German Economic Team Moldova

Impact assessment of an increase of Moldova's reduced Value Added Tax (VAT) rate for selected agricultural and food products

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2nd version

Berlin/Chişinău, August 2016

About the German Economic Team Moldova

The German Economic Team Moldova (GET Moldova) advises the Moldovan government and other Moldovan state authorities such as the National Bank on a wide range of economic policy issues. Our analytical work is presented and discussed during regular meetings with high-level decision makers. GET Moldova is financed by the German Federal Ministry of Economics and Energy. Our publications are publicly available at our website (www.get-moldova.de).

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Executive Summary

Currently, Moldova's tax code stipulates a reduced Value Added Tax (VAT) rate of 8% for a range of goods and services. Primarily, the reduced rate applies for agricultural goods, bakery products, dairy products and sugar. The estimated VAT revenues of MDL 884 m from these goods represents only 6.7% of total VAT revenues, while those goods account for over 12% of final consumption. This suggests that a VAT rate rise for those goods could deliver additional revenues.

In this policy paper we estimate the revenue potential from increasing the reduced VAT rate for the respective agricultural products, bakery products, dairy products and sugar to the standard rate. We also estimate the additional cost burden on companies and consumers from such a VAT rate adjustment.

At first sight, a rate increase from 8% to 20% would suggest an increase of revenues by 150% if demand remained unchanged. In reality, however, consumers will reduce or shift their demand depending on the retail price increase following the VAT rate rise. The size of the demand reaction depends on the elasticity of demand to price changes and the change in the retail price. Normally, demand for the agriculture and food products considered here is not very sensitive to price changes as the goods in question are daily essentials. However, in Moldova demand could be rather sensitive as consumers may turn to readily available home production and to the widespread shadow economic activity in the food sector.

The sensitivity of demand in turn has a direct impact on how much of the VAT rate rise is passed on by companies through higher retail prices. If companies or retailers expect a fall in demand, they will not increase prices to the full extent of the VAT rate rise, but are likely to absorb some of the VAT increase themselves.

Since it is not clear how strongly demand will react, we consider two scenarios: Under Scenario 1, we assume rather stable demand which allows companies to pass on a large share of the VAT rate rise to the final consumer. In comparison, under Scenario 2 we assume demand to react strongly forcing companies to absorb a large share of the VAT rate rise.

Table 1: Summary of results

	Scenario 1 "low elasticity"	Scenario 2 "high elasticity"
Additional revenues	MDL 1,159 m	MDL 1,041 m
Additional cost to business	MDL 550 m	MDL 870 m
Additional cost to consumers (per household and year)	MDL 358	MDL 184

Source: own calculations.

What does this imply for public revenue? For Scenario 1 (stable demand), we estimate the VAT rate increase to deliver additional VAT revenues of MDL 1.1 bn pear year. However, even with a strong reaction of demand we expect MDL 1.0 bn per year in additional VAT revenues. Thus, VAT revenue from the relevant agricultural and food products can be expected to increase between 118% and 131% in comparison with the current level. This additional public income from the rate adjustment would increase overall revenues by 8% - 9%.

Naturally, such a revenue increase will increase the burden placed on businesses and consumers. For companies, we expect additional costs of MDL 550m pear year under Scenario 1 (with demand assumed to be rather stable). However, the burden on businesses could increase substantially in case demand reacts strongly and companies have to absorb a large part of the VAT rate rise (as assumed in Scenario 2). To put this into perspective, in the "worse" scenario the additional tax burden would amount to around 2.6% of the affected industries' revenues.

For consumers, the impact of higher prices is expected to increase the cost of living by MDL 184 (Scenario 2) to 358 (Scenario 1) for the average household pear. This would constitute only a modest 0.3-0.5% increase of annual expenditures for the average household and should thus be easily manageable. Yet, as low-income households tend to spend a substantially larger share of their disposable income on goods of the kind affected by the reform, the government could use part of the additional VAT revenues to cushion the effect on the poor, e.g. by increasing the minimum guaranteed income (subsistence income).

So we can conclude that an alignment of the VAT rate for agricultural goods, bakery products, dairy products and sugar would lead to significant additional revenues. In other words, the current reduced VAT rate is rather costly in terms of forgone revenues.

At the same time, the current system is not really an effective instrument for supporting businesses, as VAT is a consumption tax, with exemptions primarily benefitting private households. Neither is the reduced VAT rate a good social policy instrument for supporting low-income households, as it benefits all consumers, including people with high incomes. Better targeted social support measures could provide the same poverty reduction effect at much lower cost. For example, the government could consider using a share of the additional revenue to finance a reduction of the personal income tax. Such a measure would benefit both companies and consumers and provide a welcome stimulus for the economy.

All facts considered, there are strong fiscal, economic and social arguments to align the reduced VAT rate for agriculture and food products and use some of the additional revenues to make up for the negative effects in a more effective manner.

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1 Background and objective of this research

The Value Added Tax (VAT) is one of the most important taxes in the Republic of Moldova, representing a 31.8% share of national public budget revenues or 37% of total tax revenues in 2015.

Moldova's VAT is regulated by Articles 96 to 104 of Title III of the Tax Code. Currently, following legislative changes in recent years, VAT is levied at three rates (for more details see Annex 1):

- a **20%** standard rate charged on all goods and services delivered on and imported into the national territory

- an **8%** reduced rate which applies to most agricultural products, bread and bakery products, as well as dairy products.

- **a 0% VAT rate or VAT exemption** is in place for exports of goods and services, international transport, utilities provided to the population, import and/or delivery of goods financed by grants, goods and services imported to/exported from Free Economic Zones (FEZ), goods and services for the use of diplomatic missions in the Republic of Moldova, and goods on offer in duty-free shops.

In addition, the Giurgiulesti International Free Port (GIFP) and the Marculesti International Free Airport (MIFA) have also been granted special incentives, broadly similar to those applied to FEZs.

In 2013, the tax code was amended in order to establish specific tariff headings for products for which a reduced VAT rate applies or which are exempted. The tariff headings correspond to the international HS Harmonised System[1] and thus provide clear guidance as to which products are eligible for the reduced VAT rate, reducing the ambiguity of the previous system.

Other VAT exemptions for agriculture

In addition to the reduced VAT rate for certain agriculture and food products, in 2013 a VAT exemption was introduced for imports of agricultural equipment – specifically tractors, agricultural machinery and irrigation equipment.

It is also worth mentioning that refunds for agricultural companies are restricted, with agriculture companies only being allowed to deduct input VAT or VAT for exported goods against their VAT liability for goods sold. This implies that companies cannot receive an actual refund in case input VAT claims exceed their VAT liabilities on goods and services sold. In that case, the refund can only be carried over to the next fiscal year, where it can be deducted against the VAT for goods sold.

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[1] Law no.172 of 07.25.2014 on the approval of the Combined Nomenclature of goods

Objective of this policy paper

In this briefing we carry out an assessment of the existing reduced VAT rate of 8% for agriculture, bakery and dairy products as well as sugar (see Annex 1 for a list with the specific products).

<u>Main question</u>: What would be the potential impact if the reduced VAT rate for agriculture and food products were increased to the standard VAT rate?

In this paper we assess the impact of an adjustment of the reduced VAT rate for the goods in question along three criteria:

1. **Fiscal impact:** What is the expected effect on VAT revenue?
2. **Economic impact:** Which effect can be expected on output of companies in the sectors currently eligible for the reduced VAT rate?
3. **Socio-economic impact:** What is the likely impact on prices and consumer expenditure, and thus for the citizens of Moldova?

2   Impact on tax revenues

In general, each tax exemption weakens revenue collection. In turn, removing exemptions is increase revenues and provide fiscal space (which could be used, for example, for a reduction of tax rates in general). Thus, there is a strong fiscal argument for an increase of VAT rates to the standard rate. However, the potential for raising additional revenue should not be overestimated, as companies and consumers adjust their behaviour. In this section, we estimate the likely impact on revenue of an increase in the reduced VAT rate, taking into account likely responses on the part of the taxpayers.

2.1   Current VAT revenues from agricultural and foods products

The basis for estimating the impact on VAT revenue is the amount of revenue collected in the past from the products to which the reduced rate applies. Unfortunately, the exact amount of this revenue is not known, as VAT collection is not being documented by types of goods.

Therefore, we had to estimate VAT revenue from the goods in question based on secondary data. In order to estimate the VAT revenue for the relevant goods one first needs to determine the value of final consumption of those goods (i.e. final domestic consumption). In the case of Moldova the best data source are the national account input output tables, the last version of which is available for 2014. Indeed, usually input output tables are estimated based on VAT data.

Specifically, we estimate the sales value and resulting VAT revenues for four different product categories which roughly match the agriculture and food products for which the tax code provides a reduced VAT rate. The four product categories used are:

1. Agriculture
2. Bakery products
3. Dairy products
4. Sugar

Importantly, only certain agricultural products are subject to the lower VAT – by no means the entirety of agricultural products. Indeed, the tax code states a list with specific HS codes of goods for which the lower VAT rate applies. However, while not all agricultural goods are subject to the reduced rate, those which are account for 85% of total domestic demand (i.e. sales value) of agricultural products (see Annex 1 for a detailed analysis of the sales value of agriculture products subject to the lower VAT rate). Given that 85% of sales of agriculture products are subject to a lower VAT rate, it is reasonable to treat the entire agriculture sector (or entire domestic demand for agriculture products) as entitled to a reduced VAT rate. With that simplification, we can directly make use of the data for the agriculture sector as a whole as provided in the national accounts.

For "dairy products" also a corresponding category exist in the national account input output tables, so the data for final domestic demand can be taken directly from there.

For "bakery products" and "sugar", however, no corresponding categories exist in the input output table. Therefore, we first estimate the value of the goods liable for VAT taxation (i.e. final domestic

consumption) and then calculate the resulting VAT revenues. The final domestic consumption (retail sales) for those goods is the sum of domestic production plus imports of those goods minus export and minus intermediate demand. Intermediate demand (sales to companies) can be estimated using the typical intermediate demand share for food production in Moldova.

Based on this approach we estimate that in 2014 VAT revenues for the agriculture and food products taxed at the reduced rate were approximately MDL 884m (see table 2). This represents a share of about 7% of total VAT revenues.

Table 2: Estimated VAT revenues from goods benefitting from the reduced rate VAT in 2014

MDL m	Gross VAT revenues	Input VAT	Net VAT receipts
Agriculture	1,235	620	615
Bakery products	129	41	89
Dairy products	182	90	122
Sugar	85	27	58
Total	*1,632*	*778*	*884*

Source: Ministry of Finance, Office for National Statistics

With MDL 615m, the largest share of revenues is collected from the sale of agricultural products. This reflects the importance of this sector to the economy and the significant share of these products in final consumption.

Assuming a raise of the VAT rate for the goods in question from the reduced rate of 8% to the standard one of 20% would suggest at first sight an increase in VAT revenues for the relevant goods by 150%. However, the actual increase in tax revenue collection will be smaller, as it depends on two effects:

- the change in demand resulting from the price increase following the VAT rise ("elasticity of demand")
- the share of the VAT rate increase that is passed on by businesses to consumers in form of higher prices ("pass through rate")

Both effects play an important role in how much additional revenue will be raised through the VAT rate rise; we discuss both effects in more detail below.

2.2   Elasticity of demand: How does demand respond to a VAT rate rise?

Companies will pass on some of the VAT rate rise through higher prices which is likely to prompt consumers to reduce demand for the affected goods. This in turn reduces the tax base and thus the increase in revenues that can be expected from the rate hike. The key question is, therefore, how strongly will demand react following the VAT increase?

When assessing the magnitude of the shift in demand from an increase in VAT, it has to be taken into account that retailers are not likely to pass through the full amount of the tax increase to consumers. Whether a larger or a smaller share of the tax increase is being passed through hinges on the extent to which demand and supply respond to changes in the price.

Demand for food products is normally not very responsive to price changes as they constitute everyday essentials with limited possibility for substitution. Consequently one would assume a price elasticity of below 1, suggesting that a price increase by 1% leads to a decline in demand by less than 1%.

However, in Moldova this may not be the case for agriculture and food products given the large extent of shadow economic activity in this sector. Furthermore, Moldova's agriculture sector has a large share of subsistence and small scale farming and food production, which are not captured by state taxation. This may point to a large reaction in official demand to any VAT induced price increase as consumers and producers move to the informal economy.

While those are relevant concerns, it is extremely unlikely that demand falls to such an extent that the VAT increase would lead to no additional VAT revenues at all. For that to happen, official demand would have to fall by around 60% implying a demand elasticity of 5.4, which is unheard of for these kinds of goods. Indeed, this would imply that a majority of producers and retailers, including large supermarkets, decide to sell these goods "below the counter" once the VAT rise occurs.

In addition, there was little evidence of a strong decline in official demand during previous instances when the VAT rate for agriculture and food products was lifted to the standard VAT rate on a short-term basis. Indeed, during those incidences the government was always able to raise additional VAT revenues and to clear arrears in VAT refunds owed by the government to producers.

As it is difficult to determine in advance exactly how demand will respond to the price increase following the VAT rate rise – especially if the increase is perceived to be permanent – we consider two scenarios:

- Scenario 1: A small response in official demand reflected by a low demand elasticity of 0.5. Thus, a price increase of 1% will reduce demand for the goods in question by 0.5%.
- Scenario 2: A more pronounced demand elasticity of 2.0 where a price increase of 1% reduces demand by 2%.

2.3   How much of the VAT rate rise is passed on through higher prices?

The extent to which companies increase their prices following the VAT rise is a second factor influencing the impact of the VAT rate adjustment. First of all, the retail price change will impact how consumers adjust their demand. In addition, it determines who bears the main burden of the VAT rate rise – consumers through higher prices or businesses through reduced profit margins.

Naturally, the share of the tax increase that is shifted to consumers in the form of higher prices depends directly on the responsiveness of demand. If producers and retailers know that demand is rather stable as consumers do not respond strongly to price changes, it is easy for them to pass on a large share of the additional tax payments. In turn, if companies expect demand to react strongly, they will only partially pass on the additional cost from the VAT increase and bear a substantial share themselves.

The ability of companies to shift a VAT rate increase to consumers is typically expressed by the "pass through rate". The pass through rate can range from 0 to 1, where a value of 0 implies that companies do not pass on the VAT increase at all and bear all the cost themselves. The other extreme case, a pass through rate of 1, means businesses will increase prices by the full amount of the additional VAT payment.

Empirical research suggests that typically a large share of the VAT burden is shifted to the final consumer. Typical values are in a range between 0.5 and 0.7 – meaning that companies usually pass on 50 - 70% of the VAT cost to final consumers.

So the extent of the price pass through depends directly on the elasticity of demand: for any elasticity, a corresponding price pass through rate can be calculated. The table below shows the pass through for the two scenarios considered here. Under Scenario 1, in which we assume that demand responds only modestly to price changes, companies pass through about 70% of the cost increase from the VAT rise, corresponding to a price increase of 6.9%. The remainder of the cost increase is born by businesses in the form of reduced profits.

For Scenario 2, in which we expect official demand to be very responsive, companies will only shift 33% of the additional VAT cost to consumers. Thus, we expect prices to rise only by 3.3% in this scenario, implying that companies bear the main brunt of the VAT increase themselves.

Table 3: Relationship between demand elasticity and price pass through

	Scenario 1: Low elasticity	Scenario 2: High elasticity
Elasticity of "official" demand	-0.5	-2.0
Share of additional VAT cost passed on to final consumer (price pass through)	70%	33%
Resulting price increase	6.9%	3.3%

Source: own analysis

2.4 Estimated impact on VAT revenues

As mentioned, we calculate the impact on VAT revenues for two scenarios. Scenario 1 ("low elasticity") assumes that demand in the formal economy is relatively stable with little reaction to the price change resulting from the VAT increase. Under Scenario 2, we assume that demand for goods sold in the formal market is sensitive, with a strong reaction to any price change. For comparison we also include current VAT revenues (status quo).

The table below shows the estimated impact on VAT revenues following from an assumed increase of the VAT rate for agricultural and food products from 8% to 20%. Under both scenarios, we expect a substantial increase in VAT revenues.

Under Scenario 1 (with little reaction of demand) we expect an increase in VAT revenues of MDL 1,159m, equivalent to 131% in comparison with the current situation. This increase would raise total VAT revenues by about 9%.

Table 4: Fiscal impact of VAT rate adjustment

MDL million	Net VAT from food and agricultural products	Absolute increase	Relative increase	Increase compared to total tax revenues
Status quo (2014)	884	0	0%	0%
Scenario 1 "low elasticity"	2,043	1,159	131%	9%
Scenario 2 "high elasticity"	1,925	1,041	118%	8%

Source: own analysis

For the second scenario, where we assume a strong reaction of final consumers to the price change, the increase in VAT revenues would be lower but still amount to MDL 1,041m – an increase of 118% compared to the current situation.

2.5   Impact on input VAT deductions

A relevant question that is often being asked is what happens to refunds for input VAT, once the VAT rate rises. Indeed, the agriculture and food products considered for a VAT rate rise often also serve as inputs for other companies – e.g., in food production. Thus, will the resulting increase in input VAT not eat away the entire additional revenues?

Such concerns are understandable, but the issue is not as crucial as it might look at first glance. The tax base for VAT is final domestic consumption – goods and services sold to the final consumer. There will be positive revenue growth from a rate rise except in the extremely unlikely case that final domestic consumption for the goods in question would collapse. While VAT paid on inputs will also rise in line with the tax rate increase, that is of no concern with respect to the final tax take, unless demand for inputs and final demand go dramatically into two different directions.

To illustrate this, consider the table below, which shows for Scenario 1 the development of gross VAT (VAT on sales of both final consumption and inputs), input VAT and the resulting net VAT revenues.

Table 5: Development of gross, input and net VAT revenues after tax rate rise (Scenario 1)

	Gross VAT	Input VAT	Net VAT
VAT rate 8%	1,632	748	884
VAT rate 20%	3,913	1,870	2,043
absolute change	2,282	1,122	1,159
relative change	140%	150%	131%

Source: own analysis

Naturally, the new VAT rate applies equally to inputs and to goods for final consumption. Thus, as can be seen, gross VAT revenues (VAT on all goods, i.e., inputs and final consumption) increase by 140%, roughly in line with the VAT rise. In absolute terms, gross VAT revenues increase by MDL 2,282 m.

From the gross revenues, the tax authority has to deduct VAT paid on inputs. Currently, about half of consumption of agriculture and food products is used as inputs for other businesses. The VAT on those goods is being refunded (or rather can be deducted) from the final VAT liability of a company. Thus, around 50% of the VAT payable on the sale of agriculture and food products is subject to input tax deduction. As expected, input VAT revenues also increase in line with the VAT rate rise. In this case, input VAT increases by MDL 1,122m.

But, of course, net VAT revenue is what matters for the tax authorities. As can be seen, net VAT revenues increase by MDL 1,059 m. Thus, even after deducting input VAT the revenue increase is positive. Indeed, the relationship between input and final consumption has remained largely unchanged[2].

It is hard to imagine a situation where net VAT revenues would fall while input VAT increases. This would imply that a large share of final consumption were to disappear, while demand for those goods as inputs remained unchanged. For this to happen, 60% of official final demand would have to disappear into the shadow economy.

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[2] Closer inspection shows that the share of intermediate demand in total consumption has increased somewhat. This is due to the fact that final demand will be affected by rising prices. Since companies consider net prices – excluding VAT –, intermediate demand is likely to stay stable.

3 Impact on companies

How would an adjustment of the reduced VAT rate for agricultural and food products affect the agriculture and food production sectors?

It is important to note that VAT is not a tax aimed at companies. While companies charge VAT on goods and services sold and have to transfer VAT payments to the tax authorities, this extra cost is usually to a large extent passed on to the final customer through higher prices. What is more, VAT paid by companies on inputs (input VAT) can be offset against a company's VAT obligations. Thus, to the extent companies are able to pass on VAT through higher prices, the burden of a VAT increase falls on the final consumer.

Incomplete pass through

However, in case companies can only partially pass through VAT, some of the burden is actually born by them. For example, if the pass through rate is 70%, the remaining 30% of the VAT (and any VAT rise) have to be absorbed by the companies. Thus, the part of VAT that cannot be passed on has the effect of a corporate tax.

As described in chapter 2.3 above, there is good reason to believe that the pass through rate for agriculture and food products in Moldova is comparatively low. Demand for those goods may react strongly to price changes due to home production, shadow economic activity, smuggling etc. Therefore, companies may have to absorb a relatively large part of the VAT rise increase.

Table 6: Impact on production value and profits resulting from VAT tax rise for scenario 1

Scenario 1 "low elasticity of demand" MDL m	Loss in profits	Loss in profits compared to domestic production value
Agriculture	-382	-1.4%
Bakery products	-55	-3.6%
Dairy products	-76	-3.8%
Sugar	-36	-2.2%
Total	**-549**	**-1.7%**

Source: own analysis

Scenario 1 "low elasticity"

Under both scenarios, the main impact on companies will be on profitability. Under Scenario 1, where we assume only a moderate reaction of official demand, we also expect a moderate decline in company profits by MDL 549m. This is due to the fact that companies do not pass on the full amount of the VAT rise, but reduce their net prices instead. The expected decline in profits is equal to 1.7% of production value (revenues) for the affected industries. This is a significant decline, but should be manageable.

Scenario 2 "high elasticity"

To recall, under scenario 2, we assume that demand in formal markets responds much stronger to price changes. Thus, companies are forced to absorb a larger share of the VAT rate rise (as opposed to passing it on to the final consumer). This is visible in the impact on profits following the VAT rate rise. Under scenario 2, we expect a decline in profits by MDL 870m. This is equal to 2.6% of domestic production and would mark quite a significant shock for the affected industries.

It is important to note though, that the profit decline will not have to be born entirely by the producers of the affected goods, but will be distributed along the value chain. Thus, if retailers are forced to reduce sales prices, they will pass some of that decline on to distributers who in turn may ask their producers to reduce prices. Thus, the impact on profits is spread somewhat among businesses.

Table 7: Impact on production value and profits resulting from VAT tax rise for scenario 2

Scenario 2 ("high elasticity of demand") MDL million	Loss in profits	Compared to domestic production value
Agriculture	-605	-2.2%
Bakery products	-87	-5.6%
Dairy products	-120	-6.0%
Sugar	-58	-3.5%
Total	-870	-2.6%

Source: own analysis

To sum up, the impact on companies from the VAT rate rise is largely taking place through reduced profits, as companies may have to reduce net sales prices. We expect a decline in profitability in the range between MDL 549 m and MDL 870 m, depending on the extent companies can pass on the VAT increase through higher retail prices. This amount represents an additional tax burden on companies ranging from 1.7% to 2.6% of revenues.

4 Impact on consumers

The VAT rate rise will also have an impact on households' finances. The main impact of a potential VAT rate rise on consumers will be through higher prices as companies pass through part of the VAT rate rise. Consequently, consumers have to spend more money in order to afford the same amount of goods as before, or they have to reduce consumption of the goods affected by the VAT increase.[3]

Table 8: Impact of VAT rate rise on consumer prices and cost of living

	Expected increase of official sales price	Resulting increase in cost of living MDL m	Average increase per household MDL per year	Compared to total consumer expenditure
Scenario 1 "low elasticity"	6%	530	358	0.5%
Scenario 2 "high elasticity"	3%	272	184	0.3%

Source: own analysis

Scenario 1 "low elasticity"

In scenario 1 it is assumed that companies pass on about 70% of the cost of the VAT increase. Naturally, this high pass through of VAT becomes visible as a substantial price increase. We expect prices for the affected products to rise by 6%. For consumers in total, these higher prices lead to an increase in the cost of living of MDL 530 m. This translates into an increase in the cost of living of MDL 358 per year for the average household. That is, the typical household has to spend an additional MDL 358 per year in order to be able to buy the same amount of agriculture and food products as before the VAT rate rise. However, compared to total consumer expenditure, this represents only a rather moderate increase of 0.5%.

Scenario 2 "high elasticity"

How does this compare if we assume that demand reacts strongly and companies only pass on 33% of the VAT rate rise to consumers?: Unsurprisingly, in that case, prices for the affected goods will rise much less, by only 3%. The total additional burden on households from the VAT rate increase is expected to amount to MDL 272 m, equal to MDL 184 per household per year. Aggregated consumer expenditure would only increase by 0.3% for the average household and thus will be rather small.

To sum up, the impact of the VAT rate rise on households is visible but rather moderate in scale. The costs of living are likely to increase by between MDL 184 and MDL 358 per year for the typical household. While this is a small increase for the average household, it may still represent a significant cost increase

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[3] In our analysis of the socio-economic impact we focus on the expected increase in the cost of living and neglect the effect from reduced consumption as we expect the latter to be rather small.

for households with low incomes. In order to support the poorest of the households, the government should consider increasing targeted social assistance measures. For example, an increase in the guaranteed minimum income, possibly combined with an increase in the PIT tax free amount, could be a very effective measure to protect poor households and low income earners from the expected increase in the cost of living. Such a targeted measure could easily be financed out of the additional revenue the increase in the VAT rate will deliver.

5 Conclusions

5.1 Summary of findings

To recall, we modelled the effect of a VAT rate increase for agriculture, bakery products, dairy products and sugar from the current reduced level of 8% to the standard rate of 20%. Our analysis suggests that such a move will deliver additional revenue of MDL 1,159 m in case the demand reaction is rather moderate and MDL 1,041 m in case of a strong reaction in demand. Thus, the policy is likely to substantially increase public revenue even under the assumption of an "unfavourable" reaction of demand.

Table 9: Overview impacts from VAT rate rise

MDL million	Scenario 1 "low elasticity"	Scenario 2 "high elasticity"
Impact on VAT revenues	1,159	1,041
Impact on companies **(cost from reduced earnings)**	550	870
Impact on consumers **(increase of cost for consumption)**	530	272

Source: own calculations

The burden of the VAT rate rise falls on both companies and consumers. Companies will probably compensate some of the VAT rate rise through higher retail prices, but they are unlikely to shift the additional tax payments to consumers in full. As expected, companies are likely to bear the better part of the tax burden if demand reacts strongly (as displayed in Scenario 2).

All in all, however, we expect both the impact on companies and consumers to be manageable.

5.2 Final remarks

Of the 150 countries with a VAT system, the overwhelming majority employs a multi rate system with reduced rates or exemptions for certain goods and services. Only Australia, New Zealand, Canada and Hong Kong have a Goods and Services Tax (GST) with a uniform rate.

Thus, the government of Moldova can always point out that a multi rate VAT system is in line with international best practice and used by many countries around the globe.

However, from a fiscal point of view, each exemption has a cost in the form of foregone revenue and requires the standard rate for those goods without exemption to be higher than would otherwise be necessary.

What is more, VAT is not an ideal tool for subsidising companies. VAT is essentially a consumption tax aimed at households. Thus, reduced VAT rates only indirectly benefit companies by increasing demand for the respective products and allowing for higher net retail prices. With the revenues "lost" on reduced VAT rates and exemptions, the government could finance other, more effective support measures aimed at businesses instead.

A reduced VAT rate is also often justified by its proponents as a social policy instrument. It is argued that agricultural and food products are daily essentials and account for a large share of the spending of households with low incomes who, thus, would be the primary beneficiaries of the rate reduction. While this is undisputed, though, it is a poorly targeted policy measure, as households with medium and high incomes are unnecessarily subsidized as well. Again, there are much better targeted instruments that could be used in order to provide support to the poor.

As such, there are good arguments for an alignment of the VAT rate for the affected products with the standard rate. Our calculations suggest that this could be done without causing a huge shock for businesses or consumers, while at the same time it would raise considerable additional revenue.

Therefore, we argue for an alignment of the reduced VAT rate for the affected products. The alignment can be conducted in a singular increase – there is no need for a gradual adjustment.

The additional revenue resulting from the increase could be used much more effectively, partly to address problems of poor households in a more targeted way, and partly to finance other measures, e.g., a reduction of the personal income tax burden. This would benefit both companies and consumers, reduce labour costs, and provide a much-needed stimulus to the economy, while avoiding the negative side effects of a reduced VAT rate.

Annex 1: Estimating the value of agricultural goods subject to a reduced VAT rate (tax base)

The key question for the analysis conducted in this paper is: what is the value of the agriculture and food products currently sold at the reduced VAT rate. The value of sales of reduced rate items determines the size of the tax base and the revenue potential of a possible rate increase. For dairy products, bakery products and sugar determining the value of sales is straight forward as detailed statistics exist as part of the national accounts input-output table.

For agriculture products determining the tax base is more difficult due to the fact that only certain agricultural products are subject to the lower VAT rate with many agricultural goods subject to the full VAT rate. As VAT is collected at company level and no revenue data on specific products is available from tax administration. Unfortunately, input output data is not helpful here as it only shows the agriculture sector as a whole.

Thus there is a need to estimate indirectly the share in demand of agricultural goods subject to a reduced rate. This can be done with the use of FAO statistics which provide very detailed data on production value, imports and exports for 135 different agriculture and food products. This allows determining for each individual product if it is subject to the full VAT rate or the reduced rate. Once this is done, one can estimate what is the share of sales of items subject to a reduced rate in comparison to those with the standard VAT rate.

Table 10 below shows the results of this analysis. It suggests that reduced VAT rate agriculture products account for 85% of domestic agriculture sales revenue. That is, 85% of sales of agricultural products benefit from a lower VAT rate. Consequently, agricultural goods with the full VAT rate account only for 15% of total sales of agriculture products.

Table 10: Value of agriculture products subject to reduced VAT rate

2013	Production[4]*	Import	Export	Estimated domestic consumption
Total value	1,229.8	187.0	530.5	**886.3**
Value for good with reduced VAT rate	1,152.9	107.8	504.1	**756.7**
Share of goods subject to reduced VAT rate	94%	58%	95%	**85%**

Source: Own analysis based on FAO statistics, *For products with missing production data we assume that the production value equals exports

Table 11 below confirms this notion. The table lists the top 25 agriculture items consumed in Moldova. It shows that the majority of them (highlighted in light red) are currently subject to a reduced VAT rate.

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[4] FAO Statistics need to be treated with some caution as for some items no production data exists or production data is clearly underestimated. Indeed, the total value of production from FAO is significantly below the amount published by the Office for National Statistics. However, FAO data are still a valid data source in order to get an idea which share of sales of agriculture products is subject to the reduced VAT rate.

Conclusion: Reduced VAT rate agriculture goods account for an estimated 85% of the value of sales of agricultural goods. To simplify the analysis in this paper we assume that entire agricultural sales are subject to a reduced rate.

Table 11: Demand and demand share for top 25 agricultural products

	VAT rate	Production	Export	Import	Estimated domestic demand	Demand share
Total		*1,230.1*	*530.8*	*192.5*	*891.8*	*100%*
Maize	reduced	200.4	28.1	5.8	178.1	20%
Grapes	reduced	150.5	17.0	3.3	136.7	15%
Vegetables, fresh nes	reduced	91.7	0.0	0.9	92.5	10%
Wheat	reduced	147.9	65.9	0.3	82.3	9%
Potatoes	reduced	43.5	0.3	6.4	49.6	6%
Eggs, hen, in shell	full	44.4	0.4	4.1	48.2	5%
Sugar beet	reduced	44.9	0.0	0.0	44.9	5%
Sunflower seed	reduced	155.3	136.2	12.9	32.1	4%
Soybeans	reduced	27.1	7.8	0.0	19.4	2%
Tomatoes	reduced	12.7	8.0	11.9	16.6	2%
Garlic	reduced	12.3	0.0	0.5	12.8	1%
Onions, dry	reduced	9.4	0.1	1.1	10.4	1%
Malt	reduced	0.1	0.1	10.3	10.3	1%
Bananas	full	0.0	0.0	9.4	9.4	1%
Cucumbers and gherkins	reduced	7.4	0.8	2.3	8.8	1%
Barley	reduced	34.7	26.6	0.1	8.2	1%
Tangerines, mandarins, clementines, satsumas		2.2	2.2	8.1	8.1	1%
Beans, dry	full	7.9	0.2	0.2	8.0	1%
Tea	full	0.1	0.1	7.5	7.5	1%
Cake, soybeans	reduced	0.0	0.0	6.7	6.7	1%
Rice – total (Rice milled equivalent)		0.0	0.0	6.4	6.4	1%
Carrots and turnips	reduced	4.0	0.0	1.6	5.6	1%
Tobacco, unmanufactured	full	3.4	8.3	10.5	5.6	1%
Walnuts, with shell	reduced	1.9	1.9	4.8	4.8	1%
Nuts, prepared (exc. groundnuts)		0.6	0.6	4.5	4.5	1%

Source: Own analysis based on FAO statistics

Annex 2: List of products benefiting from preferential VAT rates

VAT rate	Product description	HS code, Nomenclature of Goods of the Republic of Moldova[56]
8%	Bread and bakery products, delivered on Moldovan territory	190120000, 190540, 190590300, 190590600, 190590900
	Milk and dairy products, delivered on Moldovan territory	0401, 0402, 0403, 0405, 040610200
	Pharmaceutical products	3001–3004,
	Ethyl Alcohol (non- denatured) for medical or pharmaceutical use	220710000 and 220890
	Other pharmaceutical products or pharm articles imported or delivered on Moldovan territory	3005, 300610, 300620000, 3006 30000, 300640000, 300660000, 300670000, 370790, 380894, 382100000, 382200000, 4014, 401511000, 481890100, 900110900, 900130000, 900140, 900150, 901831, 901832, 901839000
	Natural gas and liquefied gas imported or delivered on Moldovan territory	2711
	Production from livestock animals, plant cultivation and horticulture in the natural state, produced, imported or delivered on Moldovan territory	010221, 010231000, 010290200, 010310000, 010410100, 010420100, ex.0105 – live chicken for breeding, 060210, 060220, 0701, 07020000, 0703, 0704, 0705, 0706, 070700, 0708, 070920000, 070930000, 070940000, 070951000, 070959100, 070959300, 070960100, 070970000, 070993100, 070999100, 070999400, 070999500, 070999600, 0713, 071420100, 080231000, 080610, 080711000, 080719000, 080810, 080830, 080840000, 0809, 08101000, 081020, 081030, 1001, 1002, 1003, 1004, 1005, 1007, 1201, 1205, 120600, 1209, ex.121291 – fresh or chilled beet, 121300000, 1214
	Beet Sugar produced, imported or delivered on Moldovan territory	1701
0%	Foodstuffs intended for use by infants and young children	040229110, 190110000, 160210001, 20051000, 200710101, 200710911, 200710991

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[5] Products are classified according to the Nomenclature of Goods of the Republic of Moldova which is in line with Harmonized Commodity Description and Coding Systems (HS-2007) and EU Combined Nomenclature (CN), LAW Nr. 172 of 25.07.2014 approving the Combined Nomenclature of goods

	Electricity, heat and hot water for housing
	International transportation; domestic passenger transportation services
	Goods and services delivered in the free economic zone
	Services provided by the light industry in the processing under lohn regime
	Goods delivered in duty-free shops
	Goods and services delivered to the Giurgiuleşti International Free Port (GIFP) and Mărculeşti Free International Airport (MIFA)
	Goods and services for the use of diplomatic missions in the Republic of Moldova

Source: Based on data from the Moldova's Tax Code, 2015

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