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Labor Productivity: Large vs. Small, Turkey vs. EU

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Özet:

Bu çalışma Türkiye ile Avrupa birliği arasındaki işgücü verimliliği farkını araştırmakta, bunun için farklı büyüklük grubundaki girişimlerin işgücü verimliliğini karşılaştırmaktadır. Türkiye'de büyük girişimlerin işgücü verimliliği ile yeni AB üyesi olmuş ülkelerdeki (EU10) büyük girişimlerin işgücü verimliliği ortalaması arasındaki fark oldukça küçüktür. Buna karşılık Türkiye'deki en küçük işletme grubunun (20'den az çalışanı olan) işgücü verimliliği EU10 ülkelerindeki aynı grubun ortalama verimliliğinin yarısından daha düşüktür. Ayrıca, bu grup girişimlerin toplam istihdam içindeki payı, EU10 ortalamasının üzerindedir.

Abstract:

The paper examines the labor productivity gap between firms in Turkey and the European Union (EU) by comparing labor productivities of firms of different sizes. The gap between the labor productivity among large firms in Turkey and the average labor productivity of large firms in the new member states of the EU (called EU10) is quite small. By contrast, the labor productivity of the smallest group of firms in Turkey (those employing less than 20 employees) are less than one half as productive as the average productivity of the same size group in EU10. In addition, the share in employment of this group of firms in Turkey is higher than the average share in EU10.

[1] Ahmed Ezz Eldin Mohamed was a student at Sabanci University's Master in Public Policy Program when he wrote this note.

I. Introduction

It has recently been pointed out that productivity gap between small and large firms is high in Turkey relative to OECD countries.[2] It is also well known that Turkish labor productivity lags behind many European countries. The question is: *How large is this gap and what is the contribution to this gap of firms of different size classes?* This study aims at placing Turkey in comparison to other European countries in terms of distribution of employment, total value added of labor, and labor productivity of different size classes of enterprises for the non-financial business sector in 2011.

II. Data and Methodology

Data for European countries and Turkey are obtained from the Structural Business Statistics of Eurostat and the Annual Industry and Service Statistics of the Turkish Statistical Institute (TUIK) databases, respectively. They cover the number of persons employed in the non-financial business economy by the size class of employment and the total value added of the non-financial business economy by size class of employment for the year 2011. Some adjustments are made in order to ensure that the data from both sources are compatible. First, the definition of non-financial business economy by the European Commission Database is employed for all data which refers to "economic activities covered by sections B to J and L to N including S95 according to the NACE-Rev.2 and the enterprises or its legal units that carry out those activities." This required the subtraction of categories P,Q,R, and S and adding S95 to the total values for Turkish data. Second, the size class of employment is divided into four categories according to the number of persons employed; (1-19), (20-49), (50-249), and (250+). This involved adding relevant entries for employment of (0-9) and (10-19) for European data, and (50-99) & (100-249) and all sizes above (250) for Turkish data. Third, the value added statistics for Turkish economy are reported in Turkish Liras. We convert them to million Euros by dividing by 1,000,000 and then convert them to Euros. The bilateral average annual exchange rate for the year 2011 is specified by the European Central Bank to be 2.3378 TL/Euro. Fourth, some data are missing for some countries due to the

[2] See OECD (2014) and the comment by Sak (2014).

unavailability of statistics for one or more category or confidentiality, as stated by EuroStat, and so they are deleted from the countries' list. These countries are Denmark, Germany, Ireland, Greece, France, Cyprus, Malta, Netherlands, Switzerland, and Romania.

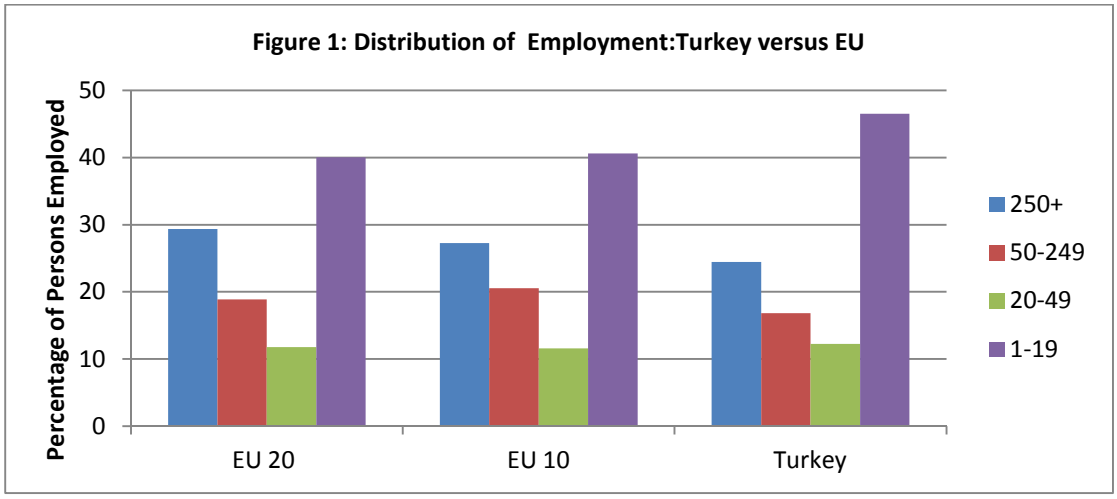
Apart from these adjustments, data from both sets follow the same definitions and categorizations. We also define two sets of European countries: EU 20 and EU 10. The first includes Belgium, Bulgaria, Czech Republic, Estonia, Spain, Croatia, Italy, Latvia, Lithuania, Luxembourg, Hungary, Austria, Poland, Portugal, Slovenia, Slovakia, Finland, Sweden, United Kingdom, and Norway. The EU10 are the recent-accession countries which includes Bulgaria, Czech Republic, Estonia, Croatia, Latvia, Lithuania, Slovakia, Slovenia, Hungary and Poland. The idea behind creating the group of EU10 is that this group consists of mainly transition economies or countries that are closer to Turkey in terms of per capita income and may act as a more relevant set of comparator countries.

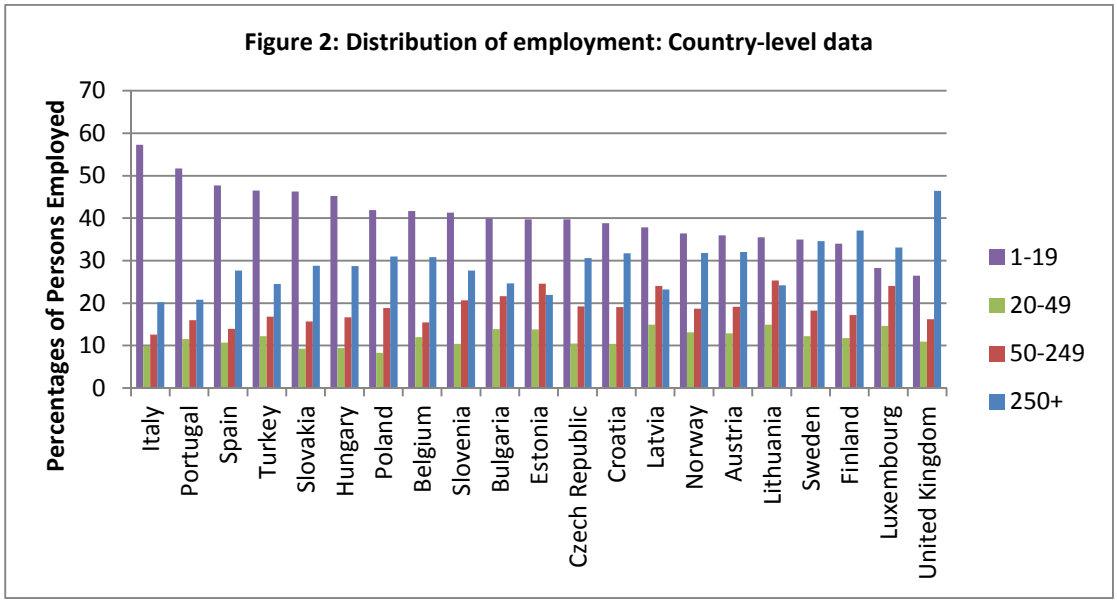
The paper starts by comparatively looking at the distribution of employment and value added of each size class of enterprises for the studied countries. Then, we contrast Turkish labor productivity with other countries and European averages.

III. Findings

III. 1. Distribution of Employment across size groups

Figures 1 and 2 compare the percentage distribution of employment by size groups of the enterprises. Figure 1 shows that the employment share of smallest firms in Turkey is higher than the average of both EU20 and EU10; the difference is about 5 percentage points. At the same time, however, Figure 2 shows that there is substantial variability in the employment share of the smallest group of firms across countries, from about 57 percent in Italy, to only 25 percent in the UK. Note that while the employment share of the smallest group of firms in Turkey is relatively high at about 47 percent, that share is higher in Italy, Portugal and Spain.





III. 2. Labor Productivity across size groups

Labor productivity is calculated by dividing the value added for each category per country by the number of persons employed within the category. We start the analysis with Figure 3 which shows that average labor productivity in Turkey (about 13.5 thousand Euros in 2011) is about one third of EU20 (43 thousand Euros) and 67 percent of EU10.

Figure 4 displays labor productivity by size classes for all the countries included in this note. Again, the large degree of variability of labor productivity across countries and size classes is visible. Among the studied countries, Norway has the highest

productivity of labor which is skewed towards its small enterprises. Similarly, Luxembourg's labor productivity is skewed towards small enterprises. For the rest of the countries, including Turkey, the largest group of enterprises has the highest level of labor productivity.

Figure 3: Average Labor Productivity

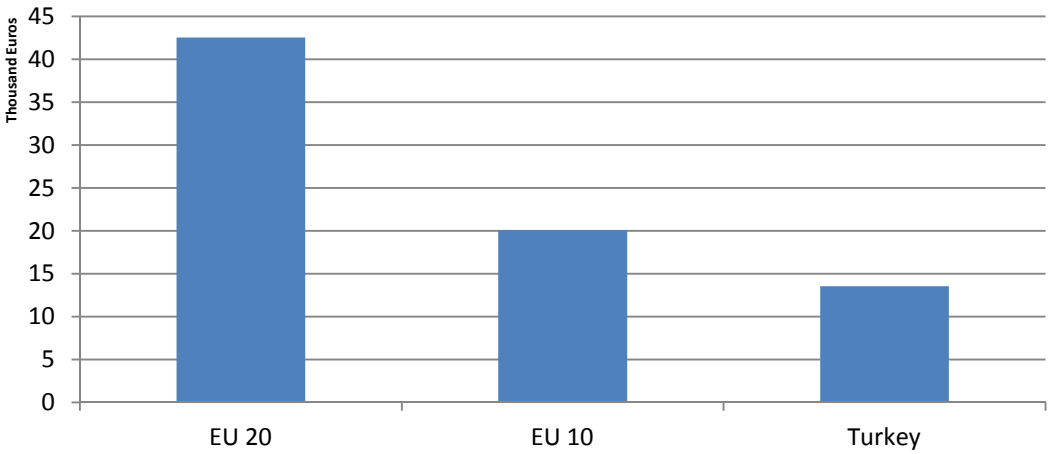


Figure 4: Labor Productivity by size groups

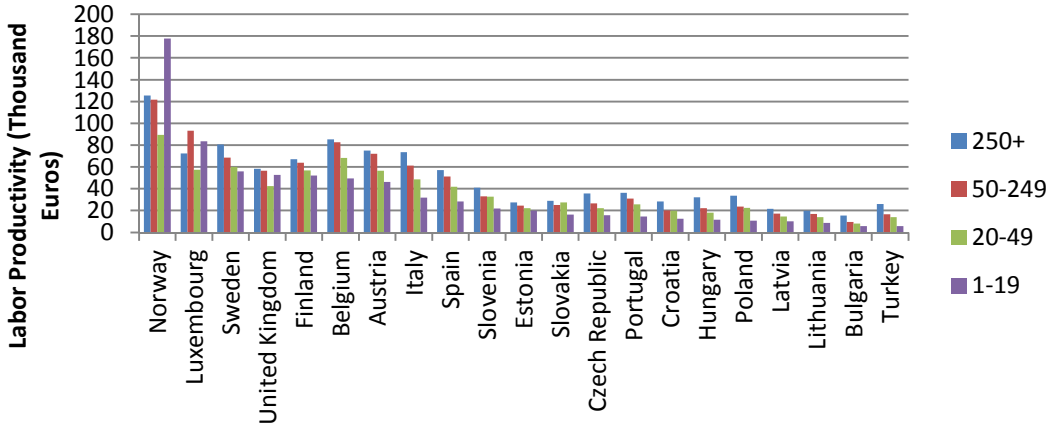


Figure 5 provides additional insight about where the productivity gap between Turkey on the one hand and EU10 or EU20 on the other, is originating from. Comparison with EU10 is especially telling. While the gap in the productivity of large enterprises between EU 10 and Turkey is relatively small (about 28 thousand Euros vs 26 thousand Euros, respectively) the productivity gap between small enterprises is much larger

(about 6 thousand Euros in Turkey vs. 13 thousand in EU10). Figure 6 provides a different perspective on the same finding. The Figure displays relative labor productivity, which is calculated by dividing the productivity of each size category of enterprises with the productivity of small enterprises It shows that while in Turkey the ratio of average labor productivity of large firms to that of small firms is about 4.5, it only 2 in EU10, and less than 1.5 in EU20.

Given that in Turkey small firms have a relatively large share in total employment, one can conclude that the gap in overall productivity of Turkey and EU10 is primarily explained by the extremely low productivity of small firms.

Figure 5: Labor Productivity of Turkey versus the EU

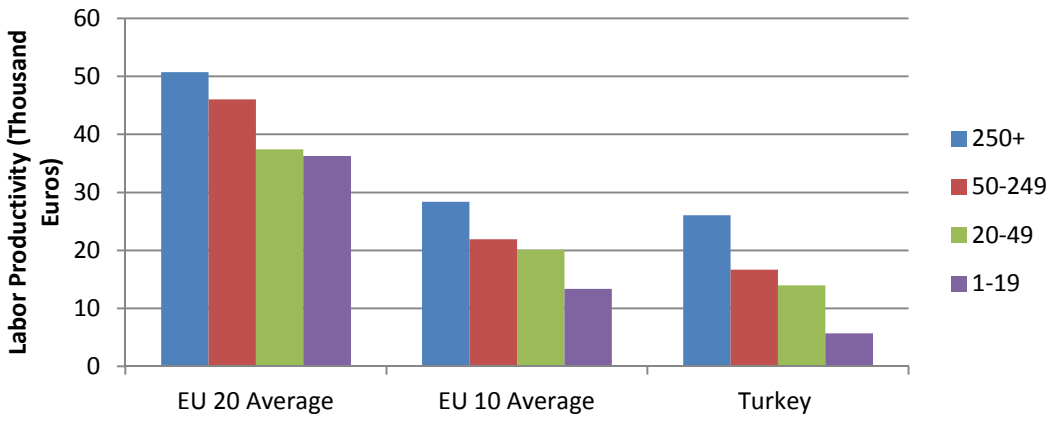
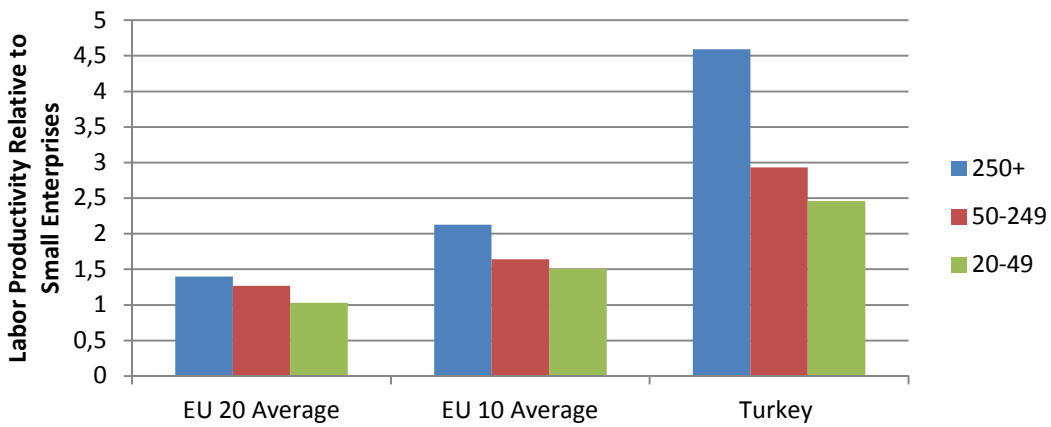


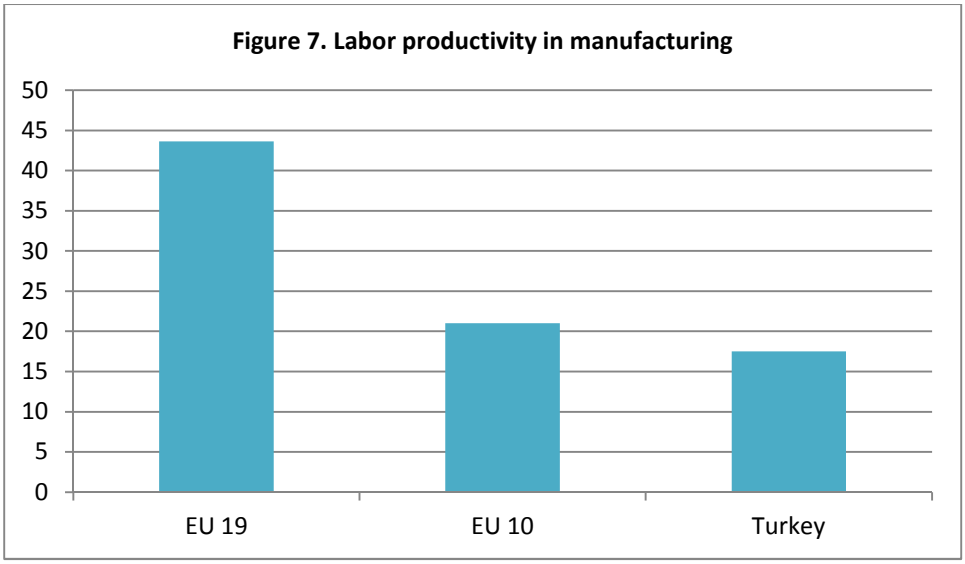
FIgure 6: Relative Labor Productivity



III. 3. The situation in manufacturing

It will be interesting to point out that the interaction between size and productivity is even more interesting in the manufacturing industry. Figure 7 shows average labor productivity in manufacturing industry in EU19 (same as EU20 minus Luxemburg for which data was not available), EU10 and Turkey. Average labor productivity (17.5 thousand Euros) in Turkey a bit lower than that in EU10 (21 thousand Euros) and about 40 percent of EU19. Figure 8 provides labor productivity by size classes, again in manufacturing. The figure shows that the largest groups of firms are actually on average *more* productive in Turkey relative to EU10. Labor productivity in all other size classes is lower in Turkey, but the gap is especially large for the smallest group of firms (5 thousand Euros in Turkey, 11 thousand Euros in EU10 and 26 thousand Euros in EU19). A closer look at the data reveals that In Turkey, the productivity of 250+ firms is 6.2 times as productive as small firms, whereas this ratio is only 2.3 for EU19 and 2.5 for EU10.

Figure 7. Labor productivity in manufacturing



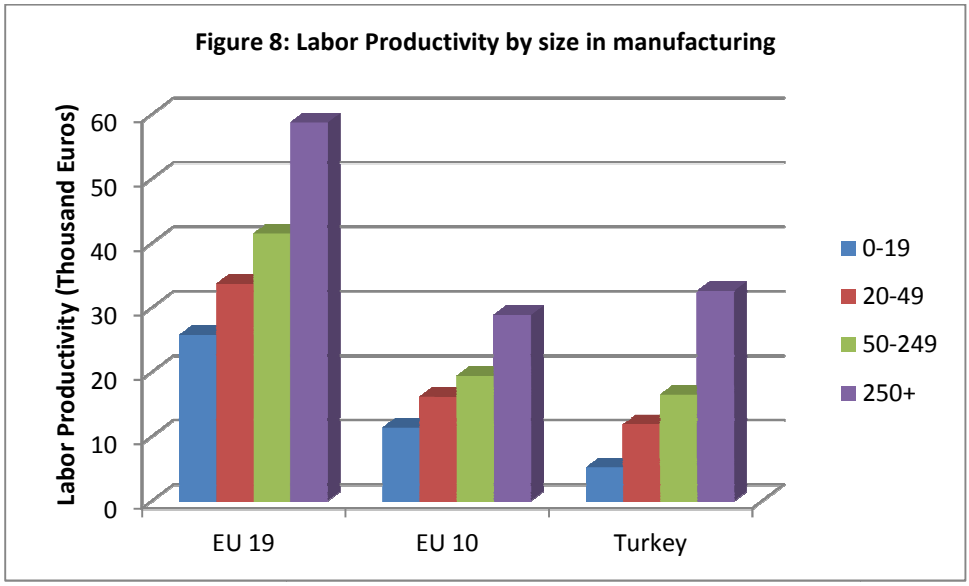
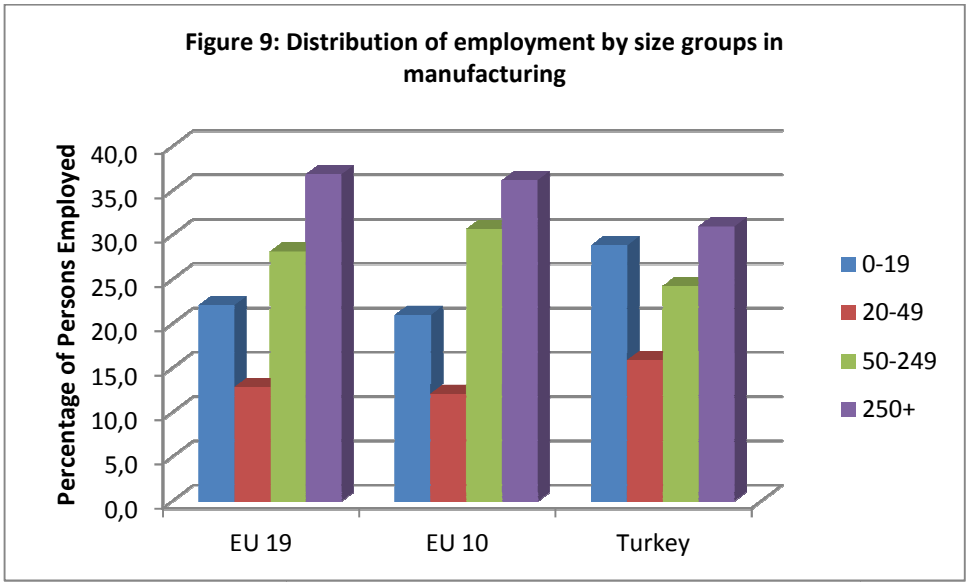


Figure 9 displays the distribution of employment among firms of different size classes, but now for manufacturing only. The employment share of small firms in Turkey (29 percent) is much higher in Turkish manufacturing than in EU10 or EU19 (about 20 percent in both) with a difference of about 9 percentage points, and the employment share of large firms is lower. Notice that the difference between the employment shares of the smallest class of firms of Turkey and those of EU10 or EU19 is large in manufacturing compared to the whole of non-financial business economy discussed above. In any case, what is true for the whole of business sector seems to be especially true for the Turkish manufacturing industry: productivity gap between Turkey and EU countries is primarily explained by the relatively very low productivity of small firms in Turkey, and plus, in manufacturing, it seems that this group of firms carries a larger weight in employment in Turkey relative to European countries.[3]

[3] Again, the employment share of the small group of firms varies significantly across countries in manufacturing as well, and Italy, Spain, and Portugal have larger shares compared to Turkey.



IV. Conclusion

The analysis presented in this note seems to confirm a point made by various observers[4], namely that Turkey seems to contain a dualistic business structure with a group of large, highly efficient modern firms a large number more traditional, low productivity small firms.

At the same time, one should be aware of the limitations of the evidence presented in this note. In particular, labor productivity is not the best indicator of productivity. Estimates of labor productivity do not control for capital, and more capital intensive sectors naturally have higher labor productivity. Hence, differences in aggregate labor productivity could simply reflect different sectoral compositions. Total factor productivity would be a better measure; however the data sets used here do not contain data for capital stock. Still, the data presented above does strongly suggest that a closer look at employment and productivity dynamics at smaller firms may provide useful insights on why aggregate productivity in Turkey is lower than comparator countries.

[4] See, for example, especially McKinsey (2003) and the OECD (2014). The latter also points out that the productivity gap between small and large firms is greater in Turkey compared to a sample of OECD countries.

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