Title
The Shadow Economy during COVID-19: Effects of the Pandemic on Dark Web Marketplaces

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Abstract
The shadow economy is a substantial part of economic activity in normal times. During the current global pandemic, governments have imposed very severe regulations on labour, movement, goods and service markets. Therefore, we would expect that some economic activity has shifted towards the shadow economy. Cryptocurrencies have made it easy for anyone to access the shadow economy. Bitcoin and other cryptocurrencies can be used with a reasonable degree of anonymity on dozens of marketplaces on the dark web. These marketplaces give people access to goods and services that are illegal (e.g., drugs), heavily regulated (e.g., prescription medicines) or in short supply (e.g., face masks). We propose to look at the dynamics of pricing and availability of goods and services on all active online dark web marketplaces. Our analysis will give an important insight into the shift toward the shadow economy during the pandemic and avenues for policy response.

Focusing on listings on dark web marketplaces, we will answer the following questions:
• Are products directly related to the pandemic (ethanol, hand sanitizer, face masks etc.) more available on dark marketplaces during the pandemic? How have their prices changed? Has the composition of services (e.g., delivery) changed?
• How have the prices and availability of illicit goods and services (e.g., drugs, prescription medicines, painkillers, credit card databases etc.) changed during the pandemic?
• Has the pandemic had an effect on competition in dark web marketplaces? Have well-trusted suppliers managed to exercise greater market power?
• Are scams (e.g., proxied by disappearing sellers) more prevalent as less experienced users join dark web marketplaces?

Focusing on Bitcoing transactions on dark web marketplaces, we will answer the following questions:
• Has overall trading activity (as measured by Bitcoins transacted) changed in dark web marketplaces?
• Have less experienced buyers started trading on dark marketplaces?
• Have the temporal patterns of Bitcoin spending changed? Are users spending more frequently?
• Are wallets being emptied faster as users drawn down savings? Are wallets reacting more to financial markets events or more-pandemic related announcements?

Data
We use two types of data:
  • Listings-level data from all prominent dark web marketplaces
  • Transactions-level data for all Bitcoin transactions on all prominent dark web marketplaces

The data are commercially sensitive and come from two industry-leading companies. Flashpoint gathers listings-level information on dark web marketplaces. Chainalysis provides intelligence and analysis of cryptocurrencies.

JEL Codes
D43, D85, L14, L15, O17.

Keywords
illicit trade, shadow economy, bitcoin, dark web marketplaces, market concentration, consumer protection, peer-to-peer platforms, supply chains, shortage.