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The Effect of the Tax System as an Institutional Factor on the Business Structure in Europe

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Summary

This chapter focuses on the influence of tax systems and taxation rules on the firm structure of the 28 European Union member economies. It is argued that higher taxes and more complex tax rules lead to smaller firms, and that, on the other hand reduces macroeconomic performance. It is found that the firm size and corporate tax rates are negatively correlated in case of medium-sized ($R=-0.4$; $p=0.03$) and large ($R=-0.41$; $p=0.03$) firms. Indications were found that higher transaction costs caused by taxation lead to smaller firms, as a significant negative correlation was found between the number of hours per year needed to administer tax payments, and the share of large firms ($R=-0.41$ & $p=0.03$), and also between KPMG's comment length (an indicator for tax system complexity) and the share of medium-sized firms' turnover from the total turnover ($R=-0.39$ & $p=0.045$). More complicated tax rules might also cause a smaller proportion of firms to grow quicker, but the significance level of these relationships is not very convincing.

Keywords: tax system; tax rate; institutions; firm size

JEL classifications: H21, L11

7.1. INTRODUCTION

Firm size is widely regarded as a key determinant of economic performance. Several studies have showed that larger firms generally outperform smaller ones: Pervan & Visic found a weak but significant positive relation between firm size and firm profitability (2012); Lee using panel data for more than 7,000 US publicly held firms found that profit

rates are positively correlated with firm size (2009). Larger firms also tend to be more internationalised (Gubik, 2007, 2008; Gubik & Bartha, 2014), and being involved in international business processes usually also leads to better performance (Gubik, 2011). The relation between the innovativeness and the size of the firm is a lot more debatable (see Vaona & Pianta, 2006 for a fairly detailed review), but it is generally found that larger firms spend more on R&D, and can be more efficient in implementing innovations if certain conditions hold (Symeonidis, 1996). Smaller firms on the other hand can be more flexible, giving them an advantage over large enterprises (Urbaniec, 2015).

For the reasons mentioned above the firm structure of an economy is of great importance. The size of the firm can be influenced by a lot of factors: bigger economies offer a larger domestic market so firms can grow bigger; more labour, capital or other factors of production can also boost the size of the firm; traditional links to international markets (like the ones formed between some European countries and their former dominions) can also lead to a larger firm size.

Institutional factors, the rules of doing business formed by the traditions and the political bodies of a country, yet again can influence firm size. If it is very complicated to establish a new enterprise, already existing firms can grow bigger because of the lack of competition they have to face. Rules that make the domestic market monopolistic affect many areas of the economy, but they undoubtedly have an effect on the size of the domestic firms as well. Some rules disproportionately increase the operating cost of companies over a certain size. One of the textbook examples is France's "social plan" rule that makes it compulsory for companies with at least 50 employees to make plans for the facilitation of reemployment. The social plan increases labour costs on the threshold, and it keeps many firms employing 30-40 people from going over 49 employees (see Figure 2 in Garicano, Lelarge & Van Reenen, 2013). To avoid such traps, certain EU policies are targeted at high growth small and medium-sized enterprises (Wach, 2015).

The taxation system can be interpreted as an institutional factor, and as such it can influence the firm structure of the economy. It may favour certain types of business entities or certain firm sizes. This paper addresses some European cases where the tax regime may have a distortion effect on the size structure of businesses.

7.2. LITERATURE REVIEW

The literature on the effect of taxation on firm size is not vast. Henrekson & Johansson (1999) used firm data for Sweden for 1968-1993 to check how different size groups of firms evolved in the country. They have found that while the number of smaller firms (employing less than 10 people, and especially the ones employing 0-1 person) increased dynamically, the number of larger firms almost didn't change at all, or even dropped in certain categories. They offer several explanations to the phenomenon (all of them being institutional ones), and one suggestion is specifically related to the Swedish tax system, which – according to the authors – disfavoured new, small firms, while large firms were highly favoured until the early 1990s. Since smaller firms could not grow because of the institutional environment, Sweden was left with a relatively low number of large firms, and a high number of slowly growing small ones (Henrekson & Johansson, 1999).

Heshmati, Johansson & Bjuggren (2009) also test Swedish firm size data for the period 1973-2002, and they try to show the effect of corporate taxes on the size distribution

of firms. During that period Sweden had used various tax systems, the nominal corporate tax rate had varied between 62% and 28%. Using data acquired from balance sheets and income statements the authors were able to calculate the effective corporate tax rate for firms of various sizes. They found yet again that the tax system had favoured larger firms: the highest effective tax rate was paid by firms with 10-19 employees, while the lowest by ones with more than 2500 employees. The effective tax rate was also lower for firms in the production sector than for those operating in the service sector. These findings can be interpreted the same way as the results of the previous Swedish analysis: the taxation system prevented smaller firms to grow (as the highest corporate taxes were paid by the 10-19 employee group); Sweden was left with many microfirms and very few large ones.

Somewhat similar results were found by Chongvilaivan & Jinjarak (2010) in a cross-country analysis. They found that there is a positive empirical association between firm size and corporate tax, more precisely the authors state that: "raising the corporate tax rates by 5% increases the average growth of firm size by 3%" (Chongvilaivan & Jinjarak, 2010, p. 158). Once they split the sample into an OECD and a non-OECD group, however, the same effect was not found for the non-OECD countries. Since this paper focuses on the EU28, and since most EU countries are also members of the OECD, Chongvilaivan & Jinjarak's findings are relevant for our analysis.

One of the main issues in cross-country studies is the difference in the firm size distribution between developed and developing countries. Many studies suggest that the difference can be caused at least partially by tax avoidance. Since the legal system is weaker in developing countries, the informal sector can be very widespread, constituting as much as half of the economic activity (Dabla-Norris, Gradstein & Inchauste, 2005), distortions in firm structure can lead to misleading results. In a study on Cote d'Ivoire Richmond and Klapper (2010) found that "the distorted firm size distribution relative to developed countries is systematic across all sectors of the economy" (p. 1). Given that the EU28 members are not homogeneous as far as the rule of law or the level of corruption is concerned, similar distortions may occur in our analysis as well.

A relatively extensive literature exists on how tax incentives (especially ones targeted at boosting R&D) affect firms of different sizes. In a Japanese study testing more than 900 companies for the period 1989-1998 it is found that large or larger firms can benefit more from such tax incentives (Koga, 2003). Labeaga Azcona, Martínez-Ros & Mohnen (2014) checked Spanish manufacturing firms, and while they had also found that large firms use the incentive more, the price elasticity in case of SMEs is larger than in case of large firms. In a final report compiled by the CPB Netherlands Bureau for Economic Policy Analysis (2014) it is remarked that: "In some of the countries analysed, small and medium sized enterprises (SMEs) tend to respond more strongly to the support for R&D, while the reverse was found in other countries" (p. 6). It seems that the effect of tax incentives on firm size is inconclusive in Europe.

7.3. MATERIAL AND METHODS

The paper uses several secondary sources, statistical databases to test the relationship between the size of firms and taxation:

- One of the main sources of the firm demographics data was Eurostat’s Structural Business Statistics database: <http://ec.europa.eu/eurostat/web/structural-business-statistics>;
- The second main source of EU country-level firm data was the 2014 issue of the European Commission’s SME Performance Review: http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/performance-review/index_en.htm;
- Macroeconomic data, such as GDP was collected from the IMF’s World Economic Outlook (IMF-WEO) database: <http://www.imf.org/external/ns/cs.aspx?id=28>;
- Macro-level taxation indicators were collected from the World Bank’s Doing Business database: <http://www.doingbusiness.org/data/exploretopics/paying-taxes>;
- For country-level tax information KPMG’s (<http://www.kpmg.com/Global/en/services/Tax/Pages/default.aspx>) and PWC’s (<http://www.pwc.com/gx/en/paying-taxes/>) tax databases were used.

The materials used have their limitations. Most firm-related data is collected in groups based on the number of employees. As many taxation rules are based on the turnover of the firm, the number of employees is not the best indicator for the size of the firm in our analysis. Some information on turnover was also available, however the data was also organised according to the number of employees. The other problem with the groups formed according to the number of employees is that we only have a limited number of categories, namely firms with 0-9, 10-49 (10-19 and 20-49 in some cases), 50-249 and 250+ employees.

The sources of firm size data were the Structural Business Statistics (SBS) and the SME Performance Review (PR) databases. Although PR takes most of its data from SBS, it also gathers some additional information from national statistics offices, and some estimates are also used, so the two databases are not completely compatible. It also has to be mentioned that not all of the businesses are counted in SBS and PR. The SBS database features active enterprises in the “business economy except activities of holding companies”, while PR includes active enterprises from sectors B-J and L-N according to the revision 2 of NACE, i.e. it excludes firms operating in the agricultural, financial, education, health etc. sectors.

Basic data analysis methods, such as linear regression were used to test the relationships. The calculations and graphic interpretations were made with MS Excel.

Firms in the study are grouped into four categories. For the sake of simplicity firms employing 0-9 people are called micro firms; those employing 10-49, small firms; medium-sized are the ones with 50-249 employees; and large ones with at least 249 employees.

7.4. RESULTS AND DISCUSSION

It is not surprising that the number of firms operating in an economy is correlated with the GDP of the country. But if we break down the total number of firms into different size groups (see Table 7.1.), we will find that the GDP is correlated a lot stronger to the number of larger firms than to those of the small ones. In case of the EU28 the Pearson’s R for firms with 0-9 employees and GDP correlation is 0.84, while it is 0.95 for larger firms (for small firms it is 0.97, for medium-sized ones it is 0.95 and for large ones it is

0.96, to be precise). The relationship is significant at all relevant significance levels ($p < 0.001$).

Table 7.1. Number of firms and the GDP of the EU28 countries in 2015

Country	GDP (current int \$ PPP, billions)	Total no. of firms	Firms with 0-9 employees	Firms with 10-49 employees	Firms with 50-249 employees	Firms with 250+ employees
Austria	402.420	314700	275541	33143	4970	1049
Belgium	492.267	519513	488385	26299	4033	796
Bulgaria	131.334	308675	282432	21730	3945	570
Croatia	89.674	149968	137913	10014	1648	394
Cyprus	27.700	38992	35954	2547	416	76
Czech Rep.	325.285	1027192	988741	31130	5958	1361
Denmark	255.866	215749	193260	18752	3136	601
Estonia	36.845	60004	54362	4577	920	147
Finland	224.846	221392	203465	14794	2562	568
France	2633.896	2603509	2428690	146837	22828	5154
Germany	3815.462	2327524	1901634	354959	60067	10864
Greece	294.014	613971	591111	20148	2302	407
Hungary	255.254	521429	493595	23058	3958	817
Ireland	237.629	142949	126640	13498	2395	412
Italy	2157.123	3543835	3359266	162900	18692	2981
Latvia	49.731	94320	84006	8440	1680	192
Lithuania	82.622	142700	129771	10488	2170	268
Luxembourg	53.174	30300	26283	3248	623	149
Malta	14.716	32019	30342	1315	303	57
Netherlands	818.249	810214	759021	41376	8397	1424
Poland	996.477	1456927	1387965	51900	14280	2783
Portugal	287.388	757843	723760	29138	4261	687
Romania	406.964	442568	387827	46045	7334	1361
Slovakia	158.428	456389	439187	14621	2149	432
Slovenia	62.949	111914	105528	5214	980	189
Spain	1619.093	2229626	2107621	105349	14008	2647
Sweden	464.264	705430	667866	31056	5487	1020
United Kin.	2641.432	1766734	1568508	164210	28009	6009

Source: Own compilation based on IMF-WEO and PR data

The mentioned results might suggest that larger firms (with more than 10 employees) are more important for economic performance. A further investigation of the topic, however, can lead to even more convincing results. Figure 7.1. shows the distribution of firms in the EU28 countries. German micro firms (employing 0-9 people) have the lowest share of the total (around 82%), while Greek, Czech or Slovak micro firms have a share of 96%. Large firms (employing more than 250 people) make up only a fraction of the total number of enterprises. In Luxembourg, where large firms have the highest proportion in Europe, they have a share of 0.5%.

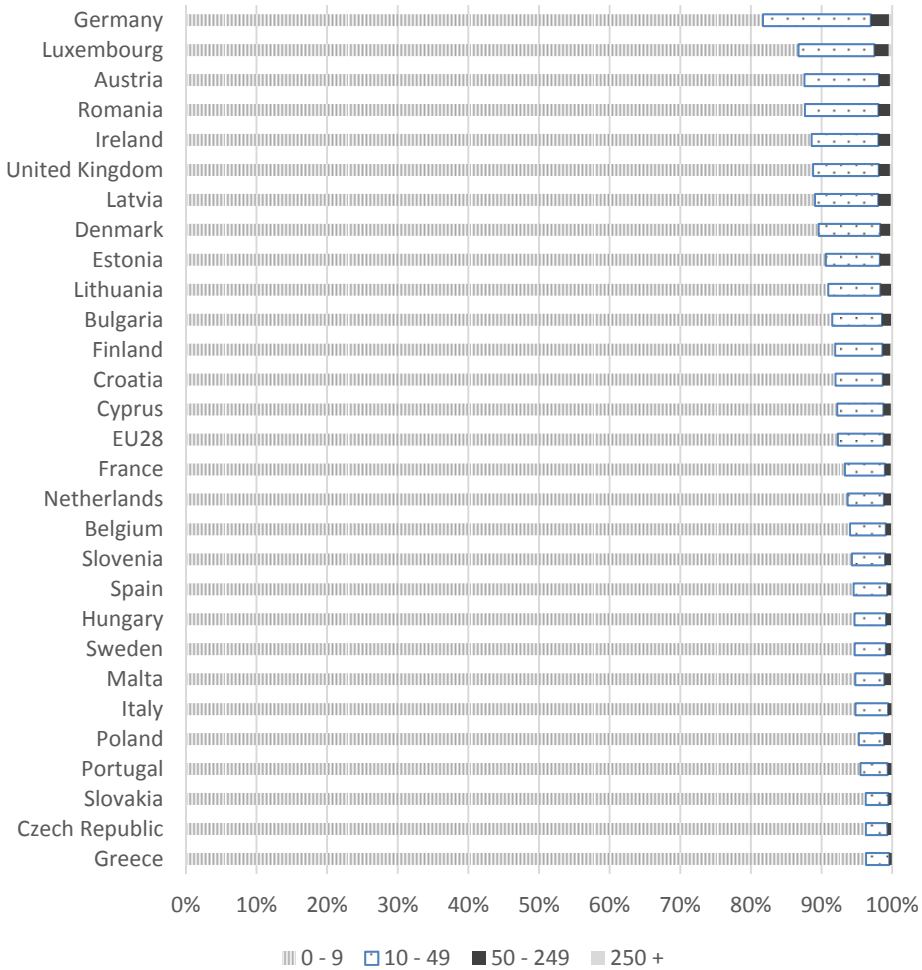


Figure 7.1. Firm size structure based on the number of people employed in the EU28 in 2015
 Source: Own calculations based on PR data.

If the relationship between the GDP/capita and the firm size distribution is tested, the results clearly suggest that the higher the share of larger firms in an economy, the higher the GDP/capita is in that country. A negative correlation is found in case of micro firms ($R = -0.39$; $p = 0.04$), while the correlation is positive and significant for all other groups of firms employing more than 9 people. The highest positive correlation is found when the share of large companies is tested, in case of which Pearson’s R is 0.58 ($p = 0.001$).

Firm Size and Corporate Taxation

Information included in the World Banks' Doing Business database on taxes paid by the enterprises was used to check the interrelation between firm size and taxation. The database contains three categories that are relevant for our inquiry (see Table 7.2.):

- Tax rates, given as a percentage of the commercial profit, and broken down into three groups: profit tax, labour tax and contribution, and other taxes;
- Number of payments per year;
- Time requirement for paying taxes (the time it takes to prepare, file and pay the corporate income tax, value added or sales tax, and labour taxes, including payroll taxes and social contributions – in hours per year).

The data show that tax rates are negatively correlated with corporate size. The correlation between the share of micro companies and the total tax rate is positive, although not significant ($p=0.10$). For the share of all other size groups, though, there is a negative correlation, and it is significant, too, for medium-sized ($R=-0.4$; $p=0.03$) and large ($R=-0.41$; $p=0.03$) firms. Although the Pearson's R value only suggest a moderate correlation, one has to conclude that higher taxes paid by firms tend to coincide with a higher proportion of micro firms in the economy, which, on the other hand, coincides with a lower GDP/capita value.

The phenomenon might partially be explained by tax avoidance (see the works of Dabla-Norris, Gradstein & Inchauste, 2005; and Richmond & Klapper, 2010 cited above). Higher taxes can create an incentive to increase illegal employment, and that will shrink the official size of firms. Since the DB database breaks down the total taxes paid by companies into three groups, the two significant of which is profit tax and labour tax, we can test which one of these two is more closely correlated with the share of firms of different sizes. It is found that profit tax is not significantly correlated with firm size. Labour tax, on the other hand, has the same effect on firm size as the total tax had: $R=-0.41$ & $p=0.03$ for medium-sized firms; $R=-0.43$ & $p=0.02$ for large firms. Higher labour taxes negatively affect the share of medium-sized and large firms in an economy. The effect might be caused because of illegal employment, or it could simply be that with higher taxes on employment it doesn't pay off to increase the number of employees after a certain limit.

Taxes can distort firm operation not only because of the rates, but also because of the transaction costs they generate for firms. The DB database has two indicators for those transaction costs: number of payments per year and number of hours it takes in a year to handle the chores related to tax payments. No significant association is found between the number of payments and the size distribution. In case of the time requirements, however, the same relation is found as in case of the tax rates. More time spent on administering taxes means a higher share of micro firms, but the significance level is above .05 ($R=0.35$ & $p=0.07$). Negative Pearson's Rs are found for small and medium-sized firms, with the significance value again around 0.07. But in case of large firms the correlation is negative and significant ($R=-0.41$ & $p=0.03$), showing that the more time has to be spent on administering tax payments, the less share large firms will have in the economy. The result is an indication that the lowering of transaction costs might help firms to grow bigger, which, on the other hand can increase the wealth generated by the economy (measured in GDP/capita).

Table 7.2. Paying corporate taxes in the EU28 countries in 2013

Country	Payments (nr. per year)	Time (hours per year)	Profit tax (%)	Labour tax (%)	Other taxes (%)	Total tax rate (%)
Austria	12.00	166.00	15.40	34.30	2.40	52.00
Belgium	11.00	160.00	6.50	50.70	0.60	57.80
Bulgaria	13.00	454.00	5.00	20.20	1.70	27.00
Croatia	19.00	208.00	0.00	17.10	1.60	18.80
Cyprus	29.00	146.50	9.60	12.00	1.60	23.20
Czech Republic	8.00	413.00	7.60	38.40	2.60	48.50
Denmark	10.00	130.00	20.30	3.00	2.80	26.00
Estonia	7.00	81.00	8.40	39.00	1.90	49.30
Finland	8.00	93.00	14.50	24.20	1.30	40.00
France	8.00	137.00	7.40	51.70	7.50	66.60
Germany	9.00	218.00	23.30	21.20	4.30	48.80
Greece	8.00	193.00	18.20	31.00	0.70	49.90
Hungary	11.00	277.00	11.80	34.30	1.80	48.00
Ireland	9.00	80.00	12.40	12.10	1.40	25.90
Italy	15.00	269.00	19.90	43.40	2.00	65.40
Latvia	7.00	193.00	4.90	27.20	2.90	35.00
Lithuania	11.00	175.00	6.10	35.20	1.30	42.60
Luxembourg	23.00	55.00	4.20	15.60	0.40	20.20
Malta	7.00	139.00	30.30	10.70	0.50	41.60
Netherlands	9.00	123.00	21.10	17.60	0.40	39.00
Poland	18.00	286.00	13.10	24.70	1.00	38.70
Portugal	8.00	275.00	15.10	26.80	0.50	42.40
Romania	14.00	159.00	10.70	31.50	1.00	43.20
Slovakia	20.00	207.00	8.50	39.70	0.40	48.60
Slovenia	11.00	260.00	12.50	18.20	1.40	32.00
Spain	8.00	167.00	21.90	35.70	0.70	58.20
Sweden	6.00	122.00	13.40	35.50	0.60	49.40
United Kingdom	8.00	110.00	20.90	11.30	1.50	33.70

Source: World Bank's Doing Business Database

Using KPMG's tax database we can make another attempt at measuring the complexity and hence the transaction costs imposed by the tax system. KPMG adds short comments to the corporate tax rate on its website to provide additional information. The comment in some cases is quite long; in case of Spain, for example it is 2,053 characters long (see Figure 7.2.). In case of other countries like Finland or Bulgaria KPMG does not feel the need to make additional comments. If we assume that longer comments are needed in case of more complex legislation, and we count the number of characters needed by KPMG to describe the corporate tax system, the length of the comments can be used as an indicator of corporate tax complexity.

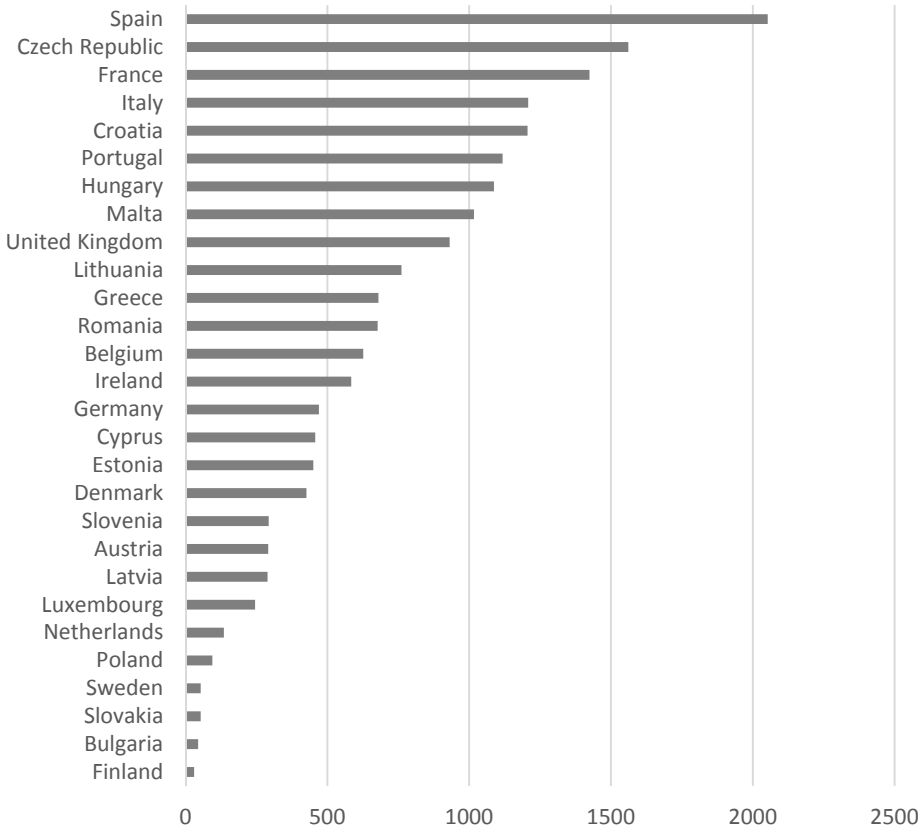


Figure 7.2. Number of characters used by KPMG to describe the corporate tax system
 Source: Own calculations based on KMPG database.

When the association is tested between KPMG’s comment length and firm size distribution data, one significant relationship is found. The PR database provides information on the turnover generated by firms of different sizes (according to the number of people employed). Using this information a similar distribution of micro, small, medium-sized and large firms can be set up, as it was done in case of employment figures. In the UK almost 56% of the total turnover was generated by large firms in 2011; in Germany it was 52%, while in Cyprus it was only 19.5% (Malta and Luxembourg were excluded from the analysis for lack of sufficient data). It was found that there is a negative association between corporate tax comment length and the share of medium-sized (50-249 employees) firms’ turnover from the total turnover ($R=-0.39$ & $p=0.045$). The more complex corporate tax system, the lower share of turnover of medium-sized companies there is. The numbers also suggest that the complexity does not have a significant influence on the turnover of either micro and small firms, or large ones.

Firm Growth and Taxation

The SBS database provides information on firm growth. It collects data for firms that have increased the number of their employees by at least 10% over the past calendar year. The latest available data is for the year 2012 (see Table 7.3.). The EU28 is reduced to EU27 here, because no data was available for Greece.

Table 7.3. Firms that increased the number of their employees by at least 10% in 2012

Country	Average nr. of employees in high growth firms	High growth firms/total number of firms ratio
Austria	70	0.8%
Belgium	67	0.5%
Bulgaria	86	0.9%
Croatia	103	0.3%
Cyprus	77	0.5%
Czech Republic	105	0.5%
Denmark	71	0.9%
Estonia	79	0.7%
Finland	63	0.9%
France	103	0.6%
Germany	83	1.5%
Hungary	90	0.6%
Ireland	82	1.1%
Italy	66	0.3%
Latvia	69	1.2%
Lithuania	78	1.4%
Luxembourg	54	1.4%
Malta	44	0.6%
Netherlands	82	0.8%
Poland	108	0.6%
Portugal	75	0.4%
Romania	141	0.3%
Slovakia	101	0.5%
Slovenia	70	0.5%
Spain	69	0.4%
Sweden	68	0.8%
United Kingdom	114	1.3%

Source: Own calculations based on the SBS database

With the help of the data provided by SBS, the effect of taxation characteristics on firm growth can be tested. Correlations were checked, but very few significant relations were found. There is a negative correlation between KPMG's comment length and the ratio of high growth firms ($R=-0.37$ & $p=0.06$). The significance level is above 0.05, yet this is the most consistent relationship that could be established in case of the firm growth data. The correlation is less than moderate, and it might suggest that more complex tax systems limit firm growth, as the ratio of firms that increase their employment by more than 10% year on year is lower.

The correlation between the labour tax rate and the high growth firm ratio is also negative ($R=-0.33$ & $p=0.1$). The profit tax rate is also negatively correlated with the average number of employees in high growth firms ($R=-0.27$ & $p=0.17$). Since the significance value is way over 0.05 in the latter two cases, these findings are not worth discussing any further.

7.5. CONCLUSIONS

At the beginning of the analysis it was found that while the share of micro firms (0-9 employees) is negatively correlated with the GDP/capita of the EU28 countries, the share of larger firms, and especially that one of the large firms (employing more than 249 people) is positively correlated with it. Larger firms are clearly critical for economic performance. The paper tested whether taxation characteristics influence the size distribution of firms in the EU28 countries. Our findings may be concluded in three points:

- Firm size and corporate tax rates are negatively correlated in case of medium-sized ($R=-0.4$; $p=0.03$) and large ($R=-0.41$; $p=0.03$) firms as well. The higher the corporate tax rate, the less medium-sized and large companies there are in the economy. It was also found that from the taxes that have to be paid by companies, it is the labour tax and contribution that causes the negative correlation. One of the possible explanations can be that higher labour taxes create the incentive for firms to increase illegal employment, distorting the distribution of firms calculated from official statistics. Another explanation could be that as a result of higher taxes firms simply grow slower. This was also tested later on.
- Indications were found that higher transaction costs caused by taxation lead to smaller firms. Transaction costs can be measured as the number of hours required per year to administer tax payments, or as the length of additional comments needed in KPMG's website to describe the corporate tax rate. A significant negative correlation is found between the number of hours related to tax payment, and the share of large firms ($R=-0.41$ & $p=0.03$), and also between KPMG's comment length and the share of medium-sized firms' turnover from the total turnover ($R=-0.39$ & $p=0.045$). Lowering the transaction cost of corporate taxation might increase the firm size, and economic performance through that.
- More complicated tax rules might cause a smaller proportion of firms to grow quicker. A negative correlation was found between KPMG's comment length and the ratio of high growth firms ($R=-0.37$ & $p=0.06$). Since the significance level of all correlations involving firm growth are above $p=0.05$, no real connection could be established between firm growth and taxation from the data used.

There seems to be a contradiction between the findings of this paper and the ones of some of the other papers mentioned in the literature review. Chongvilaivan & Jinjarak (2010) argue, for example that there is a positive empirical association between firm size and corporate tax. Yet this paper states that the firm size and corporate tax rates are negatively correlated in case of medium-sized and large firms. The contradiction probably comes from the way we measure large or small firms. This paper measures large firms with a ratio: number of large firms in a country divided by the total number of firms in the country. All firms that employ at least 250 people are counted as large ones.

Chongvilaivan & Jinjarak on the other hand use the OSIRIS database as a source, so they work with the data of 40,863 individual companies. They don't have to work with groups of companies, and so a firm with 250 and a firm with 25,000 employees is obviously not counted as being similar and basically the same.

There is a different rationale behind the arguments as well. Chongvilaivan & Jinjarak assume that higher taxes lower the number of perfectly competitive firms, and that on the other hand raises the size of those few firms. The chosen way of measurement is well suited to test that argument. But there are other ways to look at the problem. One is to say that higher taxes slow down the growth of newly established firms. Another is to say that higher taxes create incentives for illegal employment. When groups of companies, and their share from the total is chosen as a measurement method, these arguments are easier to test and to back.

It also has to be mentioned that dynamic relationships were not tested in the analysis. The relationships checked were between taxation data characterizing the current state of an economy, and firm size structure that represents the current situation yet again. It is obvious that the firm distribution will not reflect immediately the tax rules; so if there is a change in the tax system, it will take a certain number of years to the firm structure to change. Dynamic relationships of such character could only be tested if cross-period analysis is used.

REFERENCES

- Chongvilaivan, A., & Jinjarak, Y. (2010). Firm Size and Taxes. *The Journal of the Korean Economy*, 11(1): 145-175.
- CPB Netherlands Bureau for Economic Policy Analysis (2014). A Study on R&D Tax Incentives. TAXUD/2013/DE/315. FWC No. TAXUD/2010/CC/104 Final Report.
- Dabla-Norris, E., Gradstein, M., & Inchauste, G. (2005). What Causes Firms to Hide Output? The Determinants of Informality. IMF Working Paper nr. 05/160.
- Garicano, L., Lelarge, C., & Van Reenen, J. (2013). Firm Size Distortions and the Productivity Distribution: Evidence from France. NBER Working Paper 18841. <http://www.nber.org/papers/w18841>
- Gubik, A.S., & Bartha, Z. (2014). SME Internalisation Index (SMINI) Based on the Sample of the Visegrad Countries (chapter 2). In: Gubik, A.S. & Wach, K. (eds). *International Entrepreneurship and Corporate Growth in Visegrad Countries*. Miskolc: University of Miskolc. pp. 23-40.
- Gubik, A.S. (2001). A Comparison of Experts' and Entrepreneurs' Opinions on International Business Activity. *Theory, methodology, Practice*, 7(2): 47-54.
- Gubik, A.S. (2007). A kis- és középvállalatok nemzetközi megjelenésének esélyei: egy empirikus felmérés tapasztalatai. In: Gubik Andrea (ed.): *VI. Nemzetközi Konferencia a közgazdász képzés megkezdésének 20. évfordulója alkalmából*. pp. 312-321.
- Gubik, A.S. (2008). Small and Medium Sized Enterprises Going International: The Case of Borsod-Abaúj-Zemplén County. In: Borowiecki R, Jaki, A. (eds.): *Enterprises in the Face of 21st Century Challenges: Development – Management – Entrepreneurship*. pp. 355-368.
- Henrekson, M., & Johansson, D. (1999). Institutional Effects on the Evolution of the Size Distribution of Firms. *Small Business Economics*, 12(1): 11-23.
- Heshmati, A., Johansson, D., & Bjuggren, C.M. (2009). Effective Corporate Tax Rates and the Size Distribution of Firms. TEMEP Discussion Paper No. 2009:23.

- Koga, T. (2003). Firm size and R&D tax incentives. *Technovation*. 23(7): 643-648.
- Labeaga Azcona, J., Martínez-Ros, E., & Mohnen, P. (2014). Tax incentives and firm size: effects on private R&D investment in Spain. MERIT Working Papers no. 081.
- Lee, J. (2009). Does Size Matter in Firm Performance? Evidence from US Public Firms. *International Journal of the Economics of Business*. 16(2): 189-203.
- Pervan, M., & Visic, J (2012). Influence of Firm Size on Its Business Success. *Croatian Operational Research Review*. 3: 213-223.
- Richmond, C., & Klapper, L. (2010). The Political Economy of Firm Size. CSAE Conference 2010. Economic Development in Africa.
- Symeonidis, G. (1996). Innovation. Firm Size and Market Structure. OECD Economics Department Working Papers No. 161. <http://dx.doi.org/10.1787/603802238336>.
- Urbaniec, M. (2015). Europeanization of Entrepreneurship and SME Policy: Challenges and Opportunities (chapter 5). In: P. Stanek & K. Wach (Eds.). *Europeanization Processes from the Meso-economic Perspective: Industries and Policies*. Kraków: Cracow University of Economics, pp. 95-111.
- Vaona, A. & Pianta, M. (2006). Firm size and innovation in European manufacturing. Kiel Working Paper No. 1284.
- Wach, K. (2015). Modern Policy for the Entrepreneurial Economy: Theoretical Considerations (chapter 1). In: A.S. Gubik & K. Wach (Eds.). *Institutional Aspects of Entrepreneurship*. Miskolc: University of Miskolc, pp. 9-18.

ONLINE DATABASES AND SOURCES

- Eurostat's Structural Business Statistics database (SBS): <http://ec.europa.eu/eurostat/web/structural-business-statistics>
- European Commission's SME Performance Review (PR, 2014): http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/performance-review/index_en.htm
- IMF's World Economic Outlook (IMF-WEO) database: <http://www.imf.org/external/ns/cs.aspx?id=28>
- World Bank's Doing Business database (DB): <http://www.doingbusiness.org/data/exploretopics/paying-taxes>
- KPMG database: <http://www.kpmg.com/Global/en/services/Tax/Pages/default.aspx>
- PWC database: <http://www.pwc.com/gx/en/paying-taxes/>

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