

## ESTIMATION OF TAX BASE IN PERSONAL INCOME TAX AS A FORM OF SUPPORT FOR AGRICULTURE IN GERMANY

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### **Abstract**

*Taxes in most EU countries are designed to financially support farms through lower tax rates. The preferential tax allowances and exemptions motivate farmers to undertake specific activities, in accordance with the main objectives of the agricultural policy. As a result of such activities, the agricultural sector receives additional support, which officially is not subject to public control, at the same time contributing to a considerable burden of EU budgets. The aim of the article is to evaluate the selected tax expenditures addressed to farmers, contained in the German personal income tax. The paper is an attempt to answer the question, whether the method for estimating income from agricultural production used in the German personal income tax law has an impact on reducing tax burdens of farm owners and what the consequences are for the agricultural sector, especially in the area of changes in the area structure of farms.*

**Key words:** *taxation of agriculture, income tax, estimating tax base, tax expenditures, area structure.*

**JEL Classification:** *H24, H39, H59.*

### **I. INTRODUCTION**

Fiscal burden of income from agricultural production in most countries of the European Union are much lower than in other sectors of the economy. One of the reasons for this is the application of special solutions in the personal tax income structure which by assumption realized two main objectives:

1. Firstly - through lower taxation, possible with the use of e.g. a reduced tax base, calculated on the basis of estimated income, lower rates, allowances and exemptions - financially support farms.

2. Secondly - through the system of special tax allowances, they are an economic incentive to encourage farmers to undertake specific activities, consistent with the main objectives of the policy (e.g. deciding on a new investment, on the transfer of the farm to a successor, etc.).

As a result of such activities, agriculture as the so-called sensitive sector, receives additional support (through the tax system, so-called tax expenditures<sup>3</sup>), which officially is not a type of limited state aid, it is not subject to strict monitoring and it is not included in any EU statistics, concerning financial assistance for this sector. The scale and scope of tax expenditures in various jurisdictions are varied and depend on activities undertaken by the policy of a given country, both fiscal and agricultural. Unfortunately, their assessment is neither simple nor straightforward. Favourable, from the farmer's point of view, solutions do not always have a positive impact on the development of this sector. Furthermore, the consequences of the introduced preferences often differ from the objectives initially set by the legislature. Tax expenditures may demotivate owners of farms to develop production, increase the farm's area, new investments, etc. This is especially true of solutions within the first of the aforementioned categories and depends primarily on a detailed structure of applied tax expenditures.

### **II. AIM AND METHODOLOGY OF STUDIES**

The aim of the study is to evaluate selected tax expenditures addressed to farmers, contained in the

<sup>3</sup>The term tax expenditures refers to special tax structures, the aim of which is to reduce the overall tax burden. These structures, such as allowances, exemptions or reductions of the tax base are addressed only to selected taxpayers or types of economic activities. Through the use of such preferential structures, the state realizes selected socio-economic policy objectives, including amongst others the agricultural policy.

German personal income tax structure. In Germany, support of farmers through the tax system is used since 1955. This is undoubtedly one of the interesting examples of agricultural tax expenditures operating in the Member States of the European Union. The paper is an attempt to answer the question, whether the method for estimating income from agricultural production used in the German personal income tax law has an impact on reducing tax burdens of farm owners and what the consequences are for the agricultural sector, especially in the area of changes in the area structure of farms.

The authors evaluated one of the preferences, i.e. estimating income on the basis of unit average rates, due to widespread use of this instrument. German farmers also take advantage of a number of other tax expenditures, such as deducting loss or family allowance, however, these solutions are addressed to all taxpayers of personal income tax, irrespective of the category of income, and therefore, their assessment will not reflect the benefits achieved only by farmers. Studies were carried out on the basis of an analysis of the provisions of personal income tax currently in force (EStG, 2009), as well as government reports and public statistics dedicated to the sector of agriculture in Germany.

### **III. INCOME AS THE BASIS FOR TAXATION IN AGRICULTURE**

In economic terms, the source of agricultural taxes can either be funded (capital) income, and income resulting from the involvement of a farmer and his family (labour fee). Incomes of farmers to a large extent depend on the conditions of production, on which a given manufacturer has no impact. Lands characterized by better quality, more favourably situated, usually foster the achievement of better economic results. In part, however, income from agricultural production is also the result of the farmer's work. This means that the pension may be a source of a part of the fiscal burdens on agriculture, primarily in tax assets, whereas the agricultural income - in income tax.

In the member states of the European Union, the model of agricultural taxation based on income tax dominates. In most analysed jurisdictions, income from agricultural production is subject to tax on the same principles as in the case of other sectors. However, detailed legislation solutions differentiate the individual systems. This is mainly the case in the standards for determining the tax basis, the amount of which may substantially affect tax burdens of agricultural farms. For example, in some countries income from agriculture in the tax structure is treated as a separate category, which usually makes it possible to apply special methods for its calculation and allow to determine the tax basis not only based on actual income, but also on estimated income. The choice of the method for estimating income can have a significant impact not only on the fiscal burden of farmers, but also on their economic decisions.

Adopting estimated income as the basis usually means taxation of average income, without taking into account the actual costs of obtaining it, which may lead to a reduced tax burden, but it also reduces the impact of income tax on structural changes in agriculture. In general, adopting estimate standards, at the average level, promotes better management conditions than adopted to determine the tax basis. Admittedly, in the short term, estimating the tax basis may motivate to increase production. These positive effects may, however, be counteracted by negative impact on investment, which in this case are not deductible for tax purposes. Tax preferences may also affect the size and structure of farms (Harl, 1969), particularly when the choice of the method for determining the tax basis (e.g. based on an estimate) is limited by the legislature (e.g. by determining the permissible area of the farm or production volumes). Therefore, the choice of the estimated income as the tax basis may impede structural changes in agriculture<sup>4</sup>. Taxation based on estimated income may also discourage the use of accounting records in agriculture on a broader scale, which are then treated as unnecessary bureaucracy.

### **IV. PERSONAL INCOME TAX STRUCTURE AND METHODS OF ESTIMATING INCOME FROM AGRICULTURAL PRODUCTION IN GERMANY**

The taxation system of agriculture in Germany allows one to achieve special benefits in relation to the other businesses. The German law on personal income tax lists seven categories of taxable incomes, in one of them income from agriculture and forestry are listed. In the context of agricultural income, taxable is also income from total or partial sales of assets of agricultural farm, as well as direct subsidies. The tax year for income from agriculture lasts from 1 July to 30 June of the following year; the income achieved in a given tax year are settled proportionally in the calendar year.

The progressive scale was applied in the personal income tax. In 2013, the rates at the federal level,

<sup>4</sup> More: (Dziemianowicz, 2009).

depending on the amount of income, ranged between 14 and 45%. Not all income obtained by taxpayers are subject to taxation. Depending on the category of the taxpayer, in 2013, income in the amount of up to 8 130 EUR (obtained by a single person) or up to 16 260 EUR (obtained by a married couple paying tax together) was exempt of personal income tax.

In the income tax structure paid by owners of German farms, a number of beneficial solutions were applied, relating in particular to the rules determining the tax basis. Agricultural income in Germany may be calculated using four methods (Dziemianowicz, 2007):

- 1) on the basis of accounting books - actual income is subject to taxation;
- 2) on the basis of the volume of inventory (so-called simplified accounting, statement of revenues and expenses based on accounting documents, without the obligation to draw up a balance sheet);
- 3) on the basis of the flat-rate - net income from one hectare is determined based on economic value of land - so-called average unit rates, differentiated according to: quality of land, type of agricultural production, etc.;
- 4) on the basis of income valuation, carried out by the tax administration.

Real income, calculated based on accounting books, is determined by farms keeping accounting records. In 2013, these are farmers who (Abgabenordnung, 2002, §141):

- 1) reached a turnover of more than 500 000 EUR or
- 2) reached an income higher than 50 000 EUR or
- 3) whose economic value of land, calculated on the basis of the so-called statutory valuation (Bewertungsgesetz, 1991) is greater than 25 000 EUR.

The number of agricultural holdings keeping accounts is growing systematically. In 2010, approx. 35% of German farmers were required to do comprehensive bookkeeping; in addition, 15% of them conducted simplified bookkeeping. Still, however, many farmers make use of the option of estimating incomes, without the need to keep detailed accounting records.

#### V. ESTIMATING INCOME ON THE BASIS OF §13A OF THE GERMAN INCOME TAX LAW AS ONE FORM OF AGRICULTURAL TAX EXPENDITURES

The law on personal income tax (EStG, 2009) in Germany sets out the general rules for taxation of income derived from a variety of sources, including income achieved by entities conducting agricultural activity and activities in the scope of forestry. In addition, in paragraph 13a of the above law, special rules have been formulated, reserved exclusively for farming and forestry, which reflect the preferential treatment of these activities by Germany<sup>5</sup>.

The preferential regulations contained in §13a apply to the method of determining income. In contrast to the general rules addressed to all companies that determine income based on bookkeeping, farmers may determine income in a simplified manner, using the so-called average unit rates. The flat-rate average rate is varied and depends primarily on:

- the activity carried out,
- the place of business,
- the area of the farm, expressed in conversion hectares.

In accordance with the act (EStG, 2009), not all farmers can benefit from determining income in a simplified manner. This method is reserved exclusively for owners of agricultural farms, who:

- are not required to keep accounts,
- cultivate an area no greater than 20 ha independently,
- have no more than 50 units of livestock inventory.

**Table 1. Average rates of income in the basic sectors of agriculture and forestry in Germany**

Value of hectare	Value of income by average rates (EUR)
1 ha to the value of 300 DM	205
1 ha to the value of 300-500 DM	307
1 ha to the value of 500-1 000 DM	358
1 ha to the value of 1 000-1 500 DM	410
1 ha to the value of 1 500-2 000 DM	461
1 ha to the value over 2 000 DM	512

Source: (EStG, 2009).

<sup>5</sup>Support of enterprises operating in the field of agriculture and forestry is the main objective of the state's policy in the field of regulations contained in Landwirtschaftsgesetz (i.e. Law on agricultural activity) of 1955.

The list of the average rates for primary activities has been set out in excerpt 4 of paragraph 13a, and, in the case of special sections - accordingly in attachment 14 to the Act on valuation of 1955 (Bewertungsgesetz, 1991). An obligation of a farmer benefiting from this preference is to calculate the amount of taxable income, by applying the product of the number of conversion hectares and the relevant average rate (determined on the basis of the valuation of 1 ha in 1955), constituting the sum of the basic rate (Table 1) and the relevant rate for special sections (so-called aid for the basic rate).

**Table 2. Comparison of the income in the selected special sectors of agriculture determined by the average rates, and on the basis of the accounts in 2010**

Agricultural production	Value of income fixed on the base of accounts (EUR)	Additional average rates of income for special sectors of agriculture (EUR)
Hops	5 398	512
Viticulture	5 874	512
Gardening, including: cultivation of fruits	17 483	512
cultivation of vegetables	8 076	512
floriculture	7 251	512
Nurseries	45 699	512

Source: (Deutscher Bundestag, 2012), (Statistisches Bundesamt, 2010).

**Table 3. Agricultural and forestry enterprises fixed income tax base on the basis of average rates in 2010**

States of Germany	Taxpayers earning income in agriculture and forestry	Taxpayers using preference based on 13a article of EStG	
		Number	%
Schleswig-Holstein	20 702	1 260	6.1
Hamburg	1 972	16	0.8
Bremen	444	38	8.6
Lower Saxony	83 792	10 486	12.5
North Rhine-Westphalia	82 132	16 288	19.8
Hesse	40 810	12 974	31.8
Rhineland-Palatinate	35 759	4 314	12.1
Saarland	1 729	249	14.4
Baden-Württemberg	93 609	26 918	28.8
Bavaria	191 305	63 557	33.2
Berlin	881	25	2.8
<i>Total for old States</i>	<i>553 126</i>	<i>136 125</i>	<i>24.6</i>
Mecklenburg-Vorpommern	4 358	150	3.4
Brandenburg	6 022	291	4.8
Thuringia	3 381	605	17.9
Saxony-Anhalt	5 952	190	3.2
Saxony	8 203	843	10.3
<i>Total for new States</i>	<i>27 916</i>	<i>2 079</i>	<i>7.4</i>
<i>Total</i>	<i>581 042</i>	<i>138 204</i>	<i>23.8</i>

Source: (Deutscher Bundestag, 2012).

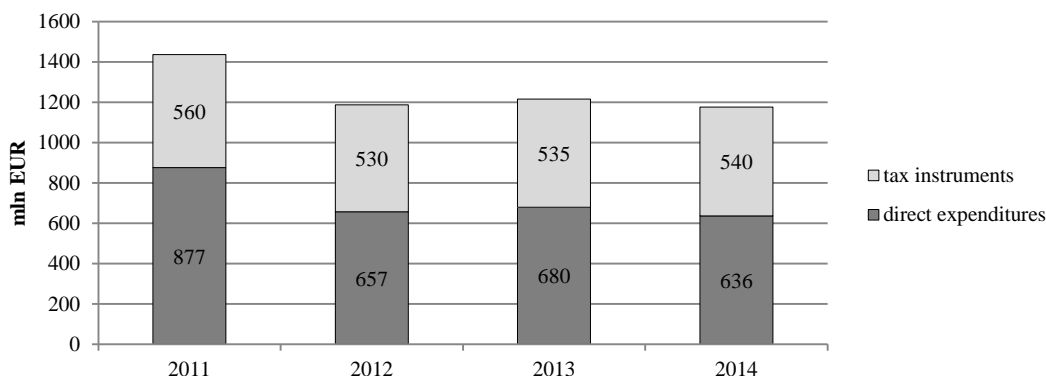
On the basis of the analysis of statistics prepared by both public institutions at both federal and union level, it can be claimed that the amount of income determined on the basis of average rates is considerably lower than real income calculated based on records contained in traditional account books. However, in the case of special sections of agricultural production, such as: growing fruit and vegetables, or hops and vines, the differences between real income and flat rate income, determined using average rates are substantial and range from 10 to 35 times the flat rate income (Table 2). The lower basis consequently means lower tax burden. Farmers note the benefits arising from the use of this special method for determining taxable income, which is reflected in the number of taxpayers benefiting from this preference (Table 3).

In 2010, nearly one quarter, i.e. 138 thousand entities conducting agricultural and forestry activities in Germany<sup>6</sup>, benefited from the preferential method of determining income. Significantly more beneficiaries of this instrument operate in the old states. In the new states, among others, in Saxony and Brandenburg, approx. 7.4% of taxpayers determined income according to average rates, i.e. approximately 2 thousand entities (Table 3).

The widespread use of preferential estimation of the amount of income by farmers is reflected in the data illustrating the scope of public support of the agricultural sector in Germany (Figure 1). In the years 2011-2014

<sup>6</sup>These statistics include not only agricultural farms, but also other entities engaged in farming and forestry, which are not agricultural farms, but can use the described tax preference.

fiscal instruments represented on average approx. 43% of financial assistance directed at broadly understood agriculture. In absolute terms this was tantamount to burdening the federal budget with an amount ranging between 530 million EUR (in 2012) to 560 million EUR (in 2011). This means, that the federal government, by introducing to the personal income tax structure, among others, preferential solutions such as estimating tax income obtained by farmers according to average unit rates, resigned from part of the income tax, while farmers could significantly reduce their tax burden.



**Figure 1 – State aid in an agriculture, food and consumer protection sector in Germany in 2011-2014 (mln EUR)**

Source: (Deutscher Bundestag, 2013).

At the same time, it should be noted that the officially published values of financial aid of a state, addressed to agricultural enterprises, are still incomplete and do not represent the full size and directions of support of this sector in Germany. This thesis is confirmed by the conclusions of the analysis of state aid value addressed to the agricultural sector in Germany in the years 2007-2014 (Table 4). The data contained in two equivalently published official reports: on financial aid of the state (in which data on tax expenditures are published) and the EU state aid<sup>7</sup>(in which data on tax instruments supporting agriculture are published), are varied. This applies to amounts both in absolute terms and relative terms. In 2012, the value of tax expenditures that support agriculture amounted to 530 million EUR and was higher than that published in reports on state aid by 158 million EUR. At the same time, in recent years, it can be observed that there is a clear substitution of state aid notified by the EU Commission, awarded in the form of tax instruments, for assistance in the form of tax expenditures (Table 4). On the basis of statistical data it can be concluded that the relevant value of support of German agriculture, realized by tax structures, is of a national character, and not of the EU. Therefore, it is not reported as an instrument of state aid and is not subject to control at the EU level. In view of the fact that only part of the support directed to the agricultural sector is reflected in public statistics, it is reasonable to assume that the value of this assistance in relation to GDP, amounting approximately from 1 to 1.7% GDP, is significantly higher than is presented by official data on preferential agricultural policy in Germany. The number of agricultural holdings keeping accounts is growing systematically. In 2010, approx. 35% of German farmers were required to do comprehensive bookkeeping; in addition, 15% of them conducted simplified bookkeeping. Still, however, many farmers make use of the option of estimating incomes, without the need to keep detailed accounting records.

<sup>7</sup>The EU state aid, treated as transfer of resources allocated to public authority, is in principle unacceptable in the European Union. Nonetheless, in certain situations it may be considered compatible with the rules of the common market. In this case, however, it is subject to strict control and is limited. This also concerns agriculture; however, in the case of this sector, characterized by a certain specificity and covered by the EU Common Agricultural Policy, the rules of acceptable state aid have been set out separately, and only to a minor extent overlap with those in force in other sectors. Different rules of competition are applied in agriculture; as a result, when assessing the legality of state aid in the agricultural sector, the European Commission is guided by the principles arising primarily from the Common Agricultural Policy. Public intervention in the agricultural sector is most often undertaken at the Community level, not national.

**Table 4. Value of state subvention into the agriculture sector in Germany (mln EUR)**

Year	State subventions reports			European Commission reports on state aid		
	Total	Tax expenditures		Total	Tax expenditures	
		Value	% of total aid		Value	% of total aid
2007	972	177	18.2%	915	496	54.2%
2008	1 185	179	15.1%	1197	523	43.7%
2009	1 088	337	31.0%	889	377	42.4%
2010	1 549	404	26.1%	779	326	41.8%
2011	1 437	560	39.0%	951	344	36.2%
2012	1 187	530	44.7%	882	372	42.2%
2013	1 215	535	44.0%	895 <sup>†</sup>	361 <sup>†</sup>	40.3%
2014	1 176	540	45.9%	909 <sup>†</sup>	350 <sup>†</sup>	38.5%

<sup>†</sup>value estimated on the basis of Eurostat data in 2007-2012.

Source: Own study based on Eurostat data and (Deutscher Bundestag, 2013).

## VI. THE IMPACT OF USING THE ESTIMATION METHOD OF DETERMINING INCOME FROM AGRICULTURAL PRODUCTION ON TRANSFORMATION OF THE AREA STRUCTURE IN GERMANY

Public support of the agricultural sector in Germany carried out by tax expenditures is justified, among others, by high financial burden incurred by farmers due to the records kept for tax purposes. It is, however, worth considering whether or not, from the point of view of agriculture, support for this sector by fiscal instruments is in fact beneficial? How does this affect changes in the area structure of farms? In the years 1995-2010, the pace of changes in the area structure in Germany was rather slow (Table 5). During the analysed period, the share of the smallest holdings out of the total number of farms declined by only about 7.35 percentage points. For 15 years it is not very much. The share of large farms, above 100 ha, increased during the analysed period by about 6.8 percentage points. Still approx. 40% oversees a relatively small area, up to 20 ha. How many farms in this group intentionally limit their production volumes, due to the possibility of using the simplified method of estimating income described above?.

**Table 5. Structure of farms in Germany in 1995-2010 (%)**

Acreage (in hectares)	1995	1999	2001	2003	2005	2007	2010	2010/1995
5-10	22.40	20.87	20.25	19.58	18.61	18.25	17.41	4.99
10-20	25.60	24.66	25.00	24.42	24.14	23.51	23.24	-2.36
20-50	33.80	32.27	30.54	29.73	29.23	28.69	27.99	-5.81
50-100	13.15	15.33	16.38	17.30	18.01	18.50	18.99	5.84
over 100	5.06	6.87	7.83	8.97	10.02	11.04	12.37	6.77

Source: own study based on: (Statistisches Jahrbuch, 2012, pp. 36-38).

In 2010, 36% of all agricultural farms in Germany, overseeing about 12% of agricultural land, determined estimated income based on so-called average rates. This means that as many as 36% of farms oversaw a small area or had not more than 50 units of livestock inventory. In the area groups 5-10 ha and 10-20 ha, their share was much higher and amounted to 55.6% and 66.2% respectively. Owners of these farms conducted their activities on 75.18% and 75.46% of utilized agricultural areas respectively in the given area group. It can be assumed that they were probably not interested in changing the method of calculating taxable income, which could lead to a higher tax burden and at the same time lower profitability (assuming a certain scale of production). And in connection with this, they limited their scope of activities, they indirectly also limited supply of agricultural land, which could enlarge the area of farms from higher area groups.

Therefore, it turns out that introducing preferential solutions to the personal income tax structure is not always a positive phenomenon. This is confirmed by the example from Germany. This solution indeed contributes to 'protecting' farmers against too high fiscal burdens, but at the same time it can impede the transformation of the area structure of agricultural holdings. Therefore, from the point of view of farmers, it is profitable to conduct activities in a size that does not exceed limits and restrictions established for taxpayers determining the amount of income per average rates.

In Germany more than a quarter of holdings conducting agricultural activities oversees a relatively small area and achieves income no higher than 50 thousand EUR. Average rates of income, much lower than the real profits of farmers, are a strong incentive for farming in the form of a small agricultural farm, achieving low profitability and intentionally limiting the scale of its activities, only in order to benefit from lower tax burden (Deutscher Bundestag, 2012).

**Table 6. The farms determining tax income in Germany in 2010<sup>†</sup>**

Acreage (in hectares)	Total		On the basis of the average rates		1/3 (%)	2/4 (%)
	Number	Acreage of farmlands in 1 000 hectares	Number	Acreage of farmlands in 1 000 hectares		
	(1)	(2)	(3)	(4)		
5-10	47 314	258.3	26 287	194.2	55.6	75.18
10-20	63 160	837.9	41 799	632.3	66.2	75.46
20-50	76 068	2 504.6	25 045	757.5	32.9	30.24
50-100	51 623	3 624.5	3 865	251.6	7.5	6.94
over 100	33 618	9 160.2	798	129.5	2.4	1.41
Total	271 783	16 385.5	97 794	1 965.1	36.0	11.97

† Number of farms determining the income on the basis of the average rates: 1) excluding farms which acreage is lower than 5 hectares; 2) including the farms which activities are strictly related with agriculture (it means that these kind of activities like forestry and fishery are not included).

Source: own study based on: (Staatistisches Jahrbuch, 2012, p. 49).

## VII. CONCLUSION

Agriculture, as one of the most sensitive sectors in Germany, is a beneficiary of public support realized through direct public expenditure and tax expenditures, such as, among others, estimating income based on average unit rates. In 2010, approx. ¼ of agricultural holdings benefited from this preferential method of determining the base of taxable income. In the opinion of the Federal Court of Germany, such a high percentage of farmers use the preferential method for determining taxable income is primarily because of the effort to simplify their register obligations. And in principle, this was one of the main objectives of this instrument to the structure of personal income tax law. Given the economic sensitivity of this sector, this is evaluated positively. The simplification of register obligations, however, is accompanied by the complication of the method for determining the average rate, which creates problems not only to farmers, but also to officials of tax administration. Especially that the average rates from 1 conversion ha have been determined on the basis of economic value of land in force in 1955.

However, the fact that lower tax burden also leads to a distortion of the scale and size of agricultural activity in Germany is very disturbing. From the point of view of farmers, it is profitable to conduct activities in a size that does not exceed limits and restrictions established for taxpayers determining the amount of income per average rates, as it leads to the occurrence of a significantly lower tax burden. As a result, agricultural farm owners, in projecting future incomes in an amount that could cause the loss of the right to use this tax preference, usually resign from higher production or new investments, and thus forgo the development of their farm. The analyses conducted show that the main cause of this phenomenon are too low flat-rate amounts of income determined according to average rates, significantly different from the actual profits of agricultural enterprises. This is particularly evident in the case of special sections of agricultural production, in which the pension for the conducted activity is relatively higher than in the basic business. The average rate of income, which is to equalize the indicated differences and amounts to 512 EUR, in the opinion of the Court, is too low in relation to the actual profits and should be changed as soon as possible. Although a conclusion may review the main points of the paper, do not replicate the abstract as the conclusion. A conclusion might elaborate on the importance of the work or suggest applications and extensions. Make sure that the whole text of your paper observes the textual arrangement on this page.

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