the market, the expert should consider the prices of contemporary products that are most similar to those being valued. This solution was used, among others, in the judgment V Aca 22/17 of January 23, 2020, of the Court of Appeal in Warsaw, 5th Civil Department, judgment ref. no. Act I ACa 22/18 of the Court of Appeal in Warsaw, Civil Division of November 29, 2018, or judgment ref. no. File IC 745/16 of the District Court in Warsaw, Civil Division of December 28, 2017.

Resolution of the Supreme Court of December 15, 2017, ref. no. Act III CZP 86/17 rejected the possibility of recognizing compensation claims for lost profits that former owners could have derived had they not lost their businesses. The principle applies that no one can become rich at his own expense.

As evidenced by the comparative analysis of global and Polish methodologies, they demonstrate convergence and afford a broad spectrum of valuation methods to be employed.

However, the task of determining compensation becomes challenging when the largest part of the company's assets consists of receivables and cash, while tangible assets, especially today, are not of much value (in particular, a company did not own any property). An example is the winery analyzed in the publication, where the assets included mainly barrels, bottles, presses and juicers. There were no written sources confirming the entity's sales volume, and high receivables and cash were known. In the end, we formulated the following research questions:

RQ1: How to determine the value of a SME company in an economy where there was no free competition?
RQ2: What indexation approach to use to determine the present value of the compensation?

Although the article focuses on the valuation of a specific wine producer, the proposed approach applies to any company which meets the following criteria: 1) the assets of the company have very low-value today (in particular, the company did not own any property) and there might be not clear whether historical records include all of the company's assets, 2) the technology the company used has significantly changed and there is no obvious direct technological successor (because nowadays exist many alternative technological solutions), 3) one can estimate approximately the company sales (not necessarily in monetary terms, also acceptable are unit sales), 4) the company operated in the centrally-governed economy without free competition and companies were obliged to produce allocated quotas to be delivered to the central distribution system, 5) gold and foreign currencies prices were centrally controlled and did not represent market prices (that is, they did not represent exchange rates which would be determined if there was a free market interplay of demand and supply). Since many formerly nationalized companies in Poland meet these criteria, the proposed method has many potential applications.

3. Research methodology

This publication describes the proposed method for valuing compensation for a small wine producing company including most of the company's movable and immovable assets, excluding buildings that were only rented.

Most of the presented assets had no significant value in modern times, as they were barrels, bottles, and simple devices for squeezing juices. At the same time, the full production capacity of the plant was not known because it fluctuated greatly and was not fully documented - only estimates by the former owner were available. The transfer (calculation of current time value) of the value of assets over time based on the principle of finding their contemporary equivalents did not take into account receivables and cash, as well as the fact that it was an organized economic unit (at the same time, this unit did not operate in a free market economy and the value of gaining market share could not be assigned to it because at that time there was a so-called scarcity economy).

Due to incomplete statistical data, the exact wine market in the 1950s was not known, as no statistics were available on the sales or consumption of fruit wines (we had statistics concerning all types of wine consumption).

Additionally, in the 1950s, the economy was planned and wine supplies were regulated centrally. This eliminated modern methods of company valuation because the basic assumptions on which they were based were not met.

Generally, in neoclassical economics, the valuation of goods and services is predominantly characterized by their market price in an open and competitive marketplace. This valuation is contingent upon the equilibrium between the demand and supply ratios within a perfectly competitive market. Consequently, in this framework, everything is perceived as a commodity, and any item lacking a market-determined price is considered to possess no economic value. Conversely, classical economics delineates the value of an entity or condition as contingent upon either the quantity of social labor required for its production or the quantity of labor economized through its consumption or utilization, as elucidated by the labor value theory. The criteria for an economy to be classified as free-competitive involve the fulfillment of the following conditions:

1. There are many buyers and sellers in the market.
2. No individual buyer and seller is large enough or can influence the price.
3. There is freedom to enter and exit the market.
4. The manufactured goods are homogeneous (identical).
5. Buyers and sellers act independently and take into account only their own position when making decisions.
6. There are clearly defined property rights, which means that producers and consumers take all costs and benefits into account when making decisions.

Given that the Polish economy during that period did not conform to the requisites of a free-competitive economy, the valuation of intangible assets, including market share, associated with the examined enterprise posed a considerable challenge. This was attributed to the unavailability of the option to sell the company as a whole (as opposed to merely selling its assets). Furthermore, there was an absence of information regarding the quantification of labor (in monetary terms) invested in establishing the entity, and the remuneration received by the owner for this endeavor.

Consequently, the sole viable method remaining was the valuation based on the entity's tangible assets. However, due to the incomparability of production technology and price relations, it became imperative to adapt the approach used in the majority of court judgments.

4. Results and discussion

The problem of valuation for 1951 also raises problems in the valorization (indexation) of estimated values due to the fact that the value of money changes over time. The change in the value of money over time results from, among others, the occurrence of the so-called opportunity costs, either in the form of deferred consumption (lost opportunity to consume earlier due to lack of income) or unearned income that we could have obtained if we had received the said amount earlier, the risk (Czekaj, Dresler, 1995) or decline in purchasing power caused by inflation (Jajuga, Jajuga, 2012).

At the outset, it should be noted that there is no single appropriate method of valorization (indexation) of monetary values between periods, and in practice, different indicators are used depending on the context, the nature of the case, data availability and common sense (Williamson & Cain, 2023). For example, in the case of indexation of the agreed and unpaid compensation for expropriated real estate, the price indices of consumer goods and services published by the Central Statistical Office are usually used, although (unannounced) indices of changes in real estate prices would be more adequate, as they more accurately capture fluctuations in real estate prices occurring within the market (Antkowiak, 2019). In turn, in accordance with the provisions of the Act of 17 December 1998 on pensions and annuities from the Social Insurance Fund (Journal of Laws of 2022, item 504, as amended), pensions and annuities are subject to annual indexation by the amount indexation index, which is equal to the average annual price index of consumer goods and services in the previous calendar year increased by at least 20% of the real increase in the average salary in the previous calendar year. In the case of indexation of funds on ZUS sub-accounts, an indicator is used based on the average nominal growth of gross domestic product (GDP) in the five years preceding the indexation date (Bojanowicz, 2023). A relatively wide range of valorization indicators was considered (and discussed) by the authors of the report on the losses suffered by Poland as a result of World War II, in which the valorization of historical values into contemporary ones was carried out using (Pońsko, Klusek, 2022):

- US dollar and US CPI inflation rate[1],

1 As the authors of the Report on the losses suffered by Poland as a result of World War II 1939-1945 claim (p. 409), due to the lack of continuity of the Polish currency before and after World War II and the inability to build a representative consumption basket for the set of consumer goods

- Gold,
- Costs of maintaining a household (or a person - a consumer unit),
- Average salary,
- Nominal GDP and GDP per capita.

Importantly, the choice of method or methods for indexing historical values should be as contextually tailored as possible and fall within rational bounds (the so-called "common sense"). In the case of enterprise valuation, this means that the indexed amount of the enterprise value calculated on a given day should not ultimately exceed the enterprise value derived from the costs (expenditures) required to launch a comparable business activity currently. Thus, the replacement value of an actively operating enterprise should constitute the upper limit of the acceptable set of valuations.

With regard to the indexation of the value of the described enterprise as of 1951, one should remember that it was not about answering the question of what assets he could allocate his funds to ("compensation"), because such a perspective would lead to an infinite number of scenarios, generating both positive and negative investment results. It was also difficult to assume that the same strategy would be implemented in subsequent years until the present day. Behavioural finance provides many examples and arguments regarding the psychological effects that investors are subject to, which cause their allocation decisions to deviate from rational ones (CFA, 2019). Taking into account the previously mentioned restrictions on the purchase of foreign currencies or gold in the analysed post-war period (including potentially punishable by imprisonment) and the functioning "black market" with prices several times higher than official prices, indexation of the value of the enterprise with investment assets, e.g., or US dollars should be excluded in this case.

Ultimately, we decided to use the CPI inflation index, despite its shortcomings, as it is a relatively simple and widely comprehensible measure.

It has been continuously published since 1950 by the Central Statistical Office (GUS), and is also frequently utilized. Therefore it has been chosen for indexing prices in retrospective valuation procedure, especially because financial or market data for a given period are limited. The second method that was considered realistic was the average monthly salary (table 2).

purchased before the war and in 1949 (the first year for which data on CPI in Poland after the war are available), the attempt to valorize losses in the Polish zloty was abandoned, replacing it with the US dollar.

Table 2. Salaries and salary multiplier for 2020-2022 based on 1951

Specification	1951	2020	2021	2022
Average monthly salary	599,00	5 167,47	5 662,53	6 346,15
Average annual salary	7 188,00	62 010,00	67 950,00	76 154,00
Wage multiplier	1,00	8,60	9,50	10,60

Source: Central Statistical Office, https://stat.gov.pl/obszary-tematyczne/rynek-pracy/ Pracujacy-zatrudnieni-wynagroczenia-koszty-pracy/przecietne-miesieczne-wynagrozenie-w-gospodarce-narodowej-w-latach-1950- 2022,2,1.html

For compensation valuation, indexation with an indicator of the rate of change in the level of average wages or a simple wage multiplier, changes in GDP per capita, indexation to the US dollar (or converted into international dollars) was also considered. However, as previously mentioned, firstly, there were no grounds to conclude that such options were available to Polish residents at all, and secondly, they led to valuations that were many times higher than the cost of reproducing similar activities today (asset, see table 3).

Table 3. GDP per capita values in the years 1950-2020 in international dollars converted to 2011 prices

Year	GDPpc	Year	GDPpc	Year	GDPpc	Year	GDPpc
1950	3 900	1970	7 058	1990	8 150	2010	20 609
1951	4 001	1971	7 503	1991	7 626	2011	21 837
1952	4 018	1972	7 986	1992	7 874	2012	22 188
1953	4 173	1973	8 512	1993	8 230	2013	22 510
1954	4 328	1974	8 928	1994	8 722	2014	23 266
1955	4 454	1975	9 258	1995	9 408	2015	24 177
1956	4 565	1976	9 397	1996	10 066	2016	24 838
1957	4 721	1977	9 483	1997	10 811	2017	26 061

Year	GDPpc	Year	GDPpc	Year	GDPpc	Year	GDPpc
1958	4 873	1978	9 741	1998	11 413	2018	27 455
1959	4 935	1979	9 471	1999	12 058	2019*	29 567
1960	5 125	1980	9 149	2000	12 732	2020*	30 367
1961	5 461	1981	8 584	2001	13 018	2021*	34 351
1962	5 325	1982	8 429	2002	13 416	2022*	40 360
1963	5 582	1983	8 764	2003	14 036		
1964	5 773	1984	9 006	2004	14 906		
1965	6 036	1985	9 022	2005	15 581		
1966	6 362	1986	9 240	2006	16 711		
1967	6 540	1987	9 059	2007	18 067		
1968	6 881	1988	9 228	2008	19 012		
1969	6 760	1989	9 060	2009	19 718		

* estimated value calculated by multiplying the value from 2018 by the GDP growth rate per capita (in PLN) provided by the Central Statistical Office

Source: Maddison Project data (https://ourworldindata.org/grapher/gdp-per-capita-maddison) and Central Statistical Office

4.1. Valuation floor

Due to its properties, we considered the valuation of assets based on an inventory of analogous assets available today to be the lower valuation limit. We estimated that the value of the assets from 1951 according to contemporary prices was one million Polish zlotys. After applying backward indexation based on the CPI inflation rate and the growth rate of the average salary in the economy, their retrospective value was calculated for 1951.

To this amount, we added accounts receivable and cash and subtracted liabilities. Afterwards, we re-indexed the resulting value to contemporary prices. Receivables and cash indexed in this way constituted a significant portion of the valued enterprise. The valuation obtained through this approach ranged between PLN 1.17 million and PLN 3,42 million for 2023.

4.2. Valuation ceiling

As previously explained, due to technological changes between 1951 and 2023, it was not feasible to ascertain the current fair value of an equivalent technological line. This difficulty stemmed from the challenge of determining which technology and production capacity would accurately represent the correct equivalent. For example, there are several methods for squeezing juice from fruit, production capacity strongly depends on the availability and the quality of winemaking equipment and facilities (such as fermentation tanks, presses, barrels, and storage space), the availability of a reliable and skilled labour force, or organization and control of the production process, among others.

Ultimately, we decided to determine the upper valuation ceiling based on the replacement value, which in turn was determined by assessing the tangible assets (along with intangible assets) of currently operating fruit wine producers in Poland. Based on the websites, producers of fruit wines were first found according to data available for 2023 (table 4).

Table 4. List of fruit wine producers in Poland

Company name	Headquarters	Employment size (number of employees)	Status
Appol	Łąkta Górna	84	active
Domain Menada	Warsaw	6	non-active
Dwikozy	Dwikozy	58	active
Fructar	Tarnów	42	non-active (dissolved due to takeover)
Polskie Wytwórnia Wina Kamparex	Kamensk	n.a	non-active (liquidation)
Marprex	Ciechanów	5	inactive (no reports since 2019 and zero fixed assets in 2019)
Niechcice	Sprit	100	non-active (bankruptcy)
Polvin	Tomaszów Mazowiecki	55	non-active (bankruptcy liquidation)

Torwin	Toruń	n.a	non-active
Vin-kon	Konin	56	active
Winex	Lipowiec Kościelny	10	non-active
Ambergris	Warsaw	890	active
Bartex Bartol	Nowy Tomyśl	213	active
Euromak	Maków Mazowiecki	35	active
Gossa	Strykow	21	non-active (bankruptcy liquidation)
Kolvin	Łask	19	active
Mercor	Warsaw	34	active
Ostrowin	Ostrow Wielkopolski	n.a	non-active (bankruptcy liquidation)
RoseWin _	Bełchatów	n.a	non-active (dissolved due to bankruptcy)
Vin Kon - Nieledew	Trzeszczany	100	non-active (bankruptcy liquidation)
Vinpol Toruńskie Piwnice Win (Henkell Freixenet Polska Sp. z o. o.)	Toruń	208	active
Winmar Sulim (Drink ID)	Piotrkow Trybunalski	161	active
Apis	Lublin	58	active
Brodvin	Kalwaria Zebrzydowska	n.a	non-active (bankruptcy liquidation)
Drinkpol	Piotrkow Trybunalski	45	non-active (bankruptcy liquidation)
Expol	Nowy Sącz	n.a	non-active
Janton	Dobroń	2	active
Konwin -Kruszwica	Kruszwica	7	non-active (dissolved due to bankruptcy)

Mix SA	Kwidzyn	17	active
Pektowin (Herbstreith&Fox Jasło Sp. z o. o.)		135	active
Tim SA (Bielsko-Biała)	Bielsko-Biala	126	active
Vinfort (Imported Wine Cellars)	Cracow	1	active
Warwin	Warka	62	active
Comiter Sp. z o. o. Sp.k.	Bydgoszcz	n.a	non-active
Sj set	Nowy Lubiel	326	active
Kubi Sp. z o. o	Wozniki	9	active
Omega S. j.	n.d	n.a	non-active
Pozwin Sp. Z OO	Boxes: Greater Poland	40	active
PPHU „POLDRINK" BOGUSŁAW SALIŃSKI		n.a	non-active

Source: own study based on information from the National Court Register

Then, only for active producers of fruit wines, we collected financial information regarding sales volume and assets after deducting prepaid expenses, long-term receivables, financial investments, land, real estate, fixed assets under construction and liabilities (table 5). Since the valued entity did not have any accruals, buildings, fixed assets under construction or financial investments, these categories were also excluded from the assets of individual entities.

Table 5. List of active producers of fruit wines with financial data [thous. PLN]

Name	Intangible assets	Number of empoyees	Last available year	Total assets	Real estate	Liabilities	Tangible assets under construction	Due contributions to share capital	Active accruals	Financial investments	Debt owed	Net assets	Sales revenues
Appol	0,00	84	2021	71 740,58	13 996,34	49 392,92	2,20	345,77	0,00	13 440,68	0,00	-5 437,32	73 207,73
Dwikozy	8 194,24	58	2021	22 487,48	3 551,85	8 203,68	0,00	284,25	0,00	50,00	0,00	10 397,71	34 867,29
Vin-kon	96,86	56	2021	22 280,40	5 848,83	13 278,40	0,00	405,81	2 000,00	0,00	0,00	747,36	30 026,84
Ambra	120 957,00	890	2021	699 918,00	56 099,00	280 300,00	54 143,00	165 076,00	0,00	654,00	0,00	143 646,00	775 648,00
Bartex Bartol	4,00	213	2022	421 104,28	39 907,94	267 222,06	23 277,54	3 707,62	0,00	36 008,68	0,00	50 980,45	312 299,99
Kolwin	b.d.	19	2022	1 166,12	b.d.	707,58	b.d.	0,00	0,00	0,00	0,00	458,54	4 157,99
Mercor	b.d.	34	2021	37 987,27	2 671,02	688,75	4 026,90	41,47	0,00	0,00	0,00	30 559,13	82 070,67
Vinpol Toruńskie Piwnice Win (Henkell Freixenet Polska sp. zoo)	0,86	208	2022	193 765,17	14 775,77	104 293,94	3 900,44	3 991,60	0,00	0,00	0,00	66 803,41	338 408,33
Winmar Sulim (Drink ID)	1 452,68	161	2021	84 034,90	12 182,35	72 717,70	2 547,12	614,31	0,00	0,00	0,00	-4 026,58	145 292,86

Apis	4 274,60	58	2022	24 355,12	1 832,03	12 307,58	20,00	51,72	0,00	11,50	0,00	10 132,29	33 556,88
Jantoń	0,00	2	2022	2 067,67	39,59	1 891,51	186,20	16,80	0,00	0,00	0,00	-66,44	425,59
Mix S.A.	0,00	17	2021	26 207,00	#ARG!	19 481,00	0,00	0,00	0,00	0,00	0,00	6 726,00	53 270,00
Pektowin (Herbstre-ith&Fox Jasło Sp. z o.o.)	37,07	135	2021	54 846,88	9 742,09	17 791,72	1 824,72	210,80	0,00	0,00	0,00	25 277,54	51 236,87
Tim S.A. (Biel-sko-Biała)	5 746,08	126	2022	121 692,30	7 712,84	83 027,66	5 326,35	2 841,09	0,00	400,00	0,00	22 384,35	201 319,40
Vinfort (Piw-nice Win Importowa-nych)	0,00	1	2020	50 496,86	22 349,27	3 764,77	1 218,83	445,49	0,00	20 988,82	301,39	1 428,28	2 621,56
Warwin	0,00	62	2021	45 823,75	10 044,33	15 167,10	4 558,00	38,56	0,00	12 598,90	0,00	3 416,87	84 988,44
Komplet S.j.	0,00	326	2020	1 821,34	b.d.	931,21	0,00	19,28	0,00	0,00	0,00	870,85	3 152,83
Kubi Sp. z o. o.	0,00	9	2021	520,43	189,57	260,73	0,00	0,00	0,00	4,11	0,00	66,03	1 458,05
Pozwin Sp. Z O.O.	0,00	40	2021	39,56	b.d.	0,00	0,00	0,00	0,00	0,00	0,00	39,56	0,00

Source: own study

Based on the data obtained, we estimated a linear regression between the net sales and the value of net assets (excluding land and buildings, financial investments and long-term receivables, fixed assets under construction, due and unpaid equity contributions and prepaid expenses) (figure 1). Based on information from websites, we calculated the average price of fruit wines.

The websites of Ambra and Tim SA showed sales in bottles. For Ambra, sales in bottles amounted to 40 million bottles (data from the website of July 28, 2023), and for Tim SA it was 15 million bottles. After converting the bottles into litres (1 bottle is 0.75 litres), we calculated that a litre of Ambra wine was sold for PLN 25.85, and a litre of Tim SA wine was sold for PLN 17.9.

After eliminating entities with negative net assets (it was assumed that the company's valuation cannot have a negative value), we estimated a regression model (R2 was 95%):

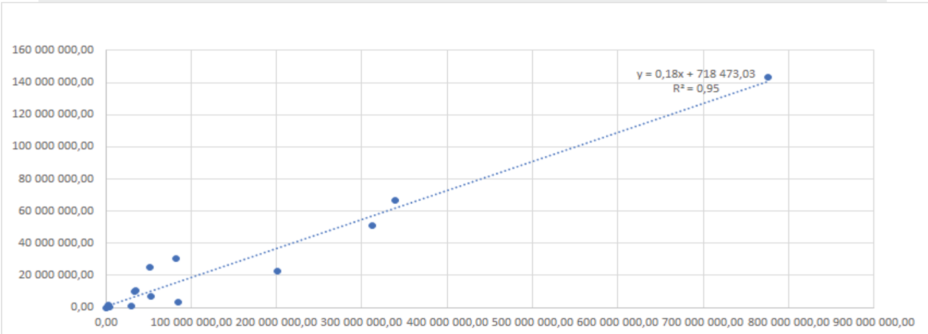

Figure 1 . The relationship between net sales and net asset value (in PLN) for fruit wine producers with positive net assets

Source: own study

Based on such a regression model, we estimated the contemporary value of net assets for the analysed company(based on the former owner's estimates of the production volume in 1950). Without knowing the sales structure, it was necessary to assume what the current average price of a litre of wine produced in the 1950s by the company could potentially be equal to (table 6).

Table 6. Simulation of the value of net sales revenues of the analysed company for different average prices of a litre of products

sale (in liters)	the average price of 1 litre of product						
	PLN 7.5	PLN 10	PLN 12.5	PLN 15	PLN 17.5	PLN 20	PLN 25
1 000 000	7 500 000	10 000 000	12 500 000	15 000 000	17 500 000	20 000 000	25 000 000

Source: own study

Table 7. Value of net assets (excluding land and buildings, long-term investments, DRM, liabilities) in PLN depending on the sales volume

Net sales revenues [PLN]	Net assets of the enterprise [PLN]
7 500 000	1 757 973
10 000 000	2 104 473
12 500 000	2 450 973
15 000 000	2 797 473
17 500 000	3 143 973
20 000 000	3 490 473
25 000 000	4 183 473

Source: own study

Upon scrutinizing the prices of fruit wines, a discernible diversity emerges, ranging from a few zlotys per bottle for the most affordable fruit wines (Stech, 2022) to several dozen zlotys per bottle for grape wines (Wina, 2023).

Drawing insights from the owner's recollections, it was established that the products of the analysed company were relatively of high quality. This evaluation aligns with broader considerations about the post-war Polish winemaking landscape, as elucidated in publicly available descriptions of Polish winemaking history (Iwańczyk, 2023):

"After the war, the wine industry flourished again. The first wine law was written in 1948 and a body controlling the correctness of production and quality standards was established, which was the United Fruit and Vegetable Industry. Thanks to these activities, Polish fruit wines and meads were once again gaining recognition among foreign customers, among others. in England, the United States, Australia, Canada and even Japan ."

The price range adequate for valuation purposes was finally set at PLN 15 to PLN 25 (2023). Based on these amounts, the replacement value of net assets (excluding intangible assets, investments and prepaid expenses) of the analysed company was set at the range of PLN 2.8 million to PLN 4.2 million (table 7).

Table 8. Estimated 2023 value of the analysed company

<table>
<tr><th>Itemized</th><th>1951</th><th>2023</th><th>Final value for 1951</th><th>Final value for 2023</th></tr>
<tr><td colspan="5">Ranges for floor valuation</td></tr>
<tr><td>Option 1
(CPI, valuation incl. liabilities towards the previous owner)</td><td>867 571,49 zł</td><td>1 169 376,75 zł</td><td rowspan="2">867 571,49 zł</td><td rowspan="2">3 429 534 zł</td></tr>
<tr><td>Option 2
(Salaries indexation, valuation incl. liabilities towards the previous owner)</td><td>323 706,64 zł</td><td>3 429 534 zł</td></tr>
<tr><td colspan="5">Ranges for ceiling valuation</td></tr>
<tr><td>Option 5
(15 zł/l, CPI)</td><td>2 075 471,28 zł</td><td>2 797 473 zł</td><td rowspan="4">3 103 758,58 zł</td><td rowspan="4">4 183 473 zł</td></tr>
<tr><td>Option 6
(25 zł/l, CPI)</td><td>3 103 758,58 zł</td><td>4 183 473 zł</td></tr>
<tr><td>Option 7
(15 zł/l, Salaries.)</td><td>264 047,71 zł</td><td>2 797 473 zł</td></tr>
<tr><td>Option 8
(25 zł/l, Salaries.)</td><td>394 869,39 zł</td><td>4 183 473 zł</td></tr>
</table>

Final value				
Final value (arithmetic mean)	-	-	1 985 665,04 zł	3 806 503,50 zł

Source: own study

Table 8 shows the final valuation range of the analysed company for the year 2023. Its value was estimated to be 3 806 503,50 PLN.

5. Conclusion

The valuation of compensation for nationalized enterprises from seven decades ago presents a formidable challenge, shaped by several critical factors:

1. Non-Free Market Context (1951): The prevailing economic conditions in 1951 Poland diverged from a free-market model, instead operating under a centrally controlled production system. Enterprises were mandated to adhere to specified production quotas designated by state authorities.
2. Delineation of Price Realities: A crucial distinction lies between market prices and official or state-set prices. Historical data from the PKO website underscores that, until 1956, the black market dollar rate was consistently five times higher than the official rate.
3. Foreign currency and Gold Acquisition Restrictions: Enterprises, including enterprise X, faced constraints on acquiring foreign currencies or gold during their operations, enforced under the threat of imprisonment.
4. Rational Valuation Assumptions: A pragmatic valuation approach was imperative. The upper limit for permissible valuations was set by determining the replacement value of material assets in an enterprise with comparable production potential within the contemporary economy. This approach mitigates potential irrationalities stemming from "mechanical" indexation with multipliers based on investment assets.
5. Incorporation of Political and Country Risk: The assessment included an examination of historical information and archival data concerning fruit wine producers in Krakow. This historical context provides insights into the political and country risks influencing the fate of such enterprises.

If in the analysed enterprise dominated real estate assets, the valuation would most involve determining their contemporary value. However, in cases which involve production property no longer used by modern technologies, valuation requires determining the modern replacement value of the organized entity allowing for similar production, as presented in this study.

Abstract

The publication describes a problem that often arises in court cases regarding the valuation of SME forcibly nationalized in the 1950s. Valuation of compensation to previous SME owners is an ongoing court debate in Poland. The authors proposed an approach that took into account the economic conditions at that time and complied with the principle of paying compensation for the actual losses incurred, and not for the potential losses that could be incurred as a result. At the same time, the publication analysed other similar judgments in cases regarding compensation for nationalized enterprises. The practical and scientific value of the publication lies in the fact that it addresses an existing practical problem and its solution.
Research Design & Methods: the paper presents a conceptual proposal of the SME valuation method in unique circumstances, complemented by a detailed case study illustrating the application of this valuation approach. Findings: When calculating the compensation for nationalization or other forms of expropriation courts use various methods of valuing net assets (fair market value, book value, recreation value) plus separately determine the value of intangibles, such as licenses, based on the discounted average profits from such assets for a reasonable period of time. If indexation was employed (for historical cost valuation), it used either average interest rates in the economy, the cost of capital of a company, or the cost of lost opportunities for a particular company. Using discounted cash flow valuation for the entire business was uncommon and even if it was included in the bilateral investment treaties (which were meant to protect investors from expropriation) it was considered by the tribunals as speculative and unreliable. Our approach proposes net asset value approach with the use of inflation or average salaries for indexation (to calculate current values of assets) and a combined approach of historical values if they were known at the moment of nationalization and modern estimates of values of remaining

assets (that belonged to the company but their value was not provided in the original documentation).
Implications & Recommendations: The analysis of historical compensation decisions and bilateral investment treaties suggests that the most popular approach to valuing a loss from expropriation is the fair market value approach and net assets approach with a separate valuation of significant intangible assets provided that they gave certainty of profits for the investor.
Contribution & Value Added: The practical and scientific value of the publication lies in the fact that it presents an existing practical problem of court calculation of compensations to owners of forcibly nationalized SMEs in Poland and its solution together with methodological framework that can be used in the future.

Keywords: *company valuation, nationalization, loss calculation.*

JEL codes: L26, H13, C52.

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