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**SUSTAINABLE DEVELOPMENT FACETS: TAXATION SOLUTIONS  
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**Abstract.** International fiscal regulation of transfer pricing solves important taxation problems of company groups to ensure fair distribution of the taxation base between different jurisdictions and in one country. The alternative to the arm's length principle for similar problems is a concept of formulary apportionment approach. The need to solve such problems is pressing for the Russian consolidated tax groups too, primarily in the technology and capital-intensive industries. Russian Federation's seven-year experience of creating the consolidated tax groups based on the formulary apportionment approach can be of interest to the specialists in any country researching such issues, because the government has acknowledged the current Russian system ineffective. Economic approach to formation of a sectorial cash-generating unit grouped according to economically integrated businesses and an investor control concept over an investment facility is the basis of our research. Practical calculations were done for the current consolidated tax group, confirming the advantages of this approach for fair distribution of the taxation base for the technology and capital-intensive industries. We have drawn executives' attention to the solutions enhancing investment attractiveness of the tax groups in conditions of restricted access to information for external users in the IFRS reports of a group.

**Keywords:** energy; groups of companies; economy; budget; taxation; taxation base; taxation policy

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**JEL Classifications:** E27, H21, G32

**Additional disciplines:** energetics and thermoenergetics, law, industry

## 1. Introduction

The taxation consolidation regimes of many states are based on widening opportunities of international consolidation, lower entry requirements and softer restrictions connected to calculation of a taxation base for consolidated tax groups (further CTG). The concept of a group presupposes a kind of restriction, an established perimeter, which depends on the current rules, accepted both in the business and in the country's legislation. Historically, Gerdes (2008) research dates the appearance of consolidated tax payer groups by the start of the XX century. At that, interest to such form of tax consolidation was expressed by both the government and the taxpayers. A consolidated tax group offers a mechanism redistributing not only direct taxes (such as an income tax or a corporate tax), but also indirect taxes (VAT, excises). At that, international practice sees consolidated

taxation as one of the possible ways of solving the tax optimization problem for business ensuring an additional investment resource to stimulate their industrial development (Barney, 1991). On the other hand, the consolidated taxation system helps the government cut tax administration costs while ensuring effective tax control over taxpayers. The Russian version of consolidated taxation, in force since 2012, was initially supposed to meet the goals. At the same time, after seven years of the CTG institute we can talk about its controversial aspects, which hurt the overall tax income of the budget and a disputable manner of profit tax redistribution between the budgets of the Russian Federation’s regions. Preliminary analysis resulted in suspension of agreements creating new CTG in 2014 - 2018 and amending existing agreements connected with admitting new organizations (excluding reorganizations). The longest lifespan of CTGs registered in 2012-2013 is set for 2023 with some restrictions (Table 1).

**Table 1.** Russian Federation’s consolidated tax groups in the energy and metals industries

CTG’s parent company	Industry	Number of participants as of the date of group creation
Gazprom Group	Oil and gas	56
Rosneft Group	Oil and gas	22
Severstal Group	Metals	9
Surgutneftegas Group	Oil and gas	7
Lukoil Group	Oil and gas	41
NLMK Group	Metals	10
NOVATEK Group	Oil and gas	12
Transneft Group	Oil and gas	14
TATNEFT Group	Oil and gas	15
Gazprom Neft Group	Oil and gas	8
Rosatom Group	Power	34
Mechel Group	Metals	16
Nornickel Group	Metals	16

*Source:* compiled with information from company official websites and information disclosure service

The drawbacks of the current CTG taxation regime may point to poor methodological work on some aspects of its practical use, which allows us to formulate a conclusion on the need to work out measures to improve it taking international taxation practice into consideration. At that, we should take into account that Kazuki (2013) note in their research that IFRS reports of the consolidated fuel and energy groups (further FAEG) show as a rule that the legal, taxation and regulatory systems of the Russian Federation are fraught with changes and the risk of ambiguous interpretation of their requirements, which, together with other legal and fiscal aspects, can create additional difficulties for business. Since tax returns of the reporting groups are unavailable for external users, excluding the controlling bodies, we need access to other sources. Information disclosure on the tax burden, of which an IRFS report can be a source, is important for external users evaluating company potential. At that, financial reports users (except controlling organizations) have no authority to ask reporting Groups of companies for more information, which can be defined as restriction of access to information.

Another problem with a strong influence on the CTG institution development is, according to Nerudova and Solilova (2014), and their industry specifics: according to the Russian Federation Taxation Service, 50 largest taxpayers accounted for 48% of the total tax receipts of the state coffers in 2018. The most important in the structure of budget revenue are the taxpayers of the Rosneft group (U.S.\$22 bln), Gazprom (U.S.\$19 bln) and Lukoil (U.S. \$9 bln). The taxpayers of the Metals and Mining Group ensured a significant part of tax receipts to the budget (10 companies with a total share of tax payments of 5.2%) and financial companies (8 companies and 6.3% respectively). At that, the 2018 computed profit tax for all the CTG amounted to U.S.\$ 8.1 mln, with the shortfall of the tax amounting to U.S.\$ 4.6 mln thanks to a reduced tax rate on some Russian Federation territories.

This is why the goal of our scientific and practical research is development of the best approach to forming a CTG when calculating a profit tax taking into consideration industry specifics of a business operating in an environment lacking information in IFRS reports. In their research, the authors do not cover the aspects of tax legislation covering control over transfer pricing (CTGs are exempt from the use on the territory of the Russian Federation) and controlled foreign companies, because these questions are a matter for a separate research because of their special features.

## 2. Theoretical background

The need to isolate property for business purposes preconditioned the appearance of a legal entity, according to Blumberg (1993). We do not intend to research the historical formation of business forms in detail, but we should note that scientific literature describes both legal aspects of establishing this form as well as the problem of a corporate unit as opposed to the state, which regulates activities of corporations by law (Porta, 1999). The companies develop their corporate structures to improve not only production, but also processing and delivery of products to clients to expand their business. In this case, the companies are interested in stable relations with their counteragents, which is hard to attain, if competition is high (Vasilev, 2019; Yemelyanov et al., 2019; Voronkova et al., 2019). By creating or acquiring companies, by forming the production – processing --- sales chains large business forms corporate units. For example, the oil and gas industry boasts company combinations to create a technological chain – production of resources, their refining, energy complexes, river and seaports, railway transport. At that, the combination of companies strives for production monopolization, according to Fama (1983). The bulk of corporations, whose activities involve production of natural resources, create natural monopolies, according to Barney (1991), and raise budget financing as financial support.

In its turn, business mergers push further development of legislation, which regulates activities of such groups. Most countries have no single notion for consolidated groups as reflected in a research by Christensen (2010). At the same time the notions of the group of companies, a consolidated group, a corporation is widely used in different legal regulations, including the shareholding, commercial, tax, antitrust legislation, in accounting laws, in the stock market laws, etc. At that, each regulatory environment uses its own definition of a group of companies based on special industrial features, its subject, aims and goals of regulation (Korableva et al., 2019). Research on definition of a consolidated group, a corporate group in international scientific literature singled out five key features, which describe several companies as a corporate group. According to Dine (2015), the key and identifying feature of corporate groups is a share ownership or common ownership. In this case, a group of companies includes a parent company and one or more subsidiaries, in which the parent company owns a stake directly or indirectly. Each company of the group, according to Galli (2017), is an independent company, has an independent legal status and its own rights and obligations.

Another identifying feature of a corporate group, according to Ciminelli (2019), is functioning of all members of the group as a single integrated enterprise, done under a unitary business policy of all the companies comprising the group (He, 2009). A unitary economic policy covering as a rule, practically all spheres of business, including marketing, production and sales, financial and human resources policies, helps the group of companies implement a global business strategy, under which the personnel, assets and profits are distributed between the companies in the best way for the group. Another feature, which identifies the borders of a corporate group, is control. There are different points of view on the definition of control for group members (Shatunova et al., 2019; Goloshchapova et al., 2018). According to Correia (2011), control means owning a voting majority, which helps establish a candidate for an individual executive body or the lineup of the board of directors of the company, and as a consequence, control the decisions the company makes. Gerdes I. (2008) in his research says that subsidiaries can belong to parent companies fully or partially, and the degree of control by a parent company depends on the number of voting shares (a share), which it owns directly or indirectly. At that, there is a different point of view, saying that control is not of a technical (50% + 1 voting share), but economic nature as set in the international financial reporting standards IFRS 10 Consolidated Financial Accounting. Such an approach ensures professional judgment and widens consolidation. One of the most popular notions of a Group of companies in

international practice is used with the aim of compiling consolidated financial reports under international standards (Shtefan, 2017). Although a consolidated tax group does not equal as a rule to a consolidated group, which reports under IFRS, we cannot ignore this type of integration in our research. Formation of consolidated groups for the purposes of financial reporting is long and, which is no less important, serious practice in application.

Historically, most researches date the first consolidated reporting, which means the first consolidated Group by 1892 (Dine, 2015). The practice of consolidated reporting covered more and more companies around the world, while the consolidating methodology and lineup of a Group were revised many times. In the current interpretation, a consolidated Group for the purposes of financial reporting is a parent company, which controls one or more subsidiaries. At that, the investor controls its investment with three conditions:

it has the authority;

it runs the risks connected with a varying income from his participation in the investment object or has the right to receive such an income;

has the possibility of using his authority to influence the size of investor's income (p. 7, IFRS 10).

Thus, a consolidated financial report of a Group represents indicators of two or more companies, linked by legal and economic relations. At that, the key indicator of consolidation is control over investment. This raises the issue of independence of the companies comprising the Group for taxation purposes. For the taxation legislation, according to Hausman (1967), the principle of taxation independence of a company lies in the fact that each company is an independent taxation object, which has obligations to pay taxes regardless of their founders for the taxation purposes. Consequently, according to Sasseville (2016), each company, regardless of whether it is part of a corporate group or not, represents an independent taxation subject, while special relations between the companies' participants of one corporate group should be taken into consideration for the tax purposes. However, there are several cases in the tax practice, when a strict adherence to the formal independence principle can prove to be ineffective (Fama, 1983) or mean additional difficulties. This triggered the appearance of exclusions in CTG legislation, which say that a link between the companies of one group exists for the taxation purposes. A good example of such an exclusion is, according to Sasseville (2016), the use by many countries of a controlled foreign corporation (the CFC Rules) or an OECD Model Convention for calculation of an income and capital tax, ensuring different dividend taxation rates depending on the holding of a shareholder.

Apart from the formal independence principle, we should note another overriding taxation principle, the principle of tax neutrality when deciding on the acknowledgment of special links between companies for taxation purposes in a corporate group. This principle, according to Spengel (2011), says that an effective taxation system should not weigh in favor of choosing the type of economic activity. For taxation purposes of a group of companies this means that, according to Masui (2004), the neutrality principle ensures that the taxpayer's choice in favor of a corporate group has no effect on its tax burden, because economic activities are taxable regardless of their form of incorporation. This is why a company operating through its units (as one corporate entity), should have the same tax burden as a company with the same activity done through its subsidiaries (as a corporate group).

At the same time, according to Penttila (2003), operations in the form of a group of companies triggers several circumstances of a heavier tax burden compared with doing business as one company in the absence of special conditions. In particular, when one company of the group incurs losses, while others are profitable, the inability to account for the loss of one company out of profits of the others means that the overall tax burden of the group may be much higher than when profit and loss occur in one company (Ho, 2013). We believe that such a situation contradicts the principle of tax neutrality. This is why there can be special rules allowing companies to account the overall financial result of all companies making part of a corporate group for the taxation purposes to ensure neutrality of the two forms of business for groups of companies. This means that the principle of tax neutrality is a rational basis for acknowledgement of the group of companies' phenomenon for the taxation purposes and acknowledgement of a group as an independent subject in tax relations.

There are two approaches to forming groups of companies in international practice – legal and economic. The

variety of approaches to forming the Groups, as well as the goals of their creation predetermines the need of a deeper research of such conglomerates' practice taking into account the economic environment of their businesses and access to information by interested stakeholders, according to Galli (2017).

### 3. Research objective and methodology

International taxation practice uses, as a rule, a combination of criteria to define a corporate group notion. Different countries set different requirements to the minimal share, which vary greatly. The taxation systems of Australia and New Zealand, which require that the parent company should own its subsidiaries fully, or have a 100% holding to be awarded a special taxation regime (Ekimova, 2017) are at one bracket of the range. The taxation systems of such states as Austria, Italy, and Germany, whose legislation allows them to use a special regime when the stakeholding is above 50% are at other end of the bracket.

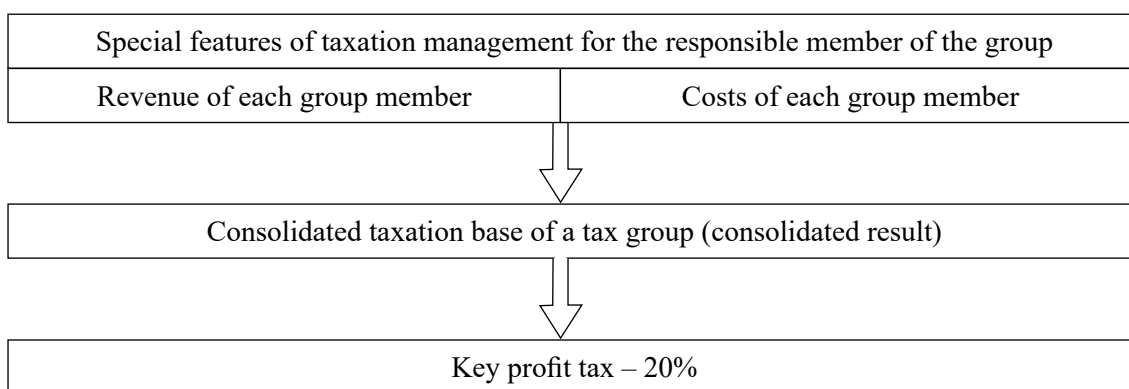
Apart from the general requirement to shareholding, some countries set additional conditions. In particular, the Netherland's taxation legislation says that if a subsidiary issues different types of shares, the shareholding requirement is valid for each type of shares. Great Britain and Cyprus demand that the stakeholding requirement be met not only as a share in percent of capital and a voting right, but also as a share of profits distributed in favor of the parent company (Mayer, 2009). In most countries, a parent company is only a company registered in accordance with legislation of the country, where the group is created. The Netherlands is an exclusion; it allows a company to become a parent firm if it was created in accordance with legislation of some other states. Besides, Austria, Germany and Italy allows a parent company to be a foreign entity, if it is created in accordance with legislation of a country, which signed a double taxation treaty with Austria, Germany or Italy, and this company has a permanent representation in the country where it creates a corporate group for taxation purposes (Jiao, 2014; Trofimova et al., 2019). Like in case with the parent company, most countries of the world allow subsidiaries registered according to legislation of the country whose rules are used to create a corporate group to make part of the group under a general rule. For example, Austria, Denmark and France allows subsidiaries created in accordance with the rules of another country member of the European Union to make part of the group (Nerudova, 2012). Economic conditions of creation of a group of companies set by legislation of different countries also include a requirement to the form of incorporation of group members, to a special agreement between group members, which cement the lineup of the companies, which make part of the group, their key rights and responsibilities, to the length of a reporting period of each group member. The special feature of Russian CTGs is voluntary participation of companies (members) basing on an agreement. The Group participants create a consolidated financial result to calculate and pay only the profit tax (Figures 1).

Financial	Organizational	Legal
<ul style="list-style-type: none"> <li>paid VAT, excises, profit tax and MET for a calendar year preceding acceptance to the group totalling no less than U.S.\$ 160 mln (before taxes paid for the goods when transporting across the EEU border);</li> <li>total sales of goods (work, services, other income) of no less than U.S. \$1.6 bln, according to accounting (financial) reporting for the calendar year preceding acceptance to group;</li> <li>total assets of no less than U.S.\$4.8 bln, according to accounting (financial) reporting as of December 31 for the year preceding acceptable the group</li> </ul>	<ul style="list-style-type: none"> <li>special economic zones residents or participants of free economic zones as well as the companies using special tax regimes;</li> <li>banks, insurers, private pension funds, stock market participants, except when other organizations of the group are banks, insurers, private pension funds, stock market participants;</li> <li>organizations making part of another CTG;</li> <li>organizations not acknowledged as corporate profit tax payers, using the exemption right or applying a 0% rate;</li> <li>gambling tax taxpayers, clearing firms, consumer credit cooperatives, microfinancial organizations</li> </ul>	<ul style="list-style-type: none"> <li>the share of direct or indirect participation in charter (pooled) capital of no less than 90%;</li> <li>net assets according to accounting (financial) reporting as of the last reporting date exceeding the charter (pooled) capital, including for newly accepted members;</li> <li>not in the process of reorganization or liquidation;</li> <li>no initiated legal insolvency (bankruptcy) proceedings, excluding monitoring procedures</li> </ul>

**Figures 1.** Russian criteria restricting creation and application of CTGs

Source: based on the results of the study <https://www.nalog.ru/eng/companies/>

A member of a consolidated tax group is an organization, which is a side of an existing agreement and meets official criteria. In its turn, the responsible participant of a CTG has the same rights and responsibilities to calculate and pay the profit tax for the group as other taxpayers. The acceptance criteria for a CTG are used when creating (registering) the group and during the whole term of the agreement with duration of no less than 5 years, taking into consideration the following restrictions. If the latest accounting (financial) reporting date is not due as of the moment of filing an agreement on creation (changes) of a CTG to a tax authority, net assets or charter (pooled) capital is calculated according to the accounting (financial) report compiled as of the previous reporting date. A member of a consolidated tax group, which meets the general criteria has the right to disengage from the group voluntarily no earlier than five profit tax periods after the date of its joining the group, including periods of agreement renewal. From a methodological point of view, the taxation base of a consolidated tax group is calculated as a sum of all taxation bases of the group members (Figures 2).



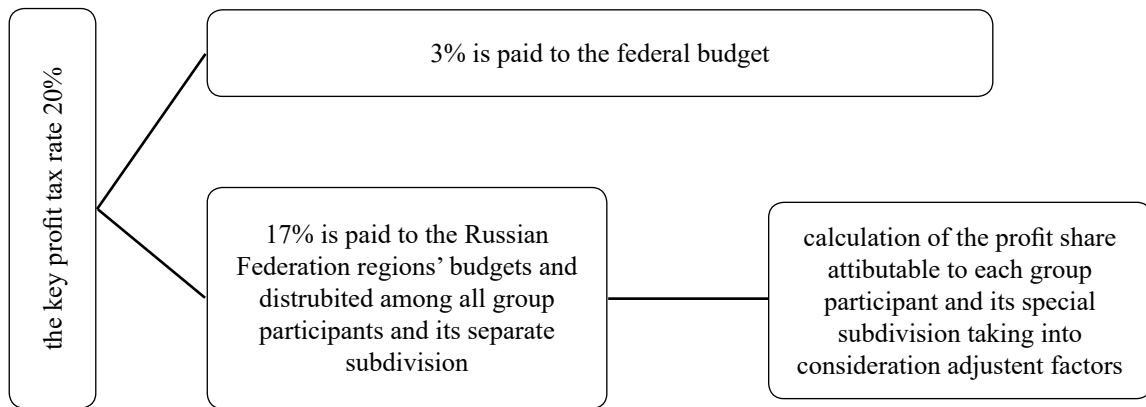
**Figures 2.** Methodological approach to forming the profit taxation base of a Russian group of taxpayers

*Source:* designed by the authors according to <https://www.nalog.ru/eng/companies/>

When calculating the taxation base the order of carrying forward the losses incurred in the previous taxation period are taken into consideration. At that, the consolidated taxation base excludes the income taxable at source of payment. If the group members incurred losses in the tax period before their acceptance to the group, the loss does not decrease the consolidated taxation base of the group. In this case the losses are to be carried forward for the future taxation periods after the disengagement of the member from the group on general grounds. When calculating a consolidated taxation base the losses of the group members are summarized. At that, the total loss of the group shall not exceed 50% of the consolidated taxation base of the current reporting (taxation period). Carrying forward of the losses is done according to general grounds for the corporate profit tax taxpayers. If all the group members had losses in the reporting (taxation) period, the taxation base of the group equals zero. According to the general methodological order, a taxpayer has the right to decrease the taxation base of the current reporting (taxation) period by the amount of the loss received in the previous taxation periods fully or partially with constraints. In particular, between January 1, 2017 and December 31, 2020 the taxation base of the current reporting (taxation) period can be reduced by no more than 50% of the losses received in the previous taxation periods. If a taxpayer incurred losses in more than one taxation period, the carrying forward of such losses to the future periods is done in the order they happened. At that, the taxpayer must keep the documents proving the loss for the whole period of the tax base reduction of the current taxation period. Calculation of the taxation base for each CTG member and the consolidated taxation base for the reporting (taxation) period is done on an accrual basis from the start of the taxation period. At that, each group member must present necessary data for calculation of the consolidated taxation base and the profit tax by the deadline outlined in the agreement (Plaskova, 2017).

The special feature of the methodological approach to the profit tax for Russian CTGs is the tax rate of 20%, of which 3% is paid to the federal budget and 17% to the budgets of Russian Federation regions between 2017 and 2020. We should note that CTG's consolidated taxation base excludes the income and costs liable to a non-key profit tax rate. For instance, for the part of the tax paid to the federal budget until 01.01.2023, the taxpayers have

the right to apply a rate of 0% on the profit received from tourist and recreational SEZs united into a cluster by the Russian Federation government, if the profit and loss are accounted separately. The responsible member of the consolidated group pays the profit tax individually taking into account the profit share attributable to each group member (subdivisions) in the total amount of profit (Figures 3).



**Figures 3.** Distribution of consolidated taxed profit of CTGs in Russia

Source: designed by the authors according to <https://www.nalog.ru/eng/companies/>

At that, the share of a unit of each group participant (as well as their subdivisions) in the consolidated profit of the group is calculated by the responsible consolidated tax group member under the following formula:

$$d_i = \frac{1}{2} \left( \frac{P_i}{P} + \frac{A_i}{A} \right) \quad (1)$$

where  $\frac{P_i}{P}$  - the share of the average number of employees or labor costs per each group member and a separate subdivision in the whole and by the group;

$\frac{A_i}{A}$  - the share of the depreciable value of amortizable assets for each group member and a separate subdivision in the whole and by the group.

The responsible member of the group calculates and pays the advance payment and the part of the profit tax paid to the federal budget at the domicile without distribution among group members and their subdivisions formed according to tax registration after each reporting (tax) period. The tax (the advance payment) paid to the Russian Federation regions' budgets of each group member (a separate subdivision) is calculated according to the tax rates valid on the territories of the regions for consolidated tax group members and their subdivisions. Research of international formulary apportionment practice helped us assume that only Russia applies a model using labor costs/employee numbers and a depreciated book value of fixed assets. The latest factor can be criticized most, because calculation of the depreciated book value of fixed assets has several specific features. At that, a financial report does not as a rule disclose sufficient information to assess company operations. We should also note no state we have chosen for analysis has a legal mechanism of taxation base distribution for groups of companies, which would be fully comparable with the Russian mechanism thanks to the specific features of state and budget functioning, the differences in the tax system structure. Thus, in Italy, Spain, the Netherlands, France and Japan, which are unitary states, the corporate profit tax, for the calculation of which the tax consolidation regime is used, is paid the central state budget fully, which means there is no need in special rules for consolidated taxation base apportionment (Karpova, 2018). Germany, Australia and the U.S., which are federations, legally ensure payment of the profit tax to one budget (the federal budget). At that, Germany distributes some incomes to regional budgets (Petrov, 2019). However, such distribution is done according to the budget rules. Some states apportion the taxation base under a formula used for the regional and local taxes with the taxation subjects similar to those of the profit tax. Such taxes include a local corporate tax in Japan (Standard Enterprise Tax), a regional business activity tax in Italy (Imposta regionale sulle attivita produttive,

IRAP) and a local business activity tax in Germany (Gewerbesteuer). The taxation base on the aforementioned taxes is apportioned between the subdivisions of a company operating in different regions (Italy) or municipalities (Japan, Germany) in proportion to the following indicators – in Japan to the number of employees engaged in each subdivision, in Italy and Germany to the labor costs. At that, Italy has a special order for some industries, according to Galli (2017), for example, banks' apportionment is done in accordance with the deposits.

At the same time, international taxation practice uses the concept of formulary apportionment, which can be taken as a practical approach when comparing Russian group taxation together with the taxation base distribution approach:

- a) by regional corporate profit tax (the U.S., Canada);
- b) by other corporate taxes (Germany, Japan, Italy).

Taking a U.S. three-factor formula of profit tax apportionment as the basis Arthur D. (1960), we will consider the order of its distribution between the subdivisions of one CTG taking into account the share of revenue, property value and labour costs of all participants on the whole with the help of the following formula:

$$d_i = \frac{1}{3} \left( \frac{S_i}{S} + \frac{P_i}{P} + \frac{A_i}{A} \right) \quad (2)$$

where  $d_i$  – the share of a unit in the CTG's taxation base

$S_i$  – sales of a unit;

$P_i$  – labor costs of a unit;

$A_i$  – property value of a unit.

Each of the three factors in formula (2) has the same weight. However, legislation allows some states to set the weight of each figure on their own (from 0 to 1) making the formula very different from state to state. We should note that the formula is used to tax the business income, while special distribution rules cover non-business income, which relates primarily to passive income in the form of dividends, interest, and royalty. Here we can single out several key factors influencing the forming of CTGs' taxation bases for the analysis:

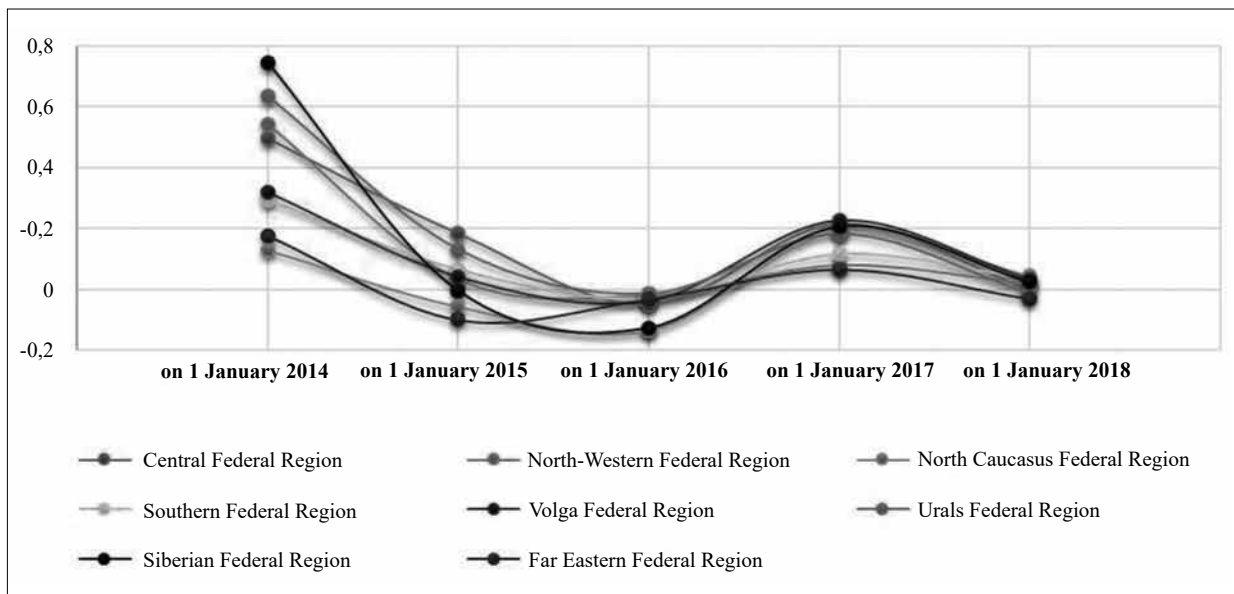
- the forming of a consolidated tax group;
- the methodology of profit redistribution;
- the choice of formulary apportionment approach;
- the absence of access to information for the stakeholders because of insufficient information disclosure in a segment format describing taxes in an IFRS report.

#### 4. Results and discussion

The economic analysis of chain substitution, empirical data of the taxation base structure of consolidated tax groups of the Russian Federation were used in our research. Official data of the Russian Federation Tax Service for the periods from the start of the groups' formation in eight Russian regions and in the whole of the country from 01.01.2013 to 01.01.2018 were used as financial indicators. Justification of such an approach as an empiric basis of a taxation base is its fullest reflection of financial activities of CTGs being a valuation, physical and other feature of a taxation object and is tax imputation per unit of tax base measurement (Figures 4).

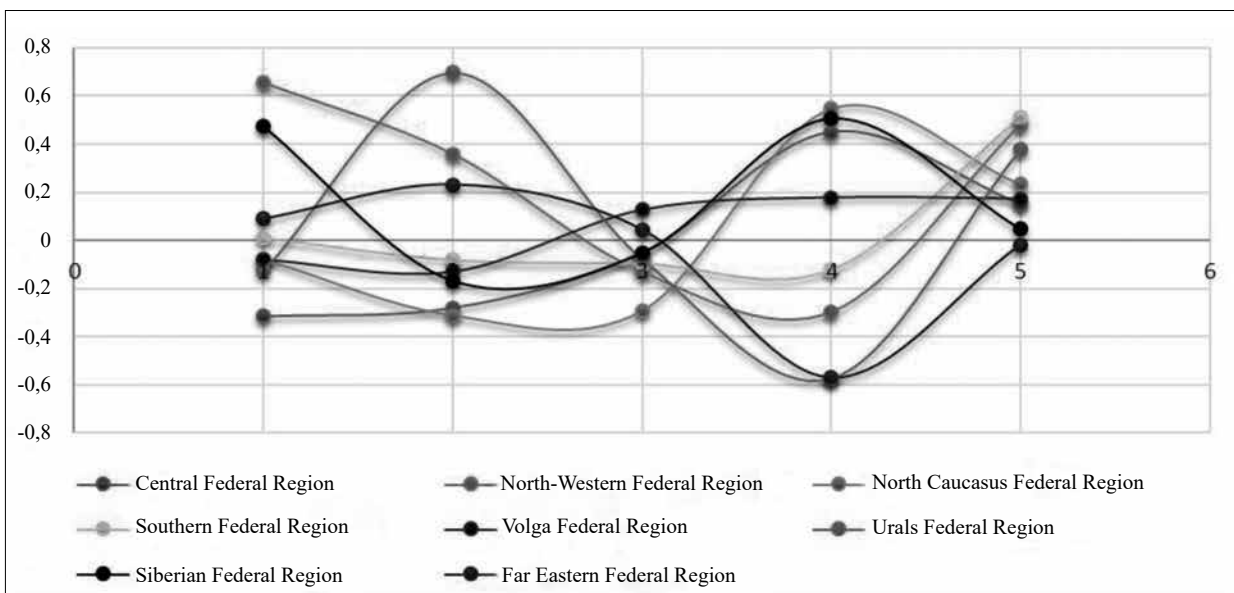
Our research done with the help of the chain substitution method allowed us to reduce a trend general for CTGs in all the Russian Federation regions under research. On the whole, their total number decreased as of 01.01.2018 compared with 01.01.2013. At that, the downward trend in all the subjects of a synchronous character because of external economic factors and does not depend on the type of activity of a CTG. In its turn, the research of the behavior of the taxation base of Russia's existing CTGs in eight regions and in the country as a whole between 01.01.2013 and 01.01.2018 allowed us to reduce mixed vectors of the share changes by taxpayer groups (Figures 5).





**Figures 4.** The rate of registered CTGs growth in Russia between 2013 - 2018

*Source:* based on the results of the study <https://analytic.nalog.ru/portal/index.en-GB.htm>



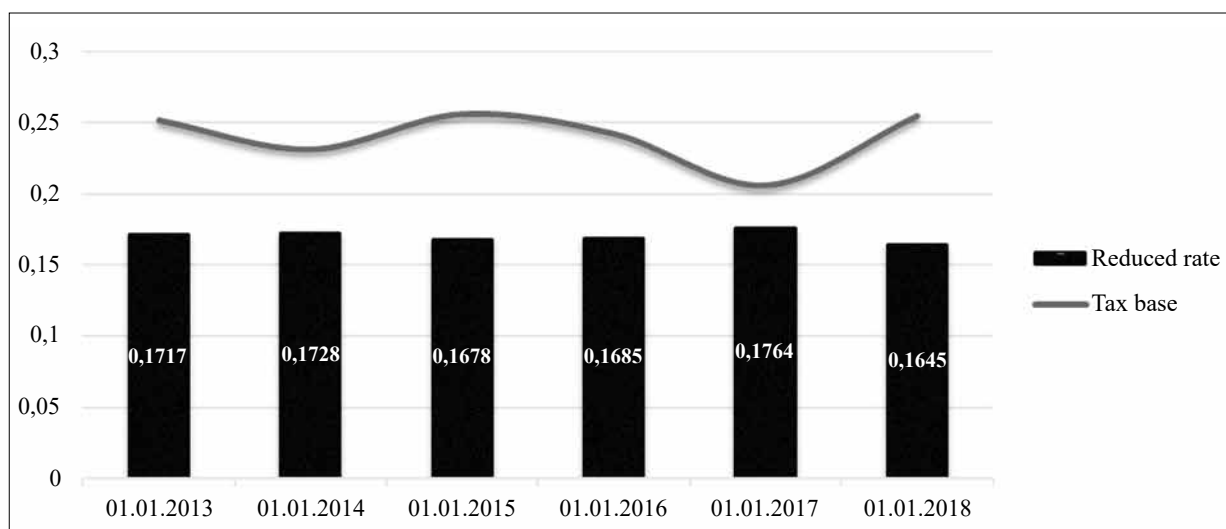
**Figures 5.** Changes in the assessed tax of the current CTGs in Russia between 2013-2018 and a forecast for the next two years

*Source:* based on the results of the study <https://analytic.nalog.ru/portal/index.en-GB.htm>

The research of changes of the amount of the assessed tax for CTGs in all the Russian regions allowed us to formulate the following statement. Despite the general principles of assessing the tax for the whole country we have discovered the absence of general trends in the change of the figure under research, that is five regions (the Central, Urals, Far Eastern, North-Caucasus and Southern Federal Districts) demonstrated a fall in the assessed forecast tax, three regions (the Volga, North-West, Siberian Federal Districts) demonstrated an increase in the assessed forecast tax. This allows us to formulate a hypothesis about a possible redistribution by CTGs participants of the taxation base between the Russian Federation regions. With a great possibility it was caused

by changes in the taxation legislation, allowing each taxation subject to apply a reduced profit tax.

This is why comparative analysis of a reduced rate set by the Russian Federation regions and the size of CTGs' taxation base helped us formulate the following hypothesis: a reduction of the tax rate leads to an increase of the taxation base of the group, which has a direct influence on redistribution of the taxation base between the regions by CTG participants and results in a variable size of the assessed profit tax for the country on the whole. In this case dependence of changes in the taxation base (y) depends on the tax rate (x) and is described by the following polynomial function:  $y = -467,51x^2 + 155,55x - 12,69$ .  $R^2 = 0,9$ . Changes in the size of the taxation base and a real profit tax rate is presented in Figures 6.



**Figures 6.** Changes in the size of the taxation base and a real profit tax rate by CTG

Source: based on the results of the study <https://analytic.nalog.ru/portal/index.en-GB.htm>

This is why we can state with a great degree of confidence that CTGs taxation base migrated constantly between the Russian Federation regions in the researched period thanks to the possibility for the tax payer to choose the indicators in the formula (1) weight  $\frac{P_i}{P}$  and  $\frac{A_i}{A}$  when calculating the profit tax on an annual basis with the possibility of migrating to the Russian Federation subjects with a reduced profit tax from 17 to 12,5%.

Since the Russian institution of CTGs is in fact one of the practical examples of the use of the formulary apportionment approach on the basis of its distribution between the Russian Federation regions, a CTG participant operates in a region using a two-factor formula (1). Logically, the deals between CTG participants are the deals, which are not controlled for the purposes of transfer pricing, since the profit tax apportionment between the Russian Federation regions' budgets is done to a fixed formula regardless of the prices used in the deals. At the same time tax apportionment between CTG participants established by the taxation legislation – remaining book value of fixed assets, an average number of workers (or labor costs) and the absence of the financial results of the taxpayers' activities in the criteria of tax distribution between the group members hurt revenue of the Russian Federation regions' budgets. This results in the impossibility for the Russian Federation regions to plan their tax revenues. In our view, the existing mechanism leads to a flawed budget revenue apportionment and deprives CTGs of incentives to increase their taxation base and consequently, higher margins and labor productivity, to cut costs since the criteria for the apportionment are the remaining book value of fixed assets and an average number of workers under Russian Accounting Standards.

Besides, all these conditions deprive the Russian Federation regions of incentives to create conditions for investment and modernization of the companies making part of CTGs on their territories because of the absence of a guaranteed financial effect from the measures for the energy taxpayers. At the same time the measures aimed at reducing the tax paid to the regional budgets from 17 to 12.5% for some categories of taxpayers also

deprived regions of such incentives. Our research shows that the apportionment factors are not grounded sufficiently and call for a third criteria. Such an approach won good reputation in the taxation practice of many states. However, revenue recognized at the location of a buyer, according to Mayer (2009) is used in international practice, but in our view does not take into account special features of costly energy and metals industries. At the same time, revenue is also a relative indicator, since the largest Russian companies have been under foreign sanctions since 2014, and they cannot change it. The need to develop business, upgrade of the fixed assets are not taken into consideration. On top of that, economically integrated related types of business, as a rule, bring an indirect economic profit, for example, cost cuts in conditions of strong competition (e.g. Tarasova et al. 2018). Consequently, the use of the profit before tax in the formulary apportionment approach would be preferable for the energy industry.

The choice of profit before tax by the international auditing firms in reports as an indicator for the materiality threshold for consolidated financial reporting of metals and energy holdings is an additional argument for this indicator. In particular, an auditor’s report compiled by PWC on an IFRS report for the METALLOINVEST holding company says that the scope of auditor’s work covers up to 99% of absolute profit before tax, which is a condition of external users’ trust to this indicator.

This is why we suggest including profit before tax received by the members of CTGs at the venue of their operations into the existing criteria of formulary apportionment approach under the following formula:

$$d_i = \frac{1}{3} \left( \frac{P_i}{P} + \frac{A_i}{A} + \frac{PT_i}{PT} \right) \quad (3)$$

where  $d_i$  – the share of a subdivision in a CTG’s taxation base

$S_i$  – labour costs or an average number of workers in a subdivision

$P_i$  – remaining book value of subdivision’s amortized property

$PT_i$  – subdivision’s profit before tax

To check the hypothesis by practical data of existing consolidated tax group METALLOINVEST comprising the following members JSC Lebedinsky GOK; JSC OEMK; JSC Mikhailovsky GOK; JSC Ural Steel, we will calculate the economic effect using formulas 1 and 3 to apportion the taxation base and discover the deviations (Table 1).

**Table 1.** Input data of profit tax taxation base apportion for CTG METALLOINVEST

Consolidated tax group	Average number of employees, people	Remaining book value of amortized property, thousand U.S. dollars	Profit before tax of each participant, thousand U.S. dollars
JSC Lebedinsky GOK	9459	791376	1023322
JSC OEMK	11572	309802	300555
JSC Mikhailovsky GOK	7540	389796	587196
JSC Ural Steel	17955	242203	-10647
METALLOINVEST	352	2387	3301

Source: based on the results of the study using <http://m.metalloinvest.com/en/financial-results/>

Using formulas 1 and 3 to apportion the taxation base, we calculate the share of each CTG member in development of the consolidated group (Table 2). Following analysis of tables 1 and 2 we can conclude that a third element for calculating the share of a CTG participant is reasonable because:

- a) the taxation base using formula 3 is adjusted to the size of profit;
- b) a CTG participant with a negative profit receives a less compared with formula 1 tax burden using formula 3, which has a sparing effect, since the key goal of consolidated taxation of groups pursues a positive financial result for all CTG participants.

**Table 2.** Comparison of different approaches to the tax base apportionment by CTG, thousand U.S. dollars

Consolidated tax group	The share of profit calculated using formula 3	The taxation base calculated using formula 1	The taxation base calculated using formula 3	Deviations
JSC Lebedinsky GOK	0,3984	626 093	758 503	-132 410
JSC OEMK	0,1944	404 881	370 105	34 775
JSC Mikhailovsky GOK	0,2313	366 883	440 321	-73 438
JSC Ural Steel	0,1723	497 414	328 060	169 354
METALLOINVEST	0,0035	8 457	6 738	1 719
TOTAL		1 903 727	1 903 727	0

Source: based on the results of the study

Consequently, further improvement of the methodology should be aimed at establishment of importance of each factor of the model, which will allow us to factor in added value of each company into the gross added value of the regions more accurately. At the same time, a research on a larger scale by the energy group is difficult because of the absence of information, which external users (excluding the controlling bodies) cannot receive, while isolated holding companies disclose sufficient information about tax effects in their financial reports.

CTGs' activities are conspicuous for the absence of access to information for stakeholders because of its insufficient disclosure for assessment of group operations. The IFRS financial reports of the companies is one of the sources of information for external users to making investment decisions. Acting in line with IFRS information disclosure requirements, the companies can present minimal information without taking users' needs into consideration, including taxation of the group. This primarily relates to information about the risks, which can influence investment decisions of external users Muchlinski (1999). In opinion of reporting CTGs, the Russian Federation tax legislation allows for various interpretations of deals and operations. This is why a reporting group management's position on taxes and the documents underlying it can be contested by the tax authorities.

Since tax controls are getting gradually stricter, the risk of the tax authorities' inspections of taxation base redistribution in a group increases. At that, the fiscal inspections can cover three calendar years of operations prior to the year of inspection while in some cases Dine (2015) earlier periods can also be checked. As a rule, there is an opinion that the management team will protect the Group's position and interpretations it used when calculating taxes, if they are contested by the taxman. Another component of information disclosure cover recognized tax obligations and assets. Recognized deferred tax assets and obligations represent a profit tax, which can be offset or paid as future payments of the profit tax and is reflected in a consolidated financial report. Definition of a future taxable profit and tax deductions, which can be offset in the future is based on a medium term business plan prepared by the management and its extrapolation for the future.

At the same time, a business plan is based on management expectations, which are considered reasonable under the circumstances (Slepov, 2019). Such information can be stable or not, but financial reporting users should rely on it as true. At the same time, the Groups participating in a CTG can disclose the key tax indicators as they disclose information by segments to meet the information needs of users (Petrov, 2019). Operational segments are represented by business components participating in profit-making activities or activities with operational costs (Ponomareva, 2019). The forming of the segments can be done on different bases (Vasilev and Tung, 2019), in particular, the oil and gas holding companies usually disclose the following information by operational segments:

- production of resource;
- transportation/delivery of resource;
- trade operations to sell resource /products.

The companies, which promote their products in different jurisdictions, are conspicuous for information disclosure by geography and type of product (Gryzunova, 2018). In our opinion, the Groups, which report under IFRS

and make part of a CTG can present information in the segment of consolidated companies. This will enhance informational value of financial reporting and ensure access to information for the users assessing the tax risks and tax effects of the company.

### 3. Conclusions

By way of conclusion, we will outline the key measures, which, in our view, should be taken to ensure the efficiency of the CTG mechanism.

Since the current rules of consolidated tax group formation does not take into consideration the economic links between economically integrated businesses of a group, including those strategically important for product delivery to the consumer, which as a rule are loss-making, but bring an indirect profit by squeezing out competitors, we believe that the rules of joining a CTG should be different. Scientific literature and assessment of the existing international rules allowed us to make the following hypothesis. CTG should include the parent company and its subsidiaries according to the principle of investor control over investment, i.e. when an investor has the authority, takes the risks related to changing profits from participation in investment or has the right to receive such profit and can use his authority to influence the size of income. At that, consolidation should include only economically integrated businesses related to the core type (s) of activity, including the production-processing-goods promotion chain. The expected effect in this case is the abolishment of a financial threshold when signing a CTG agreement. Taking into consideration taxpayers' opinion on an ambiguous interpretation of some provisions of tax legislation and the risks of unscheduled fiscal inspections, we think it necessary to ensure the possibility of signing a voluntary tax monitoring agreement to CTGs. In this case, the organization will undertake to disclose fiscal accounting data and information about deals in a real time regime to the tax authority. Here the advantages of using tax monitoring for companies are:

- a) access to the expertise of the Federal Tax Service specialists and as a consequence understanding of tax consequences for odd deals;
- b) stability and clarity of the tax burden, which increases investment attractiveness of a business.

Our research demonstrated that the entrance thresholds and other factors form the consolidated tax groups by industry. At that, the formulary apportionment approach does not take into consideration special features of each industry. CTGs usually cover technology and capital-intensive businesses such as oil and gas, metals and mining and other natural resource businesses. This is why we believe that the formulary apportionment approach should take into consideration industry specifics. Our calculations showed that the proposal to include a third indicator, a profit before tax, into the existing criteria for the formulary apportionment approach will help CTGs to get additional advantages aimed not only at boosting the companies' added value, but also at creation of necessary conditions to develop the energy industry at the regional level. In its turn, it will facilitate improvement of social and economic situation in the provinces.

Since technology and capital-intensive businesses, such as oil and gas, metals and mining and other natural resource industries have to maintain their basic production assets, including fixed assets, the formulary apportionment approach should contain a reliable asset valuation. Asset valuation done under Russian Accounting Standards is not reliable in a formulary apportionment approach. Since the CTG companies compile IFRS reports, international financial reporting standards are the most reliable source of information and fixed assets valuation.

The current formulary apportionment approach fails to reach one of the key fiscal goals of CTG creation – fair redistribution of the profit tax between regional budgets. We believe that most harm to the fiscal goals of the profit tax apportionment is done by regional competition, when regions offer reduced local profit taxes for CTG participants. Artificial blocking of business gravitating towards regions with the least fiscal burden will have no sustainable effect. Using methodologies of profit calculation, the companies can develop schemes to pay taxes on the territories of the regions with the least tax burden, while fully complying with the tax legislation. We believe that this problem could be solved by setting a flat regional tax rate for the groups of consoli-

dated taxpayers. At that, taking industry specifics of the group into account, a reduced rate is possible. The taxpayers participating in CTGs can present information on the key tax indicators by segments in their IFRS reports as they disclose information to take information needs of users in consideration. Operational segments are business components, which participate in profit-making operational activity or activities accompanied by expenses. The segments can be formed with the help of different approaches based on information disclosure by operational segment, by geography, types of products, etc. Thus, the Groups making part of CTGs and reporting to IFRS can present information inside the companies making part of consolidation. The suggested order will significantly increase the information coefficient and ensure access to it to the external users assessing the tax risks and effects of the company. Thus, the changes we recommend aim at improving conditions for the tax payers and at offering them additional possibilities to use special rules of taxation of corporate groups connected with widening of the number of companies, which can use the CTG regime and removal of the restrictions set for calculation of the taxation base for the profit tax. These amendments, taking international practice of CTG taxation into consideration, will help the government create additional advantages for the largest taxpayers from the technology and capital-intensive industries by raising investment attractiveness of the energy sector of the country.

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