

# Youth labour market in the European Union countries – convergence or divergence?

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## Abstract

The permanent division of the EU Member States into a southern region (with huge imbalances in the youth labour market) and a northern region (with a relatively good situation for the youngest part of the workforce) is a serious challenge for the cohesion policy. The aim of this research is to assess the divergence of the youth labour market in the EU countries and the impact of the COVID-19 pandemic on it. In the research, classical measures of dispersion were used and the gamma convergence method was adopted. The used indicators were: NEETs and the unemployment rate (age group between 15–24 years old). Research results: despite significant disproportions, the existence of convergence was found, although the COVID-19 crisis inhibited it.

**Keywords:** youth labour market, NEETs, European Union, cohesion policy, COVID-19

## Rynek pracy młodzieży w krajach Unii Europejskiej – konwergencja czy dywergencja?

### Streszczenie

Trwały podział krajów Unii Europejskiej na południe (z olbrzymimi nierównowagami na rynku pracy młodzieży) i północ (z relatywnie dobrą sytuacją najmłodszej części siły roboczej) jest poważnym wyzwaniem dla polityki spójności. Celem zaprezentowanych w tym artykule badań jest ocena dywergencji rynku pracy młodzieży w krajach Unii Europejskiej oraz wpływu pandemii COVID-19 na tę dywergencję. W badaniach wykorzystano klasyczne miary dyspersji oraz zaadoptowano metodę konwergencji typu gamma. Użyte wskaźniki to NEETs i stopa bezrobocia (grupa wiekowa 15–24 lat). Pomimo wyraźnie utrzymujących się bardzo dużych różnic pomiędzy krajami UE, w badaniu stwierdzono zachodzącą między nimi konwergencję, aczkolwiek kryzys COVID-19 zahamował ją.

**Słowa kluczowe:** rynek pracy młodzieży, NEETs, Unia Europejska, polityka spójności, COVID-19

The economic policy of the European Union is embedded with a philosophy of cooperation and solidarity ensuring security and prosperity, which seems more rational when compared to competition. On this basis, the EU cohesion policy was constructed, the underlying goal of which has become convergence. The adopted development concept assumes that the inhabitants of the EU, in the long run, will live at a similarly high level (Jegorow 2018: p. 61). EU cohesion policy contributes to strengthening economic, territorial and social cohesion in the European Union. Its aim is to correct imbalances between regions, countries, and social groups. "Labour fragmentation, flexibility without security and informality have been key characteristics of the EU southern labour markets throughout the 20th century, determining the structures and cultures found therein" (De Luca et al. 2020; Leontidou 2012; qtd. in: Avagianou et al. 2022: p. 425).

"Young people are particularly disadvantaged during the periods of economic recession as their unemployment is more responsive to the business cycle than other age groups" (Mascherini et al. 2012: p. 18; see also: Kotliński 2017). "This is because they tend to be more concentrated in certain cyclically sensitive industries" (Mascherini et al. 2012: p. 18; see also: Bessant et al. 2017), and they are disproportionately presented among those holding part-time positions (Wysocka 2021; Petreski et al. 2021), temporary contracts or freelance jobs (Juznik Rotar 2022). "The proportion of young people on a temporary employment contract increased since the onset of the financial crisis, leaving young people in an even more insecure position regarding their labour market participation" (Mascherini et al. 2012: p. 18). The COVID-19 pandemic crisis was the cause of further shocks, both in terms of demand and supply. The economic vulnerability of young people increased in regions such as the countries of Southern Europe, where seasonal work based on tourism is widespread (Avagianou et al. 2022).

The following **research questions** were raised in this study:

- 1) Did youth unemployment increase more than the older age group during the COVID-19 pandemic?
- 2) Did the number of NEETs rise during the COVID-19 pandemic?
- 3) Is there a convergence or divergence of the youth unemployment rate among the EU countries?

The following **research hypothesis** was put forward: the convergence of youth labour markets among European Union countries occurred in the second decade of the 21st century, but the COVID-19 pandemic crisis inhibited this convergence.

The main **research method** is the analysis of standard dispersion measures, i.e. standard deviation and coefficient of variation. Additionally, for the need of assessing the convergence of the youth labour market, gamma convergence was adopted. Generally,  $\gamma$ -convergence (gamma convergence) "occurs when countries change their positions in the ranking ordered in terms of some features" (Próchniak 2019: p. 228; Kotliński 2021: p. 696). "Gamma convergence ( $\gamma$ -convergence) is defined as the ranking concordance over time of per capita incomes within a group of countries (Siegel 1956; Boyle, McCarthy 1997)", but another indicator can also be used. "In other words,  $\gamma$ -convergence highlights

whether, and to what extent, the highest-unemployment and lowest-unemployment countries remain the same within a given country grouping over time" (Kotliński 2021: p. 696). The Kendall rank concordance coefficient can be used to verify the  $\gamma$ -convergence hypothesis (Próchniak 2019: p. 228). Kendall's coefficient of concordance ranges from 0 (no agreement) to 1 (complete agreement). The value of 1 would indicate no changes in the ranking, and, thus, signal a permanent nature of the differences among the countries (either large or small); thereby indicating no  $\gamma$ -convergence. The occurrence of convergence is "signalled by a correlation coefficient amounting to 0. The lack of concordance of ranking also means that the initial ranking in terms of a given variable is different – random – from that in the final period under study" (Kusidet 2013: p. 70–71; qtd. in: Krupowicz 2020: p. 87).

The analysis covers the 2009–2021 period for 27 EU countries, Great Britain is excluded. The calculations were based on two indicators: the annual rate of unemployment time series and NEETs, obtained from Eurostat database. Both indicators are for the age group of 15–24 years old, which is the youngest segment of the labour force.

The existing studies focus on legal convergence and on the convergence of GDP per capita. There is a lack of research focusing on the convergence of youth labour markets. This study fills this gap.

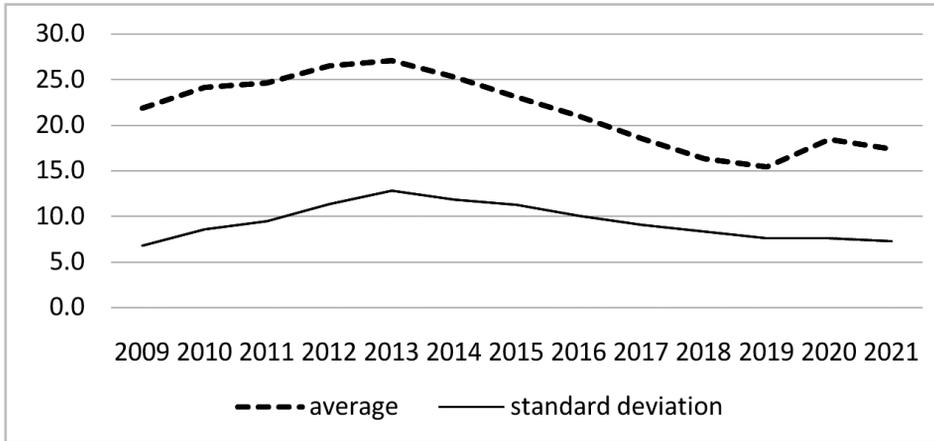
### Youth unemployment rate differentiation

"The main indicator of youth unemployment is the *youth unemployment rate* for the age group 15–24 [years old]. This uses the same standard definition as the *unemployment rate* for the working-age population. For a given age group, it is the number of those unemployed divided by the total number of people in the labour force (employed plus unemployed). [...] Given that not every young person is in the labour force, the youth unemployment rate does not reflect the proportion of young adults who are unemployed among all young people. [...] Young people outside the labour force are not included (or not taken into account) in this rate, they are neither in the numerator nor in the denominator." (Eurostat 2022).

*Figure 1* demonstrates the average rate of unemployment for the age group less than 25 years old and its standard deviation in the 27 EU Member States. Looking at the graph, the average rate of youth unemployment increases after the financial crisis, and the standard deviation ascends too. The differentiation grew until 2013. Then the unemployment rate drops until 2019. The COVID-19 crisis is a turning point, when the average rate of youth unemployment peaked at 18.5%. However, the standard deviation of the youth rate of unemployment has been consistently declining since 2013.

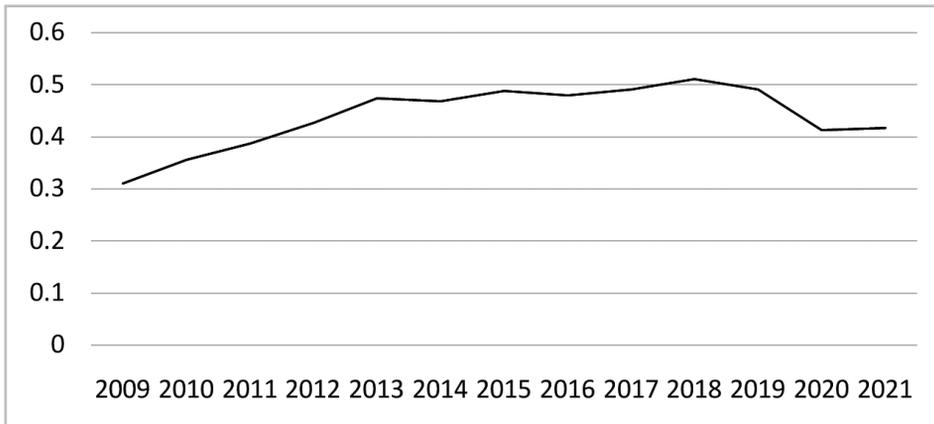
The coefficient of variation, which is a relative measure, stayed almost the same between 2013 and 2019 (see: *Figure 2*). It decreased during the coronavirus crisis.

**Figure 1: Average rate of unemployment (age 15-24 years old) and standard deviation.**



Source: author's own calculation based on Eurostat database.

**Figure 2: Coefficient of variation of the unemployment rate (age 15-24 years old).**



Source: author's own calculation based on Eurostat database.

The Kendall concordance coefficient stands at 0.477143, and it is significant with p-values less than 0.050000. The indicator should be assessed as a moderate  $\gamma$ -convergence.

Despite the moderate convergence of the unemployment rate for the youngest part of the labour force, the countries permanently high and permanently low in the ranking clearly stand out. *Table 1* presents 6 countries with the highest rate of youth unemployment and 6 states with the lowest rate. In the analysed period of 2009–2021, the countries with the highest youth unemployment rates were Spain, Greece and Italy. The youth labour markets in Germany, Denmark, Austria and the Netherlands have remained in the best situation.

**Table 1: The highest and the lowest rate of unemployment by countries (age 15-24 years old).**

Year	6 countries with the highest rate of youth unemployment	6 countries with the lowest rate of youth unemployment
2009	Spain (37.7%); Latvia (33.4%); Lithuania (29.6%); Slovakia (28.5%); Estonia (27.2%); Greece (26.1%)	Austria (11.3%); Netherlands (11.6%); Germany (11.9%); Denmark (13.5%); Slovenia (13.8%); Cyprus (13.8%)
2012	Greece (55.9%); Spain (52.9%); Croatia (42.1%); Portugal (38.1%); Slovakia (35.3%); Italy (35.3%)	Germany (8.6%); Austria (10%); Netherlands (12.9%); Malta (12.9%); Denmark (15.8%); Luxembourg (18.8%)
2015	Greece (50.3%); Spain (48.3%); Croatia (42.3%); Italy (40.3%); Cyprus (32.8%); Portugal (32%)	Germany (7.7%); Austria (11.3%); Malta (11.6%); Denmark (12.2%); Netherlands (12.5%); Czechia (12.6%)
2019	Greece (50.3%); Spain (32.5%); Italy (29.2%); Romania (21%); France (20.7%); Sweden (19.4%)	Czechia (5.6%); Germany (6.2%); Slovenia (8.1%); Netherlands (8.5%); Austria (9.1%); Malta (9.3%)
2020	Spain (38.3%); Greece (38%); Italy (29.8%); Sweden (23.5%); Luxembourg (23.2%); Portugal (22.5%)	Czechia (8%); Germany (8%); Netherlands (10.6%); Malta (10.9%); Poland (10.9%); Denmark (11.6%)
2021	Greece (35.5%); Spain (34.8%); Italy (29.7%); Sweden (24.7%); Portugal (23.4%); Croatia (21.9%)	Germany (6.9%); Czechia (8.2%); Netherlands (9.3%); Malta (9.6%); Denmark (10.8%); Austria (11%)

Source: Eurostat database.

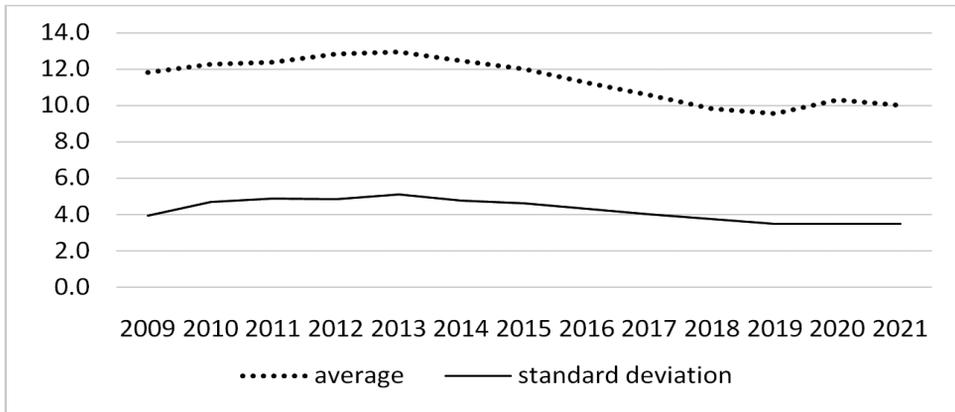
### Young people neither in employment nor in education or training – NEETs

"The indicator *young people neither in employment nor in education and training*, abbreviated as NEET, corresponds to the percentage of the population of a given age group and sex, who is not employed and not involved in further education or training. The numerator of the indicator refers to persons meeting these two conditions: they are not employed [...] and they have not received any formal or non-formal education or training in the four weeks preceding the survey. The denominator is the total population of the same age group, excluding the respondents who have not answered the question about participation in regular (formal) education and training." (Eurostat 2019). Governments with EU help "have been very active in promoting policies for re-engaging young people into the labour market or education system" (Mascherini et al. 2012: p. 109; see also: Sándor et al. 2021). "However, questions remain regarding [...] how well they perform in meeting their targets" (Mascherini et al. 2012: p. 109).

Figure 3 demonstrates an average NEETs ratio in the EU-27 during the period 2009–2021. The decline in the number of NEETs from 13% in 2009 to 9.6% in 2019 is a suc-

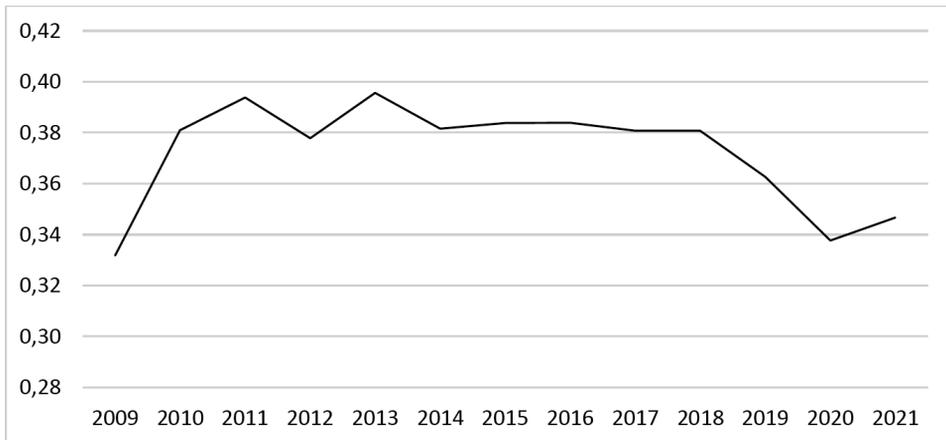
cess. Surprisingly, the increase during the pandemic was modest, and the rate of NEETs peaked at 10.3%. The standard deviation dropped slowly and steadily between 2013 and 2021. This convergence among the EU Member States is confirmed by the reading of the decreasing coefficient of variation since 2013 (see: *Figure 4*).

**Figure 3: Average NEETs ratio in the EU-27.**



Source: author's own calculation based on Eurostat database.

**Figure 4: Coefficient of variation of the NEETs among EU Member States.**



Source: author's own calculation based on Eurostat database.

The Kendall concordance coefficient between 2009 and 2021 time series stands at 0.406347, and it is statistically significant with p-values less than 0.050000. The indicator should be assessed as a moderate gamma ( $\gamma$ ) convergence. Despite this, several countries face severe problems with high numbers of NEETs throughout the period under the conducted review. *Table 2* presents 6 Member States with the highest NEETs ratio and

6 countries with the lowest ratio. The countries with the highest NEETs are Bulgaria, Romania, Italy and Spain during the entire period of 2009–2021. In contrast are the countries with the lowest NEETs rate over the entire study period: the Netherlands, Luxembourg, Sweden, Denmark, and Czechia.

**Table 2: The highest and the lowest NEETs ratio (age 15–24 years old).**

Year	6 countries with the highest NEETs ratio	6 countries with the lowest NEETs ratio
2009	Bulgaria (19.3%); Italy (18.6%); Ireland (18.3%); Spain (37.7%); Latvia (17.5%); Romania (15.9%)	Luxembourg (5.8%); Netherlands (6.3%); Denmark (6.5%); Slovenia (6.8%); Czechia (8.5%); Austria (9%)
2012	Italy (22.1%); Bulgaria (21.2%); Romania (21.2%); Ireland (19.1%); Spain (18.6%); Greece (17.3%);	Luxembourg (5.9%); Netherlands (6.2%); Denmark (7.3%); Austria (7.4%); Sweden (7.5%); Finland (7.9%);
2015	Romania (22.8%); Italy (22.5%); Bulgaria (19.1%); Croatia (18.1%); Spain 15.6%.; Cyprus (15.3%)	Netherlands (6.0%); Luxembourg (6.2%); Sweden (6.5%); Denmark (7.0%); Germany (7.0%); Czechia (7.5%)
2019	Italy (19.0%); Romania (18.4%); Cyprus (13.7%); Bulgaria (13.6%); Spain (12.1%); Croatia (11.8%)	Sweden (5.3%); Netherlands (5.5%); Luxembourg (5.6%); Czechia (5.7%); Slovenia (6.3%); Germany (6.4%)
2020	Italy (20.0%); Romania (18.4%); Cyprus (14.4%); Bulgaria (14.3%); Spain (13.9%); Croatia (12.2%)	Netherlands (5.8%); Sweden (6.2%); Luxembourg (6.5%); Czechia (6.6%); Slovenia (6.9%); (12.9%); Latvia (7.1%)
2021	Italy (19.8%); Romania (18.0%); Cyprus (12.8%); Croatia (12.7%); Lithuania (11.3%); Poland (11.2%)	Netherlands (5.1%); Sweden (5.1%); Czechia (6.5%); Slovenia (6.6%); Denmark (7.1%); Belgium (7.4%)

Source: Eurostat database.

For the 27 EU Member States, the Pearson's correlation coefficient between the percentage of NEETs in the population 15–24 years old and the unemployment rate of adolescents aged 15–24 years old is 0.685337 for data from the period 2009–2021. For one year in 2021, the data from the Pearson's correlation was only 0.421397. This should be assessed as a moderate dependency. It might be expected that the high unemployment rate and, hence, the poor employment opportunities, would have a demotivating effect on young people, so we expected a very high correlation between the NEETs rate and the unemployment rate. Such a significant decrease in this correlation during the recovery from the COVID-19 pandemic requires further research to explain this phenomenon.

## Discussion

The implications of the COVID-19 pandemic also have their territorial dimension, which is very diverse (Conte et al. 2020). Meinen et al. (2021) suggest that "the propagation of the economic impact of COVID-19 across regions cannot be explained by the regional spread of infections only. Instead, a region's economic structure is a significant driver of the observed heterogeneity. [...] On the one hand, this may be related to shortfalls in demand for the local region's exports. [...] On the other hand, COVID-19 related shocks may have caused disruptions in inter-regional supply chains. [...] Regions relying on intermediate goods sourced from foreign suppliers heavily exposed to the pandemic have experienced a significantly larger increase in the number of employees in short-time work." (Meinen et al. 2021: p. 2). The economic impact varies greatly depending on the degree of regional involvement in global value chains and specialisation in specific sectors. The characteristics of the regional economy determine the final effects of COVID-19, e.g. the concentration of jobs in the tourism sector in the region will result in greater job losses (Dziembata, Kłos 2021: p. 84–86). The actions taken related to the lockdown resulted in the emergence of supply and demand shocks in the European economy. As a result of the lockdown, the mobility of people was reduced, which reduced the demand in the service sector. Factory closures, production downtime and employee absences had an impact on supply chains, including their interruption. Household spending decreased and uncertainty about the overall economic situation contributed to the postponement of purchases. Planned investments of companies have been limited or have been postponed. These unfavourable phenomena have been reflected in the economic performance of the EU, including the labour market.

"Until the outbreak of the COVID-19 pandemic, young people often saw migration to make their lives easier. They believed that thanks to leaving the country, they would improve their financial position and life prospects" (Kowalewska et al. 2021: p. 301, 2018: p. 541). "Emigration was associated with severe economic problems of the country, such as the high unemployment rate among young people (Cerdeira et al. 2016) or the economic crisis (Cairns 2017). [...] The increase in migration flows impacted the European integration processes and the resulting free movement of capital, goods, people, and services within the framework of the free market of the European Union" (Kowalewska et al. 2021: p. 292). At the same time, it was a factor contributing to the broadly understood convergence of the Member States. "The outbreak of the pandemic and the fear of an unknown threat changed the perception of one's mobility and approach to emigration. It is also a factor that negatively affected migration movements" (Kowalewska et al. 2021: p. 301).

For example, the character of Khaby Lame became a spectacular symbol of changes in the youth labour market. "In 2020, as the pandemic flipped the world on its head, a 20-year-old factory worker in Italy was made redundant. Fast forward 12 months and that same young man had amassed over 200 million followers across social media platforms." (Lundberg Toresson 2022). In this environment, gigantic recognition is followed by enormous money, and Khaby Lame has become a millionaire after only several months

of activity on social media. It ignites the imagination of young people all over the world. It is a new "American Dream" about the way of work, where young people want to make money by making satirical videos on *TikTok*, instead of working day and night in factories.

## Conclusions

The EU cohesion policy is currently supporting employment and labour mobility. Linked to its contribution in the area of social inclusion, EU cohesion policy supports labour market reforms that promote equal opportunities for all, including young people. Despite many actions taken, the differentiation of youth labour markets among the Member States is still large.

Nevertheless, this study shows that the differentiation of the youth unemployment rate among the EU-27 countries is decreasing. The standard deviation has been decreasing since 2013, and the coefficient of variation has been significantly decreasing since 2018. Gamma convergence, understood as a situation where countries change their positions in the ranking according to the youth unemployment rate, occurs to a moderate degree. In the entire period under examination 2009–2021, the countries with the highest youth unemployment rates are: Greece, Spain and Italy. Invariably, the countries with the lowest youth unemployment rate include: Germany, Austria, Denmark and the Netherlands.

While across all countries the unemployment rate of young people has been typically higher than that of adults, the COVID-19 pandemic crisis hit young people extremely hard. On average in the EU, the unemployment rate in the age group under 24 years old increased by 4 percentage points, and in the total population over 25 years old it only increased by 0.9 percentage points.

Since 2014, the number of people aged 15-24 years old who are unemployed, not in education and not remaining on an internship (NEETs) has been gradually decreasing. This should be assessed as a joint success of the EU cohesion policy and the Member States. During the COVID-19 pandemic, this decline was halted. Invariably, the countries with the highest percentage of NEETs in the population aged 15-24 years old are: Italy, Bulgaria, Romania and Spain. Countries with the lowest percentage of NEETs are: Luxembourg, Sweden, Denmark, the Netherlands, and Czechia. The standard deviation of NEETs among EU Member States dropped slowly and steadily between 2013 and 2021. The coefficient of variation decreased, too. The gamma convergence should be assessed as moderate, but noticeable (the Kendall's concordance coefficient between 2009 and 2021 time series stand at 0.406347).

The research hypothesis was confirmed: the convergence of youth labour markets among the EU countries occurred in the second decade of the 21st century, but the COVID-19 pandemic crisis inhibited this convergence.

Pearson's correlation coefficient between the percentage of NEETs and the unemployment rate is 0.6853 for 2009–2021 and only 0.4214 for 2021, which should be assessed as a weak correlation. The relationship between the unemployment rate and the

proportion of young people not in employment, education or training decreased during the COVID-19 pandemic. The conclusion is that participants remaining as NEETs hardly depends on actual job opportunities.

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