Labour market policy in OECD countries – selected aspects

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Abstract

The goal of the paper was to evaluate OECD countries in terms of labour market policy, and to create a measure allowing to divide the analysed countries according to public spending on labour market policy. Dealing with crises caused by exogenous and endogenous factors mainly consists in activating macroeconomic policy instruments, which requires a deeper analysis. One of the objectives of macroeconomic policy is full employment, pursued in particular through labour market policies – and this aspect of the state's activities is presented extensively in the paper. First, on the basis of the OECD database, an analysis was made of the amount of funds spent on labour market policy: active and passive, measured as the percentage of the GDP of a given country. Secondly, based on the TOPSIS method and the CRITIC method, a synthetic measure with regard to public spending on labour market policy was created. These methods enabled to group the countries according to the number of these measures as well as in terms of the importance of labour market policy within macroeconomic policy. Thus countries were assigned to the labour market policy models analysed and presented in the earlier literature.

Research method: literature analysis (OECD reports), analysis of statistical data from the OECD database with the use of descriptive statistics methods, logical inference, analysis of cause-effect relationships, the Technique for Order Preference by Similarity to an Ideal Solution (TOPSIS) method, the Criteria Importance Through Intercriteria Correlation (CRITIC) method.

Hypotheses: OECD countries are diversified in terms of the labour market policy (measured as % of GDP); an active labour market policy plays a more important role in OECD countries than a passive one; the assignment of countries to the labour market policy models discussed earlier in the literature has changed.

Results: The analysis showed that the examined OECD countries were diversified in terms of labour market policy, as they focused on different instruments of this policy. However, the level of public spending on labour market policy increased in most countries in the period 2007-2019. Based on the employed methods, the author divided the OECD countries into four groups in terms of the role of labour market policy, and stated that in some OECD countries (e.g. Scandinavia), the policy on labour market (LMP) corresponded to the classification of models of LMP in the literature. Other OECD countries represented different models of LMP and different values of a synthetic measure and, in their case, this study did not confirm compliance with the theoretical models, however this could have resulted from the specification of the research or the change in the specific nature of labour market policy in these countries.

Value added: The literature offered varied typologies of labour market policy, most often derived from the models of implemented economic and social policy. This study contributes to the literature by investigating empirically the selected OECD countries in terms of labour market policy, and also compared the results with existing models of labour market policy in the literature.

Keywords: labour market, labour market policy (LMP), OECD countries, economic policy

1. Introduction

Labour market policy is one of the most relevant policy areas because of the effects that it can have on employees, employers, government and the state (Vishnevskaya, 2022). Its importance grew during the COVID-19 pandemic (Costa Dias et al., 2020) since many employees and employers anticipated support from the state. Recent studies indicate that start-up incentives and intervention works have the most effective impact on employment, together with the supply-oriented instruments of the labour market policies, especially vocational training courses and job placements (Wiśniewski, 2022). Although active labour market policy is addressed as the main instrument to improve employment possibilities in the era of the pandemic, studies showed that active instruments do not always support the reduction of unemployment, especially regarding young people (Caliendo and Schmidl, 2016; Rotar, 2022; Cvecic and Sokolic 2017). These findings indicate that labour market policy is a very important factor shaping the state's policy and the welfare of the society, moreover its importance is increasing with time.

The study aimed to evaluate the OECD countries in terms of labour market policy, and to create a measure allowing to divide the analysed countries according to public spending on labour market policy. The empirical analysis was conducted for OECD countries, diversified in terms of the role of labour market policy in general, the role the government plays, and the kind of active and passive labour market policy instruments which are implemented. The empirical analysis was conducted for the period 2007-2019 and is based on the data collected from the OECD database.

The analysis indicated that OECD countries are diversified in terms of labour market policy. Both labour market policy and the share of ALMP (active labour market policy) were changing in these countries over time, and the analysis also suggested that the countries adopted different labour market policy instruments. However, the level of public spending on labour market policy increased in most countries in the period 2007-2019. This implies that their response countries to the global macroeconomic situation was largely similar, although it also depended on the labour market situation in the given country. Based on the results, it was also concluded that in some OECD countries (e.g. Scandinavian ones), the labour market policies were comparable with the classification of LMP models in the literature, while others (e.g. New Zealand) presented different models of LMP and a different value of

synthetic measure. In the latter case, this study did not confirm compliance with the theoretical models. However, this could have resulted from the specific nature of the research, or from changes in the conditions of labour market policy in these countries.

The paper is organised as follows. The first section presents the theoretical findings on labour market policy models. The second section discusses the concept of labour market policy and the models of LMP. The third section describes the data and the methodology applied. The fourth section presents labour market policy across the examined OECD countries in 2007-2019. The fifth section contains the empirical results of the TOPSIS and the CRITIC method, followed by a discussion and conclusions.

2.   Literature review – the concept of labour market policy (LMP) and LMP models

Labour market policy (LMP) is marked by three main objectives. According to Wiśniewski, the implementation of the so-called employment objective is to reduce the size of unemployment, and of the structural objective – to increase the productivity of the labour force. The implementation of the third, more social objective, is to provide financial security for people affected by redundancies and to adapt the unemployed who have particular difficulties in the labour market (Wiśniewski, 1999, p. 20).

The main goal of labour market policy is to reduce unemployment, achieved with the help of passive and active labour market policy instruments. The passive labour market policy (PLMP) is connected with a system of benefits for the unemployed, based on the insurance system. However, there is also a strong efficiency case for active manpower policies designed to enhance the employability of unemployed people (Calmfors, 1995). These should include targeted adult training, quality placement services, recruitment subsidies for hard-to-place people, and (as a last resort) guaranteed temporary employment to people unemployed over a year. Without active manpower policies, harsh benefit regimes have an undesirable distributional effect (Layard et al., 2005, p. 509).

Although the state authorities are responsible for the implementation of labour market policy, one can also see the influence of integration organizations on the goals and effectiveness of this policy (Crespo, Simoes and Pinto, 2017, p. 17; see also Armingeon, 2007).

The subject literature offers numerous typologies of labour market policy, mostly derived from the models of implemented economic and social policy. Their differentiation results from different traditions, cultural and economic conditions existing in different countries, and a set of different objectives and instruments used in the implementation of particular labour market policies (Frączek, 2015, p. 50).

Bonoli (2010) formulated the hypothesis that the countries where pressure to develop new policies emerged relatively earlier (in the 1970s), can more easily set up comprehensive systems of active market policies because spending on this new policy does not face strong competition (yet) from expenditure on old age pensions (Bonoli, 2007; Fargion, 2000). In contrast, the countries where the pressures appeared first in the 1990s or in the 2000s face considerably bigger difficulties, because for a large number of voters the key budgetary priority is the preservation of the current generous pension system rather than the expansion of these services. This explains the divergence between the Nordic countries on the one hand, and continental and Southern Europe on the other (Bonoli, 2010, p. 9).

Table 1 presents labour market policy models in the context of social and economic policy models. As can be seen, these models are also connected with the widely described and distinguished models of market economies, and the features of economic systems somehow determine the type of the labour market policy pursued. This can be clearly evidenced by the scale of expenditure incurred in individual countries on labour market policy, i.e.– an active and passive variant of it.

A similar approach was presented by Karlson, Lindberg (2012) and Rollnik-Sadowska (2014), who grouped the countries as shown in Table 1.

Table 1. Models of labour market policy in the doctrine of social policy

Specification	Unemployment benefit system	Active labour market policy	Labour market policy objectives
Scandinavian (Nordic) – Denmark, Finland, Sweden, Norway	A generous system of support for the unemployed in terms of both the number of benefits and the time of their payment	The basic solution - high expenditure on ALMP	Integration, full employment, equality, Keynesian interventionism
Corporate (Continental) – France, Germany, Belgium, Austria, Japan	Variable, adjustable, generally generous	Relatively important, high expenditure on ALMP.	Mixed model; high protection of the employed, wide range of unemployment protection; high participation of social partners in politics; use of the third sector of nongovernmental organizations
Mediterranean (Latin) – Italy, Spain, Greece, Portugal	Less developed (generous benefit system in Portugal).	Low coverage, low expenditure on ALMP	Avoids the use of the social security system; passive system, emphasis on the society
Liberal (Anglo-Saxon) – Ireland, United Kingdom, United States, Switzerland, Australia, Canada, New Zealand	Weak, short support period and low level of benefits	Very low expenditure on ALMP	Targeted at people excluded from the labour market; support for private sector development, liberalism, reduction of interference in the market mechanism

Source: Nagel and Smandek, 2010, p. 39.

3. Data and methodology

As mentioned earlier, the purpose of the paper was to evaluate OECD countries in terms of the labour market policy, and to create a measure allowing to divide the analysed countries according to public spending on labour market policy. Based on the literature review, the author formulated the following hypotheses:

H1: OECD countries are diversified in terms of labour market policy (measured as a percentage of GDP).
H2: An active labour market policy plays a more important role in OECD countries than a passive one.
H3: The assignment of countries to the labour market policy models discussed earlier in the literature has changed.

In the second step, a set of indicators that measure labour market policy (including active and passive instruments) was collected (see Table 2). For the purposes of this study, the author created a novel panel database including data on the active and passive labour market policy spending in OECD countries in the period 2007-2019, using data from the OECD database. This ensured that the collected data were comparable and the analysis was consistent. The starting point of the analysis was 2007 when the financial crisis broke out. The author believes that the analysis of the situation in the labour markets in the OECD countries during the financial crisis may be helpful for the study of the labour market in the post-COVID reality. In consequence, the trends of labour market policy observed during the financial crisis were similar to those after the COVID-19 pandemic.

This analysis included different countries (marked by various levels of their GDP and public expenditure). Consequently, to ensure a realistic measure of the labour market policy intensity, it was decided to include public spending on the labour market as a percentage of GDP. According to the OECD, public spending on the labour market includes: public employment services and administration, training, employment incentives, sheltered and supported employment and rehabilitation, direct job creation, start-up incentives, out-of-work income maintenance and support, and early retirement, where the last two are the instruments of a passive labour market policy

(the others are instruments of an active labour market policy). The advantage of these data is that they are based on the information about individual labour market programmes appearing in the state accounts, state budgets and in the annual reports of the entities that implement these programmes (OECD, 2022). Table 2 presents a brief description and weights of the analysed indicators. The estimated weights indicate that ALMP plays a more important role in OECD countries than PLMP – which supports the second hypothesis. To be more precise, the sum of the weights for ALMP amounted to 0.54 while for PLMP – 0.46 (Table 2). The indicators were chosen based on the availability of the statistical data and substantive issues. As a result, the database on the labour market policy in OECD countries was created.

Table 2. The analysed indicators of labour market policy

Indicators	Short description	Weight	The type of labour market policy
Start_up	Start-up incentives (% of GDP)	0.02	Active
Job	Direct job creation (% of GDP)	0.08	
Empl_inc	Employment incentives (% of GDP)	0.19	
Train	Training (% of GDP)	0.09	
Pub_empl	Public employment services and administration (% of GDP)	0.06	
Shelt	Sheltered and supported employment (% of GDP)	0.10	
Out_of_work	Out-of-work income maintenance and support (% of GDP)	0.36	Passive
Retirem	Early retirement (% of GDP)	0.10	

Source: own elaboration based on OECD (2022).

In the third step, the descriptive statistics of the analysed indicators were calculated (Table 3). In the period 2007-2019, the average spending of OECD countries on LMP was from 0.01% GDP on public employment services and administration to 3.91% of GDP on employment incentives. The highest differences between these countries were observed in terms of the following instruments of LMP: early retirement (the coefficient of variation at 211.91%) and employment incentives (the coefficient of variation amounted to 209.53%). This shows that OECD countries were diversified in terms of labour market policy and focused on different instruments of this policy. However, they were relatively similar in terms of the following instruments of LMP: public employment services and administration and out of work income maintenance and support (the coefficient of variation was the lowest for these variables).

Table 3. The descriptive statistics of the applied indicators

Indicators	Min	Q_1	Q_2	M	Q_3	Max	SD	CV (%)	Number of countries	Number of observations
Start_up	0	0	0	0.01	0.01	0.14	0.03	184.58	32	416
Job	0	0	0.02	0.06	0.07	0.74	0.10	162.47	32	416
Empl_inc	0	0.03	0.06	0.11	0.12	3.91	0.23	209.53	32	416
Train	0	0.04	0.09	0.13	0.18	0.68	0.14	101.97	32	416
Pub_empl	0.01	0.06	0.11	0.13	0.16	0.43	0.09	72.50	31	403
Shelt	0	0.01	0.03	0.09	0.10	0.97	0.15	167.86	32	416
Out_of_work	0.07	0.33	0.56	0.75	1.11	3.11	0.58	77.06	32	416
Retirem	0	0	0	0.06	0.05	0.74	0.13	211.91	32	416

Note: The table includes values of the selected indicators in 2007-2019.

Source: own calculations based on OECD (2022).

In order to evaluate OECD countries in terms of their labour market policy the author employed the Technique for Order Preference by Similarity to an Ideal Solution (TOPSIS), which is a well-known method of linear ordering originally developed by Hwang and Yoon (1981), with further developments by many researchers (e.g. Hung and Chen, 2009). This study is based on the approach by Diakoulaki et al. (1995);in another approach, weights are calculated for the variables and then the distance from the negative ideal solution and positive ideal solution are multiplied by weights (Deng et al., 2000). The TOPSIS method begins with creating a decision matrix which represents the performance values of each attribute with each alternative. Next, the matrix is normalised using the desired normalising scheme, and the values are multiplied by the estimated weights of indicators. In the next step, the positive ideal and negative ideal solution are calculated and the distance from solutions is estimated, and finally the alternatives are ranked in descending order (Li et al., 2018). The main advantage of the TOPSIS method is that both the distance from the ideal solution and the negative ideal solution are included in contrast to, for example, Hellwig's method (1968). However, the main disadvantage of the latter is the fact that the obtained findings depend on the negative and positive ideal solution (Deng et al., 2000).

Next, the zero unification was conducted, in order to ensure that all the analysed indicators were comparable. Based on the literature review, all of the analysed indicators were identified as stimulant variables. Accordingly, the following formula for the stimulant indicator was used:

$$z_{ij} = \frac{x_{ik} - min_i(x_{ik})}{max_i(x_{ik}) - min_i(x_{ik})}, \quad i = 1,2,\dots,n; \quad j = 1,2,\dots k, \tag{1}$$

where $max_i\{x_{ik}\}$ – the maximum value of *k*-th characteristic, $min_i\{x_{ik}\}$ – the minimum value of *k*-th characteristic and *i* – object (a given OECD country).

Next, the weights of the analysed indicators were estimated (Table 3). For ts purpose, the study employed the Criteria Importance Through Intercriteria Correlation (CRITIC) method (Diakoulaki et al., 1995; Deng et al., 2000), in which the weights are estimated based on the standard deviation and the analysis of correlation between the analysed indicators. For these indicators, marked by a relatively high level of variation and low correlation, the weight is relatively higher. Hence, the following formula was employed:

$$w_j = \frac{c_j}{\sum_{k=1}^{K} c_k}, \quad j = 1,2,\dots,K, \tag{2}$$

where $c_j = s_{j(z)} \sum_{k=1}^{K} (1 - r_{jk}), j = 1,2,\dots,K$ is the quantity of information contained in *j*-th characteristic, $s_{j(z)}$ – the standard deviation based on the normalised values of *i*-th characteristic, and r_{jk} – the coefficient of correlation between *j*-th and *k*-th characteristic. The sum of the weights was 1.

Nt, the Euclidean distance from the positive ideal solution (d_i^+) and the negative ideal solution (d_i^-) was calculated. For this purpose, the following formulas were employed:

$$d_i^+ = \sqrt{\sum_{k=1}^{m}(z_{ik} - z_k^+)^2}, \tag{3}$$

$$d_i^- = \sqrt{\sum_{k=1}^{m}(z_{ik} - z_k^-)^2}, \tag{4}$$

where d_i^+ – the Euclidean distance from the positive ideal solution, d_i^+ – the Euclidean distance from the positive ideal solution, z_{ik} – the observation of *k*-th variable for *i*-th object; z_k^+ – the positive ideal solution; z_k^- – the negative ideal solution.

As mentioned above, the author followed the approach by Diakoulaki et al. (1995) and the Euclidean distances were multiplied by estimated weights, and used the following formula to estimate the value of a synthetic measure for each OECD country:

$$q_i = \frac{d_i^-}{d_i^+ + d_i^-}, \quad i = 1, 2, \dots, n, \tag{5}$$

where $q_i \in [0,1]$. The value 1 of the synthetic measure meant the best result.

In the final step of the analysis, the analysed countries were divided into four groups according to the level of labour market policy instruments, based on the arithmetic average and standard deviation of the synthetic measures:

- $q_i \geq \bar{q} + s_q$ – countries with the highest value of the synthetic measure;
- $\bar{q} + s_q > q_i \geq \bar{q}$ – countries with a medium higher value of the synthetic measure;
- $\bar{q} > q_i \geq \bar{q} - s_q$ – countries with a medium lower value of the synthetic measure;
- $q_i < \bar{q} - s_q$ – countries with the lowest value of the synthetic measure,

where $\bar{q}$ – the arithmetic average for the synthetic measure, and s_q – the standard deviation for the synthetic measure.

The research procedure is presented in Figure 1, which shows the steps of the research.
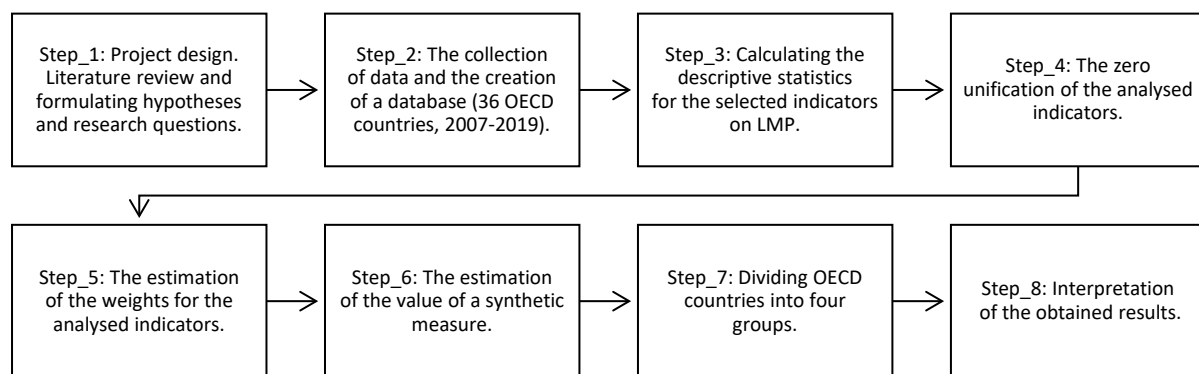

Fig. 1. Methodology of the research

Source: own elaboration.

4. Labour market policy across OECD countries – the empirical results

Figure 2 presents public spending on labour market policy (a percentage of GDP) and their dynamics in OECD countries, characterised by a different level of public spending on labour market policy as a percentage of GDP, which confirms the first hypothesis. The level of public spending on labour market policy increased in most countries from 2007 to 2019. The highest increase in public spending on LMP was observed in New Zealand (over 7 times), followed by Estonia (over 5 times) and Australia (over 3 times). A decrease in public spending on LMP was observed in some countries, although it was minor. The high increase in New Zealand probably resulted from the growing long-term unemployment in the previous year. Moreover, this may be a result of the experience of New Zealand in the area of dealing with crises caused natural disasters.

Figure 3 shows public spending on active labour market policy (a percentage of GDP) and its dynamics in OECD countries. The highest increase in public spending on ALMP was in New Zealand (over 12 times), followed by Estonia (over 9 times) and Australia (almost 5 times). Thus, the general increase of public spending on LMP in New Zealand was particularly related with the increase of public spending on active labour market policy. A decrease of public spending on ALMP was observed in, among others, the Netherlands and Portugal. However, most OECD countries experienced an increase of public spending on ALMP as a percentage of GDP, which suggests that an active labour market policy plays a more important role in these countries than a passive one.
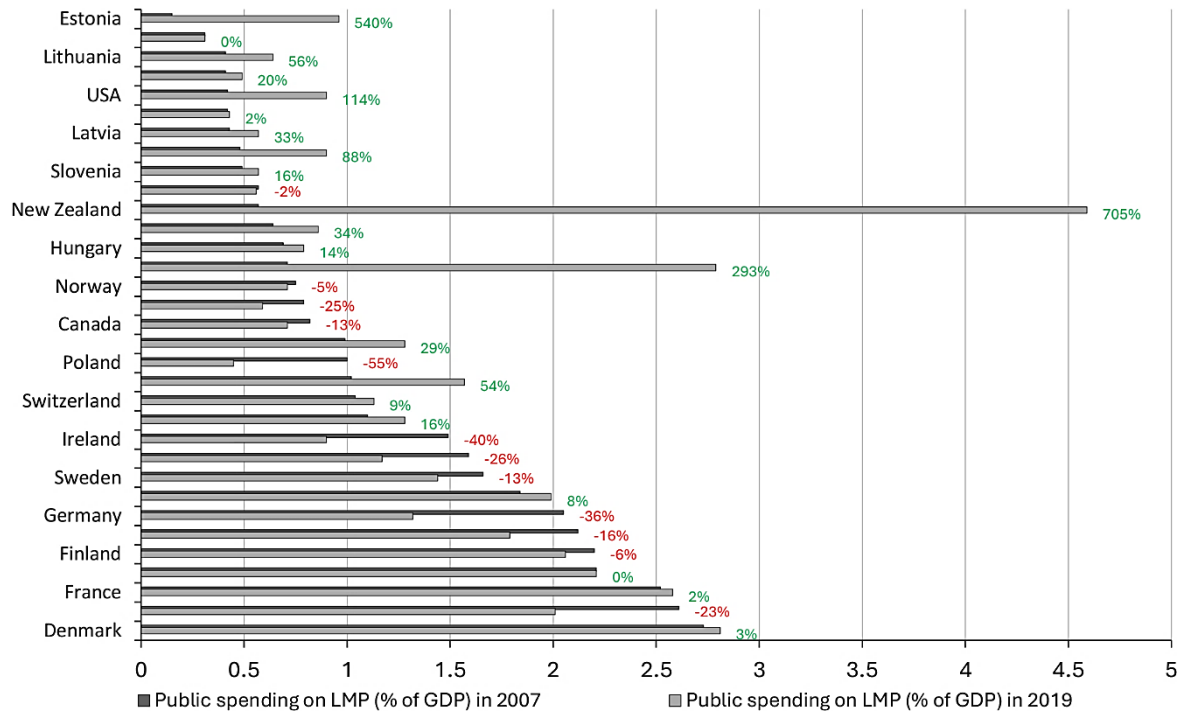
Fig. 2. Public spending on labour market policy (percentage of GDP) and its dynamics in OECD countries

Note: The figure shows the level and the percentage change of public spending on LMP in the given country. The green colour represents a positive change, while the red one – negative.

Source: own calculations based on (OECD, 2022), Public spending on labour markets (indicator). https://doi.org/10.1787/911b8753-en (accessed on 13 June 2022).
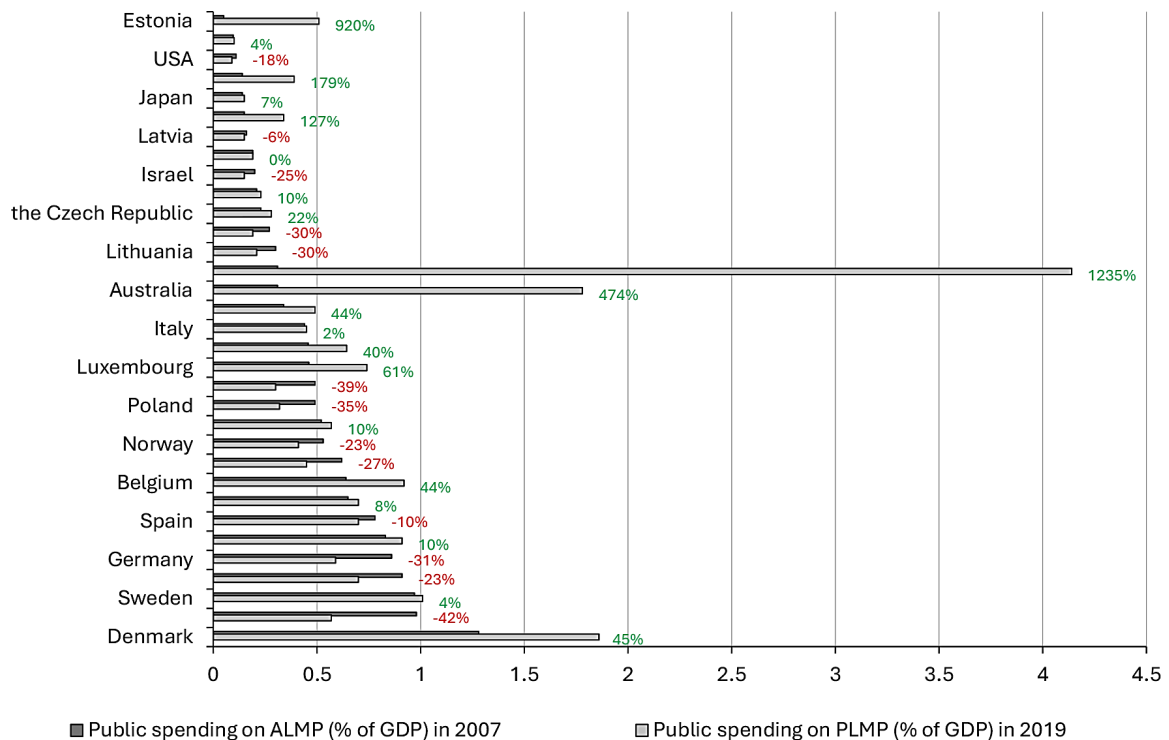

Fig. 3. Public spending on active labour market policy (percentage of GDP) and their dynamics in OECD countries

Note: The figure shows the level and the percentage change of public spending on ALMP in the given country. The green colour indicates a positive change while the red – negative; ALMP – active labour market policy.

Source: own calculations based on (OECD, 2022), Public spending on labour markets (indicator). https://doi.org/10.1787/911b8753-en (accessed on 13 June 2022).

Figure 4 shows public spending on passive labour market policy (% of GDP) and its dynamics in OECD countries. An increase of public spending on PLMP was observed in most of them, however the rate of change in public spending on PLMP was smaller than for ALMP, which thus confirms the second hypothesis. The highest increase in public spending on PLMP took place in Estonia, Lithuania and Chile. A decrease of public spending on PLMP was recorded in, among others, Poland, Belgium, Germany, and Hungary. Yet, it can be expected that the level of public spending on PLMP will continue to rise after the COVID-19 pandemic in most OECD countries (because of the lockdown in a number of economic sectors).
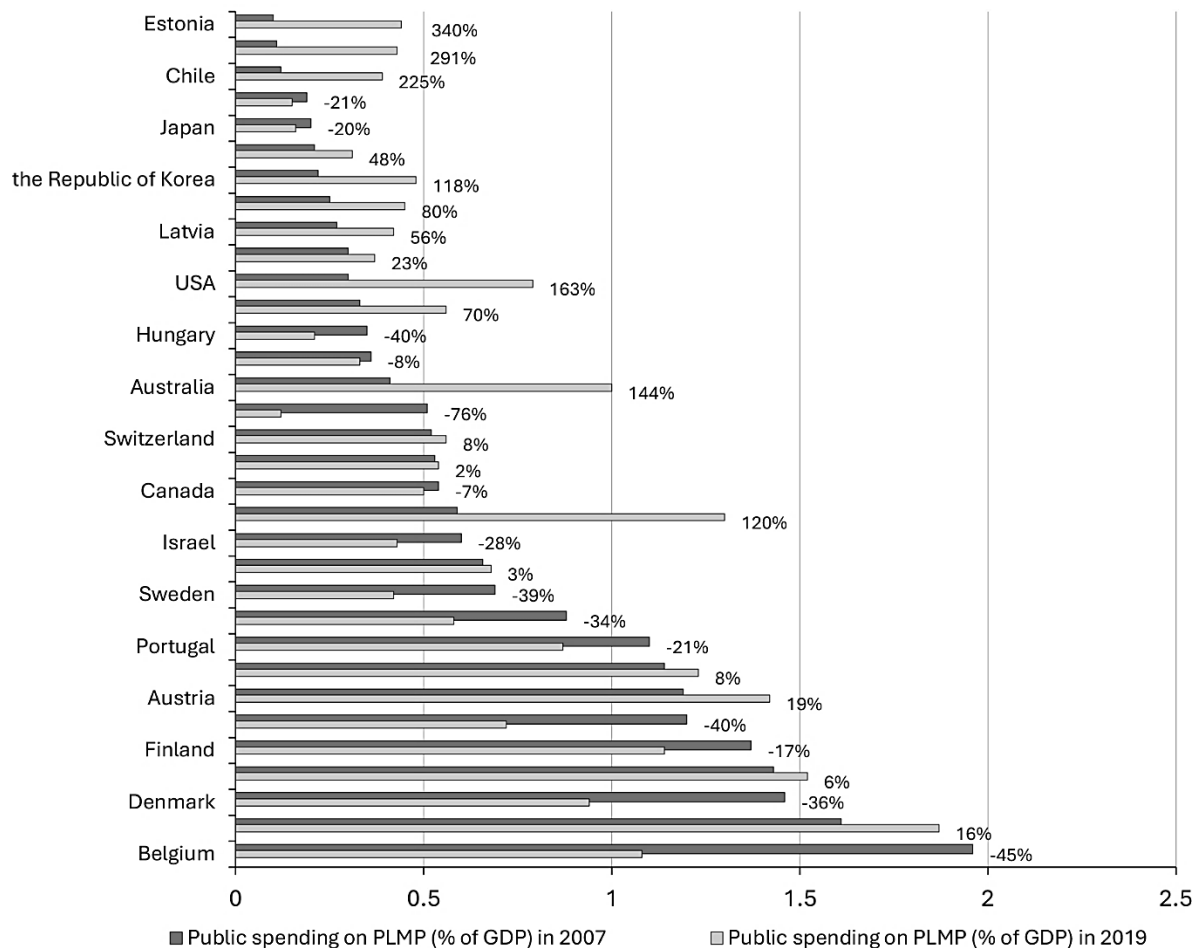

Fig. 4. Public spending on passive labour market policy (percentage of GDP) and its dynamics in OECD countries

Note: The figure shows the level and the percentage change of public spending on PLMP in the given country. The green colour represents a positive change, while the red – negative; PLMP – passive labour market policy.

Source: own calculations based on (OECD, 2022), Public spending on labour markets (indicator). https://doi.org/10.1787/911b8753-en (accessed on 13 June 2022).

5. The results using the TOPSIS and CRITIC methods

Figure 5 presents the values of the synthetic measure in terms of labour market policy. The highest values of a synthetic measure was observed in Denmark (0.54), followed by Spain (0.51), France (0.48), Belgium (0.46) and Finland (0.44), while the lowest in Japan (0.07) and Chile (0.07). The average value of the synthetic measure amounted to 0.25, however most of the examined countries achieved a result lower than 0.25.
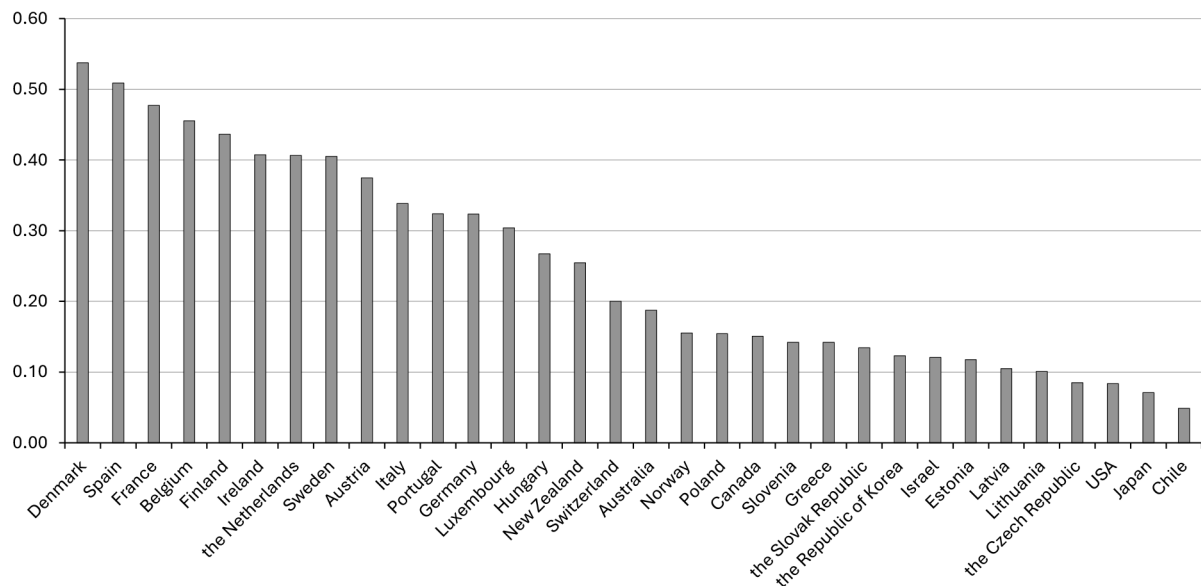
Fig. 5. The value of a synthetic measure in OECD countries

Source: own calculations.

Table 4 shows the groups of OECD countries in terms of their labour market policy , while Table 5 presents the average values of a given indicator for each group. The first group includes the countries with the highest value of the synthetic measure (above 0.40) for eight of them: Scandinavian countries (Denmark, Finland, Sweden), most West European countries (France, Belgium, Ireland, the Netherlands, and Spain) (see Table 4). Therefore, the first group shares a common history and culture (namely Scandinavian countries), and is also marked by the relatively high level of a given instrument of LMP. In these countries, an important role is played by an active labour market policy, focused on training, public employment services and administration, sheltered and supported employment. Job placement and related services are also well developed, with great importance attached to training and special support for apprenticeship. In contrast to other groups, the first one has a relatively high level of out of work income maintenance and support (Table 5). This means that the unemployed can use a wide range of support. The results are compatible with the existing models of labour market policy for Scandinavian countries, which confirms the third hypothesis that the assignment of countries to the labour market policy models discussed earlier in the literature has changed. Still, this group also includes Ireland and Spain. As was mentioned earlier, these countries were traditionally included, respectively, in the liberal and the Mediterranean groups. This shows that labour market policy and the share of ALMP has been changing in OECD countries over time.

The second group numbers seven countries, ranging from West European countries (Austria, Germany), Mediterranean European countries (Italy, Portugal), as well as Hungary, Luxembourg and New Zealand, with a medium higher value of the synthetic measure (Table 4). In the second group a notably lower level of a given instrument of LMP (both active and passive) was observed; in particular, the level of sheltered and supported employment was relatively low. The most significant role was played by out-of-work income maintenance and support, and training, however the share of these instruments in GDP was significantly lower than in the first group (Table 5). The findings are compatible with the existing models of labour market policy for the majority of countries in this group, in particular, for Germany and Austria, and confirm the third hypothesis that the assignment of countries to the labour market policy models discussed earlier in the literature has changed. However, New Zealand was assigned to this group, although it was traditionally included in the liberal model with a less-developed system of support for the unemployed and a relatively low level of ALMP.

The third group was the most numerous, with 13 OECD countries. Most of them are Central and Eastern European countries (Poland, Slovenia, the Slovak Republic, Estonia, Latvia, Lithuania), yet this

group also includes Switzerland, Australia, Norway, Canada, Greece, the Republic of Korea and Israel. These countries are marked by a medium lower value of the synthetic measure (Table 4). In the third group, the most important instrument was out-of-work income maintenance and support, while the active instruments of labour market policy were definitely less important, with the most important being public employment services and administration; the remaining instruments of LMP were less important (Table 5). Most countries from this group are not in the existing social and economic policy models of LMP (Table 1), which confirms the third hypothesis; this group includes Australia, Switzerland, Canada and Norway. In the case of Australia, Switzerland and Canada, a transition was observed from the liberal model into the model with relatively higher level of spending on ALMP and PLMP, whilst noting that Norway does not have as generous a system of support for the unemployed as the other Scandinavian countries.

The last group was the least numerous, showing the lowest values of synthetic measure (below 0.10), and included the Czech Republic, USA, Japan, and Chile (Table 4). This group had the lowest level of a given instrument of labour market policy, with the most relevant instrument being out-of-work income maintenance and support (0.29% of GDP). Based on these results, one can assume that the active labour market policy was not well developed in this group, yet the active labour market policy in these countries was strongly focused on public employment services and administration (Table 5). The results are compatible with the existing models of labour market policy for the USA, which confirms the third hypothesis, however, in the case of Japan, the study observed a lesser support for the unemployed and the lower the level of spending on ALMP. To sum up, the results do not confirm compliance with the theoretical models for all OECD countries.

Table 4. The groups of OECD countries in terms of labour market policy

Number of group	The value of the synthetic measure (q_i)	Short description*	OECD countries
I	$q_i \geq 0.40$	Countries with the highest value of the synthetic measure (8)	Denmark, Spain, France, Belgium, Finland, Ireland, the Netherlands, Sweden
II	$0.40 > q_i \geq 0.25$	Countries with a medium higher value of the synthetic measure (7)	Austria, Italy, Portugal, Germany, Luxembourg, Hungary, New Zealand
III	$0.25 > q_i \geq 0.10$	Countries with a medium lower value of the synthetic measure (13)	Switzerland, Australia, Norway, Poland, Canada, Slovenia, Greece, the Slovak Republic, the Republic of Korea, Israel, Estonia, Latvia, Lithuania
IV	$q_i < 0.10$	Countries with the lowest value of the synthetic measure (4)	the Czech Republic, USA, Japan, Chile

*Notes: the number of OECD countries in a given group in parentheses.

Source: own calculations.

Table 5. The average values of the selected variables in the groups of OECD countries

Number of group	Start_up	Job	Empl_inc	Train	Pub_empl	Shelt	Out_of_work	Retirem
I	0.02	0.09	0.17	0.25	0.22	0.22	1.44	0.13
II	0.01	0.10	0.17	0.19	0.14	0.02	0.81	0.09
III	0.01	0.03	0.07	0.07	0.08	0.06	0.44	0.03
IV	0.00	0.03	0.03	0.03	0.06	0.03	0.29	0.00

Source: own calculations.

6. Discussion

As was shown in Table 6, a similar value of our synthetic measure q_i was observed in some groups of countries, and these are different from the countries defined by similar models of labour market policy. However, one can also observe that, for example, Denmark, Finland and Sweden, which represent the Scandinavian model, are in the group with a high value of the synthetic measures. A similar situation was also noted for Austria and Germany, Greece and the United States, where it may be seen that the policy on the labour market corresponded to the classification of models of LMP.

Table 6. Summary of research and theory of labour policy models

OECD countries/groups of the similar value of the synthetic measure q_i	Models of labour market policy
Denmark, Spain, France, Belgium, Finland, Ireland, the Netherlands, Sweden	Scandinavian (Nordic) – Denmark, Finland, Sweden, Norway
Austria, Italy, Portugal, Germany, Luxembourg, Hungary, New Zealand	Corporate (Continental) – France, Germany, Belgium, Austria, Japan
Switzerland, Australia, Norway, Poland, Canada, Slovenia, Greece, the Slovak Republic, the Republic of Korea, Israel, Estonia, Latvia, Lithuania	Mediterranean (Latin) – Italy, Spain, Greece, Portugal
the Czech Republic, USA, Japan, Chile	Liberal (Anglo-Saxon) - Ireland, United Kingdom, United States, Switzerland, Australia, Canada, New Zealand

Source: own work.

Other countries included in Table 6 represented different models of LMP and different values of a synthetic measure, and in their case, this study did not confirm compliance with the theoretical models. The reasons for this situation could be in the specificity of the research or the change of the particular nature of labour market policy in these countries, which have changed the nature of the applied instruments, expenditure on the instruments, and where the situation in labour market changed in the period of research. It must be stressed that many OECD countries were not included in previous studies and in the classifications shown in Table 1; this applies to the countries of Eastern Europe.

7. Conclusions

The author's analysis shows that OECD countries were diverse in terms of labour market policy, and focused on different instruments of this policy. However, the level of public spending on labour market policy increased in most countries in the period 2007-2019.

Based on the employed methods, the author divided OECD countries into four groups in terms of the role played by labour market policy. The first group included mainly Scandinavian, and most of the West European countries and Spain, with an important role played by an active labour market policy. Moreover, their unemployed citizens could use a wide range of support from the state. The second group included seven countries: West European (Austria, Germany), Mediterranean European (Italy, Portugal), Hungary, Luxembourg and New Zealand. In this group, a significantly lower level of given instruments of LMP was observed, with the largest role played by out- of-work income maintenance and support, and professional training. The third group was the most numerous (13 OECD countries), mostly Central and East European countries. This group also included Switzerland, Australia, Norway, Canada, Greece, the Republic of Korea, and Israel. The labour market policy in these countries was based especially on out-of-work income maintenance and support, while the active instruments of labour market policy were definitely less important. The fourth group showed the lowest level of public spending on labour market policy, and included the Czech Republic, USA, Japan, and Chile, where the

active labour market policy was of minor importance. To sum up, the findings show that labour market policy and the share of ALMP changed in OECD countries over time.

Based on the research results, it can be also stated that in some OECD countries (e.g. Scandinavia), the policy on labour market corresponded to the classification of models of LMP in the literature. Other OECD countries (e.g. New Zealand) represented different models of LMP and different values of a synthetic measure and, in their case, this study did not confirm compliance with the theoretical models. However, this could have resulted from the specificity of the research or the change in the particular nature of labour market policy in these countries.

As part of future research, it would be worth analysing the relationship between the estimated synthetic measure regarding labour market policy in OECD countries and labour market outcomes (e.g. employment rate, labour participation rate, etc.). The expectation concerning the impact of labour market policy on labour market outcomes may inspire further research. Nowadays, as already mentioned, the level of public spending on labour market policy has increased in most OECD countries, and consequently, it would be of value to examine whether and to what extent labour market policy changes could lead to an improvement in labour market outcomes.

References

Armingeon, K. (2007). Active labour market policy, international organizations and domestic politics. *Journal of European Public Policy*, *14*(6), 905-932. https://doi.org/10.1080/13501760701497923

Bonoli, G. (2007). Time matters. Postindustrialisation, new social risks and welfare state adaptation in advanced industrial democracies. *Comparative Political Studies*, *40*, 495-520. https://doi.org/10.1177/0010414005285755

Bonoli, G. (2010). The political economy of active labour market policy. *Working Papers on the Reconciliation of Work and Welfare in Europe*. REC-WP 01/2010. RECWOWE Publication, Dissemination and Dialogue Centre.

Caliendo, M., & Schmidl, R. (2016). Youth unemployment and active labor market policies in Europe. *IZA Journal of Labor Policy*, *5*(1), 1-30. https://doi.org/10.1186/s40173-016-0057-x

Calmfors, L. (1995). Labour market policy and unemployment. *European Economic Review*, 39(3-4), 583-592. https://doi.org/10.1016/0014-2921(94)00065-8

Costa Dias, M., Joyce, R., Postel-Vinay, F., & Xu, X. (2020). The challenges for labour market policy during the COVID-19 pandemic. *Fiscal Studies*, *41*(2), 371-382. https://doi.org/10.1111/1475-5890.12233

Crespo, N., Simoes, N., & Pinto, J. C. (2017). Determinant factors of job quality in Europe. *Argumenta Oeconomica*, 1 (38), 15-40.

Cvecic, I., & Sokolic, D. (2018). Impact of public expenditure in labour market policies and other selected factors on youth unemployment. *Economic Research. Economska Istrazivanja,* 31(1), 2060-2080, https://doi.org/10.1080/1331677x.2018.1480970

Deng, H., Chung-Hsing, Y., & Willis, R. J. (2000). Inter-company comparison using modified TOPSIS with objective weights. *Computers & Operations Research*, *27*(10), 963-973. https://doi.org/10.1016/S0305-0548(99)00069-6

Diakoulaki, D., Mavrotas, G., & Papayannakis, L. (1995). Determining objective weights in multiple criteria problems: The critic method. *Computers & Operations Research*, *22*(7), 763-770. https://doi.org/10.1016/0305-0548(94)00059-H

Fargion, V. (2000). Timing and the development of social care services in Europe. *West European Politics*, *23*, 59-88. https://doi.org/10.1080/01402380008425367

Frączek, M. (2015). Cele rodzaje i efekty polityki rynku pracy. In M. Frączek (ed.), *Polityka rynku pracy. Teoria i praktyka* (pp. 45-53). PWE.

Hellwig, Z. (1968). Zastosowanie metody taksonomicznej do typologicznego podziału krajów ze względu na poziom ich rozwoju oraz zasoby i strukturę kwalifikowanych kadr. *Przegląd statystyczny*, 15(4), 307-327.

Hung, C. C., & Chen, L. H. (2009) *A Fuzzy TOPSIS Decision Making Model with Entropy Weight under Intuitionistic Fuzzy Environment*. Proceedings of the International Multi Conference of Engineers and Computer Scientists, Hong Kong, 18-20 March 2009.

Hwang, C. L., & Yoon, K. (1981). *Multiple attribute decision making methods and applications*. Springer-Verlag.

Karlson, N., & Lindberg, H. (2012). Corporate Cartels and Challenges to European Labour Market Models. *Revista Internacional de Organizaciones*, 9, 11-26.

Layard, R., Nickell, S. & Jackman, R. (2005). *Unemployment, macroeconomic performance and the labour market.* Oxford University Press.

Li, M. K., Liu, Y. K., Peng, M. J., Xie, C. L., & Yang, L. Q. (2018). The digital simulation and fuzzy evaluation to reduce the likelihood of unsafe behavior in nuclear decommissioning. *Annals of Nuclear Energy*, *119*, 331-341.

Nagel, K., & Smandek, I. M. (2010). *Polityka rynku pracy i źródła jej finansowania*. Uniwersytet Ekonomiczny w Katowicach.

OECD (2022). *Public spending on labour markets (indicator)*. https://doi.org/10.1787/911b8753-en (Accessed on 24 September 2022).

Rollnik-Sadowska, E. (2014). Transformation of European labour market policy models – exemplified by Denmark, Germany and the United Kingdom. *Optimum. Economic Studie, 5*(71), 38-51. https://doi.org/10.15290/ose.2014.05.71.04

Rotar, L. J. (2022). Effectiveness of active labour market policies in the EU countries for the young unemployed people and implications for the post-pandemic period. *Engineering Economics*, *33*(3), 326-337. https://doi.org/10.5755/j01.ee.33.3.29652

Vishnevskaya, N. T. (2022). OECD Countries: Labour market policy during the COVID-19 pandemic. *Mirovaia ekonomika i mezhdunarodnye otnosheniia*, *66*(1), 110-118. https://doi.org/10.20542/0131-2227-2022-66-1-110-118

Wiśniewski, Z. (1999). *Kierunki i skutki deregulacji rynku pracy w krajach Unii Europejskiej*. UMK.

Wiśniewski, Z. (2022). The effectiveness of Polish active labour market policies. *Bulletin of Geography. Socio-Economic Series*, 56, 125-132. https://doi.org/10.12775/bgss-2022-0017