

## Economic relevance of crypto-mining in Georgia

Georgia is one of the leading producers (“miners”) of cryptocurrencies worldwide. Despite this fact, little is known about the relevance of crypto-mining for the Georgian economy. Official statistics fail to properly record the mining activity, which to a large extent takes place in free industrial zones.

Against this background, we conducted our own estimation of the economic relevance. For 2017, we estimate a turnover of USD 311 m. The main costs of miners are processors and electricity. Labour costs are very low, given that only ca. 300 persons are employed in this capital- and energy-intensive sector. We estimate profits of the sector for 2017 at USD 178 m and the contribution to GDP at 1.2%, which is quite sizeable.

Policy makers should make efforts to improve the statistical recording of this industry. Furthermore, the impact and the implications for the electricity market should be looked at; mining-related electricity consumption amounts to 6% of total consumption. Finally, the fact that the sector doesn’t pay practically any taxes is quite remarkable. Ways to raise taxes from the sector should be explored.

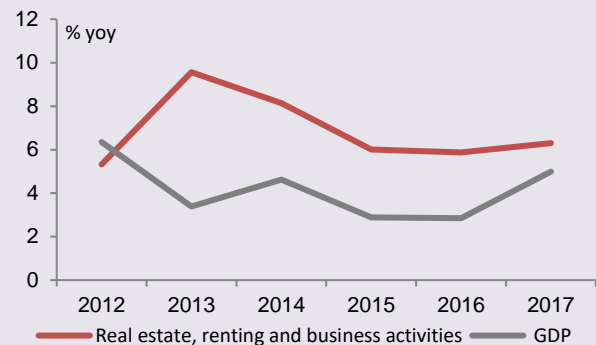
### Crypto-mining in Georgia

There is much debate and considerable investment into cryptocurrencies world-wide. This debate relates primarily to the financial sector. However, the main cryptocurrencies such as Bitcoin and Ethereum need to be produced (“mined”) using economic resources. Thus, cryptocurrencies are also relevant for the real economy. This is especially true for Georgia, which is one of the leading crypto-miners worldwide. The low cost of electricity (ca. USD-cent 5/kWh for industry) and the favourable business climate (rank 9 in the World Bank’s Doing Business Report) have certainly contributed in attracting crypto-mining investment into the country.

### Crypto-mining in official statistics

In Georgian official statistics, crypto-mining is part of the category “real estate, renting and business activities”. However, the dynamics of this category are quite smooth and the massive increase in crypto-mining since 2014 is clearly not sufficiently recorded in official data. For this reason, we decided to conduct our own estimation of the economic relevance of crypto-mining in Georgia.

Development of “real estate, renting and business activities” vs GDP in real terms, 2012-2017



Source: GeoStat

### Estimation of profits of crypto-miners

For 2017, we estimate that mining facilities in Georgia have a capacity of 65 MW. With these facilities, Georgia was able to mine 77,837 Bitcoins (BTC), including BTC due to transaction fees. Taking the average BTC price of USD 4,001 in 2017, we arrive at an estimated turnover of USD 311 m in 2017.

Electricity is one of the main costs of mining. We estimate mining-related electricity consumption at 569,400 MWh in 2017, which corresponds to 6% of total electricity consumption in Georgia (excluding Abkhazia). Assuming a tariff of USD-cent 5 kWh, we estimate electricity costs of USD 28 m in 2017.

Mining requires very little labour. We estimate less than 300 employees in the industry in 2017, earning ca. USD 3 m per year. Processors are an important factor; we estimate a yearly cost of USD 72 m. Taking into account other costs such as renting of sites, finance and cooling, we arrive at estimated profits of the industry of USD 178 m in 2017.

### Profits in 2017

Item	USD m
Turnover	+311
Cost of electricity	-28
Labour cost	-3
Cost of equipment	-72
Other cost (renting of sites, finance costs, cooling, etc.)	-30
<b>Profits</b>	<b>+178</b>

Source: own research

### Contribution of mining to GDP

The estimated contribution of crypto-mining to GDP amounted to USD 181 m in 2017 (profits of USD 178 m and labour income of USD 3 m). This is equivalent to 1.2% of Georgia’s GDP. To put this into perspective: the categories “mining and quarrying” (i.e. traditional mining) amounts to 1.1%, “manufacture of alcoholic beverages” to 1.1% and “restaurants; bars; canteens and catering” to 1.6% of GDP. Thus, crypto-mining has a sizeable impact on Georgia’s GDP, which is (at best) only partly recorded by public statistics.

### Taxation of crypto-mining

To a large extent, mining facilities are located in free industrial zones, which are exempted from practically all taxes. The exemption includes profit taxes, VAT for imported processors and for electricity, as well as customs duties. As such, crypto-miners pay practically no taxes, despite high profits of USD 178 m in 2017. The rationale for these exemptions is not straightforward, given the very limited impact of crypto-mining on the labour market.

### Impact on trade balance

The estimated, but only partially recorded impact of crypto-mining on the trade balance is depicted in the table below.

#### Impact on trade balance in 2017 (partly unrecorded)

Item	Impact on balance, USD m
Exports of bitcoins	+311
Net-imports of electricity	-28
Imports of processors	-72
Imports of other goods	-10
<b>Net impact</b>	<b>+201</b>

Source: own research

Thus, an accurate recording of the sector would lead to a sizeable reduction of the current account deficit by 1% – 2% of GDP.

### Policy implications

Our estimation shows that crypto-mining has an important impact on Georgia’s GDP. However, this impact is not properly recorded by official statistics. Thus, we think additional efforts are necessary in order to improve crypto-mining statistics.

Mining is responsible for 6% total electricity consumption and has thus a strong impact on the electricity market. In our view, further research is needed to study this impact in order to arrive at policy conclusions, including

the pricing of electricity for crypto-miners, which is so far unknown.

The government should also check whether the existing crypto-mining industry can be used as a starting point for developing an IT cluster. Also, the strong crypto-mining position of Georgia could be used for the purpose of FDI attraction, thus complementing traditional sectors such as tourism and wine.

Finally, the very low taxation of estimated profits of USD 178 m in 2017 is quite remarkable. We suggest checking ways to significantly increase tax revenues from this industry.

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A more comprehensive analysis is provided by the Policy Study PS/03/2018 [“Mining cryptocurrencies in Georgia: Estimation of economic relevance”](#).

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