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## Contemporary Monopolies in the Polish Economy – the Case Study of PWPW

**JEL Classification:** A10; M20; M38

**Key words:** *monopoly; identification security; transactional security; PWPW; key interest of state security*

**Abstract:** *The paper presents the role of PWPW, as a company with some attributes of a natural monopoly, in contemporary Polish economy. It shows that commercial companies – performing special tasks which are necessary for the functioning of state and which concern identification as well as transactional security and at the same time take advantages of the economy of scale and range as a condition of their presence and development – have a logically justified place in the economy. They are a source of benefits for shareholders in the form of taxes, dividends and other economic benefits, as well as the value of the company itself. Moreover, they are creators of domestic employment and they enrich the national potential of technology. Also, such firms provide a right level of identification and transactional security, which influences the stability and reliability of legal and economic relations.*

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*The necessary conditions in order to realize the benefits coming from owning a company such as PWPW by the state are the company's business continuity, the stability of its domain of action and the financial stability. These conditions can be fulfilled through a certain partnership between the state and PWPW in the form of a legal monopoly or lasting and stable commercial contracts.*

## Introduction

The portfolio of companies controlled by the Treasury includes both entities that the state expects only to have their value maximised, as well as entities for which the expectations exceed the value of the maximisation postulate. These additional expectations pertain in particular to the company's securing of the state's key interests. The examples of such economic sectors include power engineering or oil industry, the state's key interests may include e.g. the country's energy security or stimulating the development of specific industries (e.g. shale gas extraction). The state's interest may be secured by using three tools, with each of them capable of being used independently:

- the Treasury's majority share in the given company,
- the so-called golden veto of the State Treasury resulting from the act dated to 18 March 2010 on the special rights of the minister competent for the Treasury matters and their performance in certain limited companies or groups of companies conducting activity in the power, oil or gaseous fuel sectors,
- other regulations imposing special duties of specific business entities or specific sectors of economy towards the state<sup>1</sup>.

The state may choose between the above-mentioned tools in such a way that a combination thereof ensure meeting the state's interests and goals. Trading the shares in such companies owned by the Treasury, as well as their (partial) privatisation are possible (and frequently desirable), but such actions should be correlated with adapting the other tools used for securing the state's interests to the performance of the goals and expectations designated thereby.

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<sup>1</sup> For example *the act dated 16 February 2007 on the oil, oil-based product and natural gas reserves and on the rules of conduct in case of a threat to the country's fuel security or interruptions on the oil market*, Polish Journal of Laws Dz.U. of 2007 no. 52 item 343, as amended; *the act dated 24 April 2009 on the investments in the liquefied natural gas regasification terminal in Świnoujście*, Polish Journal of Laws Dz.U. of 2009 no. 84 item 700, as amended.

The example discussed in this paper is Polska Wytwórnia Papierów Wartościowych S.A. (PWPW): a company wholly owned by the Treasury tasked with the production of, among other things, banknotes, documents and associated IT systems. Despite its undeniably important function for Poland from the point of view of its activity, the company's status is no different from any other limited company. It would seem that including PWPW in the list of companies material to state economy<sup>2</sup> has been the first step on the way to defining the state's expectations towards this entity. However, so far these expectations have been lacking in content, and therefore in the case of PWPW the model of investor relations encompassing active communication with the market and the investors' involvement in the building of the company's value has not been implemented (Dziawgo, 2006, pp. 307-308). It is difficult to find the justification for this state of affairs. It could be a result of the traditional view of state economy and the role of the individual sectors therein. Up until recently, the sectors associated with e.g. power engineering, extraction industry, telecommunication, transport, or defence were considered key from the point of view of state security, including economic security. However, the development of technology and civilisation has made it so that from the point of view of the state and its citizens the key processes also include those related to the IT and its uses, such as identification in a broad sense of the term, encompassing, among other things, assigning identity to the citizens via the relevant identification documents, authorisation and authentication of transactions, or maintenance and development of state registries. Examples of those activities are related not only to physical products, but also to IT solutions to an increasingly greater degree. These functions are used each day by both citizens and business entities in social life and in legal or economic transactions. The solutions used by a given country for the purposes of identification are a foundation of the contemporary economic and social relationships and activities.

### **Purpose of the paper and methodology**

The purpose of this paper is to present the role played by state-controlled monopolists in contemporary economy by using PWPW as an example. This is an issue which is highly important in relation to Poland, where the privatisation processes still have not been completed. Therefore, the re-

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<sup>2</sup> Regulation of the Council of Ministers *on defining state-owned enterprises and companies wholly-owned by the Treasury that are material to state economy* of 22 October 2010 (Polish Journal of Laws Dz.U. no. 212 item 1387).

search aspect translates into the practical aspect related to the state's economic policy, and especially the policy concerning business entities controlled by the Treasury. By specifically stressing the possibilities of utilising in practice the conclusions resulting from the research dedicated to the above-mentioned issue it has been decided that within the framework of the study's methodology the relevant literature and the case study of PWPW will be analysed. Cross-sectional studies of various business entities of this type, as well as different sectors of economy, are material to researching the role of contemporary monopolies in the economy. However, at the same time a more detailed opinion about the importance and role of such entities in the economy is provided by the case studies of individual companies. This is because such a type of study enables a detailed analysis of business entities and the circumstances of their operation. Furthermore, as indicated by Adamkiewicz-Drwiłło (2008, pp. 138-139), the role of administrative science is not only to describe reality, but also to propose solution to the problems and, by extension, to present examples of bad management or best practices. The conclusions drawn from such studies must not be generalised, but rather treated as a deeper justification for the general conclusions drawn from cross-sectional studies.

### **Good and bad monopolies**

The term "monopoly" does not create positive connotations for the contemporary man. Older readers can surely remember a range of inconveniences and terrible quality of the services offered by the sole telecommunication operator during the times of the People's Republic of Poland and during the early stages of the political transformation after 1989. Today, too, monopolists are not being favoured by either society or economists. The reader need not be reminded how many lawsuits and grassroots social initiatives are being filed against, for example, Microsoft Corporation (Armentano, 2007, pp. 37-50). After all, it should not come as a surprise. A monopoly, meaning a market in which there is only one supplier and many recipients who do not coordinate their actions, generates an unnecessary social loss and therefore it is not desirable. The monopolist sets the production and the prices at a level that will maximise its profits. It can use multiple strategies for this purpose, especially in the area of price differentiation. The power of a monopoly as defined by neo-classic economy leads to suboptimal allocation of resources and, consequently, a loss of social prosperity (Dietl, 2010, p. 54), especially when compared to the conditions on a perfectly competitive market. In a long term, perfect competition en-

tures that marginal costs and revenues are equalised, resulting in a specific level of production. A monopolist does not equalise its marginal costs with marginal revenues, because there is no motivation to reduce the costs. As a result, by reducing production and setting a higher price it generates additional profit with a loss for social prosperity.

However, when discussing monopolies, natural monopolies must not be excluded. They have been present for hundreds of years and they generate no negative phenomena associated with “artificial” monopolies. Smith mentioned them, even though he was not using the term “natural monopoly”: *Some natural productions require such a singularity of soil and situation, that all the land in a great country, which is fit for producing them, may not be sufficient to supply the effectual demand* (Smith, 2007, p. 73). Smith cited the French vineyards as an example. Even though Smith’s example has become largely obsolete, since, as a result of the development of agricultural sciences, food industry and transportation, French wines are facing strong competition not only from Italian or Spanish wines, but also American, Australian or South African ones, natural monopolies are still present in economy.

The term “natural monopoly” was probably used for the first time by Malthus (1815) who postulated that in certain situations, requiring a unique combination of production factors, monopolies are natural and necessary. Following this train of thought, Mill narrowed down the meaning of *natural* monopolies to the monopolies *created by circumstances, and not by law* (1965, vol. 1, p. 639). For Bastiat (1850), the difference between the natural and artificial monopolies was so basic that he called the people who could not see it blind and shallow. Successive generations of economists dedicated themselves to the subject of natural monopolies. Actually, it is still open for discussion today. Currently, natural monopolies are defined as markets in which a greater effectiveness is provided by having only one enterprise on the side of supply (e.g. Waterson, 1987, p. 61), with the consumers on the side of demand not coordinating their actions. In this case, effectiveness is frequently associated with the so-called subadditivity condition (Baumol, 1977, p. 809) in which the function of a natural monopoly’s costs will always generate costs that are lower than the sum of costs  $N$  of individual companies operating in such a market. In other words, a distinctive feature of a natural monopoly are significant economies of scale and high costs of entry which make the activity of a group of individual entities generate higher total costs than those generated by a single entity acting as a (natural) monopoly. Additional factors reinforcing the cost advantage of a natural monopoly could be the ownership of unique technology, indivisibility of specific production factors, or the effect of learning.

Natural monopolies occur both in Poland and in other countries. This is exemplified by the power (Polskie Sieci Elektroenergetyczne Operator S.A.) or gas (Operator Gazociągów Przesyłowych GAZ-SYSTEM S.A.) transmission lines. It is difficult to imagine a situation in which such lines, which are quite expensive to construct and maintain, are doubled by competitors operating on the same market. A monopoly and a possible geographical market division subordinate to the subadditivity condition are a natural solution. However, at the same time a field of operation opens for the state regulator that makes sure the (natural) monopolist does not abuse its position. This is because free market is not the panacea to all problems of the contemporary economy. Deviations from it are required in justified cases. As shown by Jakimowicz (2010, pp. 258-259) “studies (...) prove that market regulation is one of the most important challenges that contemporary economy must face.”

### **PWPW's domain of activity: support for identification and transactional processes**

PWPW's case is not one that can be classified easily. Currently, PWPW's domain of activity includes two primary areas: support for identification processes and support for transactional processes. The said domains of PWPW's activity comprise both traditional as well as electronic and IT security features. PWPW's mission is to have their products and services secure the reliability of transactional and identification processes. The said mission is realised through PWPW's ongoing activities. The production of personal ID blanks, passport booklets, driving licences, or vehicle registration cards is an example of the company's presence in the field of identification. However, at the same time the company integrates the traditional identification products with IT solutions, such as the Sigillum electronic signature. Modern personalisation technologies allow PWPW to provide the whole value chain of transportation documents. It must be stressed that PWPW's expertise includes not only perfectly-secured physical carriers of identification data, but also IT systems for reading and managing such data carriers and for transmitting data. The coupling of all those competencies in a single value chain contributing to the documents offered to PWPW's clients must be a problem for global IT companies that aspire to the role of state IT systems' integrators.

Apart from supporting identification processes PWPW remains an active participant in the transactional processes support market. Similar to the case discussed previously, the company's activity includes both transaction

carriers and services. PWPW manufactures banknotes, cheques, postage stamps, and bank cards, and it also develops its activities consisting in the authentication of transactional processes. An example of this is the undertaking carried out through its subsidiary Polskie ePłatności S.A., consisting in the creation of a network for approval, authorisation and billing of cash-free payments throughout Poland.

For the purposes of this paper the two above-mentioned market categories (support for identification processes and support for transactional processes) have been limited to the markets of two primary product categories: the document market along with the associated IT systems and the bank-note market.

### **Natural monopoly or monopsony**

PWPW displays certain features of a natural monopoly, but in some aspects it actually does not match this model. It is the only provider of this type of products and services in Poland, which proves that it is a monopoly. This monopoly is not guaranteed by any regulations (although such practice is used by some EU countries) and it is natural. No other business entity in Poland has developed such specific technological competencies related to physical and/or IT security features of documents and banknotes. On the one hand this is the effect of the company's long-term experience (it was established in 1919), while on the other it is the result of the ongoing development through introduction of successive innovations pertaining to both the documents' physical aspect, as well as the initiation and development of the IT technologies that ensure optimal functionality and security of the IT aspect of the products and services. The aspect related to the financial expenditures necessary to establish a company like PWPW is also important. Obtaining the funds required to "copy" PWPW is obviously possible (though quite difficult during a financial crisis), but it would lead to the violation of the effectiveness and subadditivity conditions which are distinctive for a natural monopoly. The demand for PWPW's key products and services results directly from the state's purchase orders related to the demographics, GDP growth, payment system policy, consumption structure etc.. It is impossible to create a rational, additional demand for banknotes, documents and the associated IT systems. As a result, additional domestic "competition" for PWPW would lead to increased production costs throughout the sector (diseconomies of scale) and, later, increased prices. An example that illustrates the above-mentioned risks very well is the story of the no longer existing company Drukarnia Skarbowa S.A. This company

acted at the time as PWPW's competitor in the field of document production, but it was unable to endure the competition and in 2004, while in terrible financial condition, it was acquired by PWPW.

Another effectiveness-impairing factor would be the limitation of the so-called *economies of scope*. The specific nature of enterprises such as PWPW (and its counterparts abroad) consists in skilful management of the production process of different products utilising similar manufacturing technologies and requiring the use of the same machines and employee competencies. Therefore, in a way it is standard for this type of companies to have a product portfolio including both banknotes and documents. Such measures ensure rational usage of the resources available to the company. Excluding one of the key products (banknotes or documents) disturbs the balance, leading to the loss of the economies of scope. Taking advantage of the economies of scope is characteristic of other manufacturers of banknotes and documents. Examples include the British de la Rue, German Giesecke & Devrient, French Oberthur or Note Printing Australia Ltd. owned by the Central Bank of Australia.

PWPW's natural monopoly is corroborated by the analysis of banknote and document purchase orders and production in other countries. It has become a general rule that large countries have their own enterprises responsible for manufacturing banknotes and/or documents. On the other hand, in smaller countries the purchase orders for banknotes and documents are fulfilled by foreign companies. This dichotomy concerning the supply of various countries with documents and banknotes results directly from the natural factors discussed that are present or absent in the individual countries, i.e. the demandable scale of production (resulting primarily from the number of citizens and inflation) and the technological competencies developed. Table 1 contains a list of EU member states sorted according to the number of citizens (from the highest to the lowest) together with the information about their manufacturers of banknotes and passports (as one of the material documents issued by the state to its citizens). In each case one of the following three categories has been used:

- domestic manufacturer,
- external manufacturer,
- collaboration: domestic and external manufacturers.

The following list shows that the lower the number of citizens, the lower the inclination to order and manufacture banknotes and documents domestically. This is especially clear in the case of Estonia, Cyprus, Luxembourg, and Malta. Due to the lack of natural conditions they failed to develop the entities specialised in the production of banknotes and documents, and the authorities and central banks place the orders with foreign manufacturers.



On the other hand, from among 10 of the EU countries with the greatest number of citizens 9 order passports from their local manufacturers (apart from The Netherlands), and 8 order banknotes from domestic manufacturers (apart from The Netherlands and Germany). In the case of Germany is should be stressed that the orders for the euro banknotes are placed by the Bundesbank under a tendering procedure.

**Table 1.** Banknote and passport manufacturers (domestic or external) for EU member states

No.	Country	Banknote producer	Passport producer
1	Germany	external	domestic
2	France	domestic	domestic
3	United Kingdom	domestic	domestic
4	Italy	domestic	domestic
5	Spain	domestic	domestic
6	Poland	domestic	domestic
7	Romania	domestic	domestic
8	The Netherlands	external	external
9	Portugal	domestic	domestic
10	Greece	domestic	domestic
11	Belgium	domestic	collaboration: domestic and external
12	The Czech Republic	domestic	domestic
13	Hungary	domestic	domestic
14	Sweden	domestic	external
15	Austria	domestic	domestic
16	Bulgaria	domestic	collaboration: domestic and external
17	Denmark	domestic	external
18	Slovakia	external	external
19	Finland	external	external

Table 1 Continued

No.	Country	Banknote producer	Passport producer
20	Ireland	domestic	collaboration: domestic and external
21	Croatia	external	domestic
22	Lithuania	external	collaboration: domestic and external
23	Latvia	external	external
24	Slovenia	external	domestic
25	Estonia	external	external
26	Cyprus	external	external
27	Luxembourg	external	external
28	Malta	external	external

Source: author's elaboration.

Therefore, the most important premise taken into account by a public administration when selecting the banknote and/or document manufacturer is the existence of domestic business entities capable of fulfilling the order in accordance with the ordering party's expectations. The presence of such entities is the result of natural causes related to the size of the individual countries. It is not a consequence of the decision currently made by the public authorities, because apart from the cases of legal monopoly the freedom of business activity enables anybody to establish a private enterprise and compete with state-controlled entities, too. The lack of new initiatives concerning the establishment of companies specialising in the production of banknotes and documents results from this natural monopoly existing in the countries in which objective circumstances (economies of scale and scope, the subadditivity condition) justify the status quo, the way it is in Poland.

PWPW displays a certain feature distinctive to natural monopolies, which, as shown above, is rational and beneficial for the society. On the domestic market PWPW is the only entity offering the complete package of products and services related to the identification and transactional security: banknotes, documents and associated IT systems. However, at the same time it addresses its primary activities to a specific group of clients consisting of the Polish government and local government administration and the National Bank of Poland. To a lesser degree PWPW's products and ser-

vices are dedicated to corporate clients and for export, which utilises the company's surplus production capacities. PWPW's primary group of clients is homogenous and it is not dispersed. It has a significant bargaining power in relationships with suppliers and it coordinates its activities within this framework. Allowing for PWPW's ownership structure factor, we are dealing to a large extent with the owner's and the client's identity. This situation limits the classic problems related to corporate supervision (significant stakeholder homogeneity), but at the same time it may trigger greater activeness, determination and effectiveness when fulfilling the company's strategic objectives, and it may also lead to shareholder value maximisation while respecting key relationships between stakeholders (Boehlke, 2004, p. 504).

Obviously, the situation discussed does not apply to relationships with foreign clients (e.g. production of banknotes or documents for export to countries whose size does not justify construction of their own production facilities) or clients other than domestic public administration (e.g. IT services), because the markets associated with those recipients are not a monopoly, either artificial or natural. A perfect example illustrating this issue could be the production of biometric passports for Lithuania or the contract with Ekstraklasa S.A. for the delivery of an IT system for the identification of fans in stadiums. In such areas PWPW adapts to the conditions of free competition.

It must be stressed that PWPW is a recognisable entity on foreign markets. The company's key products and services are present in more than 22 countries. In 2012 the value of PWPW's export, whose large scale development started in 2007, reached the level of approx. PLN 52 million. The company's strategic development plans for the coming years provide for further intensive growth and expansion of export sales. PWPW's activities in foreign markets constitute a perfect example of utilising a company's intellectual, technological and production potential, as well as effective functioning of the economies of scale and scope. It also shows the positive effects of the company's research and development activities, which allow it to introduce innovative, state-of-the-art identification and transactional products to the Polish and foreign markets. An essential condition to fulfil the ambitious export and innovation targets is the company's stable position in the country as far as the strategic projects executed for the Polish state are concerned.

The discussed structure of the demand aspect of PWPW's business in Poland is not a distinctive feature of a monopoly, or even a natural monopoly. In the classic example of a monopoly (including a natural monopoly) the clients are scattered and they cannot coordinate their activities and they

have no real influence (bargaining power) on the monopoly's behaviour or its price and supply conditions. Therefore, it is difficult to call PWPW a natural monopoly. If we are to use this term at all, then it would be more accurate to use the term "quasi-natural monopoly". The situation analysed, as far as its structure and the recipients' power are concerned, is more typical of a monopsony, i.e. a market in which there is only one client (central administration in this case). As a result, a mechanism safeguarding the country from a potential negative impact of a (natural) monopoly related to the production of banknotes, documents and associated IT system is created naturally (through the structure and type of the basic group of purchasers). Enterprises usually consider the information about their income structure with respect to their clients or client categories as business secret. This is the case also for PWPW. However, in the context of the discussed notion of monopsony, the most important information about this structure can be presented with a certain degree of generality. Therefore, in relation to the national document market and the associated IT systems the only client of PWPW is the Polish public administration (including but not limited to the Ministry of Transport, the Ministry of Construction and Maritime Economy, the Ministry of the Interior, the Ministry of Finance). On the other hand, as far as the national banknote market is concerned, the only ordering party is the National Bank of Poland. The orders fulfilled for these entities constitute a major part of the income generated by the company. The domestic market of banknotes, documents and associated IT systems is a market with only one client: the central administration. An analogous situation will be found in other countries, too. The nature of the products and services supplied by banknote and document manufacturers around the world is closely linked to state security and in general we cannot say that there is a global market for these types of products and services. The existing legal or natural monopolies in the individual countries constitute a (justified) hurdle against complete or even significant internationalisation of those markets. Foreign trade carried out by the manufacturers of banknotes and documents is in general only a complementary activity for their primary tasks carried out on domestic markets.

The state's strategic interests related to PWPW's activity are reinforced by the enterprise's ownership status (company wholly owned by the Treasury). The ordering party (central administration) commissions the production of documents to a specialised business entity (company) that is controlled by the state at the level of its general assembly and supervisory board. PWPW's unique product offering also justifies the significant role of the state in the area discussed.

PWPW's product portfolio is composed largely of quasi-public goods. They are not purely public goods, such as, for example, national defence or public safety, because they do not meet the following two conditions simultaneously: 1) not excluding anybody from the public good's consumption and 2) joint (additional) consumption without generating additional costs (Holcombe, 1997, p. 2). In the modern world it is difficult to imagine a citizen without documents or money, and therefore the first condition is met. On the other hand it is difficult to imagine the ways of joint consumption of an identification document or money, because their distributions are strictly regulated. Furthermore, it should be observed that there is a supernatural demand for documents and legal tenders resulting from criminal intent and the desire to assume someone else's identity. Reference books suggest that the quasi-public goods market may not be fully reliable, which justifies certain intervention or regulation by the state (e.g. Borkowska 2009, p. 28).

### **Regulatory capabilities – theory and practice**

Up until the 1960s the negative effects of classic monopolies (both artificial and natural ones) were prevented through state regulation and nationalisation of monopolies. However, in many cases this practice failed. Currently, deregulatory alternatives are being sought for this type of market situations. Reference books indicate auctions for the right to conduct activity in a monopoly market, the concept of contestable markets, or the price regulation through e.g. comparative competition. However, these methods pertain to classic monopolies and classic ineffectiveness as postulated by Pareto. As shown above, problems of this type do not occur in the case of PWPW, because the structure and provenance of its recipients, as well as corporate supervision, eliminate such threats effectively. Therefore, in the case of PWPW a combination of free market properties with state regulations seems the most correct. In practice such a solution should consist in ensuring the deliveries of goods requiring the benefits of scale and scope, as well as special supervision from the point of view of production security (banknotes, documents and associated IT solutions) by one state-owned company together with a simultaneous free competition in the areas of other products and services.

The above postulate is no different from the solutions applied by other countries. Under the EU law this issue is regulated by article 14 of Directive 2004/18/EC that excludes *secret contracts and contracts requiring special security measures* from the harmonised rules for awarding public

procurement contracts. It can be said with full certainty that the procurements related to identification documents satisfy the requirements referred to in this paper. Article 14 has been implemented in national laws: in the case of Poland it is article 4 of the act on public procurements whose item 5) explicitly refers to “procurements designated *secret* or *top secret* under the regulations on the protection of non-public information or if required by state security or public safety.” Furthermore, pursuant to article 4b item 1 point 2) of the public procurement law the act’s provisions do not apply, among other things, to the procurements pertaining to “sensitive services”, i.e. “the services related to security that use non-public information, that require their use or that include them,” because in their case the application of the act’s provisions would obligate the ordering party to reveal information whose disclosure is contrary to the interest of state security.

The above-mentioned EU regulations are used in practice by such countries as Austria, France, Spain or Portugal. Under the act on the national printing house (*Staatsdruckereigesetz*) the Austrian company OeSD is the exclusive manufacturer of securities used by the Austrian administration and other government bodies. This exclusive right is limited only in situations when OeSD has no “actual or legal” capabilities to fulfil the order for a “reasonable” price or if another company offers the given product with identical quality, under the same terms, but at a better price. Undoubtedly, the possibility that an order will be placed with another entity is a disciplining factor for OeSD’s pricing policy and cost control. During a parliamentary debate concerning the bill on the regulation of OeSD’s activities it was stressed that this company should be awarded a monopoly with respect to the products material to state interests, i.e. the products requiring secrecy and security (Bundesrat, 1981, p. 15 329). In this framework the monopoly was described as “indisputable” (p. 15 330). On the other hand, pursuant to the act dated 31 December 1993 the Treasury-owned French joint stock company *Imprimerie Nationale* is the sole supplier of secret or secured documents, especially personal IDs, passports, visas etc. Pursuant to Decree 1114/1999 dated 25 July 1999 the state-controlled company FNMT-RCM is a monopolist in Spain as far as the use of printing machines designed for printing banknotes and other secured prints is concerned.

An analysis of other EU member states that, due to their size, have domestic enterprises producing documents and printing banknotes clearly shows that it is especially the identification security that is the deciding factor for placing orders with those entities, even if there are no regulations in force guaranteeing such model of conduct. In the case of Germany the entity responsible for the production and personalisation of identification documents (passports, personal IDs, transport documents) as well as the

associated IT systems is the wholly-owned by the state Bundesdruckerei. The German Ministry of the Interior's choice when selecting the contractor to produce e.g. the personal IDs currently issued in Germany was and is obvious. Due to the previously-mentioned issues of state security this order was placed with Bundesdruckerei. Worth quoting here is the statement of Hans-Peter Uhl, member of the Bundestag, who in 2008 postulated on behalf of *de facto* all political forces in the German government that "the production of our (German) documents must remain in German hands" (Doll & Frühbrodt, 2008).

However, it must be stressed that in general the presence of "national" document and banknote printers in Europe, irrespective of their ownership status, is a function of the country's size. A specific population level combined with the economic and technological development of the given country justifies having a domestic entity responsible for carrying out the activity discussed. Such entities not only transfer taxes and dividends to the shareholding state, but also act as a creator of employment, enrich the country's technological potential and act as a price anchor of sorts (Ramamurti, 1987).

In Poland there are currently no regulations indicating PWPW as the entity responsible for supplying identification documents and banknotes. The only exception to this was a clause in the act dated to 29 July 2005 on the digital tachograph system stating that PWPW would be the company issuing tachograph cards for a period of 7 years. There are no analogous regulatory provisions with respect to other documents or banknotes. In practice, due to the conditions indicated in this paper, the production of documents and banknotes is carried out by PWPW, but it is encumbered by the risk generated by such legal circumstances. The case of the new personal IDs' production (the PL.ID project) clearly showed that PWPW's foreign competitors and international IT integrators are doing their best to eliminate PWPW from the document production market. Entrusting the production of Polish documents to such entities would strike at the strategic and economic interests of Poland.

### **PWPW's importance for state security**

No national regulations on PWPW's position concerning its presence on the Polish banknote and document market, against a constant need to secure strategic interests of the state, cause the risk of a lack of going concern. This risk may weaken the state's capacity to ensure right and secure processes connected with identification and to carry out associated strategic

projects. This entails the risk of identification and transaction safety, that is the risk that the state will be hampered in its functions and will incur financial losses resulting from insufficient protection of document and money production. The following factors influence this risk greatly:

- the level of security and resistance of detailed specification (that is classified information) of documents and money,
- the level of security of personal data,
- the level of security connected with transportation of money, documents or their semi-products,
- possibilities of developing own technologies and know how in production of documents and money.

As regards the first risk group, we may observe that the production of ID documents by a national State-owned entity allows using additional tools of exerting control over the manufacturer, apart from contractual provisions. The State is entitled to ongoing control in the areas of ownership and capital, allowing constant monitoring of the company's situation and pre-emptive reaction to any possible threats. Additionally, state security agencies (for PWPW – ABW) are periodically auditing the company's capacity to process classified data, in particular the specifications of ID documents and banknotes. In case of entrusting their production to a foreign entity or a domestic private entity a possibility of influencing the ownership relationships of the manufacturer is eliminated. A situation is then possible where the document manufacturer is taken over by another entity enjoying a lesser level of trust from Polish authorities. There are also risks of results of any foreign or private bankruptcy, connected among others with a need to provide a substitute supplier immediately and to secure the hosted data. In an extreme case this situation may lead to an illegal production of blank documents and banknotes without the ordering country knowing about it. Such documents may then be used both by special services of other countries and by the organized crime.

Personal data should be particularly well protected, as they concern all citizens for whom the personalized documents are prepared. The security of personal data is threatened by multiple factors, like unauthorized access, processing personal data with violations of regulations, change, loss, damage or destruction of such data. Therefore a central processing facility is postulated (the fewer data processing centres, the lesser the threats) as well as an inclusion of personalization process in the document production process (Goc, 2010, p. 6-7).

The third group of risk factors influencing identity and transaction safety risk is the transportation issues. In case of cross-border transport a risk of theft or losing some documents (blank ones) is higher than in case of do-



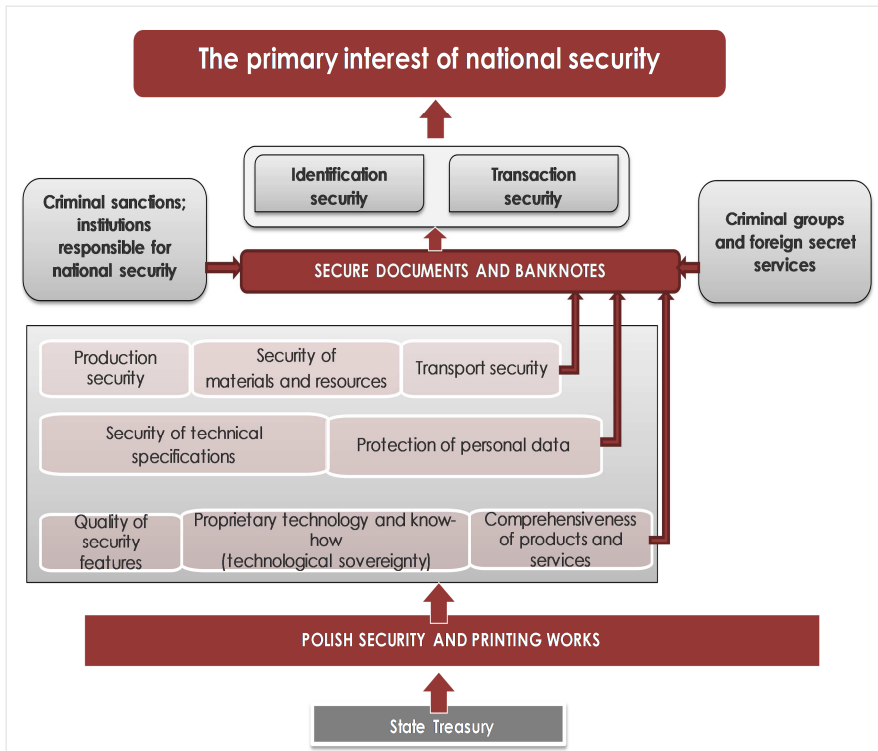
mestic transport or intra-city transport. Consequences of a loss or a theft of documents (blank documents) may be very serious and may even lead to a complete overhaul of the document, as it happened in the UK in 2010 for car registration documents.

The fourth group of risk factors involves cutting a given country off from modern technologies and know-how on document and banknote production. Placing orders for documents or banknotes at foreign or domestic private entities may lead to a technological dependency of a given country on foreign entities.

All the above risk factors for identification and transaction risk may lead to problems in functioning of the state and to financial losses through using documents (blank documents) gained in an unauthorised way, or money or counterfeited money. Such criminal activities may disturb the market. Crime leads to losses both in finances of entities suffering from it, and in countries' GDP (Lewandowski, 2004, p. 624). Oversight of the payment system by central banks covers in broad understanding also payment instruments and technical infrastructure (Iwańczuk, 2011, p. 51), that means also a secure system of supplying the central banks with adequately secured money before its issue, Violation of this element may weaken financial stability, influencing financial markets. The above risks influence the basic safety of a country. Scheme 1 shows the factors influencing the said risks.

Due to a specific character of the company's activities related to the safety of the state, citizens and the business transactions what matters particularly is the guarantee that its products, services, manufacturing processes and auxiliary processes meet adequate safety criteria. In an entity of that kind there cannot be any room for irregularities and mistakes connected with incorrect choice of materials at the design stage, securing the product stage, information about the product or for irregularities connected with registering quantities used. PWPW boasts industrial security certificates issued by ABW or the international INTERGRAF certificate and there are no irregularities that can and do take place in companies with less rigorous procedures and security systems. We may also remember here press articles informing that ABW shares with the prime minister its major reservations and fears regarding the tender for the new Polish ID card (PL.ID), which would generate a risk of acquiring strategic Polish information by foreign entities (and foreign special services). Therefore in the countries like Germany or France the manufacturing of most important documents and accompanying IT systems is entrusted to domestic companies.

**Scheme 1.** Identity and transaction safety against the basic safety interest of a country



Source: author's elaboration.

### Creation of technological potential

A prerequisite of efficient implementation of strategic projects of a state, supporting transaction and identification processes, is the technological potential and innovativeness of the national manufacturer of money and documents. This potential allows to continue technological progress ensuring that PWPW's strategic products would fulfil their tasks in the area of national security, safety of citizens and markets, as well as legal and business transactions. PWPW's technological potential is best observed in the following areas:

- the company's scope of activity and the scope of activity of its affiliated entities (the area of activity),
- new and modernized products and services and their securing,

- R&D cooperation with academic centres and other companies.
- The scope of PWPW's activity comprises products and services ensuring credibility of transactions and identification. This definition allows for flexible approach to products and services offered by PWPW, as it does not list certain products (or types of products), but functions to be fulfilled by such products. Therefore the expansion of the company is not limited to a given technology or a given product or service. An example of such expansion is the presence of PWPW in the area of electronic payments. Moneys issued by the National Bank of Poland are still a significant player in transactions, but the role of electronic payments is on the increase, including those made through payment cards. PWPW Capital Group portfolio encompasses also Visa and MasterCard payment cards, personalization of these cards and, through a subsidiary company called Polskie ePłatności S.A. – the authorization of POS electronic payments and their settlement. Yet another example of creation of technological potential of the company basing on new technologies is the development of IT systems and combining these activities with document manufacturing.

Modernization of existing products, designing brand new products and physical, electronic or IT security devices is being constantly performed at PWPW. R&D work covers all areas of manufacturing and services of the company. A presentation of the constantly developing technological potential of PWPW is not possible within the confines of this work, several examples of remarkable achievements in this area must, however, be mentioned. Technological solutions prepared recently were of key importance concerning supplementing value chains of the company and concerned both banknotes and ID products. Examples can include PWPW's own inventions and technologies concerning:

- Transparent Laser Engraving, TLE;
- Optically variable element (first level security device imprinted as pictures or graphically variable element depending on viewing angle);
- PCP (Polycarbonate Colour Personalisation; a possibility of imprinting a colour photo on one of the inside layers of a polycarbonate card, and the closing it during the production process in the permanent structure of the card);
- Creating a rigid personalization page for passports together with a unique way of integrating this page with the booklet;
- Programming cards and electronic documents allowing secure verified signature through a qualified certificate (SmartApp products);

- Including a personalized non-flammable element into an ID card (ExtremeID);
- Anti-bacterial paper for banknote production with antiseptic qualities;
- Anti-soiling paper with increased soiling resistance.

The above examples of PWPW S.A.'s innovations are used in products sold in Poland and abroad. The company cooperates with academic institutions for its R&D. A good example may be here the GRAFINKS project, involving graphene inks and pastes to print conductors on polymer bases, performed in cooperation with Warsaw Technical University and the Institute of Electronic Material Technology

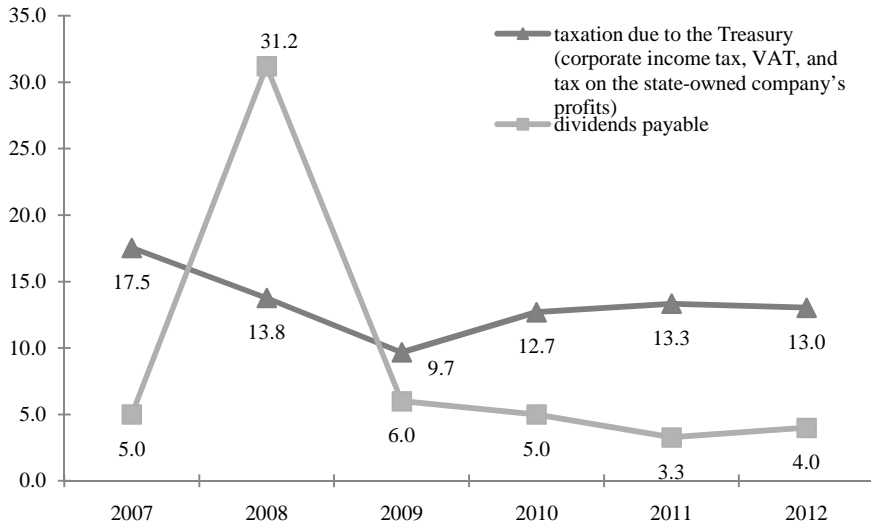
### **Fiscal functions of PWPW**

The share of the State Treasury in PWPW also brings about economic profits (apart from regulatory benefits). PWPW's finances have for many years been very satisfactory. Together with the company's assets, including its goodwill, know-how, knowledge and expertise, they create value for the State Treasury, both in long and in short term, expressed in dividends, high profit pay-outs and taxes. The amount of financial transfers from PWPW to the state budget for income tax, VAT, profit pay-outs and divided was more than 1.3 billion PLN for 2007-2012. This amount places PWPW among the companies bringing the highest revenue to the state budget in this period. The company is an important element of budgetary income. It is even more so as the company does not pursue aggressive tax optimisation schemes. Apart from the fiscal function, resulting from significant financial potential of PWPW, the job creation function is also important. PWPW also supports growth in economically weaker regions of Poland. A decision to conduct PWPW's activity in Poland results in job creation. Supporting real economy and employment is of great importance to the economic stability of Poland. PWPW directly employs more than 1800 people, but indirect employment, taking into account employment at PWPW's suppliers and economic partners, is much higher. Despite its headquarters being situated in Warsaw, the company notices and uses regional potential in weaker regions, like Podkarpacie. There the subsidiary, Polskie ePłatności S.A., is located in the special economic zone.

The aspect of economic benefit the state treasury has from PWPW, including taxes, dividends, profit pay-outs (see Figure 1) must be taken into account when the state places orders with PWPW. These benefits namely decrease the real cost (the price paid by the state) of banknotes, documents or IT systems ordered from PWPW. Also employment may be one such

benefit. In case orders are placed with other entities, in particular PWPW's foreign competitors, such a "discount" is granted to other countries – the shareholders of foreign competitors. Economic benefits to the state stemming from the existence of a national manufacturer of banknotes and documents need to be taken into account particularly when confronting domestic prices with prices offered by foreign competitors of PWPW, usually applying competition-eliminating pricing in their export activities. (Waniowski, 2003, p. 174).

**Figure 1.** Selected financial transfers from PWPW to the State Treasury[PLN millions]



Source: author's elaboration.

### Strategic partnership with the state

Bearing in mind on one hand the need to ensure economic efficiency of PWPW's activities, on the other the subordinate function of the company towards the Polish state, materializing through the postulate of decreasing transaction and identification risk, and supplying goods and services to the most important state institutions and concerning all citizens, a creation of coherent long-term policy of the state towards PWPW is very much justi-

fied. This policy should be based on concepts of strategic partnership between the state and PWPW and combine at least three principal pillars: 1) business continuity, 2) area of business activity and 3) finances. A strategic partnership of this type can become a legal monopoly for PWPW or long-term trade contracts.

The first pillar of the expected policy of the state towards PWPW revolves around securing its business continuity. At present, the risks related to business continuity are substantial. The company does not have a guarantee by law of being the sole manufacturer of state documents and banknotes, or of being an entity responsible in terms of production and services for ensuring credibility of transaction and identification processes in relation to tasks imposed by the state. Despite its mission of strategic importance from the point of view of the state, PWPW must fight for state orders with foreign entities. Granting a special status to PWPW in connection with its tasks, like that of an entity responsible for manufacturing Polish ID documents and banknotes, together with exclusivity in that respect would allow, like in the countries stated above, to minimize risks of business continuity and of implementation of strategic state projects in identification and transaction. Taking into account the market stance of PWPW and its present shareholding structure, such a status would not violate market principles. As shown above, in the special case of PWPW we do not have negative economic effects of a natural quasi-monopoly (as price increases or production limits), but we do have economies of scale and scope and state security. A special status granted to PWPW would be a material and real expression of the term „a company with special importance to the national economy”. Consequently, long-terms plans for the company would be possible, taking into account the most important stakeholders of PWPW, namely its owner and central governmental bodies, as well as the National Bank of Poland. Moreover, a declaration of current and future needs, as well as plans and ways of development of most important PWPW clients would allow a more precise definition of company's goals and to prepare for its tasks in the optimum way.

A risk of taking over document and money production by one of key foreign competitors not only endangers the state security, but also its economic interest. It may result in the state being dependent on foreign, transnational entities, which may not only engage in price setting, but also consolidate its assets creating a global monopoly or duopoly. In such a case, negative consequences of the (artificial) monopoly would be very profound, and there would be no possibility of re-creating a national entity responsible for this very specific production, requiring an unique set of skills and abilities.

PWPW's area of business activity is the support of identification and transaction processes. However, some spots in this area are simultaneously occupied by State Treasury-controlled companies, or by central or local government units and their subordinate institutions. Overlapping of competences of PWPW and other units in this particular area, namely ensuring credibility of transactions and identification leads to the lack of optimum use of resources. The upkeep of separate infrastructures may lead to economic inefficiencies, and result in suboptimum product quality. Examples of such overlapping include personalisation of vital statistics documents or of documents in government offices. It needs to be pointed out that these activities do not belong to the core business of such institutions, they are always auxiliary. The asset consolidation for state-controlled entities in the field of supporting transactions and identifications and subordinating them to market principles would result in greater economic sense of their use and their better management. Therefore certain areas of manufacturing and service activity performed by the state need to be pointed out. Those areas may successfully (with benefits to the state) be performed by PWPW.

An example for positive effect of such consolidation is placing with PWPW not only manufacturing of all transport-related documents, like driving licence or registration document, but also of their personalization. This generates economic benefits, but also increase the security of these documents thanks to combining their manufacturing and personalization and limits the number of people and entities with access to personal data bases. As a result of specialisation of document-manufacturing entities, the centralized personalization results in higher than in local solution quality of personalisation techniques, as they require high technological skills, equipment and IT solutions (Ombelli & Knopjes, 2008, p. 122). In experts' opinion the centralized personalization as an element of the manufacturing process significantly increases the level of document security (Goc, 2010, pp. 6-7).

The discussed policy in relation to PWPW should allow the company to take over these areas, and additionally to define a domain of supporting transaction and identification processes, indicating PWPW as a specialised entity performing tasks related thereto. These are striking examples of increasing the economies of scale and scope. What is the point of maintaining manufacturing entities within the central and local government structures. The Act on public finances of 2009 removed ancillary (budgetary) enterprise and budgetary enterprises in central administration as entities economically ineffective. A part of activity of these enterprises is still anchored in public administration, under different name. It seems that the time is right to continue activities started by the 2009 Act. The Minister of

the State Treasury shares that view, albeit in relation to companies, as in the Privatization Plan for 2012-2013 there are provisions stating the need to organize better the ownership structure of companies strategically important for the state, to consolidate companies and create capital groups with strong and competitive position on the market. The ideas must however be changes in solid legal and formal solutions.

Finances are the third pillar of the state policy towards PWPW, covering the owner's expectations concerning financial goals, maximizing value for the owner and questions concerning the structure of capital and shareholding. Financial goals allow a simplified verification of completion of basic goal of any enterprise, namely maximization of value. They are a measure of value for shareholders and, more generally, stakeholders. The value for shareholders is usually measured in the shareholder income, either frozen in the company value, or in the current income from dividends or share sale. In PWPW dividends play a major role. They influence strategic choices of the company regarding investment activity, especially in new economic areas. Uncertainty occurring every year concerning the amount of profit (or reserve capital) for the owner leads to the impossibility of planning long-term developments and investments. A risk of dividend drainage of the company may result in abandoning projects generating high value for the owner, but requiring investment outlays. A long-term statement from the owner concerning expectations on dividend level would set thresholds for developments and investments of the company. Creating dividend policy one has to bear in mind that the profit generated in the company, usually acquired by the owner, is only one of the three forms of maximizing shareholder value. The dividend cannot be a tool to lower the company's value, which may happen with dividend overburden and when subjugating the dividend policy to the present financial needs of the state.

The question of PWPW holding enough capital to finance investments is also connected with indicating sources of this capital. Currently they are bank loans and retained profit. A potential new source of capital would be share issue for new investors, leading to a privatization of PWPW. From the point of view of development and investment plans of the company the knowledge about the future composition of shareholders and any possible income from new share emission is of crucial importance. Like the dividend policy, long-term decisions on ownership character of PWPW would indicate the areas for investments and development. A possible sale of an interest by the current owner does not directly translate into the investment and development policy of the company. (it is owner's income on shares), but, through a choice of a strategic investor other than the State Treasury – would influence the entire business of the company, its future and ability



to perform tasks it is given. Thinking about any possible changes in ownership of PWPW (and other companies) one has to bear in mind the goal of such an undertaking for the owner, the State Treasury. A risk of transferring production abroad, to German or French factories struggling with overcapacity cannot be overlooked here. Also the risks of technological dependency from a foreign supplier, or the aforementioned risks of state and citizen security and the security of their data (identification and transaction risks) must be analysed.

### **Conclusions**

The present paper, based on the PWPW case study, leads to the conclusion that in the area relating to state security and protection of national strategic interests it is justified to keep in the State Treasury portfolio companies providing goods and services necessary to keep the said security. At the same time natural monopoly of such companies does not constitute a negative premise for an assessment of their functioning in the economy. The PWPW analysis have allowed to indicated a number of beneficial functions performed by that entity, that is first of all ensuring identification and transaction security, ensuring substantial financial benefits to the State Treasury and creation of national innovative potential. These special attributes place PWPW among the State Treasury-controlled companies with significant own potential and major importance to the national economy. The State Treasury deciding to keep such entities in its portfolio should however create a favourable environment of legal and factual conditions, facilitating their further growth and optimum usage.

The example of PWPW presented herein shows that the State Treasury interest in shareholding of nationally strategic companies does not necessarily hampers their development, and companies controlled by the state may be economically efficient organizations, bringing expected rates of return and ensuring fulfilment of national strategic interests.

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