



Trends in the availability and types of drugs sold on the internet via cryptomarkets, October 2022 - September 2023

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From 1st October 2022 to 30th September 2023, 18 cryptomarkets were monitored, of which 11 remained active at the end of the reporting period.

- 1** Bohemia
- 2** Tor2Door
- 3** Incognito
- 4** Nemesis

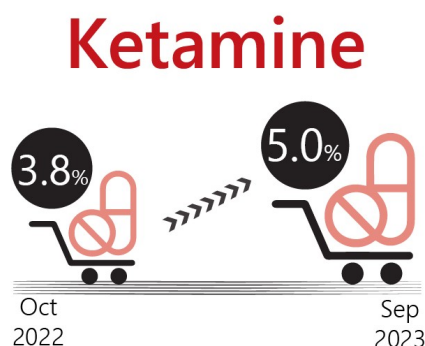
The largest cryptomarkets in the final month of monitoring (September 2023).



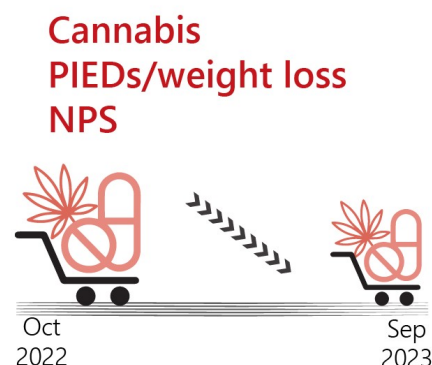
There was an average of 38,698 drug listings per snapshot in September 2023; 7.9% decrease per month over the 12-month period.

- 31% Cannabis**
7.7% MDMA
7.5% Benzodiazepines
7.4% Cocaine
6.0% Opioids (excluding heroin)
5.7% Meth/amphetamines

Top 6 drugs across cryptomarket listings from October 2022 to September 2023.



The market share of ketamine showed the highest rate of increase from 3.8% in October 2022 to 5.0% in September 2023.

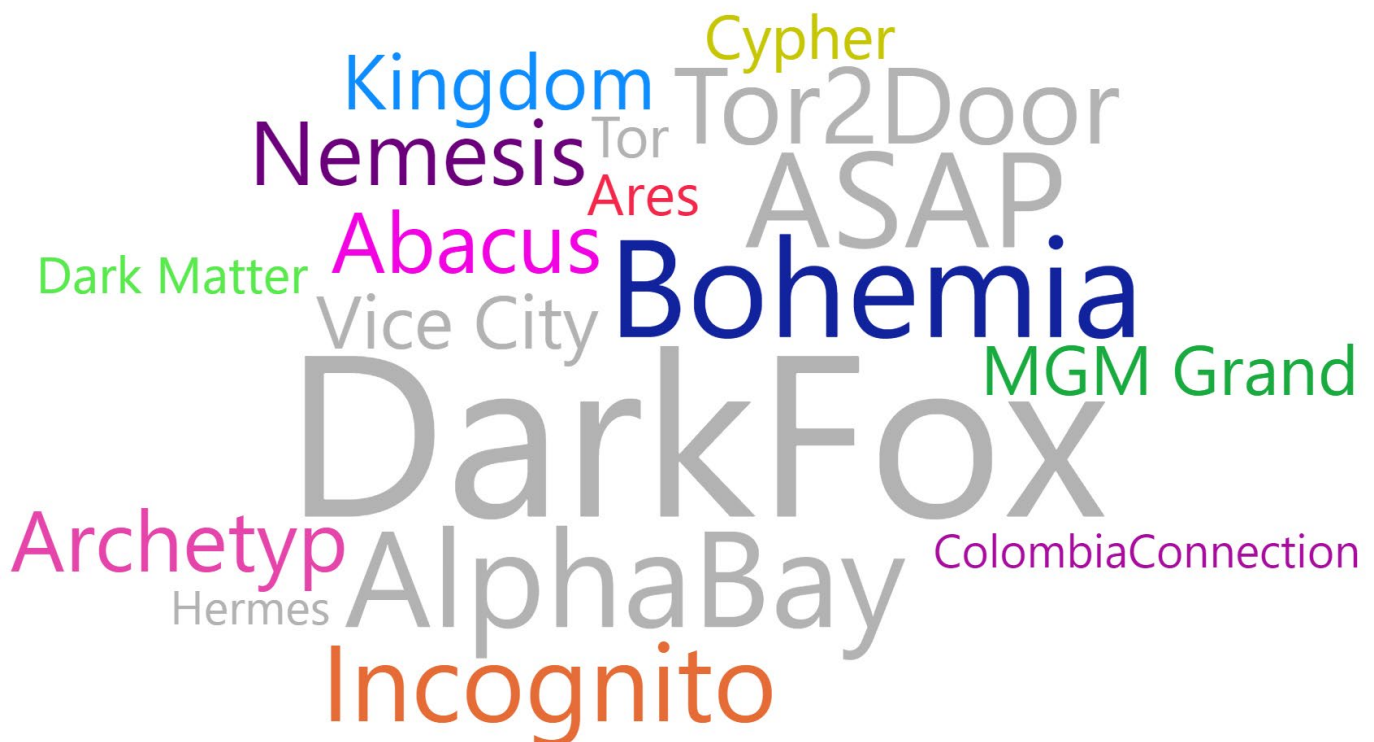


Significant decrease in market share was observed for cannabis, performance and image enhancing/weight loss drugs and new psychoactive substances in the 12-month period.

Key Findings

- From 1st October 2022 to 30th September 2023, 18 cryptomarkets were monitored, of which 11 remained active at the end of the reporting period.
- The four markets reaching more than 10,000 listings in a snapshot during this period were DarkFox, Bohemia, AlphaBay and ASAP.
- In the final month of monitoring, Bohemia, Tor2Door, Incognito and Nemesis were the largest cryptomarkets.
- There was an average of 38,698 drug listings per snapshot in September 2023, with an estimated decrease in listings of -7.9% per month as compared to October 2022 (n=77,090).
- Cannabis comprised the greatest percentage of drug listings from October 2022 to September 2023 (31%), followed by MDMA (7.7%), benzodiazepines (7.5%), cocaine (7.4%), opioids (excluding heroin) (6.0%), and meth/amphetamine (illicit) (5.7%).
- The market share of ketamine showed the highest rate of increase from 3.8% in October 2022 to 5.0% in September 2023. Significant decrease in market share was observed for cannabis, PIEDs/weight loss drugs and NPS in the 12-month period.

Figure 1. Word cloud of cryptomarkets monitored from October 2022 to September 2023.



Note: The 7 cryptomarkets that closed before 30th September 2023 are in grey color font. The maximum size of the market (in the period from October 2022 to September 2023 as shown in [Table 1](#)) is proportional to the font size of the cryptomarket.

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Background



This bulletin series reports on trends in the availability and types of drugs sold on the internet via cryptomarkets over the last 12 months (a new bulletin is released typically every 4 months). The current bulletin focuses on analysis of drug listings on cryptomarkets from 1st October 2022 to 30th September 2023.

[Drug Trends](#) have identified, crawled (or 'scraped'), extracted, categorised and analysed drug listings on cryptomarkets on a regular basis since 1st January 2014, formerly using VBA programming processes, and since 9th August 2018 using a range of programmed automated processes in Python that operate with minimal manual input. Following extraction of common text features across each listing (e.g., drug listing name, vendor name), individual listings are then categorised according to a pre-specified drug classification structure. Drug categorisation is carried out through rules-based text-matching in the first instance, followed by a long short-term memory (LSTM) artificial neural network (target predictive percentage 90%) that has been trained on historically categorised listings for those not matched through the former process. Further background and information regarding the methods are available for [download](#).

Panel A. Terminology

- **Cryptomarkets** ('darknet markets') are online marketplaces that facilitate the purchasing of illicit goods and services via multiple sellers, and provide their users with anonymity via its location on the hidden web. This bulletin focuses on drug listings advertised on cryptomarkets. A large proportion of listings are of prohibited drugs though licit drugs (e.g., alcohol, paracetamol) may occasionally be advertised on these platforms ([Christin and Thomas, 2019](#)).
- A **snapshot** of the cryptomarkets is taken on a twice monthly basis, in the two weeks starting on the 1st and 15th of each month.
- **Number of listings** is the sum of listings per snapshot belonging to a specific market and/or drug class. For this measure, duplicate listings (defined as listings with identical names by a single vendor on a single market within the same snapshot) are removed. Listings are further deduplicated for quantity variants (see **section 5.2.1** in the [Methods](#) document).
- **Market size** is defined as the number of drug listings per snapshot, overall, by market or by drug class.
- **Market share** is defined as the percentage of total drug listings by drug class.
- **Average monthly percent change (AMPC)** is the relative percent change in number or percentage of listings per month estimated using the Joinpoint regression program ([National Cancer Institute, 2022](#)).

Our reporting focuses on identified cryptomarkets which comply with the following: presented in English; have an accessible Tor link for scraping; have >1 vendor; vendors ship to and/or from Australia, or ship to and/or from multiple countries; and have had >100 drug listings. For a historical record of marketplaces monitored by Drug Trends, we refer the reader to our [interactive timeline](#).



An accompanying public [online interactive data visualisation](#) is available, allowing viewers to interact with data collected since February 2014. Data in the current bulletin and the accompanying interactive visualisation are presented as twice monthly snapshots in each of the two weeks starting on the 1st and 15th of each month. We present data on number of listings observed in a given snapshot in the bulletin (see **Panel A**). Please refer to [this interactive visualisation](#) and [this bulletin](#) for the weekly data up until 31st May 2022.

In this bulletin, we provide estimates of change over the 12-month reporting period by estimating average monthly percent change (AMPC) in number or proportion of listings per month. This is done using the Joinpoint regression program ([National Cancer Institute, 2022](#)) as detailed in the [Methods](#) document.

While these data can be considered reasonable estimates for trends in drug availability, we cannot guarantee exhaustive and/or immediate identification and capture of cryptomarkets once they emerge. As a result, there are some cryptomarkets which have existed for periods of time before our first scrape, resulting in a lack of data availability for these periods. In this bulletin, we show the date of the first post on a subDread¹ for each monitored market to give an indication of when that market may have started. There can also be challenges in certain periods of time (e.g., distributed denial of service (DDoS) attacks on sites) that prevent a routine scrape of an identified market.

Since our findings do not reflect the total of all cryptomarkets existing in the reporting period, the analysis and estimates in this bulletin should not be used to infer the number of drug listings across all cryptomarkets. Further, they should only be considered a proxy indicator of drug availability: we have not provided any metric that reflects sales or purchasing of drugs via cryptomarkets. See [here](#) for further discussion of caveats to interpretation.

There are various approaches to collecting, collating, categorising and analysing cryptomarket data, and inherent challenges in these processes. Our monitoring is an ongoing process. Refinements to our reporting processes in each bulletin are reported in the accompanying methods document. We welcome feedback and suggestions so that we can continue to improve utility of these data and our reporting on them (contact us at drugtrends@unsw.edu.au).

¹ Dread is a forum on the darkweb that is analogous to Reddit. A subDread is a forum group on Dread. The administrators of a cryptomarket often open a subDread for their cryptomarket. However, the market may not yet be fully functional as there can be several months of web development, beta testing and onboarding of vendors before a market becomes fully operational. Thus, it is likely that monitored cryptomarkets reported on in this bulletin reached our eligibility criteria sometime between their first subDread post and our first scrape.

Findings

Profile of Cryptomarkets from 1st October 2022 to 30th September 2023

Which markets were monitored during this period?



The current bulletin reports findings from 18 cryptomarkets that were monitored for the period from 1st October 2022 to 30th September 2023 (**Figure 2**). See our [interactive timeline](#) for a historical record of the cryptomarkets monitored since February 2014. **Table 1** shows the characteristics of these cryptomarkets since the date of our first scrape, noting that many of the cryptomarkets may have existed for some time before we started scraping them. We have mainly only scraped listings of products originating from Australia from 15th July 2023 onwards for Tor2Door and Abacus when we have difficulties accessing these two marketplaces (see footnote of **Figure 2** for more details). Those scrapes with only product listings originating from Australia are not reported here but will be included in future reporting on product listings originating within Australia. Please refer to footnotes of **Figure 2** for a description of other prolonged disruptions to data collection from other cryptomarkets.

Which markets closed during this period?



Of the 18 markets monitored in this bulletin, 7 markets (39% of monitored markets) closed within the reporting period for the following purported reasons (**Table 1**).

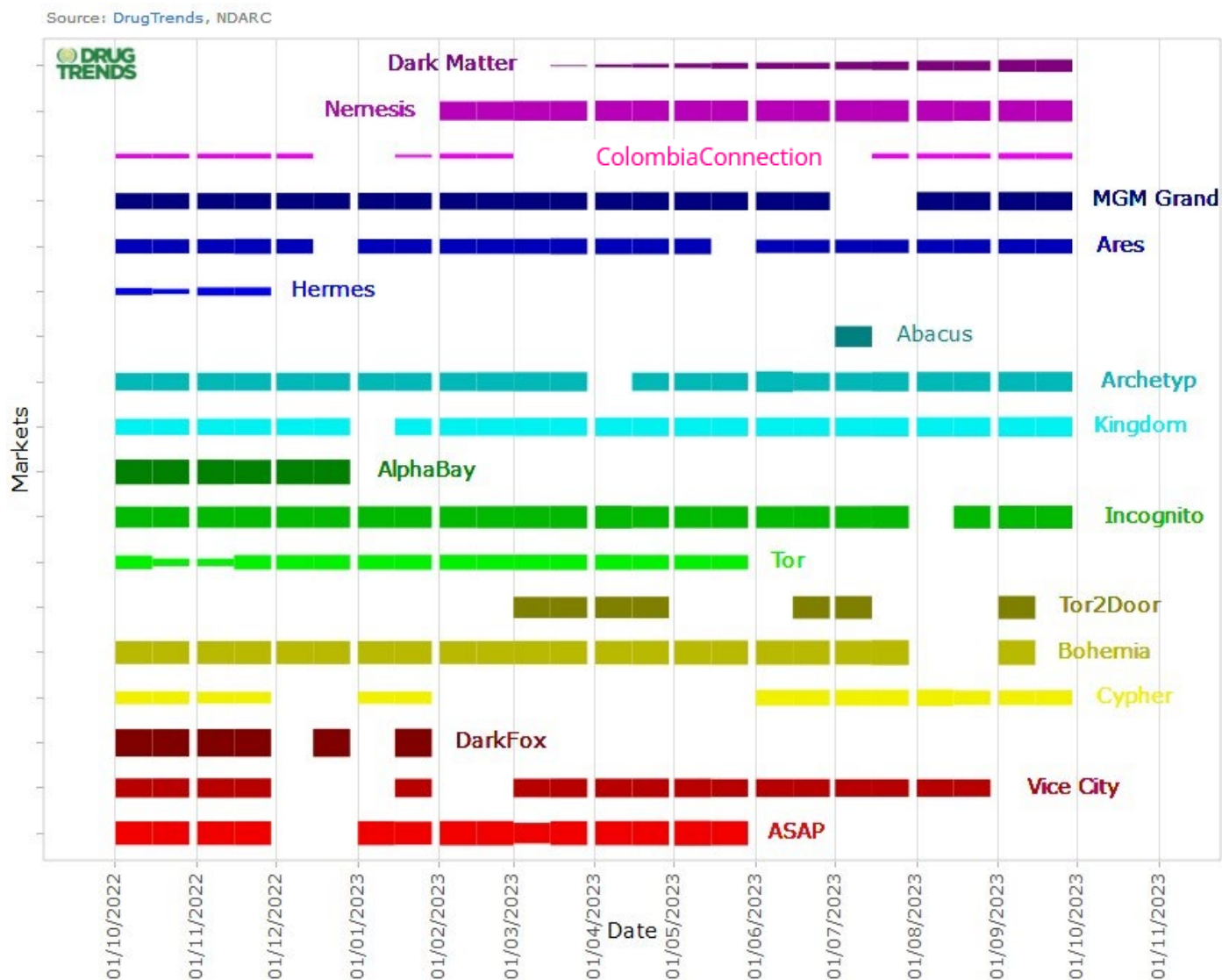
- Hermes was last scraped in the 2 weeks starting on 15th November 2022 and considered closed due to persistent DDoS or for unknown reason;
- AlphaBay was last scraped in the 2 weeks starting on 15th December 2022 and considered closed with a possible [exit scam](#);
- DarkFox was last scraped in the 2 weeks starting on 15th January 2023 and considered closed due to a possible [exit scam](#);
- ASAP was last scraped in the 2 weeks starting on 15th May 2023 and considered closed with an [voluntary exit](#);
- Tor was last scraped in the 2 weeks starting on 15th May 2023 and claimed to be temporarily [pausing their operations](#) for 2-6 months but it is likely to be a voluntary exit;
- Vice City was last scraped in the 2 weeks starting on 15th August 2023 and considered closed due to a possible [exit scam](#); and
- Tor2Door was last scraped in the 2 weeks starting 1st September 2023 and reported for a possible [exit scam](#) when the site could not be accessed from 14th September 2023 onwards.

Since around August 2022, 'Dread', the most widely used dark web discussion forum, has experienced persistent large-scale DDoS attacks alongside many of the cryptomarkets, culminating in the Dread administrators' decision to [take the Dread server offline for restructuring in December 2022](#)². Many markets also could not be accessed from December 2022 to January 2023. Hermes, AlphaBay and DarkFox which were

² On February 25th 2023, Dread was online again for private testing by service admins and some sub-dread moderators on the production server. It reopened to all users on 6th March 2023 but is still constantly taken offline for upgrades and remains sporadically available.

last scraped in the snapshot of 15th November 2022, 15th December 2022 and 15th January 2023, respectively, are considered closed either due to the persistent DDoS, a possible exit scam, administrative failure or for unknown reasons. There is a lack of online reporting on the closure of Hermes given it is a relatively small cryptomarket.

Figure 2. Markets monitored from October 2022 to September 2023.



Note: There are short breaks at the end of each month because the twice-monthly snapshots are based on 2-week intervals starting on the 1st and 15th of each month, i.e. days of the month after the 28th are excluded from monitoring. Extended breaks indicate periods where market crawling was not achievable or incomplete. The width of the bar is proportional to the log of the number of drug listings observed in each snapshot for each market. We stopped scraping ColombiaConnection between 1st March 2023 and 14th July 2023 because of difficulty accessing the site due to its anti-scraping/DDoS detection. We stopped scraping Tor2Door between 1st September 2022 and 28th February 2023 because an access link needed to be purchased. When a link did not need to be purchased for Tor2Door, we attempted scraping again; however, the scrapes often could not be completed because of difficulties accessing the relatively large market for completion of a scrape. We have mainly only scraped listing of products originating from Australia from 15th July 2023 onwards for Tor2Door and Abacus when we have difficulties accessing these two marketplaces. We performed a complete scrape for Abacus in the 1st July 2023 snapshot to reassess the process for scraping this marketplace, and we could access Tor2Door for a relatively prolonged period to complete the scrape in the 1st September 2023 snapshot before the market closed. Data are missing for Cypher in the months of February to May 2023 because of scripting error.

Abacus market remained active at the end of the reporting period although, as noted above, we have mainly only scraped listings of products originating from Australia for this marketplace. The other 10 markets remaining active at the end of the reporting period were Cypher, Bohemia, Incognito, Kingdom, Archetyp, Ares, MGM Grand, ColombiaConnection, Nemesis and Dark Matter (Table 1).

Table 1. Characteristics of markets identified in this bulletin (ordered by date of first snapshot).

| Market | Status as at Sep 2023 (reported reason ^a) | Earliest subDread post | First snapshot | Last snapshot | Duration in months ^b | Maximum number of listings ^c |
|----------------------------|---|---------------------------|---------------------------|---------------------------|---------------------------------|---|
| ASAP | <u>Closed</u> (voluntary exit) | 9 th Apr 2020 | 1 st May 2021 | 15 th May 2023 | 25 | 11,435 |
| Vice City | <u>Closed</u> (possible exit scam) | 26 th Aug 2020 | 1 st May 2021 | 15 th Aug 2023 | 28 | 3,801 |
| Cypher | Open | 8 th Feb 2020 | 1 st Jun 2021 | Ongoing ^d | 24* | 2,120 |
| DarkFox | <u>Closed</u> (possible exit scam) | 24 th Feb 2020 | 1 st Jun 2021 | 15 th Jan 2023 | 20 | 23,202 |
| Bohemia | Open | 23 rd May 2021 | 15 th Jul 2021 | Ongoing ^d | 22.5* | 11,828 |
| Tor2Door | Closed (<u>exit scam</u>) | 3 rd Jul 2020 | 15 th Jul 2021 | 1 st Sep 2023 | 26 | 8,047 |
| Tor | <u>Closed</u> (possible exit scam) | -- ^f | 15 th Aug 2021 | 15 th May 2023 | 21.5 | 1,672 |
| Incognito | Open | 19 th Oct 2020 | 1 st Oct 2021 | Ongoing ^d | 20* | 8,057 |
| AlphaBay | Closed (possible exit scam) | 8 th Aug 2020 | 1 st Jan 2022 | 15 th Dec 2022 | 12 | 11,567 |
| Kingdom | Open | 3 rd May 2021 | 1 st Jan 2022 | Ongoing ^d | 17* | 4,281 |
| Archetyp | Open | 19 th Apr 2020 | 15 th Jan 2022 | Ongoing ^d | 16.5* | 5,192 |
| Abacus | Open (mostly only scraped Australian origin listings) | 27 th Sep 2020 | 15 th Feb 2022 | Ongoing ^e | 17.5* | 5,121 |
| Ares | Open | 26 th Aug 2021 | 15 th May 2022 | Ongoing ^d | 12.5* | 1,843 |
| Hermes | Closed (unknown) | 15 th Apr 2020 | 15 th May 2022 | 15 th Nov 2022 | 6.5 | 408 |
| MGM Grand | Open | 26 th Apr 2021 | 15 th May 2022 | Ongoing ^d | 12.5* | 3,176 |
| Colombia Connection | Open | 3 rd Nov 2020 | 15 th Jul 2022 | Ongoing ^d | 10.5* | 258 |
| Nemesis | Open | 5 th Jun 2021 | 1 st Feb 2023 | Ongoing ^d | 4* | 5,823 |
| Dark Matter | Open | 22 nd Sep 2022 | 15 th Mar 2023 | Ongoing ^d | 2.5* | 940 |

Note: ^a Most probable reason for closure is given in brackets. ^b Duration of monitoring is the number of months between the start of the first snapshot and the end of the last snapshot, including when data could not be scraped from the cryptomarket. Where the cryptomarket was still active and monitored as of 30th September 2023 (indicated by *), the duration is computed as the number of months between the first snapshot and 30th September 2023. ^c Maximum number of listings in a scrape is computed from the snapshots over the 12-month reporting period. ^d The cryptomarket was active as of 30th September 2023. ^e Abacus was still active as of 30th September 2023; however, we only scraped the whole market in the 1st July 2023 snapshot in this 12-month period and then mainly only scraped Australian-origin listings from 15th July 2023 onwards.

What markets were monitored for the first time during this period?

Cryptomarkets are identified for monitoring if they are accessible for scraping, are displayed in English, have multiple sellers, have >100 drug listings and satisfy geographical criteria for shipping (see the Methods document for more details). Of the 18 markets in this reporting period, 2 markets were monitored for the first time. These are (Figure 2 and Table 1):

- Nemesis with first snapshot from 1st February 2023; and
- Dark Matter with first snapshot from 15th March 2023.

These markets were still active and monitored at the end of September 2023.

Which markets from this period have been monitored for the longest?

Of the 18 markets monitored, Vice City had been monitored for the longest (28 months since 1st May 2021 [Table 1](#)). This is followed by:

- Tor2Door for 26 months since 15th July 2021;
- ASAP for 25 months since 1st May 2021;
- Cypher for 24 months since 1st June 2021;
- Bohemia for 22.5 months since 15th July 2021; and
- Tor for 21.5 months since 15th August 2021.

However, some of the cryptomarkets may have existed for some time before we started scraping them as indicated by the earliest date of the subDread forum posts ([Table 1](#)). Of these longest-running markets, only Cypher and Bohemia remained active at the end of September 2023.

Which markets from this period were the largest in size based on number of drug listings?

The markets reaching more than 10,000 listings in a snapshot ([Table 1](#)) were:

- DarkFox with maximum number of listings in a snapshot of 23,202;
- Bohemia with maximum number of listings in a snapshot of 11,828.
- AlphaBay with maximum number of listings in a snapshot of 11,567; and
- ASAP with maximum number of listings in a snapshot of 11,435.



Of these four markets, only Bohemia remained active at the end of September 2023. The smallest of the scraped cryptomarkets with a maximum of less than 1,000 listings per snapshot were Hermes, ColombiaConnection and Dark Matter ([Table 2](#)).

In the final month (September 2023), 10 markets were scraped. The markets whose mean number of listings per snapshot (including interpolated data for missing scrapes) was above the average of 4,395 listings in September 2023 were ([Table 2](#)):

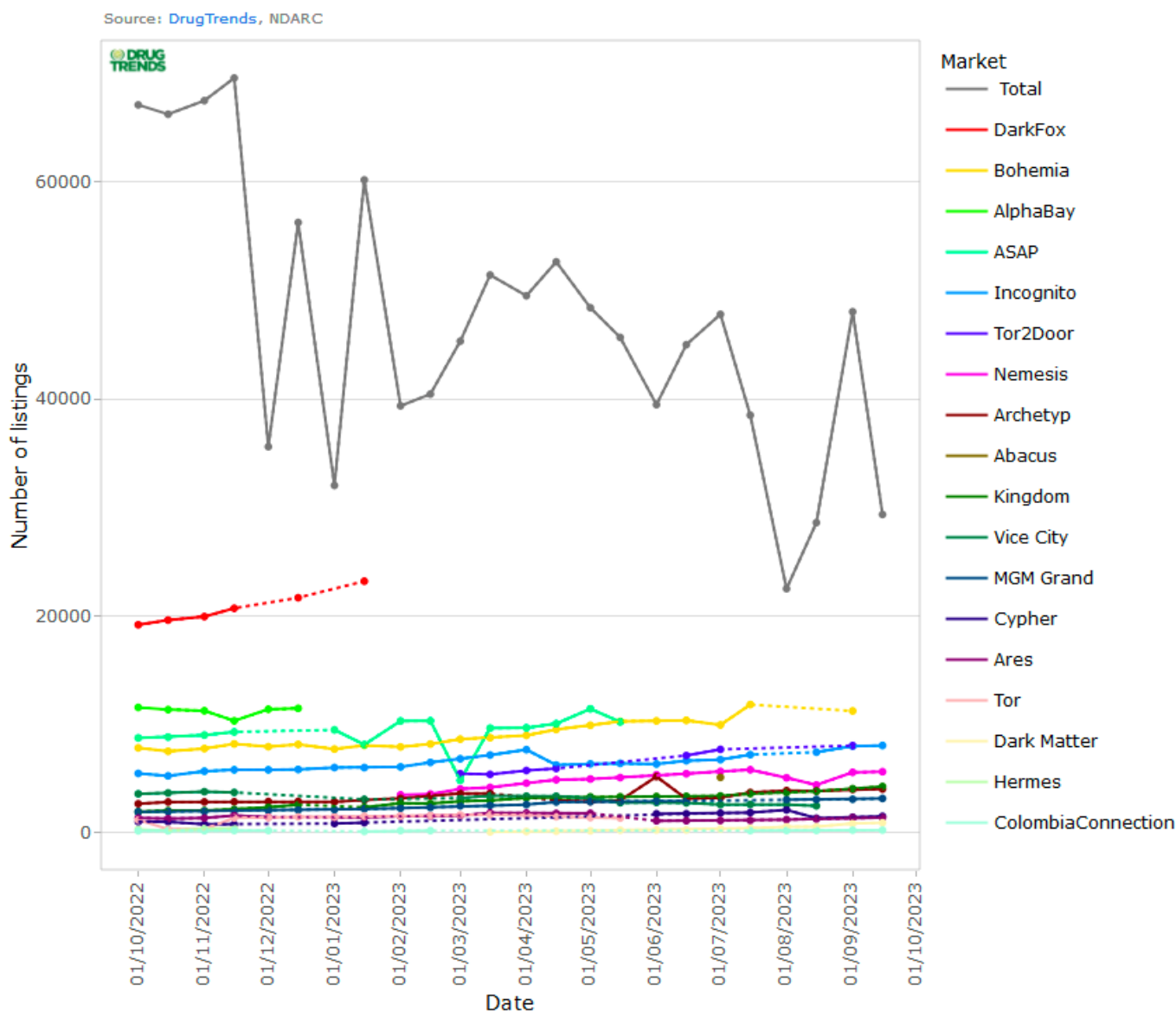
- Bohemia with an average of 11,242 listings per snapshot;
- Tor2Door with an average of 8,047 listings per snapshot;
- Incognito with an average of 8,028 listings per snapshot; and
- Nemesis with an average of 5,614 listings per snapshot.

Did the total market size (based on number of drug listings in the 18 monitored markets) change over this period?

The average monthly percent change in market size (or number of listings) decreased over the reporting period (-7.9% per month; [Figure 3](#); [Table 2](#)) which was largely the result of market closures. The total number of listings reached a peak in the snapshot of 15th November 2022 after which many of the markets were affected by heavy DDoS attacks and resulted in a decrease in the number of listings. In particular, AlphaBay,

which was a relatively big market with 11,484 listings in its last scrape on 15th December 2022, could not be accessed and closed in January 2023. This is followed by the closure of DarkFox which was the biggest market in our current reporting period, with 23,202 listings in its last scrape on 15th January 2023. While Hermes also closed in December 2022, it was a relatively small market with only 408 listings in its last scrape on 15th November. These market closures were followed by the closure of ASAP and Tor with a likely voluntary exit and their last scrape was in May 2023. Vice City and Tor2Door closed with an exit scam and their last scrape was in August and September 2023, respectively.

Figure 3. Number of drug listings by marketplace from October 2022 to September 2023.



Note: Dashed lines indicate missing scrapes over periods where a market could not be monitored. The dark grey line shows the total number of drug listing across all markets. The markets are ordered by maximum number of listings per snapshot over the 12-month period as shown in [Table 1](#).

Table 2. Number of drug listings (including interpolated data for missing scrapes) and average monthly percent change (AMPC in %) on the markets monitored from October 2022 to September 2023.

| Market (Number of months) ^a | First snapshot | Last snapshot | Mean ^b in Oct 2022 | Mean ^b in Sep 2023 | AMPC (95%CI) ^c |
|--|----------------|---------------|-------------------------------|-------------------------------|---------------------------|
| DarkFox (4) | 19,185 | 23,202 | 19,402 | – ^e | 5.5 (5.2, 5.9)* |
| AlphaBay (3) | 11,567 | 11,484 | 11,470 | – ^e | -0.7 (-5.7, 4.6) |
| Bohemia (11.5) | 7,840 | 11,242 | 7,683 | 11,242 | 4.0 (3.3, 4.8)* |
| ASAP (8) | 8,754 | 10,238 | 8,795 | – ^e | 1.4 (-4.6, 7.8) |
| Incognito (12) | 5,485 | 8,057 | 5,371 | 8,028 | 3.5 (3.1, 3.9)* |
| Tor2Door (11.5) | 5,466 | 8,047 | 5,185 | 8,047 | 4.1 (4.0, 4.2)* |
| Nemesis (8) | 3,507 | 5,644 | – ^d | 5,614 | 6.7 (4.2, 8.3)* |
| Abacus (9.5) | 5,121 | 5,121 | – ^f | – ^f | – ^f |
| Kingdom (12) | 1,950 | 4,281 | 2,005 | 4,179 | 6.5 (5.6, 7.5)* |
| Archetyp (12) | 2,687 | 4,045 | 2,768 | 4,027 | 3.3 (1.9, 4.6)* |
| MGM Grand (12) | 1,941 | 3,176 | 1,953 | 3,141 | 4.4 (4.2, 4.5)* |
| Vice City (11) | 3,602 | 2,496 | 3,642 | – ^e | -4.2 (-5.0, -3.6)* |
| Cypher (12) | 1,028 | 1,535 | 1,026 | 1,491 | 3.4 (1.5, 4.8)* |
| Ares (12) | 1,378 | 1,416 | 1,349 | 1,412 | 0.6 (-0.1, 1.4) |
| Tor (8) | 1,188 | 1,370 | 770 | – ^e | 3.1 (-1.7, 7.4) |
| Dark Matter (6.5) | 93 | 940 | – ^d | 907 | 43.6 (38.4, 49.1)* |
| Hermes (2) | 317 | 408 | 284 | – ^e | 26.5 (-13.4, 84.1) |
| ColombiaConnection (12) | 187 | 258 | 190 | 256 | 1.9 (0.9, 2.9)* |
| Total (12)^g | 67,109 | 29,352 | 77,070 | 38,698 | -7.9 (-9.7, -5.9)* |

Note: ^a Number of months is the number of months between the first and last snapshot in the 12-month period, including when data could not be scraped from the cryptomarket. ^b The mean in the first and last month are calculated as the mean of the number of listings including the interpolated number of listings where there were no data in the intervening data points. ^c Average monthly percent change (AMPC) in number of listings is the estimated percent change in number of listings on the cryptomarket (or market size) per month. Because regular data points are required, intervening data points with no data were interpolated for estimating AMPC. The estimates that are statistically significant at $p < 0.05$ have 95% confidence intervals (95%CI) that do not include 0. They are marked with “*” and highlighted in bold. ^d Nemesis and Dark Matter had not yet started in October 2022. ^e DarkFox, AlphaBay, ASAP, Vice City, Tor and Hermes closed before September 2023. ^f Because of difficulties accessing the website, we have only scraped listings of drugs from the whole market in the 1st July 2023 snapshot for Abacus during this 12-month period. ^g Note that the estimates in the ‘Total’ row is derived from total number of listings in the overall market in the period. As such, the estimated mean in market size for individual markets do not add up to the ‘Total’ row in each column. The number of listings including those in the ‘Total’ row includes interpolated data; as such it is different from the ‘Total’ row data presented in Table 4 which excludes interpolated data.

Did the size of the individual markets change over the period?

Of the 18 cryptomarkets, 11 had a significant rate of increase in number of listings (Table 2). The exceptions were AlphaBay, ASAP, Vice City, Tor and Hermes, all of which closed before the end of September 2023, as well as Ares. Vice City showed a statistically significant rate of decrease (-4.2% per month) in number of listings as the market came to a closure with a possible exit scam. Dark Matter had the greatest increase of 43.6% per month but it is one of the smallest markets. This is followed by:

- Nemesis with an increase of 6.7% per month from 3,507 listings in the first snapshot to 5,644 in the last snapshot over 8 months;
- Kingdom with an increase of 6.5% per month from 1,950 listings in the first snapshot to 4,281 in the last snapshot over 12 months;
- DarkFox with an increase of 5.5% per month from 19,185 listings in the first snapshot to 23,202 in the last snapshot over 4 months;
- MGM Grand with an increase of 4.4% per month from 1,941 listings in the first snapshot to 3,176 in the last snapshot over 12 months;

- Tor2Door with an increase of 4.1% per month from 5,466 listings in the first snapshot to 8,047 in the last snapshot over 11.5 months; and
- Bohemia with an increase of 4.0% per month from 7,840 listings in the first snapshot to 11,242 in the last snapshot over 11.5 months.

The other five markets with a significant rate of increase had <4% increase per month.

Main Drugs Sold via Cryptomarkets from 1st October 2022 to 30th September 2023

What were the main drugs sold via cryptomarkets during this period?

DRUGS

Cannabis comprised the bulk of the listings identified across all markets over the 12-month period (31%) (see [Table 3](#), [Figure 4](#) and [Figure 5](#)). This was followed by:

- MDMA with 7.7% of listings;
- benzodiazepines with 7.5% of listings;
- cocaine with 7.4% of listings;
- opioids (excluding heroin) with 6.0% of listings;
- meth/amphetamine (illicit) with 5.7% of listings;
- PIEDs/weight loss drugs with 5.3% of listings.

New psychoactive substances (NPS) comprised 4.5% of listings; however, it should be noted that new drugs may have appeared since we created our dictionary terms (see the [methods](#) document for our summary bulletin) that may not have been captured as NPS. We plan to update our dictionary terms for NPS and our machine learning model for drug listing categorisation in the future.

Did the market share of the main drugs sold via cryptomarkets change over this period?

Ketamine had the greatest rate of relative increase in market share (2.5% per month) from October 2022 to September 2023 (3.8% of all drug listings to 5.0%, respectively; [Table 3](#) and [Figure 4](#)). This is followed by:

- other medicines increasing at 2.2% per month from 3.3% to 4.2%;
- other psychostimulants & nootropics increasing at 1.5% per month from 3.0% to 3.5%;
- MDMA increasing at 1.2% per month from 7.2% to 7.7%;
- LSD increasing at 1.0% per month from 3.0% to 3.3%; and
- benzodiazepines increasing at 0.7% per month from 7.9% to 8.4%.

Cannabis, PIEDs/weight loss drugs and NPS had significant rate of relative decrease in market share (-0.9% per month) from October 2022 to September 2023 ([Table 3](#) and [Figure 4](#)):

- cannabis from 30.8% to 27.6%;
- PIEDs/weight loss drugs with a decrease from 5.9% to 5.2%; and

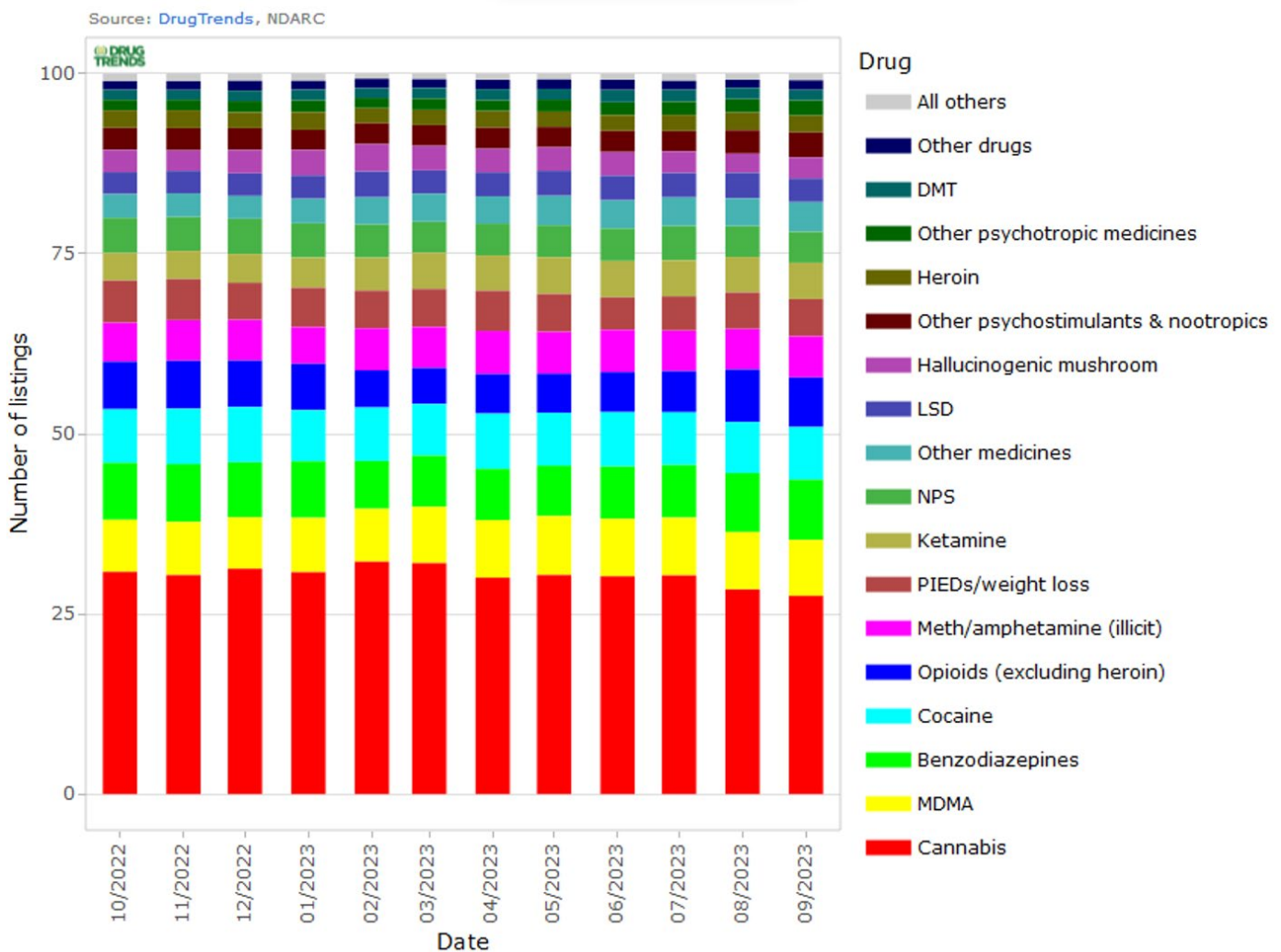
- NPS with a decrease from 4.9% to 4.3%; and

Table 3. Market share (percentage of listings) by drug class, and their average monthly percent change (AMPC in %) from October 2022 to September 2023.

| Drug | Market share (percentage of listings) ^a | | | AMPC (95%CI) ^b |
|---|---|----------|----------|---------------------------|
| | Overall | Oct 2022 | Sep 2023 | |
| Cannabis | 30.5 | 30.8 | 27.6 | -0.9 (-1.7, -0.2)* |
| MDMA | 7.7 | 7.2 | 7.7 | 1.2 (0.5, 1.8)* |
| Benzodiazepines | 7.5 | 7.9 | 8.4 | 0.7 (-0.4, 1.7) |
| Cocaine | 7.4 | 7.5 | 7.2 | -0.4 (-0.8, 0.1) |
| Opioids (excluding heroin) | 6.0 | 6.6 | 6.9 | 0.3 (-1.3, 2.0) |
| Meth/amphetamine (illicit) | 5.7 | 5.4 | 5.7 | 0.4 (-0.2, 1.0) |
| PIEDs/weight loss drugs^c | 5.3 | 5.9 | 5.2 | -0.9 (-1.6, -0.2)* |
| Ketamine | 4.6 | 3.8 | 5.0 | 2.5 (2.0, 2.9)* |
| NPS | 4.5 | 4.9 | 4.3 | -0.9 (-1.6, -0.2)* |
| Other medicines | 3.7 | 3.3 | 4.2 | 2.2 (1.3, 3.1)* |
| LSD | 3.3 | 3.0 | 3.3 | 1.0 (0.3, 1.7)* |
| Hallucinogenic mushroom | 3.2 | 3.1 | 2.9 | -0.5 (-1.8, 1.0) |
| Other psychostimulants & nootropics | 3.0 | 3.0 | 3.5 | 1.5 (0.7, 2.3)* |
| Heroin | 2.3 | 2.5 | 2.3 | -0.2 (-1.4, 1.1) |
| Other psychotropic medicines^d | 1.7 | 1.5 | 2.1 | – ^f |
| DMT | 1.5 | 1.4 | 1.4 | – ^f |
| Other drugs | 1.3 | 1.2 | 1.3 | – ^f |
| GHB/GBL/1,4-BD | 0.48 | 0.64 | 0.46 | – ^f |
| Total^e | 100 | 100 | 100 | – |

Note: ^a Market share is the proportion of the number of listings of the drug as a percentage of the number of all drug listings per snapshot across all marketplaces observed in the stated period. ^b Average monthly percent change (AMPC) in market share is the estimated relative percent change in percentage of listings of the particular drug per month. The estimates that are statistically significant at $p < 0.05$ have 95% confidence intervals (95%CI) that do not include 0. They are marked with “*” and highlighted in bold. ^c PIEDs: performance and image enhancing drugs. ^d These are pharmaceutical drugs with psychotropic effects excluding psychostimulants and opioids which are in their specific classes of ‘other psychostimulants & nootropics’ and ‘opioids (excluding heroin)’, respectively. See [methods](#) for further details. ^e The total row includes all drug listings presented including those not shown in this table. Paraphernalia, MDA, PCP, tobacco, alcohol, e-cigarettes and inhalants are not shown in this table due to small values, with each comprising <0.5% of the overall market share. However, GHB/GBL/1,4-BD is still shown because of recent interest in this drug in Australia. ^f Estimates of AMPC for market share are not shown where overall percentage of listings of the drug is <2% due to unreliability of estimates.

Figure 4. Percentage breakdown of listings by month and drug class over time from October 2022 to September 2023.



Note: "All others" comprise of drugs or related products that each make up <0.5% of listings over the reporting period. These are GHB/GBL/1,4-BD, paraphernalia, MDA, PCP, tobacco, alcohol, e-cigarette and inhalants.

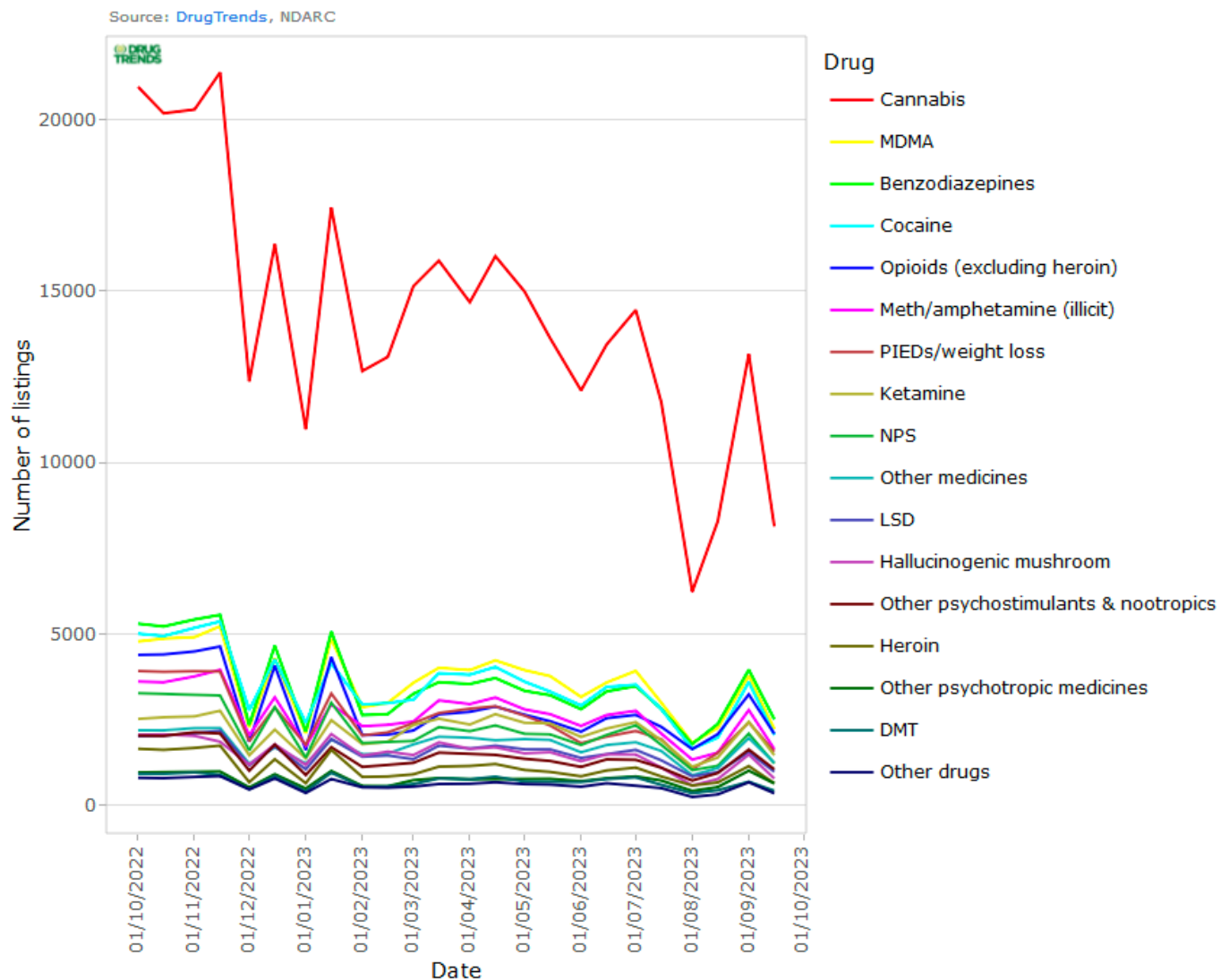
Did the market size (based on the number of listings) of the main drugs sold via cryptomarkets change over this period?

All the drugs shown in [Table 4](#) showed decreases in number of listings. These declines were significant for all drug classes except ketamine and other psychotropic medicines. GHB/GBL/1,4-BD showed the greatest rate of relative decrease (-7.8% per month) from October 2022 to September 2023 (428 to 180 listings, respectively). This is followed by:

- PIEDs/weight loss drugs from 3,908 to 1,997 listings (-6.4% per month);
- hallucinogenic mushroom from 2,065 to 1,134 listings (-6.1% per month);
- cannabis from 20,570 to 10,648 listings (-6.0% per month);
- NPS from 3,260 to 1,659 listings (-5.9% per month);
- cocaine from 4,974 to 2,826 listings (-5.4% per month); and
- heroin from 1,636 to 896 listings (-5.3% per month).

While other drugs, benzodiazepines, opioids (excluding heroin), meth/amphetamine (illicit), other psychostimulants & nootropics, LSD, MDMA, DMT and other medicines also showed a significant rate of decrease in number of listings, the decreases were of a smaller magnitude than the rate of decrease in total number of listings.

Figure 5. Number of listings disaggregated by drug class for all markets from October 2022 to September 2023.



Note: Drug classes that each make up <0.5% of listings over the reporting period are excluded in this figure. These are GHB/GBL/1,4-BD, paraphernalia, MDA, PCP, tobacco, alcohol, e-cigarette and inhalants.

Table 4. Market size (number of listings) by drug class and their average monthly percent change (AMPC in %) from October 2022 to September 2023.

| Drug | Market size (Mean number of listings) ^a | | | AMPC (95%CI) |
|--|---|----------|----------|----------------------------|
| | Overall | Oct 2022 | Sep 2023 | |
| Cannabis | 14,316 | 20,570 | 10,648 | -6.0 (-8.5, -3.4)* |
| MDMA | 3,600 | 4,823 | 3,005 | -4.0 (-7.2, -0.7)* |
| Benzodiazepines | 3,532 | 5,260 | 3,235 | -4.8 (-7.9, -1.7)* |
| Cocaine | 3,488 | 4,974 | 2,826 | -5.4 (-8.2, -2.7)* |
| Opioids (excluding heroin) | 2,839 | 4,396 | 2,662 | -4.8 (-8.6, -0.8)* |
| Meth/amphetamine (illicit) | 2,652 | 3,602 | 2,212 | -4.7 (-7.5, -1.9)* |
| PIEDs/weight loss | 2,493 | 3,908 | 1,997 | -6.4 (-9.1, -3.6)* |
| NPS | 2,155 | 3,260 | 1,659 | -5.9 (-8.9, -3.0)* |
| Ketamine | 2,138 | 2,546 | 1,949 | -2.4 (-5.3, 0.5) |
| Other medicines | 1,723 | 2,190 | 1,604 | -3.0 (-5.7, -0.2)* |
| LSD | 1,543 | 2,028 | 1,266 | -4.2 (-6.7, -1.6)* |
| Hallucinogenic mushroom | 1,499 | 2,065 | 1,134 | -6.1 (-9.2, -2.9)* |
| Other psychostimulants & nootropics | 1,401 | 2,032 | 1,341 | -4.5 (-7.3, -1.6)* |
| Heroin | 1,080 | 1,636 | 896 | -5.3 (-8.7, -1.8)* |
| Other psychotropic medicines | 762 | 968 | 825 | -2.2 (-5.0, 0.8) |
| DMT | 696 | 925 | 558 | -3.7 (-6.9, -0.5)* |
| Other drugs | 595 | 800 | 514 | -5.0 (-8.2, -1.7)* |
| GHB/GBL/1,4-BD | 237 | 428 | 180 | -7.8 (-12.8, -2.7)* |
| Total^f | 46,944 | 66,678 | 38,697 | -5.1 (-7.7, -2.4)* |

Note: ^a This shows the mean number of listings per snapshot across all marketplaces observed in the stated period. ^b Average monthly percent change (AMPC) in market size is the estimated relative percent change in number of listings of the particular drug per month. The estimates that are statistically significant at $p < 0.05$ have 95% confidence intervals (95%CI) that do not include 0. They are marked with "*" and highlighted in bold. ^d PIEDs: performance and image enhancing drugs. ^e These are pharmaceutical drugs with psychotropic effects excluding psychostimulants and opioids which are in their specific classes of 'other psychostimulants & nootropics' and 'opioids (excluding heroin)', respectively. See [methods](#) for further details. ^f The total row includes all drug listings presented including those not shown in this table. Paraphernalia, MDA, tobacco, PCP, alcohol, e-cigarettes and inhalants are not shown in this table due to small values, with each comprising <0.5% of the overall market share. However, GHB/GBL/1,4-BD is still shown because of recent interest in this drug in Australia.

What drugs did the different markets sell over this period?

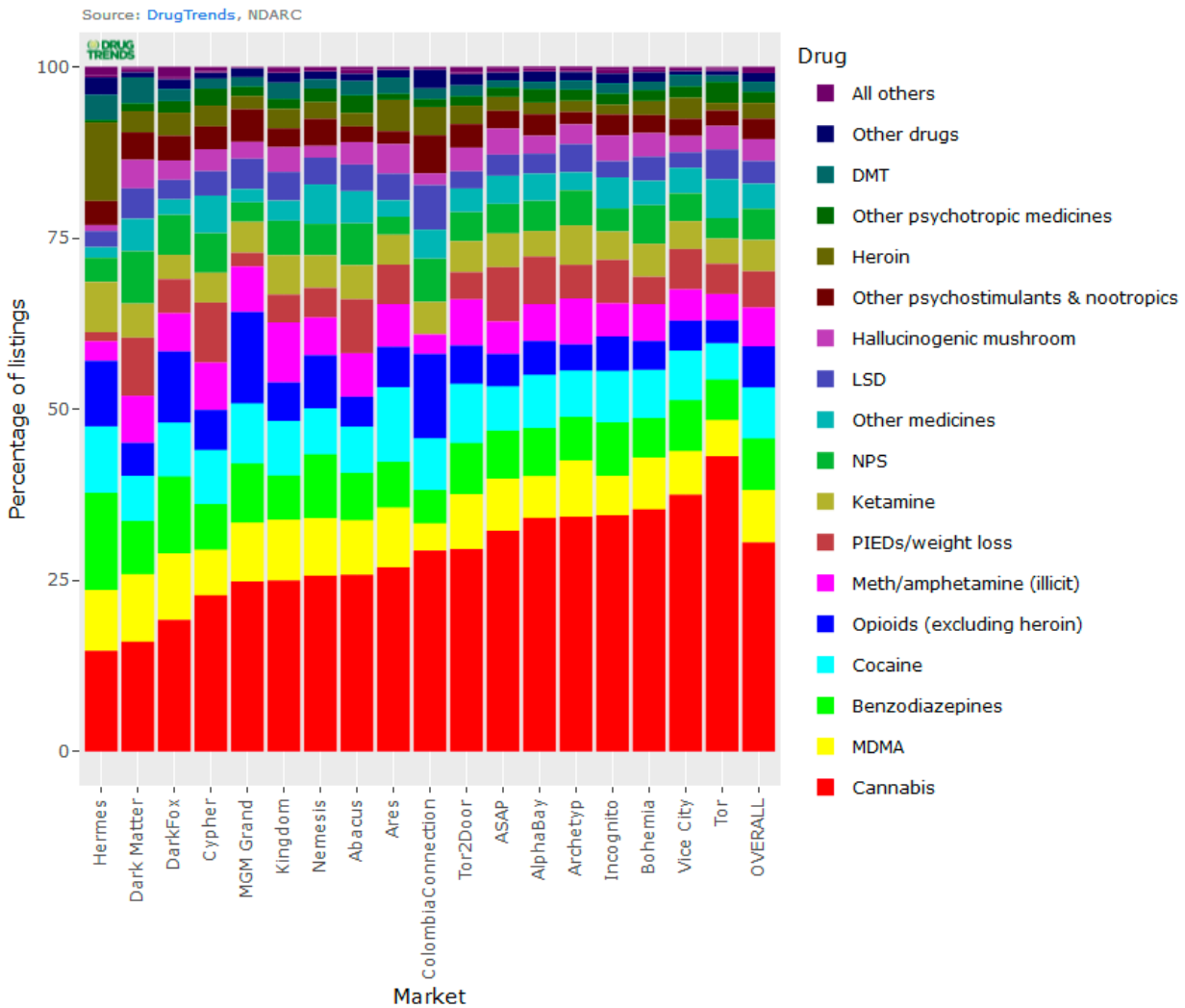
Figure 6 shows the breakdown of listings by drug class per market during the 12-month reporting period. The analyses shows that most markets monitored listed an array of different drugs. The market share of cannabis varied between 14.7% for Hermes and 43.1% for Tor with a relative difference from the overall market of -49% and 50%, respectively (**Table 5**). The following significant differences from the overall market can also be noted from **Table 5**:

- DarkFox, one of the biggest markets, had the highest percentage of MDMA and benzodiazepine listings (relative difference of 24% and 39% from overall market, respectively) after excluding Hermes and Dark Matter which are two of the smallest markets with <1,000 listings in a snapshot;
- Hermes is one of the smallest markets, but it has the highest percentage of heroin and benzodiazepines listings, compared with the overall market (relative difference of 362% and 75%, respectively);
- Ares had the highest percentage of cocaine listings (relative difference of 44% from overall market);

- MGM Grand followed by ColombiaConnection and DarkFox had the highest percentage of listings comprising opioids excluding heroin (relative difference of 105%, 88% and 60%, respectively, from overall market);
- Kingdom had the highest percentage of meth/amphetamine (illicit) listings (relative difference of 55% from overall market);
- Cypher followed by ASAP and Abacus had the highest percentage of PIEDs/weight loss drugs (relative difference of 57%, 43% and 41%, respectively, from overall market) after excluding Dark Matter;
- Archetyp and Kingdom had the highest percentage of ketamine listings (relative difference of 33% and 32%, respectively, from overall market); and
- Nemesis and Tor had the highest percentage of other medicines listings (relative difference of 61% and 60%, respectively, from overall market); and
- Ares had the highest percentage of hallucinogenic mushrooms (relative difference of 41% from overall market).

ColombiaConnection also had a relatively high percentage of listings comprising LSD and other psychostimulants & nootropics; however, they were not statistically significantly different from overall market percentages given ColombiaConnection is one of the smallest markets in the reporting period. Besides ColombiaConnection, MGM Grand had the highest percentage of other psychostimulants & nootropics listings (relative difference of 55% from overall market).

Figure 6 Drug composition of markets monitored from October 2022 to September 2023 (in ascending order by proportion of cannabis listings, and overall market in last column).



Note: This figure displays drug class percentage of all listings observed from 1st October 2022 to 30th September 2023 for each marketplace monitored. "All others" comprise of drugs or related products that each make up <0.5% of listings over the reporting period. These are paraphernalia, MDA, PCP, tobacco, alcohol, e-cigarette and inhalants.

Table 5. Relative percent difference in drug market share between each market and the overall market from 1st October 2022 to 30th September 2023.

| Market | Cannabis | MDMA | Benzo-diazepines | Cocaine | Opioids (excluding heroin) | Meth/ amphet-amine (illicit) | PIEDs/ weight loss | Ketamine | NPS | Other medicines | LSD | Hallucino-genic mushroom | Other psycho-stimulants & noo- tropics | Heroin |
|--------------------|--------------|--------------|------------------|--------------|----------------------------|------------------------------|--------------------|--------------|--------------|-----------------|--------------|--------------------------|--|--------------|
| Hermes | -49** | 14 | 75** | 28 | 47 | -47 | -78* | 65 | -26 | -58 | -25 | -71 | 16 | 362** |
| Dark Matter | -44** | 25 | -5 | -12 | -26 | 22 | 55 | 17 | 57 | 35 | 36 | 31 | 32 | 24 |
| DarkFox | -33** | 24** | 39** | 5 | 60** | -2 | -10* | -18** | 21** | -37** | -10 | -8 | 17** | 37** |
| Cypher | -20** | -16 | -17 | 5 | -11 | 23 | 57** | -1 | 19 | 53** | 13 | 4 | 9 | 25 |
| MGM Grand | -13** | 9 | 7 | 17 | 105** | 17 | -64** | 4 | -41** | -45** | 39** | -21 | 55** | -23 |
| Kingdom | -13** | 12 | -20* | 6 | -13 | 55** | -27** | 32** | 4 | -17 | 32* | 17 | -11 | 15 |
| Nemesis | -10** | 7 | 15* | -11 | 19** | -2 | -22** | 9 | -5 | 61** | 23* | -44** | 28** | -1 |
| Abacus | -10** | 1 | -14* | -10 | -33** | 13 | 41** | 14 | 26** | 32** | 22* | 6 | -26* | -21 |
| Ares | -6 | 10 | -17 | 44** | -9 | 10 | 4 | 0 | -46** | -32 | 22 | 41* | -40* | 88** |
| ColombiaConnection | 3 | -52 | -41 | 1 | 88* | -50 | - | 9 | 27 | 19 | 109 | -39 | 84 | 73 |
| Tor2Door | 3 | 2 | -7 | 15** | -14* | 19** | -29** | 4 | -13 | -3 | -21* | 12 | 11 | 10 |
| ASAP | 13** | -4 | -13** | -14** | -27** | -16** | 43** | 13 | -11 | 15* | -3 | 24** | -16 | -17 |
| AlphaBay | 19** | -23** | -13** | 4 | -24** | -5 | 25** | -14* | -9 | 12 | -9 | -15* | 1 | -29** |
| Archetyp | 20** | 3 | -21** | -10 | -41** | 18 | -11 | 33** | 6 | -25* | 28* | -6 | -41** | -33* |
| Incognito | 20** | -27** | -3 | 0 | -22** | -14* | 14* | -5 | -30** | 27** | -25** | 22* | -2 | -42** |
| Bohemia | 23** | -4 | -29** | -6 | -35** | -4 | -28** | 11 | 16* | 0 | 10 | 12 | -15 | -17 |
| Vice City | 31** | -19* | -8 | -3 | -33** | -19 | 6 | -7 | -16 | 5 | -30* | -22 | -18 | 25 |
| Tor | 50** | -33** | -26* | -29* | -49** | -31* | -20 | -16 | -39* | 60** | 36 | 11 | -28 | -55* |

Note: Each column is colour coded to highlight the lowest numbers in green, the mid-range numbers in yellow and highest numbers in purple, following the colour scale range. ** and bold underline indicate relative difference is statistically significant at $p < 0.001$, and * in bold indicate relative difference is statistically significant at $p < 0.01$.

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Related Links

- Data visualisations: <https://drugtrends.shinyapps.io/cryptomarkets>
- For more research from the Drug Trends program go to: <https://ndarc.med.unsw.edu.au/program/drug-trends>