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Moeller, K.; Haugen, K.; Liem, M.C.A.

International Journal of Drug Policy 149 (2026) 105176

Contents lists available at ScienceDirect

International Journal of Drug Policy

journal homepage: www.elsevier.com/locate/drugpo

Are the data good enough? Assessing cocaine markets and indicators in The Netherlands, Denmark, and Sweden

Kim Moeller [a,*], Kamilla Haugen [b], Marieke Liem [b]

[a] Malmö Universitet, Jan Waldenströms gata 25, Malmö, Sweden
[b] Leiden University, PO-Box 13228, 2501 EE The Hague, the Netherlands

ARTICLE INFO

Keywords:
Cocaine market
Northern route
Market indicators
Illicit drugs

ABSTRACT

The European cocaine market has undergone rapid transformations in recent years, with supply increasing and shifting geographically from southern to northwestern ports. These changes have implications for Northern Europe, as shorter distribution routes may affect prices, purity, and consumption. An unstable cocaine market may also increase risks of drug-related systemic violence.

This commentary assesses the utility of EU cocaine market indicators by examining trends in the Netherlands, Denmark and Sweden. Using data on price, purity and aggregate use reported to the European Union Drugs Agency (EUDA), we evaluate the quality and consistency of these indicators. We found that reporting for wholesale price and purity was highly inconsistent, while retail-level data were more complete, particularly from 2007 to 2023. Wastewater analysis provided a proxy for aggregate use.

Consistent with theoretical expectations, the markets in the three countries appear integrated, suggesting a supply route originating in the Netherlands and moving northward. Data deficiencies constrain research and policymaking at a time when a changing market increases risks of instability and violence.

Background

The cocaine supply to the EU has changed markedly over the past decade, with entry points shifting from the Iberian Peninsula in the southwest to major ports in the Netherlands and Belgium in the northwest. Surrounding cities now face unprecedented levels of drug-related violence driven by competition among criminal networks with intercontinental reach (Europol, 2023), to the extent that the European Commission (2023) recognised it as one of the most significant current security threats. Europol (2025: p. 57) noted that cocaine trafficking networks "tend to use violence more frequently and in more extreme forms than networks trading other types of drugs".

While cocaine trafficking and crack cocaine use were directly linked to homicides in the United States in the 1980s and 1990s (Reuter, 2009), this relationship is broadly recognized as "contingent" on social circumstances and timing (Jimènes-Garcia et al., 2023; Ousey & Lee, 2007). Cocaine is expensive, with considerable price variation across time and place. This variation offers insights into opportunities and incentives for traffickers (Caulkins & Reuter, 2010), but research is almost exclusively based on the U.S. and Latin America (Liem & Moeller, 2025). Global macro-level developments in production and trafficking, however, can rapidly impact national drug markets, even for established drug types like cocaine (Caulkins et al., 2015).

Greater coca bush cultivation and more efficient conversion to cocaine hydrochloride led Colombia, Bolivia, and Peru to more than double exports between 2013-2018, with an additional 35 percent increase from 2020-2021 (United Nations Office on Drugs and Crime (UNODC), 2023). Combined with a substantial contraction of U.S. demand (Caulkins et al., 2015), this left an abundance of coca leaves on the market prompting traffickers look toward the EU for new opportunities (UNODC & Europol, 2021). The EU is attractive due to higher prices and significant growth potential. Illustratively, according to the UNODC (2022), the weighted average cocaine wholesale kilo price in Western and Central Europe was around EUR 39,000 in 2021, compared to EUR 31,000 in the U.S. In total, the EU market is estimated to be worth more than EUR 10 billion annually (EUDA, 2022). These developments call for updated research on the lucrative and dynamic cocaine market in the EU.

In this commentary, we describe the regional cocaine flows between the Netherlands, Denmark, and Sweden, using data collated by the European Union Drugs Agency (EUDA) on prices, purity, and aggregate use. We chose the Netherlands, Denmark, and Sweden to examine and

* Corresponding author.
E-mail addresses: Kim.moeller@mau.se (K. Moeller), k.haugen@fgga.leidenuniv.nl (K. Haugen), m.c.a.liem@fgga.leidenuniv.nl (M. Liem).

https://doi.org/10.1016/j.drugpo.2026.105176

Available online 30 January 2026

illustrate both the downstream consequences of the new northern European entry points and to discuss data quality. These are all cocaine consumer countries, but the Netherlands is also an entry point country for South American imports, and Denmark serves as a transit country connecting mainland Europe with the Nordic countries. Theoretically, a shorter supply route with fewer border crossings, fewer transactions, less cumulative risk, and lower transportation costs should lead to lower prices, higher purity, and, over time, increased use and harm (Caulkins & Bond, 2012). These countries spend substantial resources on drug control and harm reduction (Reuter, 2006) and have the infrastructure to collect drug market data. This commentary aims to (1) describe recent changes in the cocaine market in these countries and (2) assess the quality of available data.

We proceed by first describing prior studies on the utility of cross-national drug market indicators supplied by the EUDA. Next, we examine the reporting consistency for the cocaine market indicators and then proceed with a simple trend analysis of the flow between the three countries. We conclude by discussing implications for research and monitoring of drug-related violence in Europe.

Methods

Price and purity are proxy indicators for availability and have predictive value for understanding illicit drug markets (Giommoni, 2024; Hughes et al., 2020). We use data that European countries report annually to the EUDA (formerly known as the European Monitoring Centre for Drugs and Drug Addiction, EMCDDA) through their National Focal Points (Singleton et al., 2018). Wastewater analysis is used to indicate market size (Ter Laak et al., 2025) and is preferable to population prevalence studies, which miss heavy users who account for most consumption. Stable prevalence rates can mask substantial increases in aggregate use (Caulkins et al., 2015).

UNODC (2022) provides similar price and purity data, but reporting is less consistent. Ideally, comparisons of drug prices over time and across countries would use purity-adjusted prices (Singleton et al., 2018). However, EUDA reports price and purity in separate tables as point estimates, and we cannot assume they originate from the same samples. EUDA adjusts for inflation to improve interpretability (EUDA, 2025a).

Prior studies have used these data for related purposes. Groshkova et al. (2018) showed that EMCDDA retail price and purity data can support refined metrics such as drug affordability, while highlighting substantial uncertainty and sampling biases inherent in law-enforcement-generated series. Caulkins et al. (2024) used heroin purity data to examine how the first Taliban poppy ban reverberated through Baltic and Nordic drug markets, illustrating the value of these indicators for assessing rapid supply shocks. Moeller (2019) combined cannabis prevalence data with seizure numbers to construct measures of control intensity across Nordic countries and compare historical rates.

A few studies have assessed these cross-national indicators more comprehensively. Werb and Colleagues (2013) highlighted the limitations of ecological analyses based on international surveillance systems, specifically the EMCDDA/Reitox data for cannabis, cocaine, and heroin. They noted uneven national reporting, uncertain seizure sample representativeness, and disproportionate influence from a few large reporting countries. Kilmer and Colleagues (2015) reviewed cross-national drug market indicators, including EMCDDA data, and concluded that purity-adjusted price series remain sparse, seizure data lack essential details such as purity and distribution across market levels, and significant gaps persist despite earlier recommendations and EMCDDA's own feasibility work on wholesale purity-adjusted prices (Kilmer et al., 2010).

Prices

Price data reflect the interaction of demand and supply. Changes may indicate fluctuations in the supply chain, new production methods, or shifts in demand due to popularity or other factors. Price data are also noisy because they depend on distance from source as well as local demand, competition, and enforcement intensity (Chandra et al., 2025; Giommoni, 2024). Retail prices tend to be noisier than wholesale prices because they are influenced by relationships between the seller and buyer (Kilmer et al., 2015), and quantity discounts, which can be substantial (Moeller et al., 2021).

The main strength of the EUDA data is that it extends back to 2002 and includes annual measures at both the retail (per gram) and wholesale (per kilogram) levels. Indicators are freely available online and include summary statistics of central tendency, mean, median, and mode, as well as minimum and maximum values.

Coverage for wholesale cocaine prices is inconsistent, making clear trends difficult to discern. The Netherlands did not report wholesale price data to the EUDA for 2016-2023. Denmark reported the highest price in 2021 at more than EUR 37,000 per kilogram, up from around EUR 33,000 in 2016. Conversely, Sweden's wholesale price was EUR 32,000 per kilogram in 2024, down from EUR 42,000 in 2017 (EUDA, 2025a). For these two countries, reporting consistency improved markedly after 2015. Denmark reported in 50 percent of years and Sweden in seven out of eight years between 2016 and 2023. Denmark consistently included mode, minimum, and maximum prices for the wholesale data but not median, while Sweden reported all indicators for seven out of eight years.

Mean retail price data are more consistently reported for all three countries, especially for 2007-2023, with Denmark providing mean prices in 70 percent of the years and Netherlands and Sweden reporting for all years. Median and mode for retail prices are less consistently reported, except in Sweden which reported all indicators for all years.

Purity

For cocaine products (hydrochloride (HCI) and crack), purity is measured as the percentage of a powder "sold as cocaine" that is actually cocaine. However, "standards of laboratory analysis vary between and within countries. Sampling strategies and calculations of 'averages' can be unclear" (EUDA, 2025b). We focus on cocaine HCI, as data on crack in Europe are rarely reported.

No wholesale cocaine purity data are reported from any of the three countries. Retail purity data show a similar reporting consistency pattern to the price data. The Netherlands and Sweden provided data for 16 out of 17 years, while Denmark reported mean retail purity in all years from 2007-2023. Other measures of central tendency are less consistently reported.

Use

The best estimates of cocaine consumption come from wastewater analysis, which measures urinary biomarkers and metabolites in sewage (Ter Laak et al., 2025). The precision of this method is limited by the need for correction factors to account for cocaine breakdown in the body and during transport to treatment plants. Additionally, the denominator used to calculate per-person drug use relies on census data, which do not account for daily fluctuations due to tourism or commuting, potentially leading to overestimates in busy areas (Zuccato et al., 2008).

In Europe, wastewater analysis data are collected by the Sewage Analysis CORe group Europe (SCORE) and published by the EUDA (2025c). Data collection currently covers 128 cities, and the Netherlands, Denmark, and Sweden rank among the countries with the highest participation with nine, six, and ten cities, respectively.

We include data from each country's capital, as these cities provide the most years of data. Reporting remains inconsistent but has improved over time. Amsterdam measured cocaine consumption every year from 2011 until 2024, except in 2016. Copenhagen reported eight out of twelve years for 2013-2024. Stockholm began measuring cocaine

metabolites in 2016 and has reported five out of nine years since.

Results

Chandra and Colleagues (2025) noted that if purity between two nations (or cities) is correlated above the threshold of 0.88, this suggests that their markets are integrated, connected by a flow, where a change in purity at a sending node transmits to a receiving node. The direction of the flow can be inferred from purity levels, as cocaine is subject to adulteration along the distribution chain. They argue that, compared to price data, purity data are "superior" for this purpose. Figs. 1 and 2 below show the trends in cocaine retail price and purity for the three countries from 2007 to 2023.

Retail price trends

Overall, price levels follow the theoretically expected pattern, with higher prices in countries farther from the source than the Netherlands (Caulkins & Bond, 2012). The mean retail prices between the three countries are not strongly correlated, except for Denmark and Sweden, which show a negative correlation: Netherlands and Denmark (r = 0.10), Denmark and Sweden (r = -0.78), Netherlands and Sweden (r = 0.27). When prices increase in Denmark, they tend to decrease in Sweden.

Transactions are typically in rounded amounts to facilitate expediency (Kilmer et al., 2015; Manski et al., 2001), which could explain the relationship between mean prices in Denmark and Sweden. The Swedish price has decreased relative to Denmark, but this could be attributed to an overall trend in which the value of the Swedish krona has declined relative to the Danish krone. Cocaine purity, rather than currency, is therefore a better measure for our purpose because it does not increase as the drug travels farther from its source (Chandra et al., 2025).

Retail purity trends

The data show the same ordering of the three countries with cocaine purity highest in the Netherlands, intermediate in Denmark, and lowest in Sweden. There is a clear upward trend in mean purity over time in all three countries, which together suggests that their cocaine markets are integrated.

From 2007 to 2023, retail cocaine purity levels in Netherlands and Denmark are strongly positively correlated (r = 0.94), as well as Denmark and Sweden from 2008 to 2023 (r = 0.96), and the Netherlands and Sweden from 2008 to 2023 (r = 0.92). These correlations indicate market integration according to Chandra et al. (2025) theory.

Use trends

Fig. 3 below shows the mean amount (mg) of cocaine consumed daily in each capital from 2011 to 2024. Concentrations in Amsterdam have almost doubled since 2011, whereas Copenhagen and Stockholm have more than doubled from much lower starting points, but over a shorter period (EUDA, 2025c).

Conclusion and implications

The data presented here support statements by EU authorities that the cocaine market has changed significantly since 2007. While retail prices have remained relatively stable, mean purity has increased markedly. Our analyses support the notion of a northern route, where the markets are integrated and the cocaine flows from the entry point in the Netherlands, transits through Denmark, and reaches Sweden. Prior studies suggest this could have implications for use (e.g. Hughes et al., 2020), as wastewater analyses from the capital cities show an increase in cocaine metabolites.

A growing market can lead to an increase in systemic drug-related violence. Instability in market value can trigger violent competition among suppliers for market shares (Aziani, 2020; Atuesta & Ponce, 2017). A larger market implies more transactions and more opportunities for things to turn violent (Wallman et al., 2023). This violence may attract more law enforcement attention, resulting in drug seizures and arrests, which in turn cause further instability and perpetuate drug-related violence (Werb et al., 2011). These mechanisms are not well understood (Caulkins & Reuter, 2010) and are based on research and data from contexts outside the EU (Liem & Moeller, 2025). Lower levels of community disorganisation and socioeconomic disadvantage in the EU (compared to the United States) may inhibit escalation (Jiménez-García et al., 2023; Ousey & Lee, 2007).

Achieving a better understanding of how the cocaine market relates to violence in the EU requires reliable data, yet the data we used were less consistent and accurate than desired. We relied on retail-level data due to the absence of consistent wholesale data. Retail-level data are noisier (Chandra et al., 2025; Giommoni, 2024), and the observed trends

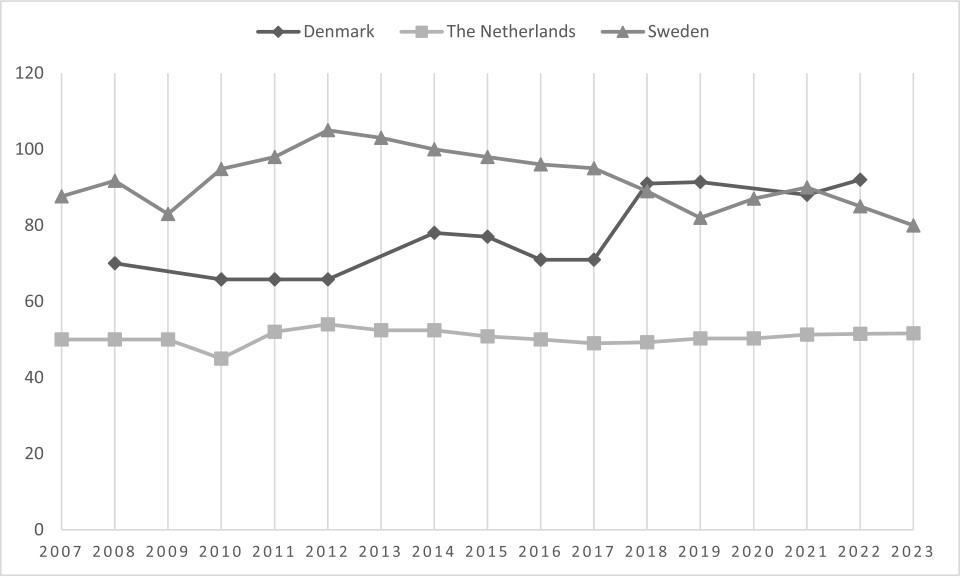

Fig. 1. Mean cocaine HCI retail price per gram, 2007-2023, Euros.

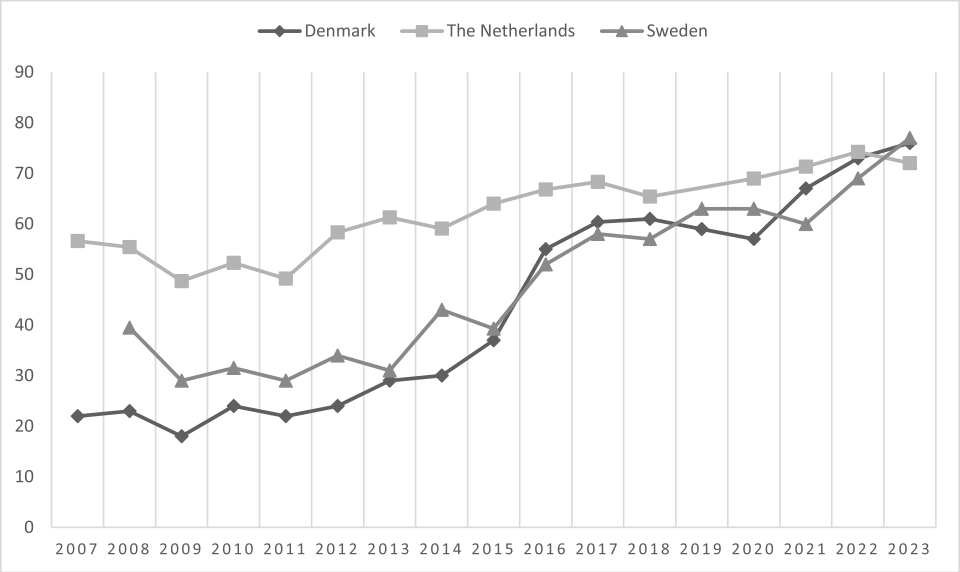

Fig. 2. Mean cocaine HCI retail purity per gram, 2007-2023, %.

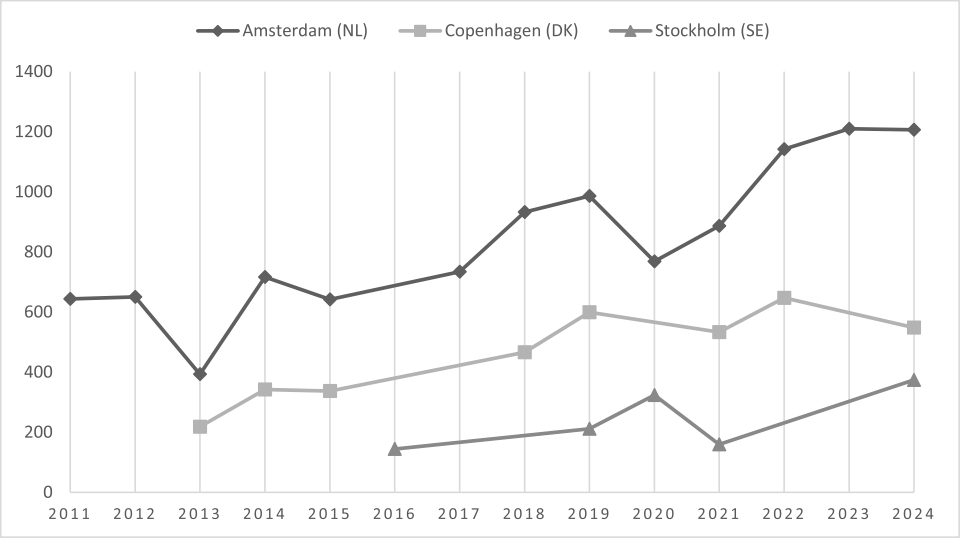

Fig. 3. Mean amount of cocaine used daily, 2011-2024, mg, population normalised.

could reflect meso-level factors, such as more efficient distribution or changes in domestic policy (Caulkins & Reuter, 2010; Kilmer & Hoorens, 2010). Law enforcement data are convenience samples rather than representative samples (Reuter & Greenfield, 2001), so measurement error cannot be ruled out (Chandra et al., 2025).

Absent information on dispersion around the mean, the three measures of central tendency (mean, median, mode) published for EUDA indicators could aid interpretation. For example, if mean and median differ, extreme values may distort the mean. If they are close, outlier distortion is unlikely, and the mean is more valid. The utility of these data for research and practice could be improved with more consistent data from the wholesale-level, data on purity-adjusted prices, and sample size information. Practical improvements could include access to individual-level data underlying the metrics and the ability to download multiple indicators at a time. These additions would enable more sophisticated statistical analyses of trends and flows across EU countries, where simple correlation matrices are insufficient.

Collecting and collating data from all EU member states is a major undertaking (Giommoni, 2024; Singleton et al., 2018). To address emerging challenges, such as new criminal groups entering the market, law enforcement, policymakers and researchers would benefit from consistent reporting, ideally at shorter intervals (Chandra et al., 2025; Kilmer & Hoorens, 2010). This is neither a novel insight nor a new challenge. Drug researchers have long urged policy makers to allocate resources for accurate and timely data (Groshkova et al., 2018; Kilmer et al., 2015; Manski et al., 2001). The EUDA's supra-national data infrastructures remains important for cross-national comparisons of drug markets and policy (Comiskey et al., 2024). We recognise that developing this infrastructure has taken many years (Singleton et al., 2018), and despite its limitations, EUDA data is arguable the best current source on European drug markets (Giommoni, 2024). We are cautiously optimistic that the issues identified here will improve in the coming years.

CRediT authorship contribution statement

Kim Moeller: Writing – review & editing, Writing – original draft, Project administration, Funding acquisition, Conceptualization. **Kamilla Haugen:** Writing – review & editing, Data curation. **Marieke**

Liem: Writing – review & editing, Funding acquisition, Conceptualization.

Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:

K.M. and M.L. have received funding from EUDA to undertake research on drug-related violence and data availability in the EU. M.L. is the head of the EUDA scientific committee.

References

Aziani, A. (2020). Violent disequilibrium: The influence of instability in the economic value of cocaine markets on homicides. *Crime, Law and Social Change, 74*(3), 245–272. https://doi.org/10.1007/s10611-020-09894-2

Atuesta, L. H., & Ponce, A. F. (2017). Meet the Narco: Increased competition among criminal organisations and the explosion of violence in Mexico. *Global Crime, 18*(4), 375–402. https://doi.org/10.1080/17440572.2017.1354520

Caulkins, J. P., & Bond, B. M. (2012). Marijuana price gradients: Implications for exports and export-generated tax revenue for California after legalization. *Journal of Drug Issues, 42*(1), 28–45. https://doi.org/10.1177/0022042612436

Caulkins, J. P., Kilmer, B., Reuter, P. H., & Midgette, G. (2015). Cocaine's fall and marijuana's rise: Questions and insights based on new estimates of consumption and expenditures in US drug markets. *Addiction, 110*(5), 728–736. https://doi.org/10.1111/add.12628

Caulkins, J. P., & Reuter, P. (2010). How drug enforcement affects drug prices. *Crime and Justice, 39*(1), 213–271. https://doi.org/10.1086/652386

Caulkins, J. P., Tallaksen, A., Taylor, J., Kilmer, B., & Reuter, P. (2024). The Baltic and Nordic responses to the first Taliban poppy ban: Implications for Europe & synthetic opioids today. *International Journal of Drug Policy, 124*, 104314.

Chandra, S., Liu, M., Bjarnadottir, M. V., & Midgette, G. (2025). A novel method for measuring the extent of cocaine flows across the US. *Justice Quarterly*, 1–24. https://doi.org/10.1080/07418825.2025.2523338

Comiskey, C., Bergeron, H., Clausen, T., Colman, C., Ferrer-Wreder, L., Fischer, G., Liem, M., Moeller, K., & Mèlich, M. T. (2024). The importance of co-produced, multi-method, independent scientific evidence in times of alternative truths and global policy debates. *International Journal of Drug Policy, 129*, Article 104481. https://doi.org/10.1016/j.drugpo.2024.104481

European Union Drug Agency. (2022). *EU Drug market: Cocaine*. Publications Office of the European Union.

European Union Drug Agency. (2025a). *Statistical bulletin 2025 — Price, purity and potency*. Publications Office of the European Union.

European Union Drug Agency. (2025b). *Statistical BULLETIN 2025 — Methods and definitions for price, purity and potency*. Publications Office of the European Union.

European Union Drug Agency. (2025c). *Wastewater analysis and drugs — A European multi-city study*. Publications Office of the European Union.

European Commission. (2023). *EU Roadmap to fight drug trafficking and organised crime*. Publications Office of the European Union.

Europol. (2025). *European Union Serious and Organised Crime Threat Assessment - The changing DNA of serious and organised crime*. Publications Office of the European Union.

Europol. (2023). *Criminal networks in EU ports. Joint report of Europol and the Security Steering Committee of the ports of Antwerp, Hamburg/Bremerhaven and Rotterdam*. Publications Office of the European Union.

Giommoni, L. (2024). How to improve the surveillance of the Taliban ban's impact on European drug markets. *International Journal of Drug Policy, 124*, Article 104320. https://doi.org/10.1016/j.drugpo.2024.104320

Groshkova, T., Cunningham, A., Royuela, L., Singleton, N., Saggers, T., & Sedefov, R. (2018). Drug affordability–potential tool for comparing illicit drug markets. *International Journal of Drug Policy, 56*, 187–196. https://doi.org/10.1016/j.drugpo.2018.01.021

Hughes, C., Hulme, S., & Ritter, A. (2020). The relationship between drug price and purity and population level harm. *Trends and Issues in Crime and Criminal Justice, 598*, 1–26. https://doi.org/10.52922/ti04510

Jiménez-García, W. G., Arenas-Valencia, W., & Bohorquez-Bedoya, N. (2023). Violent drug markets: Relation between homicide, drug trafficking and socioeconomic disadvantages: A test of contingent causation in Pereira, Colombia. *Social Sciences, 12*(2), 54. https://doi.org/10.3390/socsci12020054

Kilmer, B., & Hoorens, S. (2010). *Understanding illicit drug markets, supply-reduction efforts, and drug-related crime in the European Union*. DG Justice, Freedom and Security. RAND. Prepared for the European Commission.

Kilmer, B., Pacula, R., Hunt, P., & a Rabinovich, L. (2010). Indicators for understanding supply-reduction efforts. In Kilmer, & Hoorens (Eds.), *Understanding illicit drug markets, supply reduction efforts, and drug-related crime in the European Union*. RAND Europe.

Kilmer, B., Reuter, P., & Giommoni, L. (2015). What can be learned from cross-national comparisons of data on illegal drugs? *Crime and Justice, 44*(1), 227–296. https://doi.org/10.1086/681552

Liem, M., & Moeller, K. (2025). Revisiting Goldstein's drugs-violence nexus: Expanding the framework for the globalized era. *International Criminology*, 1–13. https://doi.org/10.1007/s43576-025-00160-w

Manski, C., Pepper, J., & Petri, J. (Eds.). (2001). *Informing America's policy on illegal drugs – What we don't know keeps hurting us. National Research Council*. Washington, D.C: National Academy Press.

Moeller, K. (2019). Sisters are never alike? Drug control intensity in the Nordic countries. *International Journal of Drug Policy, 73*, 141–145. https://doi.org/10.1016/j.drugpo.2019.06.004

Moeller, K., Munksgaard, R., & Demant, J. (2021). Illicit drug prices and quantity discounts: A comparison between a cryptomarket, social media, and police data. *International Journal of Drug Policy, 91*, Article 102969. https://doi.org/10.1016/j.drugpo.2020.102969

Ousey, G. C., & Lee, M. R. (2007). Homicide trends and illicit drug markets: Exploring differences across time. *Justice Quarterly, 24*(1), 48–79. https://doi.org/10.1080/0741882070.12009.76

Reuter, P. (2009). Systemic violence in drug markets. *Crime, Law and Social Change, 52*(3), 275–284. https://doi.org/10.1007/s10611-009-9197-x

Reuter, P. (2006). What drug policies cost: Estimating government drug policy expenditures. *Addiction, 101*(3), 315–322. https://doi.org/10.1111/j.1360-0443.2005.01336.x

Reuter, P., & Greenfield, V. (2001). Measuring global drug markets. *World Economics, 2*(4), 159–173.

Singleton, N., Cunningham, A., Groshkova, T., Royuela, L., & Sedefov, R. (2018). Drug supply indicators: Pitfalls and possibilities for improvements to assist comparative analysis. *International Journal of Drug Policy, 56*, 131–136. https://doi.org/10.1016/j.drugpo.2018.02.003

Ter Laak, T. L., Emke, E., Dolot, N., van Loon, E. E., van der Kooi, M. M., van Asten, A. C., & de Voogt, P. (2025). Mapping consumptions and market size of cocaine, amphetamine and MDMA through wastewater analysis: A Dutch case study. *Addiction, 120*(1), 116–125. https://doi.org/10.1111/add.16649

UNODC. (2022). *World Drug Report. Annex: Price time series for cocaine and heroin, Western Europe and the United States*. UNODC.

UNODC. (2023). *Global report on Cocaine 2023 – Local dynamics, global challenges*. UNODC.

UNODC & Europol. (2021). The illicit trade of cocaine from Latin America to Europe – from oligopolies to free for-all?. *Cocaine Insights*. UNODC.

Wallman, J., Rosenfeld, R., & Roth, R. (2023). The opioid epidemic and homicide. *Harry Frank Guggenheim Foundation*. HFG Research and Policy in Brief.

Werb, D., Kerr, T., Nosyk, B., Strathdee, S., Montaner, J., & Wood, E. (2013). The temporal relationship between drug supply indicators: An audit of international government surveillance systems. *BMJ Open, 3*(9), Article e003077. https://doi.org/10.1136/bmjopen-2013-003077

Werb, D., Rowell, G., Guyatt, G., Kerr, T., Montaner, J., & Wood, E. (2011). Effect of drug law enforcement on drug market violence: A systematic review. *International Journal of Drug Policy, 22*(2), 87–94. https://doi.org/10.1016/j.drugpo.2011.02.002

Zuccato, E., Chiabrando, C., Castiglioni, S., Bagnati, R., & Fanelli, R. (2008). Estimating community drug abuse by wastewater analysis. *Environmental Health Perspectives, 116*(8), 1027–1032. https://doi.org/10.1289/ehp.11022