The Price and Purity of Illicit Drugs: 1981 Through the Second Quarter of 2003

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Executive Summary

This report extends, improves, and augments previous estimates of trends in the price and purity of five major illicit drugs—powder cocaine, crack cocaine, heroin, d-methamphetamine, and marijuana—using data from the 1981–2003 Drug Enforcement Administration's (DEA's) System to Retrieve Information from Drug Evidence (STRIDE) database. Series are extended in this study through the second quarter of 2003, so data for 2003 reflect only one-half year. Estimates are provided for three or four quantity levels for each substance and, where sufficient data exist, for five specific cities. All prices are adjusted for inflation and reported in 2002 dollars. Our primary national estimates for price and purity are based on formal econometric models used to analyze "purchase" transactions from STRIDE. Further analyses developing purity estimates are based on both "purchase" and "seizure" transactions from STRIDE.

Since drugs are provided through markets, albeit illegal markets, it is natural to want to track data series pertaining to prices as well as more traditional indicators of demand, use, and quantities consumed. Suppliers do not, of course, report prices, but samples of market prices are obtained in the course of drug enforcement, particularly through undercover buys. Drug acquisitions sent to a DEA laboratory for analysis are registered in STRIDE. These data are used by policymakers and researchers to estimate the price and purity of specific drugs in various jurisdictions, including cities, states, and the nation. Small and irregular sample sizes for particular locations, together with the fact that drugs are not sold in standard package sizes with consistent purity, considerably complicates analysis, but these issues can be addressed by using appropriate statistical techniques. A more fundamental limitation is that the data are obtained through a nonrandom process. It is not possible to assess definitively what possible biases arise from nonrandom sampling, but the series generated here and in earlier studies using STRIDE correlate with external indicators such as emergency-room mentions and drug consumption, suggesting that price and purity series derived from STRIDE can reliably capture broad trends. Further exploration of such correlations would be valuable.

Before describing trends in average price and purity observed in the STRIDE data, it is important to note that at any given place and time, a wide range of prices and purities can be observed for a particular drug. This report seeks to convey some sense of the magnitude of this dispersion by reporting estimates of the 25th and 75th percentiles of the distributions of prices and purities predicted by the model. These ranges do not reflect variability stemming from uncertainty concerning the model itself or the precision of the model estimates, so the true ranges may be even broader.

Furthermore, there can be great variation in prices across cities. Therefore, "national" price estimates are simply weighted averages of price estimates obtained for particular cities and regions. Price levels and even trends in locations throughout the country do not necessarily match the "national" prices. The same is true for "national" estimates of purity. Thus it may be more appropriate to think of these "national" price and purity series as indices of prices and purity that behave in a manner similar to the S&P 500 for stock prices.

Cocaine price and purity trends reported here mirror those reported in the past: very sharp (roughly 70 percent) price declines during the 1980s through 1989 at all quantity levels, a pronounced (22 to 35 percent) one-year increase from 1989 to 1990, and gradual declines during the 1990s, interrupted briefly in 1995. Hence, prices at the end of the 1990s were 30 to 40

percent below those in 1989. There was an apparent price jump between 1999 and 2000 that was sustained until 2001, at least at the lowest quantity level. Prices then declined uniformly from 2001 to 2003, reaching all-time lows that are roughly 12 to 21 percent below prices in 1999. Cumulatively, powder cocaine prices have declined by roughly 80 percent since 1981. These broad trends are apparent at each quantity level and in each of the five cities for which city-specific series are described.

The average purity of powder cocaine in 2003 was high and was similar across quantity levels (60 to 80 percent) but was still well below the peak levels of the late 1980s. Through the late 1980s, there were pronounced differences in average purity between the two lower quantity levels and the two higher quantity levels. Now those differences are quite small, suggesting that "cutting" or diluting powder cocaine as it moves from the higher (~100 gram) to the lower (~1 gram) quantity levels is not as common as it used to be.

The crack cocaine series display many of the same features as the powder cocaine series: sharp price declines through 1989, an even more pronounced (30 to 45 percent) one-year increase from 1989 to 1990, and gradual, modest declines at higher quantity levels during the 1990s. There are some differences, however. Crack prices rose from 1998 to 1999 and from 1999 to 2000, whereas powder cocaine prices did not begin to increase until 2000, and, notably, crack prices at the lowest quantity level did not decrease during the 1990s. As a result, while crack prices at higher quantity levels reached all-time lows in 2003, crack prices at the lowest quantity level did not. In addition, there are some unique city-specific price and purity trends for crack cocaine that do not closely mimic the national pattern, at least not in the short run.

The heroin series also share many features with the powder cocaine series, including very sharp (roughly 55 percent) price declines during the 1980s through 1989, a pronounced (30 to 50 percent) increase from 1989 to 1990 at the larger quantities, and further declines during the 1990s. Purity-adjusted prices were at or near all-time lows in 2003. Again, however, there are some important differences. For example, there was no spike in 1995 in the heroin price series, and there was at most perhaps a slight leveling but no increase in prices in 2000. As a result, heroin prices at the end of the 1990s were 55 to 65 percent lower than they were in 1989, a much larger decline than was observed for powder cocaine during the same period. Heroin prices have declined another 10 to 20 percent since the late 1990s. Variation in trends in average prices across cities is substantial, more akin to what is observed for crack cocaine than for powder cocaine.

Heroin purity has been relatively stable since the early 1990s. For purchases, purity averages roughly 30 to 40 percent at the two lower quantity levels (<1 gram and 1 to 10 grams). For seizures and purchases combined, the average purity is about 60 percent for quantities of 10 to 200 grams and 75 percent for quantities over 200 grams. The incrementally higher purity levels at higher quantity levels suggest that heroin is often cut when it is passed between quantity levels.

Unlike the cocaine and heroin series, the d-methamphetamine series in this report differ substantially from those in previous reports. The preceding report described a more-or-less steady decline in methamphetamine prices from the mid-1980s onward (through 2000, the last year in that series). The series in this report show comparable declines overall, but with three

very large and noteworthy spikes in the year or years following three precursor control regulations in 1989, 1995, and 1997. Purity trends for d-methamphetamine have been the opposite, with troughs in purity occurring alongside spikes in prices, consistent with a hypothesis that these transients reflect some sort of market disruption.

There are far fewer price observations for d-methamphetamine than for powder cocaine, crack, or heroin, and they are disproportionately concentrated in one city (San Diego). Furthermore, d-methamphetamine prices and purity have varied in more complicated ways over time, perhaps reflecting a relatively immature market that is still evolving. Hence, observations with regard to d-methamphetamine market trends are more tentative than those for the other substances, but they are intriguing and merit further analysis.

In the case of marijuana, this report summarizes trends in the average price of a gram (rather than a pure gram) because STRIDE does not record information on the potency of this substance. Marijuana price trends are not correlated with trends in prices of the other drugs. While prices of the other drugs were falling in the 1980s, in some cases very dramatically, the average price of marijuana was rising, reaching a peak in 1991 for two of the three quantity levels. Prices then declined through 2000 but have since rebounded somewhat. At the two lower quantity levels (<10 grams and 10 to 100 grams), marijuana prices in 2003 were about one-third above their 2000 troughs. This recent price increase leaves current marijuana prices near their 20-year averages.

In summary, prices for powder cocaine, crack, and heroin declined sharply in the 1980s and have declined more gradually since then, with periodic interruptions by modest price spikes that have usually persisted for a year or less. For d-methamphetamine, the pattern is broadly similar, but the price spikes appear to be larger and longer-lasting, particularly for 1989–1991. Marijuana prices have followed a very different pattern, increasing from 1981 to 1991, then declining through 2000 and increasing over the past three years.

The average purities of these drugs have varied substantially by drug, occasionally with divergent trends. Trends over time suggest that cutting, or diluting, across quantity levels occurs today primarily in the case of heroin. The data also show that the average purity of drugs obtained through seizures is generally higher than that of drugs observed through purchases, particularly at higher quantity levels.

This report reflects several methodological changes from our previous reports. First, we have taken steps to avoid aggregating price data from distinct substances. Specifically, separate series are now produced for powder cocaine and crack cocaine; heroin series are based only on “heroin base” and “heroin hydrochloride” observations; and the methamphetamine series is specifically for d-Methamphetamine, not other forms. Second, this report uses a random coefficient regression model. This allows for the possibility that the extent of quantity discounts (or equivalently, the extent of price markups as one moves down the distribution chain) might vary from city to city. Third, estimates of the ranges of price and purity across cities are provided in the form of estimates of the 25th and 75th percentiles (interquartile range) of distributions. Fourth, several adjustments are made to account for the fact that buyers often do not discover the actual purity of what they purchase until after the price is agreed upon and the deal consummated. Specifically, quantity levels are defined in terms of the total or “raw” quantity, not pure quantity, and prices are standardized based on an estimate of the purity the buyer could

have expected to receive, not the assayed purity. Fifth, the city-specific weights used when computing national estimates as a weighted average of city-specific series are simply the cities' population. Previous reports used a proxy for quantities consumed in various cities estimated from emergency-room data, but those estimates are not available for all cities, they have limitations, and they are less transparent. Finally, more information is provided on the variation of purity across quantity levels.

Given these methodological changes, it is not appropriate to compare price levels in this report to those developed in previous reports. Comparisons in this report between cities and particularly over time are, however, valid and instructive.

1. Introduction

Illicit drugs are ultimately consumer goods, and like other goods in modern societies, they are provided primarily through markets. Prices play a prominent role in understanding, analyzing, and intervening in markets of all kinds, illicit as well as licit. Obtaining national or even local price and purity information for illicit drugs is challenging, however, for a variety of reasons. Some challenges are largely unavoidable, for example, the need to rely on administrative datasets not designed for tracking prices. Other problems, such as the fact that drugs are not generally sold in standardized quantities or qualities, can largely be resolved by using appropriate statistical techniques. Because of these complexities, greater effort has traditionally been devoted to collecting and reporting data related to demand and quantities consumed (e.g., National Household Survey on Drug Abuse (NHSDA)-based estimates of numbers of users) than to data on prices. That is unfortunate, because (1) prices affect drug use and consumption; (2) many outcomes of interest relate to expenditure, which is the product of price and quantity consumed; and (3) price data are a potentially important tool for understanding the workings of drug markets and interventions intended to control those markets.

This report continues a series produced by the Office of National Drug Control Policy (ONDCP) that seeks to improve understanding of trends in prices for five major illicit drugs. It provides updated estimates of the price and purity of powder cocaine, crack cocaine, heroin, and d-methamphetamine and of the price of marijuana in the United States from 1981 through the second quarter of 2003, using data from the Drug Enforcement Agency's (DEA's) System to Retrieve Information from Drug Evidence (STRIDE) database.

Since the 1970s, the Intelligence Division of DEA has been recording in STRIDE information obtained from seizures, purchases, and other drug acquisition activities conducted by undercover agents and informants from federal and, in some locations, local law enforcement agencies. STRIDE is a forensic database, designed primarily to control the inventory of drug acquisitions in the laboratories and to provide scientific data regarding the quality and quantity of the substances collected, for judicial processes. The data included in the STRIDE database represent only those acquisitions that are sent to a DEA laboratory for analysis and thus exclude most of the very large number of purchases and seizures that are made by state and local agencies. Because the data are not collected for analytical purposes, they do not reflect a random sample of all drug transactions that occur within any geographic location.[1,2] Instead they represent a "convenience sample," or observations that are obtained in response to purposeful decisions made by law enforcement agencies investigating specific drug-related activities. The timing and location of encounters are not only unrepresentative they are erratic. The number of observations from a given location can vary dramatically from year to year. This has implications for how these data can be used, in terms of both which observations should be retained within a sample and the statistical methods that should be used to analyze them.[3, 4]

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[1] Frank, R.S. (1987), "Drugs of Abuse: Data Collection Systems of DEA and Recent Trends," *Journal of Analytical Toxicology*, Vol. 11, pp. 237–241 (Nov./Dec.).

[2] Manski, Charles F., John V. Pepper, and Carol V. Petrie (eds.) (2001), *Informing America's Policy on Illegal Drugs: What We Don't Know Keeps Hurting Us*, National Academy Press, Washington, DC.

[3] Horowitz, Joel L. (2001), "Should the DEA's STRIDE Data Be Used for Economic Analysis of Markets for Illegal Drugs?" *JASA*, Vol. 96, No. 456, pp.1254–1271.

[4] Manski, Charles F., John V. Pepper, and Carol V. Petrie (eds.) (2001), *Informing America's Policy on Illegal Drugs: What We Don't Know Keeps Hurting Us*, National Academy Press, Washington, DC.

Even with these limitations, the STRIDE database is the best source of information on illicit drug prices and purity currently available. No other database provides as much objective information on the characteristics of specific drug acquisitions over time or for as many geographic areas in the United States. Furthermore, although the data represent a convenience sample rather than a probability sample, they may still convey valid and useful information regarding changes in price and purity if they are used properly. Indeed, there are parallel examples in the business world of price indices constructed from convenience samples, including the ACCRA Local Cost of Living Index. Such indices are constructed and examined despite their known limitations, in large measure because they are highly correlated with other data that are drawn from independent, probabilistic samples. In the case of illicit drugs, there is a growing literature demonstrating that price series generated from the STRIDE data are also significantly correlated with related series constructed from independent probability samples, such as trends in drug use and drug-related consequences.[5,6,7] Further, the STRIDE data may also be quite informative about trends in purity. STRIDE's limitations are most problematic for assessing absolute levels of prices and purities, rather than trends, but even in the case of absolute levels, STRIDE data can be informative.

Methodological Changes

In an effort to be responsive to criticisms raised by the National Research Council regarding past price indices constructed from STRIDE data[8], we have made a number of methodological changes that enable us to use the data more carefully. First, in the development of price and purity indices, we have tried not to aggregate across different drug forms unless the drug forms are indistinguishable to the buyer at the time of the transaction. In addition, price and purity series are estimated only for drug forms for which sufficient data exist across time. For example, the current report presents price and purity series separately for cocaine hydrochloride (essentially powder cocaine) and cocaine base (predominantly crack cocaine). Observations pertaining to other forms of cocaine are dropped from the analysis because they (1) are physically distinguishable from the other two forms of cocaine and (2) are insufficient in number to permit estimates of their own price and purity series. A similar approach is taken with the other drugs. Thus it is important to clarify what is meant by specific drug names used in this report:

- *Powder cocaine* refers to cocaine hydrochloride.
- *Crack cocaine* refers to cocaine base.
- *Heroin* refers only to heroin base and heroin hydrochloride.
- *Methamphetamine* refers only to the d-forms of methamphetamine.

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[5] Caulkins, Jonathan P. (1999), "Can Supply Factors Suppress Marijuana Use by Youth?" Federation of American Scientists' *Drug Policy Analysis Bulletin*, Issue No. 7, pp. 3–5; Caulkins, Jonathan P. (2001), "The Relationship Between Prices and Emergency Department Mentions for Cocaine and Heroin," *American Journal of Public Health*, Vol., 91, No. 9, pp. 1446–1448.

[6] Saffer and Chaloupka (1999), "The Demand for Illicit Drugs" *Economic Inquiry* 37(3): pp. 401–411.

[7] DeSimone J. and M. Farrelly. 2003. "Price and Enforcement Effects on Cocaine and Marijuana Demand" *Economic Inquiry* 41(1): 98-115; DeSimone, J. (2001), "The Effect of Cocaine Prices on Crime," *Economic Inquiry* 39(4), pp. 627–643.

[8] Manski, Charles F., John V. Pepper, and Carol V. Petrie (eds.) (2001), *Informing America's Policy on Illegal Drugs: What We Don't Know Keeps Hurting Us*, National Academy Press, Washington, DC.

- *Marijuana* refers to plant material (and not whole plants or seeds).

A second methodological change from previous reports is the use of a random coefficient regression model, which enables observations from one city to have a unique relationship between price and quantity that is different from the price/quantity relationships in other cities. The justification for this model, which was empirically tested and validated, is the possibility that drug markets behave differently in different locations. Therefore, instead of imposing the same relationship between price and quantity across all locations for which we have data, the random coefficient model groups observations by cities and then estimates the relationship between price and quantity by city, using all the available data. Predicted standardized prices (and purities) for each city are calculated for each quarter or year from this model. These predicted standardized prices (and purities) are then weighted to generate the national price (purity) indices reported here.

This report incorporates two further methodological changes in an attempt to capture and describe the considerable variability observed in the price and purity of illicit drugs. First, price and purity series for selected cities are presented, along with the national series. There can be clear and sometimes rather pronounced differences in price and purity across cities, just as there is geographic variation in prices for licit goods, such as houses. Examining only aggregate, national series that represent some composite or average of the city-specific series can obscure the extent of this spatial variation. City-specific series make it possible to evaluate how price and purity move in geographically smaller markets. They also help confirm whether apparent "national" trends in the aggregate series are really nationwide trends, and not merely trends in some regions, and even whether the apparent national trends might be spurious artifacts that emerge because of STRIDE's nonrandom sampling. Second, estimates of the variation in predicted prices (and purities) across cities are represented by the identification of the 25th and 75th percentile value of standardized predicted prices (purities) in addition to the average price (purity) index.[9] Often the gap between the 25th and 75th percentile values, known as the *interquartile range*, is wide, showing that at any given point and time, a wide range of prices and purities can be observed. Hence, successive samples—say, from different quarters—can yield somewhat different averages even if there is no change in the underlying distribution of prices. The 25th and 75th percentile observations enable the reader to judge whether trends in these series are truly meaningful without imposing any sort of distributional assumptions on the series on which they are based. Changes in price (or purity) that remain within this interquartile range are more likely to reflect only sampling changes over time, rather than real movements in price (or purity), in contrast to changes that extend beyond the interquartile range. The interquartile range should not be interpreted as confidence intervals, because a substantial amount of variation (50 percent) still exists outside of these bands.

A number of other improvements have also been made. Notably, distribution levels, referred to more accurately in this report as *quantity levels*, are identified on the basis of amounts purchased, unadjusted for potency, rather than on pure quantities. This change facilitates interpretation, since it is sometimes more natural to think of quantity levels in terms of actual quantities transacted rather than of quantities adjusted for purity. More fundamentally, it ensures that wholesale transactions with very low purities (including rip-offs) are not inadvertently

[9] The construction of the interquartile range estimates is based on the model and only holds as far as the model holds. They do not represent actual data points.

lumped together with smaller retail transactions. STRIDE observations span a continuum of quantities; there are not just a few well-defined transaction sizes, as there are in some licit markets (for example, milk in supermarkets is sold predominantly in pints, quarts, half-gallons, and gallons). Hence, boundaries between quantity levels are not well-defined, and their selection is somewhat arbitrary. Thus, it might be just as reasonable to include among "retail"-level cocaine transactions either transactions of 0.2 to 4.0 grams or transactions of 0.1 to 2.0 grams. We sought to define quantity levels with roughly equal numbers of observations in each level but with round-number boundaries. For all drugs except powder cocaine, three levels were identified, each of which in most cases contains between 25 and 50 percent of the total number of observations for that drug. In the case of powder cocaine, enough data were available to identify a fourth quantity level. Given that these boundaries were largely data-driven, little meaning should be assigned to the labels applied to them.

Another improvement is the adoption of the expected purity hypothesis (EPH). Illicit drugs are what economists refer to as "experience goods"; purchasers often cannot readily assay the quality of the drug until it is consumed, which generally occurs after a price is negotiated and the deal is completed. Hence, the *actual* purity of the drug does not typically govern the negotiated price at the time of the transaction, but rather the supposed or *expected* purity of the drug. For example, it might be observed that most transactions of a particular drug at a particular time, place, and transaction size are 60 to 80 percent pure, but a minority have very low or even zero purity although the price paid for these very low-purity drugs is not noticeably lower. The view implicitly adopted by past statistical models was that purchasers of low-purity drugs were knowingly paying much more—sometimes ten or more times as much—per pure gram than were most customers because actual purity (and not expected purity) was included in the model. The view implicit in the EPH models is that these customers were "ripped off"; they paid a price typical of 60 to 80 percent pure transactions because they thought or expected that they were buying drugs that were 60 to 80percent pure. These low-purity transactions are not discarded; they represent a real cost to customers. In the EPH, they are incorporated into expectations of the pure quantity contained in purchases, on average, rather than being assumed to represent fully informed purchases.

The adoption of the EPH has two important implications for the way the data get analyzed. First, observations involving low purity are retained in the analysis, provided they meet other general criteria for inclusion. Second, price is estimated through a two-step procedure where expected purity rather than actual purity is included in the price regression model. Expected purity is the predicted value obtained from a first stage regression where actual purity is estimated as a function of all other observable information available to the buyer that is reported in the database (e.g., amount, city, quarter, year).[10] Because expected purity is far less volatile than actual purity, the EPH model generally produces smoother price series, even when relatively fewer data points are available (e.g., when estimating prices for a specific city). Failing to use the EPH model can either inflate or suppress the estimated price level somewhat, depending on the details of the distribution of purities observed and whether and how many low purity observations are discarded. Thus, it is not appropriate to compare the level of prices produced by an EPH method and a non-EPH method.

[10] For detailed information regarding the specification of the price and purity model see the accompanying report, *Technical Report for the Price and Purity of Illicit Drugs Through 2003*.

Another, related change is that the price of the transaction, not the price per pure gram, is the dependent variable in the statistical regression models. This is an improvement for a technical, statistical reason. The old methods included amount and purity in the denominator of the dependent variable, which biases estimates of the coefficients on the amount and purity variables on the right-hand side of the equation and hence leads ultimately to biased price estimates. Predictions of the price of one expected pure gram can still be generated with this new approach simply by multiplying the coefficient estimates of the regression model by the value of the corresponding independent variable for each transaction, with purity set to 100 percent and amount set to 1 gram. However, because the current models are estimated for different quantity levels, amount is not actually set to 1 gram. Instead, the predicted price of an amount given by the midpoint for each range evaluated at 100 percent purity is calculated and then scaled up or down by a factor of proportionality to generate the equivalent price per expected pure gram.

A final methodological change is the use of simpler weights when generating the national price and purity indices as a weighted average of the various city-specific series. Various weighting schemes can be used. Each has advantages and disadvantages, and the relative merits of each approach depend in part on the purpose for which the national price or purity series will be used. Past reports sought to weight city-specific prices by a proxy for the quantity of the drug consumed in each city, where that proxy was based on drug-specific emergency department episodes recorded by the Drug Abuse Warning Network (DAWN). That approach is not unreasonable. However, the current report adopts the simpler and more transparent approach of weighting city-specific estimates by the relative size of the city as indicated by its population. This approach provides a national series that might be interpreted as the national average price seen by potential users (who reside in cities with enough data to estimate city-specific prices). The previous method attempted to estimate the national average price paid by current users (who reside in cities with enough data to estimate city-specific prices and DAWN rates). Neither average is intrinsically of greater interest than the other. We prefer the former because it can incorporate price data from any city, not just cities for which DAWN estimates can be created, and because population estimates are reliably and universally understood.[11]

A number of minor technical adjustments have also been made; these adjustments are explained in detail in the accompanying technical report. The purpose of all of the revisions is to improve the scientific methodology employed so that more-accurate information can be obtained from the STRIDE data. Again, it is important to stress, that *given these revisions, it is not appropriate to compare the level of price and purity estimates in this report with those presented in earlier reports, and users of this report are strongly advised not to draw inferences from such comparisons. Comparisons of levels within this report, however—e.g., between different cities or years—are, of course, appropriate.*

General Comments About the Presentation of the Results

All prices in this report represent the standardized real price per one expected pure gram (or in the case of marijuana, one bulk gram), adjusted for inflation and expressed in 2002 dollars. As in previous reports in this series, results are presented in a series of graphs and tables. The

[11] Just to emphasize that there are many different reasonable definitions of a national price series, a third alternative would be constructing a series weighted by the number of teenagers in each city. That might be interpreted as the national average price seen by people vulnerable to initiating use of that drug (and who reside in cities with price data).

statistical models underlying these graphs and tables are described in the accompanying technical report. Annual figures and tables of the price per expected pure gram and purity of powder cocaine, crack cocaine, heroin, and methamphetamine observed in purchase transactions are presented, as are annual figures and tables of the price per bulk gram of marijuana. (STRIDE does not include information on potency of marijuana in its observations.) Tables showing the predicted quarterly prices are presented in the Appendix to this report. All tables and figures are based on drug acquisitions within the 50 states and the District of Columbia, and only purchases and purchase attempts are used to estimate price and purity trends in Section 2.

For each drug, the figures and tables present prices and purities at several quantity levels. It is clear from this and other research that prices vary dramatically across these levels; enforcement pressure creates substantial price markups at each stage of the distribution chain between source countries and consumers in the United States. Likewise, for some drugs in some times and places, it is not uncommon for purity to be diluted as the drugs move down the distribution chain. However, as mentioned earlier, definitions of quantity level boundaries and names are somewhat arbitrary. For example, DEA prefers to call the lowest market level the *street* level, reserving the term *retail level* for the next higher level of distribution (e.g., 2.0 to 10.0 grams, for cocaine). Academics prefer using the term *retail* for transactions between a seller and a user, not between two dealers. The data in STRIDE contain information on transactions that range substantially in size, from very small (e.g., 0.1 grams) to very large (multiple kilograms). Illicit drug transactions do not all occur in specific, round lot sizes.[12] Hence, dividing this continuum into discrete levels to represent specific markets is inevitably somewhat arbitrary. To facilitate exposition, we use the terms Q1, Q2, Q3, and Q4 in this report to refer to incrementally higher quantity levels based on the amount of drug involved in the transaction. Readers are advised not to read too much into the labels, as they merely indicate natural breaks in the data and are not intended to convey any scientific meaning.

Because ONDCP is also interested in knowing how purity varies as drugs move down the distribution chain, Section 3 describes the actual purity of powder cocaine, heroin, and d-methamphetamine in transactions reported in all the U.S. seizure and purchase acquisitions available in STRIDE. The inclusion of the seizure data dramatically increases the number of observations, particularly of large drug acquisitions, and, for some drugs, provides greater insights into purity differences across quantity levels.

[12] The accompanying technical report provides information plots of the quantities transacted for particular substances in Appendix A.

2. Results: The Price and Expected Purity of Specific Drugs

Powder Cocaine

Four quantity levels are identified and examined for powder cocaine:

- 0.1 to 2.0 grams, unadjusted for purity (Q1)
- 2.0 to 10.0 grams, unadjusted for purity (Q2)
- 10.0 to 50.0 grams, unadjusted for purity (Q3)
- More than 50.0 grams, unadjusted for purity (Q4)

Estimated annual cocaine price series for each of these levels, evaluated at the median amount for that quantity level, are shown in Figure 1. For example, the median quantity purchased in Q2 observations across all years was 5 grams, so a price of $100 per expected pure gram at this quantity level would indicate that $500 was paid for 5 expected pure grams, and a smaller amount would have been paid for 5 grams of what was expected to be less than 100 percent pure cocaine.

These price series share many features familiar from earlier reports: very sharp (roughly 70 percent) declines during the 1980s through 1989 at all quantity levels, a pronounced (22 to 35 percent) one-year increase from 1989 to 1990, and gradual declines during the 1990s so that prices at the end of the 1990s were 30 to 40percent below those in 1989. With the additional data for 2000 forward, the series show an apparent price jump between 1999 and 2000 that was sustained until 2001, at least at the lowest quantity level. Prices continued to decline uniformly, however, from 2001 to 2003, reaching all-time lows roughly 12 to 21percent below those in 1999. Cumulatively, powder cocaine prices have declined by roughly 80 percent since 1981, with the average price of one expected pure gram of cocaine purchased at Q1 (i.e., 0.1 to 2.0 bulk grams) costing approximately $107 in 2003.

Figure 2 provides information on the interquartile range of prices for each of these powder cocaine series from 1981 through 2003. It shows that the decline observed in average prices throughout the 1980s substantially exceeds the variability in prices observed at any other point in time. Hence, the decline that occurred between 1981 and 1989 is likely to be real, not a statistical artifact. The increase in average prices observed in 1990 is accompanied by a substantial jump in the prices observed within the interquartile range for all quantity levels. These simultaneous shifts upward for all quantity levels stand in sharp contrast to the prevailing downward trend in prices prior to this period. That trend over the 1990s appears to be substantial relative to the variability in prices in any given year, particularly prices in 1990 or 1991 are compared to those in 2003. This can be seen more clearly in Figure 3.

The interquartile ranges for prices tend to be broader at lower quantity levels. Thus, there is less variability in STRIDE observations drawn from higher quantity levels, such as Q3 and Q4, than at lower levels. This could be because there is actually less price dispersion at the higher levels or it may reflect better knowledge on the part of law enforcement of reasonable transaction costs at higher quantity levels.

A striking characteristic of the four powder cocaine price series is that they are very highly correlated, certainly in the long run, reflecting the common price variation between 1981 and

1993 (minimum correlation of 0.99) but relatively greater price stability (correlations of 0.71 to 0.91) even over the past ten years. In particular, prices at the lowest quantity level (Q1) are consistently 1.5 to 2.1 times those at the next higher level (Q2), 1.9 to 3.1 times the Q3 level prices, and 2.7 to 3.9 times those at the Q4 level.

The all-time lows in prices (which, like prices throughout this report, are adjusted for expected purity and inflation) are not accompanied by all-time highs in expected purity, as can be seen by comparing the average predicted prices in Figure 1 to the average predicted purities in Figure 4. Powder cocaine purity peaked in 1987–1988. Expected purity at Q1 (the lowest quantity level) is near all-time highs, and at Q2, although well below peak levels, is still higher than it has been in the past five years. However, average expected purity at the highest quantity levels (Q3 and Q4) has not fully recovered from its extended slide since the late 1980s and appears to be below the expected purity seen at the lowest quantity level for the past four years. Still, Figure 5, which includes the interquartile range of expected purities for each year and each quantity level, shows that these differences in trend lines for average expected purity are generally not large compared with the variability at any one time, as indicated by the interquartile range. The one notable exception is the difference in expected purity observed between Q4 and Q1 and Q2 during the mid-1980s, which suggests that the expected purity of cocaine at lower quantity levels rose more slowly than did that at the highest quantity level in the first part of the period and then rose more quickly than the highest quantity level in the mid-1980s. Indeed, considering the width of the interquartile ranges at the lowest quantity level (Figure 6), expected purity at this quantity level appears to have been fairly stable since the increases that occurred prior to 1987, except for a decline around the 1990 price spike and perhaps around the 2001 price increase as well. Figure 7 suggests that the Q4 level has experienced less stability and a greater decline since the late 1980s, which is why the expected purities converge across these levels.

Unlike what was seen for expected purity-adjusted prices, the spread in the distribution of predicted purities does not diminish as quantity level increases. Even at the higher quantity levels, considerable variability remains in expected purities, making it important not to over interpret apparent trends in simple averages.

Figures 8 and 9 provide city-specific time trends in average price and expected purity, respectively, for five regionally dispersed cities for which STRIDE contains a large number of powder cocaine observations in the lowest quantity level.[13] Ninety-five percent confidence intervals for the city-specific standardized prices are available in Appendix D of the accompanying technical report. Figure 8 shows that the downward trend in powder cocaine prices during the 1980s occurred systematically across a sample of cities from different regions. Similarly, the upward trend in average expected purity during the mid-1980s followed by a leveling off appears fairly robust. This consistency in trends across cities suggests that the trends in the national aggregate series described above can reasonably be thought of as national, not as an artifact produced by variation over time in the number of observations from each city (a concern expressed by the NRC). Although the level of prices appears to differ substantially across cities, the confidence intervals around the price estimates are fairly large so these

[13] This report provides city-specific price information for only a small number of cities that are consistently observed in the data over most of the time period examined. The observed patterns and trends in these data can be viewed as fairly reliable.

differences are not statistically significant. Some of the intercity differences in the level of purity of cocaine, however, are statistically significant for particular years and cities.

Crack Cocaine

Crack cocaine price and expected purity series begin in 1986; in earlier years, insufficient data were available for estimation. Recall, as noted in the introduction, that technically the series labeled here as *crack* is derived from all cocaine base observations in STRIDE, the majority but not necessarily all of which are literally crack. Three quantity levels are identified and examined for crack:

- 0.1 to 1.0 grams, unadjusted for purity (Q1)
- 1.0 to 15.0 grams, unadjusted for purity (Q2)
- More than 15.0 grams, unadjusted for purity (Q3).

It is important to note that quantity levels Q1, Q2, and Q3 for crack differ from those levels for powder cocaine. For example, Q1 for powder cocaine includes observations up to 2.0 grams, a larger range than is specified for crack. Because drugs are sold with substantial quantity discounts, this depresses the average prices for powder at the Q1 level relative to what would be recorded if Q1 for powder cocaine matched the range identified for crack. Hence, direct comparisons should not be made of the *levels* of prices for crack and powder cocaine.

The estimated annual average price of crack cocaine for each of the three quantity levels is shown in Figure 10. The crack series display many of the same prominent features as the powder cocaine series: sharp price declines during the 1980s through 1989, an even more pronounced (30 to 45 percent) one-year increase from 1989 to 1990, and gradual modest declines at levels Q2 and Q3 during the 1990s, with prices at the end of the 1990s about 10 percent below those in 1989. There are some differences, however. Crack prices rose from 1998 to 1999 and from 1999 to 2000, whereas powder cocaine prices did not begin to increase until 2000. All three crack series increased from 1996 to 1997, whereas for powder cocaine, two increased and two decreased. Notably, prices at the lowest quantity level (Q1) did not trend downward during the 1990s. As a result, while Q2 and Q3 crack prices reached all-time lows in 2003, Q1 crack prices did not.

The variability surrounding these estimates of average price per expected pure gram of crack is illustrated by the spread within the interquartile range of estimates shown in Figure 11. The decline in the reported average price of crack during the 1980s was likely to reflect a real decline, particularly at the higher two quantity levels. Further, the increases in average price in 1990 and 1999–2000 were accompanied by rather large shifts in the interquartile distribution of prices for those years, suggesting that these spikes could be statistically meaningful particularly at the lowest quantity level (Q1). In general, the results presented in Figure 11 reinforce the conclusion that the average price of crack cocaine has remained fairly stable since the beginning of the 1990s, particularly at the two highest quantity levels.

As was the case with powder cocaine, there is a fairly stable ratio of crack prices at different quantity levels. Crack prices at Q1 are 1.8 to 2.6 times those at Q2, which in turn are consistently 1.4 to 1.7 times those at Q3. The ratio of Q1 prices to those at Q2 and Q3 has

increased somewhat over time, since Q1 crack prices did not fall during the 1990s, but the ratio of Q2 and Q3 prices is strikingly stable.

The average expected purity of crack—although increasing since 2000—is still, like that of powder cocaine, well below the record levels seen in the late 1980s (see Figure 12). However, as shown in Figure 13, there is considerable variability in these estimated purities at all quantity levels. This can be seen more readily in Figure 14, which shows the interquartile range of estimates for the highest quantity level (Q3), revealing a clear decline in expected purity during the 1990s before the recent rise. This variability during the 1990s is particularly surprising in light of the relative stability in expected purity-adjusted prices for this quantity level during the same period. Another interesting finding from Figure 13 is the extensive overlap in interquartile ranges of expected purity between Q1 and Q2. Given that there is substantial overlap in the interquartile range of these two series, one should not put too much credence in the finding that the average expected purity is lower at the second quantity level than it is at the first; these differences could reflect sampling variability or spatial-aggregation issues.

Geographic differences in crack cocaine market prices for specific cities in the STRIDE dataset can be seen clearly in Figure 15. For example, the downward trend in prices during the mid-1980s occurred to very different degrees in different markets. In Washington, DC, the price of one expected pure gram of crack cocaine dropped by 32 percent between 1986 and 1987, while it went up by 67 percent in New York City. And while New York, Chicago, and, to a lesser degree, Washington DC experienced increases in the price of crack between 1999 and 2000, the price in San Diego appeared to increase a year earlier and fall back in 2000. More generally, the average correlation among Q1-level crack prices in Atlanta, Chicago, New York, San Diego, and Washington, DC, was only 0.15, while that for powder cocaine was 0.65 over the same years and cities. Thus, except for the broad decline in the 1980s, the national average trends for crack are truly nothing more than an average of sometimes divergent city-specific trends; many cities experienced year-to-year fluctuations that differed from those shown in Figure 10. Similar idiosyncratic differences in the expected purity of crack cocaine can be seen in particular years for each of these cities (see Figure 16); however, the general trend across all the cities appears to be fairly robust: All show a decline in expected purity between 1988 and 1999.

Comparison of Powder Cocaine and Crack Cocaine Price Series

As mentioned above, the powder cocaine and crack cocaine price series share some dominant features: sharp price declines through 1989; spikes in 1990 and 2000, as well as a smaller bump in 1995; and substantial declines from 2000 to 2003. (Alone among the seven series, crack prices at the lowest quantity level increased between 2002 and 2003.) Hence, since the first year of the crack series (1986), the various crack and powder cocaine series generally display a fairly high correlation. The average correlation coefficient across all these series is 0.93, with the lowest correlation coefficient, 0.87, occurring for the lowest quantity levels (Q1).[14] However, this apparent correlation stems in part from the shared dramatic changes between 1986 and 1991 and common trends in prices at higher quantity levels. Over the past ten years, the Q1 crack series diverged from the other six cocaine-related price series; its correlation with the Q1 powder cocaine series was only 0.29 over that time. That is, retail powder cocaine series are more highly correlated with wholesale crack series than with retail crack series. These differences in trends

[14] Average correlations were calculated as pair wise correlations across both substances and all quantity levels.

across drug forms support the National Research Council's recommendation to disaggregate drug products by form, when possible.

The finding that crack prices are typically higher than powder cocaine prices at the lowest quantity level appears to contradict previous work by Caulkins (1997), which showed that, on average, retail crack and powder cocaine were equally expensive.[15] However, the lowest quantity levels for crack and powder cocaine are not defined identically in this report, as was explained previously, and they are evaluated at different quantities. Thus the apparent difference in prices may not be real, and further analysis is needed before any conclusions can be drawn.

Heroin

As noted above, the heroin price and expected purity series are generated using observations identified in STRIDE as either *heroin base* or *heroin hydrochloride*. Three quantity levels are identified and examined in this report:

- 0.1 to1.0 gram, unadjusted for purity (Q1)
- 1.0 to 10.0 grams, unadjusted for purity (Q2)
- More than 10.0 grams, unadjusted for purity (Q3).

Heroin price series for each of these quantity levels are shown in Figure 17. The trends in these series share many features with the powder cocaine price series shown in Figure 1, including very large (roughly 55 percent) price declines during the 1980s through 1989, a pronounced (30 to 50 percent) increase from 1989 to 1990 for the two larger quantity levels, and further declines during the 1990s, with expected-purity-adjusted prices at or near all-time lows in 2003. There are some important differences between the heroin and powder cocaine series, however. For example, the 1989–1990 price spike did not occur at the Q1 level for heroin, while the spike for the Q2 level for heroin was much more pronounced than the Q2 spike for powder cocaine, and it lasted two years. Further, there was no spike or other disruption in the heroin price series in 1995 at any quantity level and at most perhaps a slight leveling in prices in 2000. As a result, heroin prices at the end of the 1990s were 55 to 65 percent lower than they were in 1989; the corresponding decline for powder cocaine was 30 to 40 percent. Heroin prices have declined another 10 to 20 percent since the late 1990s, as have powder cocaine prices.

Heroin prices reached all-time lows in 2002 and stabilized at roughly those levels in 2003. Cumulatively, heroin prices have fallen roughly 85 percent since the beginning of the price series, so prices in 2002–2003 were only about one-sixth of what they were in 1981. These tremendous price declines occurred at all quantity levels. Indeed, the three heroin price series are highly correlated not only over the full range of years but even for just on the past ten years. During the past ten years, heroin prices at the Q1 level were consistently 1.1 to 1.6 times those at the Q2 level, and prices at that level were in turn 1.3 to 2.1 times higher than those at the Q3 level (see Figure 18).

The interquartile range of predicted prices is shown in Figure 19 for each year ; the ranges suggest that the decline in average quality-adjusted price over the 22-year period exceeds the within-period interquartile variability for most of the quantity levels. However, there appears to

[15] Caulkins J. 1997. "Is Crack Cheaper than (Powder) Cocaine?" *Addiction* 92(11): 1437-1443.

be significant overlap in the interquartile ranges across quantity levels for most time periods throughout the full period, suggesting that differences in prices across specific quantity levels may not be meaningful. Finally, as was the case with powder and crack cocaine, the variability in predicted prices at the Q1 level is substantially greater than that at the higher quantity levels, suggesting that there may be less variability in prices at higher quantity levels or that enforcement agents have better knowledge about these prices.

The average expected purity of heroin is shown in Figure 20. Unlike powder cocaine, the expected purity of heroin generally rose throughout the period when prices were falling. Expected purity levels today, however, are not at their all-time highs; they appeared to peak in the mid- to late-1990s, depending on quantity level. The rise in average expected purity from 1981 through the early 1990s is very pronounced, even when one considers the uncertainty in the point estimates (see Figure 21). The variability in expected purity between 1992 and 2000, however, may reflect noise caused by differences in samples over time rather than true variability in the average expected purity, perhaps with the exception of 1996. Since 2000, there has been a modest shift downward in the interquartile range of predicted purity at all levels.

City-specific heroin price series for the lowest quantity level (Q1) are shown in Figure 22. There are pronounced differences in the level of average prices across cities, differences that are statistically significant in particular years.[16] Those differences became substantially smaller during the 1990s, so that by 2003, the differences in price per expected pure gram across cities were relatively small. Large differences in average expected purities across cities remain, however, as can be seen in Figure 23. New York City has a much higher average expected purity for heroin than do Washington DC and Chicago, which have the lowest purities, although all three cities show a general rise in expected purity since the early and mid-1980s. The trends in expected purity differ across cities since the mid-1990s, however, with some cities, specifically New York and Washington DC, experiencing a leveling off in average expected purity, while others (Atlanta, Chicago and San Diego) had moderate declines. Thus, as shown in Figures 22 and 23, differences exist across geographic markets for heroin, and care should be taken in interpreting trends in simple averages in the national indices. Spurious trends can be generated by the inclusion or exclusion of observations from particular cities in a given year.

d-Methamphetamine

As noted earlier, only the d-forms of methamphetamine are considered in this report . The three quantity levels identified and examined for d-methamphetamine are as follows:

- 0.1 to 10.0 grams, unadjusted for purity (Q1)
- 10.0 to 100.0 grams, unadjusted for purity (Q2)
- More than 100.0 grams, unadjusted for purity (Q3)

Price and expected purity trends for cocaine, crack, and heroin are relatively easy to describe: long-term trends are interrupted by occasional modest price spikes, and trends at all quantity levels are generally highly correlated. Series for d-methamphetamine prices are far more irregular in two respects, as shown in Figure 24. First, in the 1980s, trends are not concordant

[16] See Appendix D in the accompanying technical report for tables that present the 95 percent confidence intervals for these estimates.

across quantity levels. For example, Q1 prices through 1984 were declining, while Q2 prices were increasing. Second, although the price series for the three quantity levels are concordant with each other after 1988, they are still highly variable, with pronounced spikes in 1990–1991, 1995 perhaps extending into 1996, and in 1998. The distinct trends at each quantity level exceed the associated interquartile ranges of predicted values for each year, as shown in Figure 25. Although there is some minor overlap between the interquartile ranges for the two lowest quantity levels, the markets remain fairly distinct, as do the pattern in prices prior to 1988.

Trends in the average expected purity of d-methamphetamine display the same irregularities as those for expected-purity-adjusted price, as shown in Figure 26. Each quantity level exhibits a different pattern between 1981 and 1988, then after 1988, the trends move concordantly, with troughs in 1990–1991, 1995, and 1998 across all quantity levels. Unlike expected-purity-adjusted prices for d-methamphetamine, however, the difference in expected purity trends prior to 1988 are modest relative to the great variability within each quantity level, as indicated by the interquartile ranges in Figure 27. Indeed, it is not clear that there is a substantial difference in average expected purity across quantity levels for d-methamphetamine until 1995, at which point the interquartile range of predicted purities for the Q1 and Q3 levels begin to separate. The peak and troughs since 1988 suggested by Figure 26 represent substantial shifts relative to within-period variability, as is more readily apparent in Figures 28 through 30, which show the interquartile range of predicted average purities for each quantity level separately.

There is tremendous volatility in the price and expected purity of d-methamphetamine, with the average expected purity following trends that mirror those observed in the price series for the two lowest quantity levels. Figure 31 shows how expected purity troughs correspond with price spikes in the Q1 level. The estimated correlation coefficient between these two series is –0.82, slightly higher in absolute value than that observed for the Q2 level (estimated correlation of –0.63). Today, d-methamphetamine prices are at or near all-time lows, with current prices approximately 40 percent lower than their average during the 1990s. Average purities have also been rising quite steadily since their trough in 1998 but have not yet reached their 1994 peak levels.

The d-methamphetamine series merit focused follow-up research for at least two reasons. First, unlike cocaine and heroin observations, d-methamphetamine observations are highly concentrated in one region of the country (the Southwest). Indeed, one city (San Diego) accounts for nearly 25 percent of all the d-methamphetamine price observations. (See Figures 32 and 33 for city-specific estimates of expected purity-adjusted price and expected purity, respectively.) Varying numbers of observations made over time in other cities and at different rates at different quantity levels could generate spurious trends and other artifacts, such as the inversions in predicted purities observed across quantity levels.

A second reason for further follow-up research on the d-methamphetamine series is the fact that patterns identified in this report differ sharply from those presented in previous reports. It may be that the methodological changes made in the modeling used for this report, including focusing on only one type of methamphetamine, make it easier to see real trends in the volatile and sparse methamphetamine data. Nonetheless, before attributing substantial meaning to these d-methamphetamine series, their external validity should be explored by examining how well they correlate with trends in methamphetamine-related outcomes obtained from other data sources. For example, the price and expected purity spikes and troughs reported in Figures 24, 26, and 31

appear to overlap with the introduction of methamphetamine precursor chemical regulation introduced in 1989, 1995, and 1997. Precursor regulations are intended to restrict supply, so one would expect to see price spikes and possibly expected purity troughs following these precursor control interventions. Cunningham and Liu (2003) have examined the extent to which hospital admissions for methamphetamine use and/or abuse in the Southwest correlate with the adoption of these laws, and a similar investigation could be performed for methamphetamine prices.[17]

Marijuana

Marijuana trends are in some sense simpler than those of the other drugs, because they pertain only to price. Information on the potency of marijuana observations is not available through STRIDE. Furthermore, the quantity levels identified and examined in this report correspond to those employed in previous reports, allowing for some basic comparison in trends across reports. The three quantity levels examined are:

- 0.1 to10.0 grams, unadjusted for purity (Q1)
- 10.0 to 100.0 grams, unadjusted for purity (Q2)
- More than 100.0 grams, unadjusted for purity (Q3)

The marijuana price trends, shown in Figure 34, are not highly correlated with trends in prices of other drugs over time. While the price of powder, heroin, and, to a lesser extent, crack were falling during the 1980s, the average price of marijuana generally rose, reaching a peak in 1991 for two of the quantity levels. The peak for Q2 occurred in 1993–1994. Prices then declined through 2000, at which time they began a slight upward trend. At quantity levels Q1 and Q2, 2003 marijuana prices were about one-third above their 2000 troughs. This recent price increase leaves current marijuana prices at Q1 and Q2 near their 20-year averages. The prices for Q3, on the other hand, are near all-time lows.

Marijuana prices at different quantity levels range from 0.62 to 0.84 and are thus not as highly correlated over time as those for other drugs, particularly powder cocaine and heroin. Figure 35 shows that there is not a lot of overlap in the distribution of prices across the three quantity levels, suggesting that quantity discounts/price markups across quantity levels exceed variability in prices within a quantity level. However, it would be misleading to speak of ratios of prices between quantity levels for marijuana, as the apparent ratios sometimes seem to depend on the level of prices. For example, roughly speaking, marijuana prices at level Q1 are about three times those at Q3 plus $3/gram, not just three times the Q3 prices. On the other hand, Q2 prices are roughly 1.3 to 2.6 times the Q3 prices.

3: Purity of Drugs When Seizures Are Included

In the previous section drug-specific expected purity trends were discussed alongside the corresponding price trends because price and purity often move in tandem, as was illustrated

[17] Cunningham, J., and LM. Liu (2003), "Impacts of federal ephedrine and pseudoephedrine regulations on methamphetamine hospital admissions," *Addiction*, Vol. 98, 2003.

explicitly for d-methamphetamine in Figure 31, and expected purity is a very important component of price. The purity analysis presented previously, however, is limited in that it considers the purity only of observations that were obtained through purchases (so price information was available), not of those obtained through seizures and other enforcement activities.

In this section we explore in more detail how the average purity of powder cocaine, heroin, and d-methamphetamine varies across different quantity levels by examining both purchase and seizure data from STRIDE. Actual purities, instead of predicted purities, for each of these drugs are evaluated, although observations with zero purity are not included in these analyses. Analyses are not conducted for marijuana or crack cocaine for different reasons. Information on marijuana purity is not available in STRIDE, which precludes conducting such an analysis. STRIDE does contain purity information on crack cocaine, or more accurately, cocaine base, but purity series are not examined because of the possibility that a heterogeneous mix of different drugs is included in the cocaine-base seizure data. Unlike the cocaine-base purchase data, which apparently predominantly reflect crack cocaine, the seizure data may contain a sizable number of observations of other forms of cocaine base.[18] For example, cocaine base may be imported from South America and converted into powder cocaine in the United States. Thus, although it is reasonable to presume that virtually all of the purchase observations involving cocaine base reflect crack cocaine, this may not be the case for cocaine-base seizure observations.

The inclusion of the seizure data dramatically increases the number of observations available for each drug, making it possible to identify four quantity levels for each drug. Again, these quantity levels were identified based on the distribution of the data, and we attempted to spread the number of observations evenly across levels. However, once the quartiles of the data were determined, quantity boundaries were rounded off to make the levels easier to interpret. Table 10 defines the quantity levels used for this analysis and indicates the number of observations falling into each level for each drug over the entire 1981–2003 time period. Note that, for all three drugs, the quantity levels defined in Table 10 differ from those analyzed previously in the purchase data. For example, the third quantity levels in the purchase data analyses of heroin and d-methamphetamine have been broken up into two levels for the current analysis. In the case of powder cocaine, three of the four quantity levels have changed: The two lowest quantity levels in the purchase analysis (<=1 gram and 1g to 10g) are now combined into the lowest level, and the highest level has been broken up into two different quantity levels.

The analysis considers all domestic observations collectively, not by location. This introduces the possibility of variation over time in the composition (spatial distribution) of observations, confounding trends over time, so minor fluctuations in the time series should be examined in greater detail before strong conclusions are drawn about them. However, including all of the data gives the best sense of general trends experienced by the nation as a whole.

To summarize, purity trends in this section differ from those in the previous section in the following ways: (1) they include data from seizures; (2) they include all U.S. observations in one pool, rather than aggregating city-specific trends for certain cities; (3) they are based on actual, not predicted, purities; (4) they are determined for more and somewhat different ranges of transaction sizes; and (5) they are not determined for crack.

[18] This information was obtained through a project meeting with representatives from DEA on November 24, 2003.

Summary of Variation in Purity Across Quantity Levels

It is known that traffickers sometimes dilute or adulterate drugs as the drugs move through the distribution chain, and there is little evidence that traffickers refine or otherwise increase purity after the drugs are first produced. Hence, it would not be surprising for purity to decrease as the drug moves from higher quantity levels down toward retail transactions. That is indeed what the data often indicate, as shown in Tables 11 through 13 and Figures 36 through 38, but there are interesting exceptions and caveats.

For example, there are only very modest differences in average heroin purity between quantity levels Q1(<=1 g) and Q2 (1g –10g), but average purity at the higher levels (10g to 200g and > 200g) is substantially higher (see Figure 36). This suggests that heroin is more often diluted or "cut" between the two top quantity levels and between Q2 and Q3 (i.e., between quantities <10 g and those >10 g) than between Q2 and Q1.

In contrast, as shown in Figure 37, there was a regular progression of purity across quantity levels for powder cocaine in the 1980s, suggesting that dilution could occur between each pair of quantity levels. However, inasmuch as the average purity even at the lowest levels has almost always been at least 50 percent, the total dilution of cocaine has not been that substantial, on average. (A single "one-for-one cut" would reduce even perfectly pure cocaine to 50 percent purity.) By the 1990s, these purity differences for cocaine across the lowest three quantity levels had largely disappeared, in part as purities at the highest quantity levels fell, suggesting that cutting or diluting cocaine was not as common a practice in the 1990s as it was in the previous decade. The difference in purity between the third and fourth quantity levels remained. From about 1998 on, average purity was higher for the lowest quantity level (Q1) than for the second quantity level (Q2), and even the third (Q3) in 2002 (see Figure 37). Such inversions could occur because of compositional effects stemming from aggregating varying numbers of transactions from higher- and lower-purity regions or markets, not because distributors are refining cocaine inside the United States. However, this inverse trend further underscores the conclusion that, except at the highest quantity levels, most cocaine is no longer commonly diluted in the United States. Certainly some is still diluted; cocaine samples with very low purities, containing a variety of diluents and adulterants, can still be found. But such samples are now the exception rather than the norm.

Historically, there has been little variation in average d-methamphetamine purity across quantity levels, but since the late 1990s, the highest purities have been observed at the lowest quantity levels. This purity inversion was also seen for predicted average purity from the purchase observations and extends to the entire interquartile range of values for the purchase and seizure data (results are not shown here). It is not clear why this happens. Conceivably, for d-methamphetamine, this may indicate difficulty controlling purity when converting large batches of precursor chemicals into methamphetamine or it may be an indication of some variation in the type of precursor chemicals that are used at specific quantity levels.

Overall, the purchase and seizure data reveal that differences in purity across quantity levels exist only for heroin and, to a modest degree, cocaine during the early 1980s. Thus, the "classic"

understanding of dilution/adulteration may not be a useful construct for thinking about the purity of powder cocaine and d-methamphetamine at different quantity levels. Additional analysis is needed to provide new insights into the variability of purity at different quantity levels for each of these drugs.

Variation in Purity Trends When Seizure Data Are Included

Heroin

As discussed above, average (and even median) purity calculated from the heroin seizure and purchase data sort neatly by quantity level, with 10 to 20 percent differences between quantity levels. The one exception is average purity at the two lowest quantity levels, between which there is relatively little difference in purity until about 1995. These differences in average purity across quantity levels, particularly between the higher and lower quantity levels, are consistent with what was observed for average purity in the purchase data shown in Figure 20. The general trend of rising purity during the 1980s and early 1990s and the leveling off during the mid-1990s, followed by a moderate decline in the 2000s, is also consistent with what was observed from the purchase data alone. Indeed, even the spike in average purity observed in 1989 and the trough in 1991 can be seen in Figure 36.

However, some differences in the level of average purity at certain quantity levels are revealed when seizure data are included. Specifically, the average purity at the two highest quantity levels (between 10 and 200 grams and > 200 grams), as shown in Figure 36, are generally higher than those observed in the purchase data (Figure 20). The observed increase in average purity is not entirely due to a breaking out of the highest quantity level in Figure 20, as even the third quantity level in Figure 36(which has a smaller range of amounts than is included in the third quantity level in Figure 20) generally has higher average purity than is found in the third quantity level of purchase observations. This suggests that seized heroin at the two highest quantity levels generally has higher purity than corresponding purchased heroin. The data demonstrate a similar pattern for the two lower quantity levels, but the differences are not nearly as consistent or as large as those observed for the higher levels.

Powder Cocaine

As with heroin, the trends in average purity for powder cocaine over time and across quantity levels are generally consistent with those observed for the purchase data (Figure 4) when seizure data are included in the analysis (Figure 37). Like Figure 4, Figure 37 shows a substantial decline in average purity across quantity levels in 1985 and 1990 and a trough in 2000 and 2001. It is interesting to note that the overlapping of purity trends at specific levels during the late 1990s and early 2000s that was observed in the purchase data alone is also seen in the seizure and purchase data for the three lowest quantity levels. Purity at the highest quantity level (> 750 grams), however, remains substantially higher than that for the other three markets.

Once again, the average purity reflected in the combined seizure and purchase data is generally higher than that observed in the purchase data alone. The differences are much more substantial at the higher quantity levels than at the lower levels, where the result is not consistent across all years.

d-Methamphetamine

The inclusion of seizure data in an examination of d-methamphetamine purity dramatically increases the number of observations available for analysis. Thus, it is not surprising that trends reported in the seizure and purchase data (Figure 38) are far less volatile than those reported in the purchase data alone. However, the underlying trends of the combined purchase and seizure purity data are generally consistent with those observed in the purchase data (Figure 26), with troughs in purity in 1990/1991, 1996, and 1998 and a local peak in purity in 1994. The data also show higher average purity at the lowest quantity level than at the higher quantity levels from 1996 on.

The inclusion of seizure data in the analysis produces two primary differences: First, the rise in average purity from 1985 to 1989 is generally more pronounced than that shown in the purchase data alone, and the average levels of purity across each of the four quantity levels during this time period are more similar. Second, the levels of average purity reported in the seizure and purchase data are consistently higher than those indicated by the purchase data alone at all quantity levels, showing again that the typical purity in seized observations is generally higher than that in purchase observations.

4. Conclusions

Perhaps the most striking observation about illicit drug prices is simply that they are still extraordinarily high per unit weight, even though prices have declined over the past 20 years. Gold sells for about $400 per ounce. Marijuana is quite literally worth almost its weight in gold, selling for approximately $325 per ounce in 2003, according to information from STRIDE. Cocaine, d-methamphetamine, and heroin are even more expensive, selling at the gram level for the equivalent of about $3,020, $4,410, and $10,260 per ounce, respectively. Hence, these more expensive illicit drugs are quite literally an order of magnitude (or more) more expensive per unit weight than gold. High prices can be beneficial in that they discourage consumption.

Another striking characteristic of drug prices is their extreme variability over quantity levels, between locations, over time, and from transaction to transaction. The variation across quantity levels is due to the substantial quantity discounts given for all four drugs examined here. For example, the price per expected pure gram of powder cocaine is nearly three times higher for small transactions (< 2 grams) than for larger transactions (> 50 g). The price per expected pure gram of crack cocaine at the lowest quantity level is 3.5 times higher than the price at the higher quantity levels.

There is also substantial spatial variation in prices. In 2001, for example, street level prices for powder cocaine varied considerably across the five cities for which there are sufficient data to generate city-specific estimates, ranging from a low of $59 per expected pure gram in San Diego to a high of $121 in Atlanta. Comparable variation was observed in heroin prices.

Prices also vary substantially over time. The overall trend for powder cocaine, crack, and heroin showed a steep decline during the 1980s, a spike in prices in 1989–1990, then relative stability, with a modest decline during the 1990s and early 2000s. Variation in marijuana prices was also substantial but followed a very different pattern. Marijuana prices rose from 1981 to 1991, fell through 2000, and have since rebounded somewhat. Variation in d-methamphetamine prices

over time has been the most volatile, with multiple sharp spikes that may be related to the advent of various precursor control regulations.

The final form of variability—variability in transactions that occur at the same time, in the same geographic location, and of the same size—is no less important. The time series generated in this report focus on average prices in particular places and times, but at any given time, location, and quantity level, a broad range of prices is likely to be observed.

Trends and variation in purity are drug-specific but are also quite common. Cocaine purities are now typically fairly high at all quantity levels. Substantial cutting, or dilution, of powder cocaine occurs but is no longer the norm. Heroin today is much more pure than it was in the early 1980s, and the gap between purity of larger and smaller observations has shrunk considerably. However, substantial evidence of routine dilution of heroin remains. D-methamphetamine purity has varied dramatically and irregularly over time, although it has usually moved in the opposite direction of prices.

This report merely documents and describes the trends in price and purity. Some patterns are easy to explain and interpret, while others deserve further exploration. Subsequent work should focus not only on further refining and updating of the descriptive trends, but also on correlating these trends with other data indicators both to externally validate the trends identified here as well as explain what drives them.

Figure 1: Annual Predicted Price of One Expected Pure Gram of Powder Cocaine

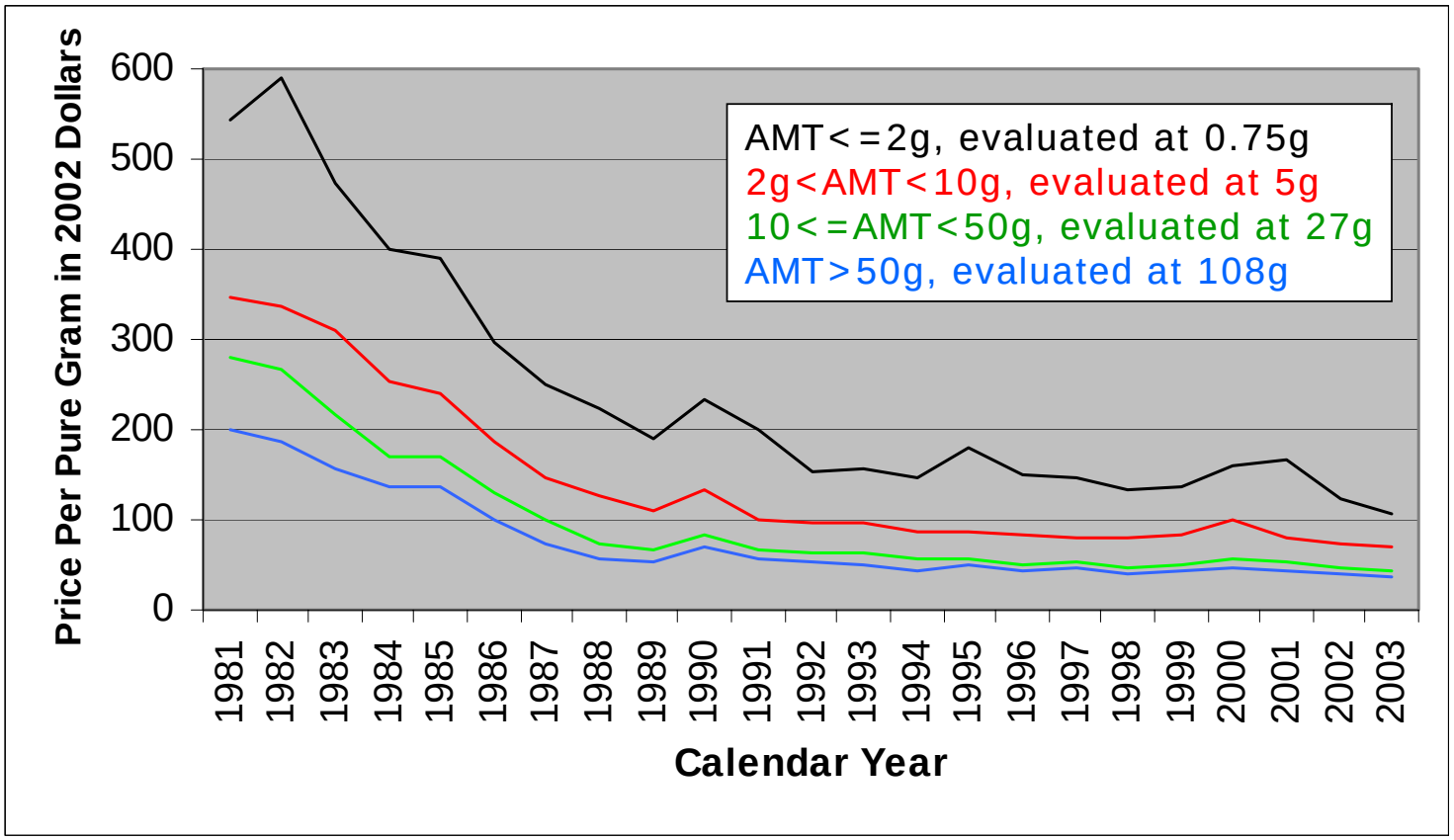

Figure 2: Interquartile Range of Predicted Prices for One Expected Pure Gram of Powder Cocaine

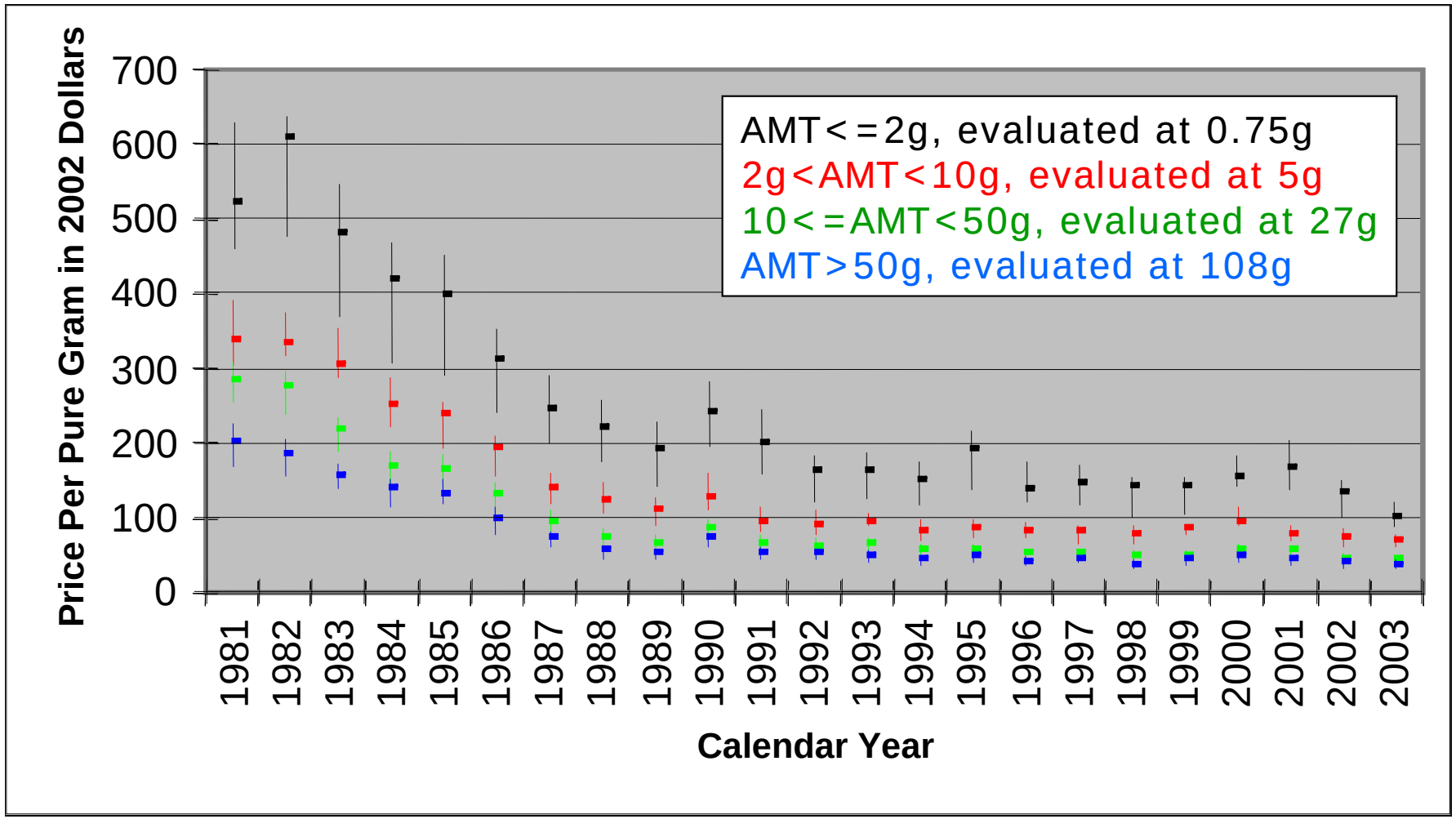

Figure 3: Interquartile Range of Predicted Prices for Powder Cocaine Since 1990

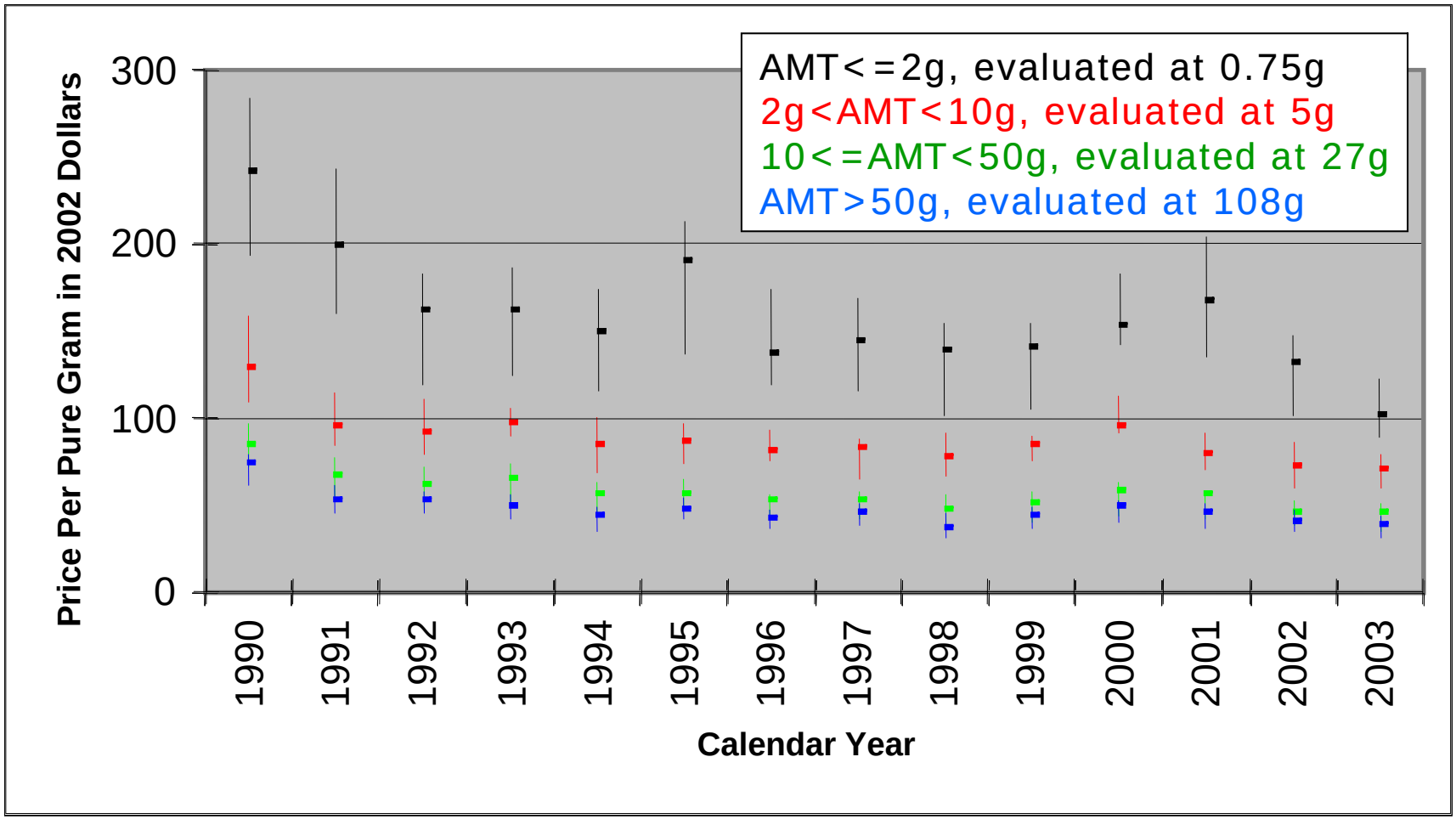

Figure 4: Expected Purity of Powder Cocaine

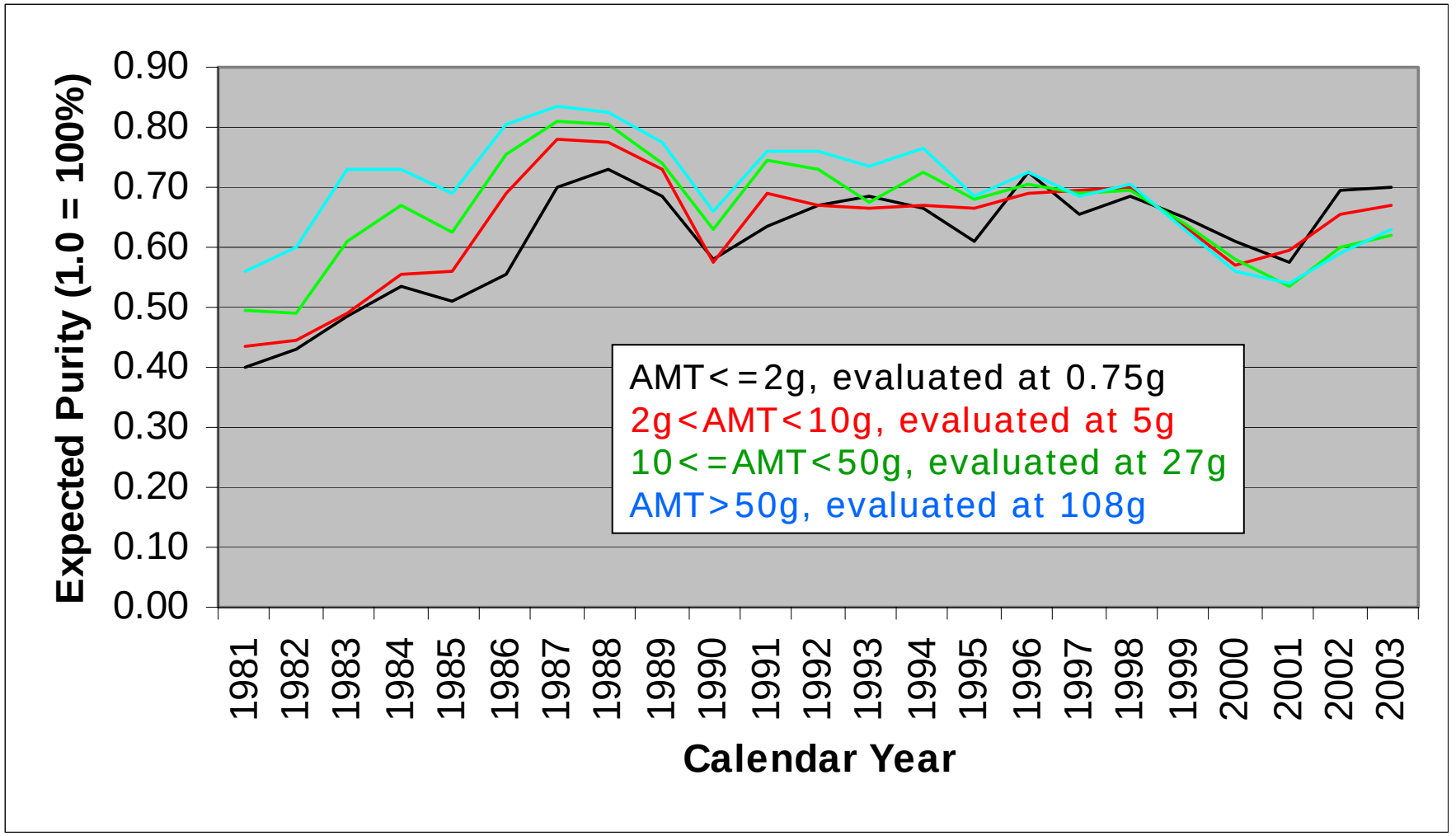

Figure 5: Interquartile Range of Expected Purity for Powder Cocaine

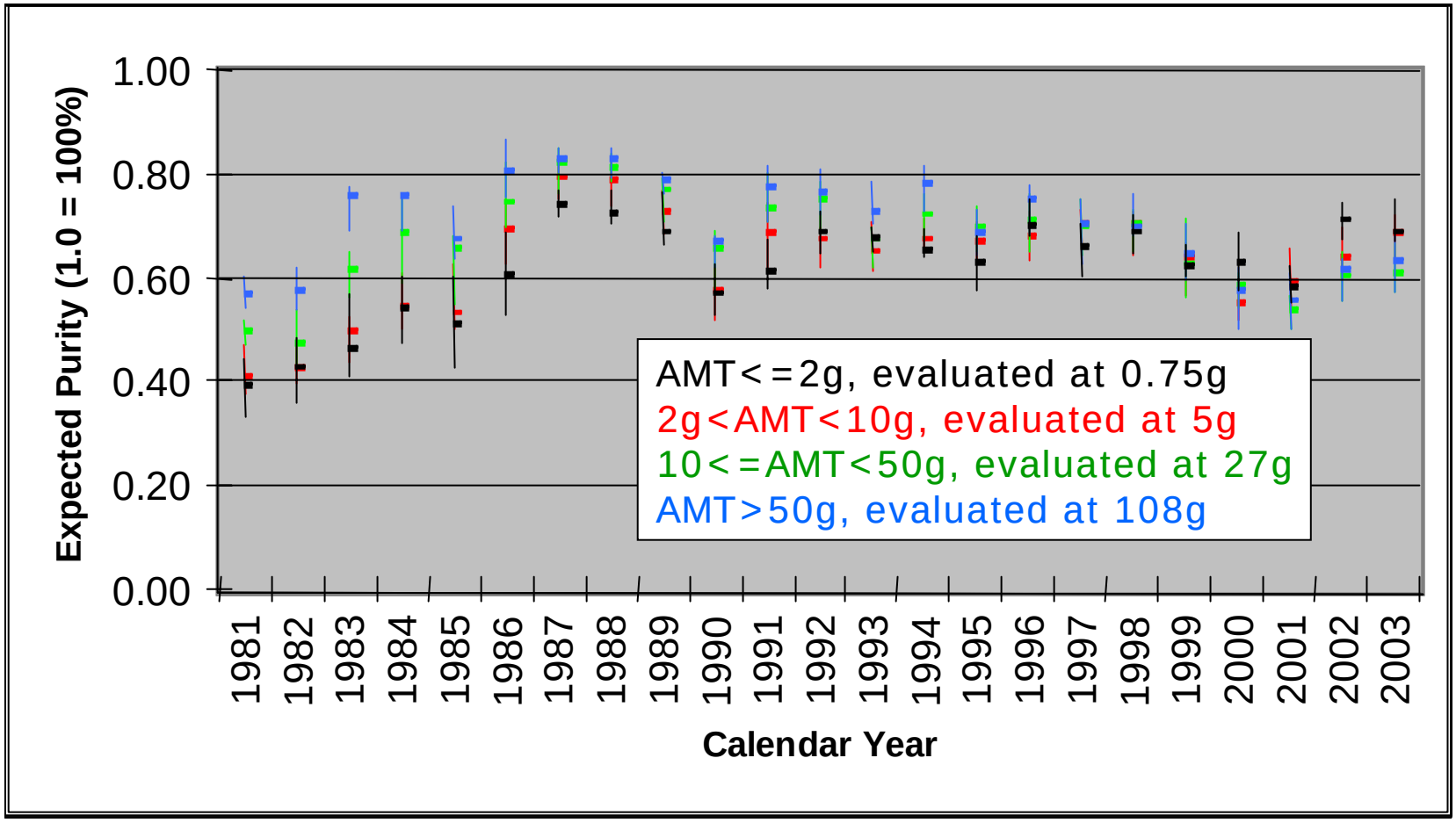

Figure 6: Interquartile Range of Expected Purity for Powder Cocaine--Lowest Quantity Level (Q1)

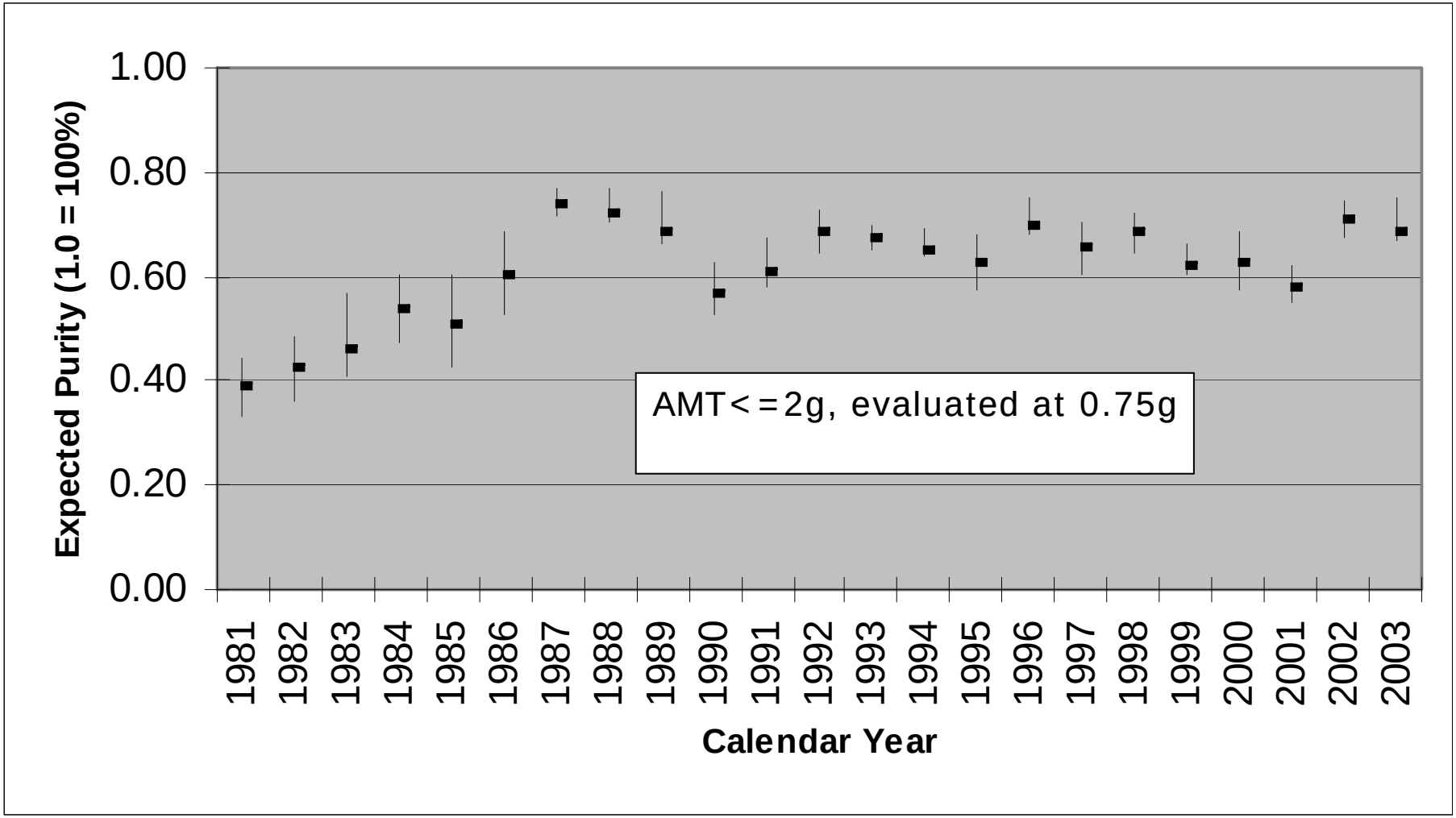

Figure 7: Interquartile Range of Expected Purity for Powder Cocaine--Highest Quantity Level (Q4)

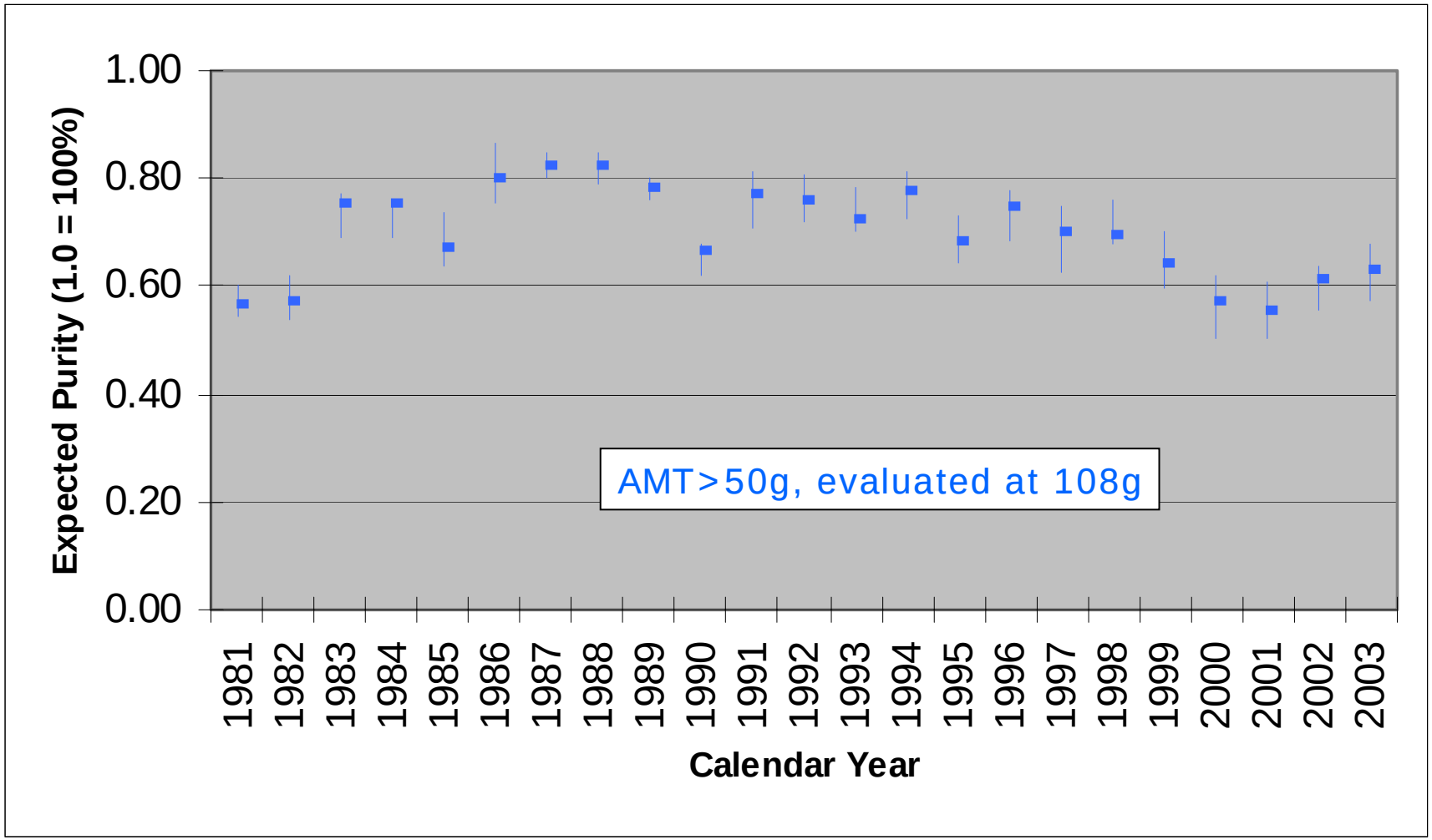

Figure 8: City Trends in the Retail Price of One Expected Pure Gram of Powder Cocaine

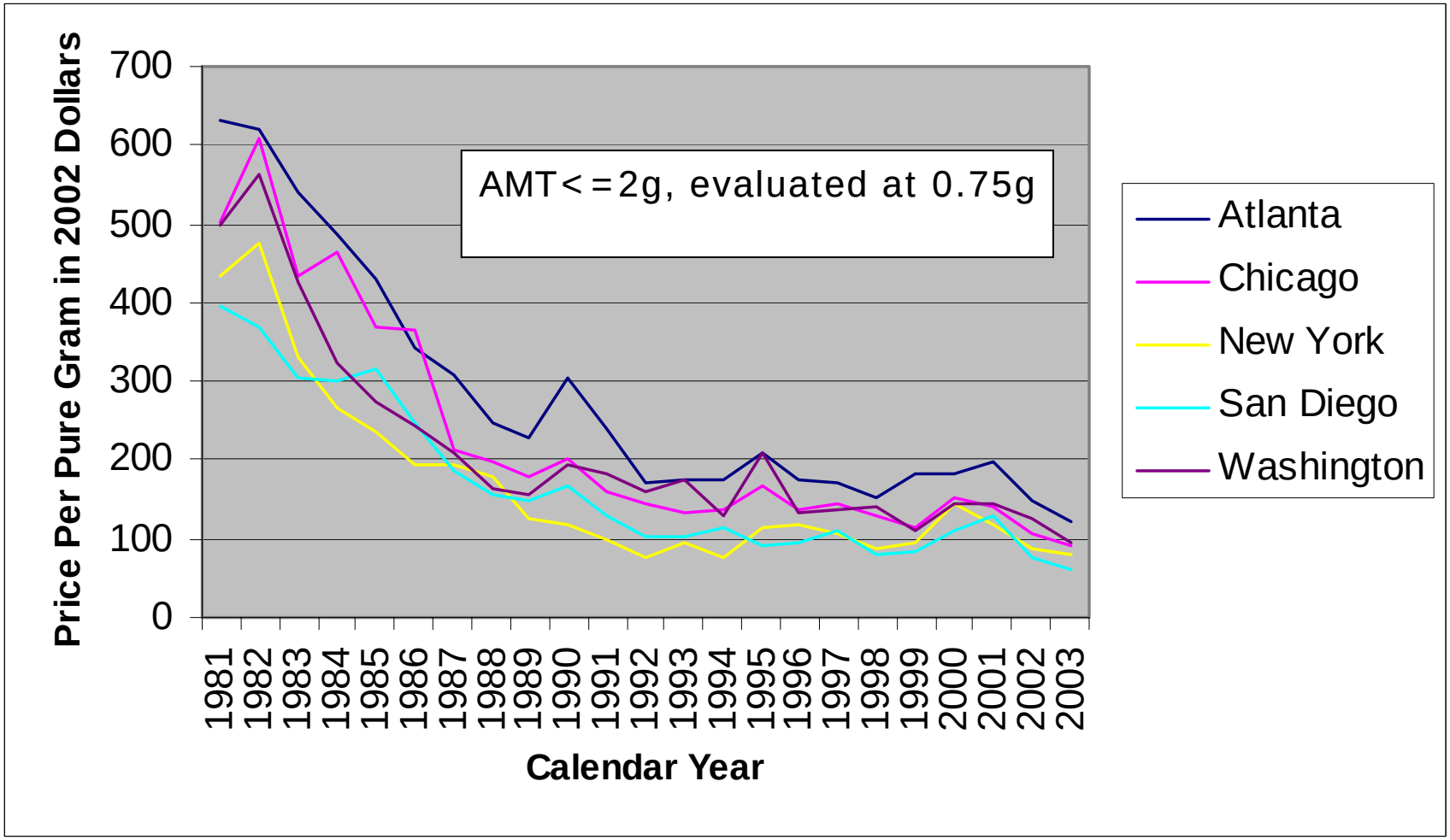

Figure 9: City Trends in Retail Expected Purity of Powder Cocaine

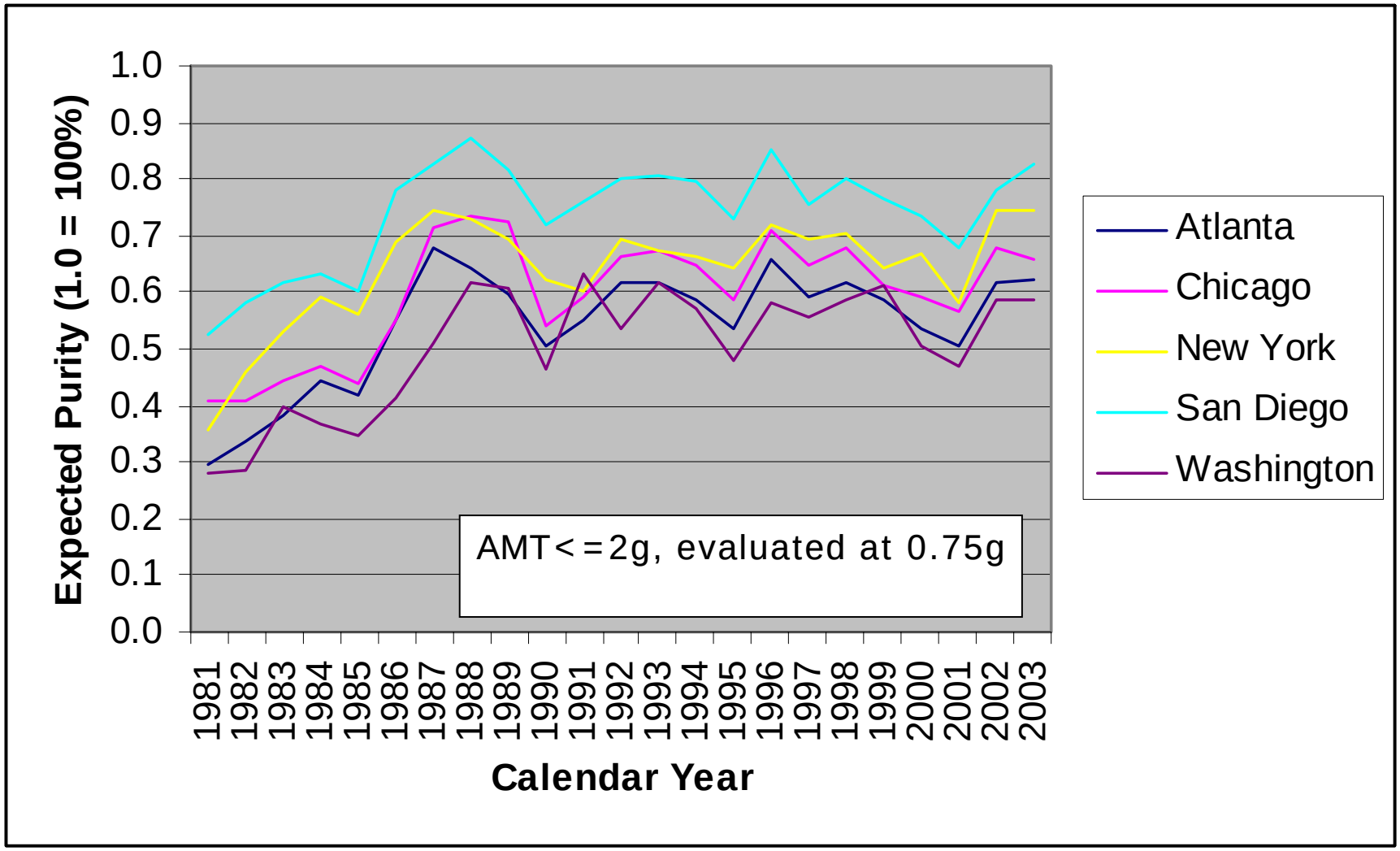

Figure 10. Annual Price of One Expected Pure Gram of Crack Cocaine

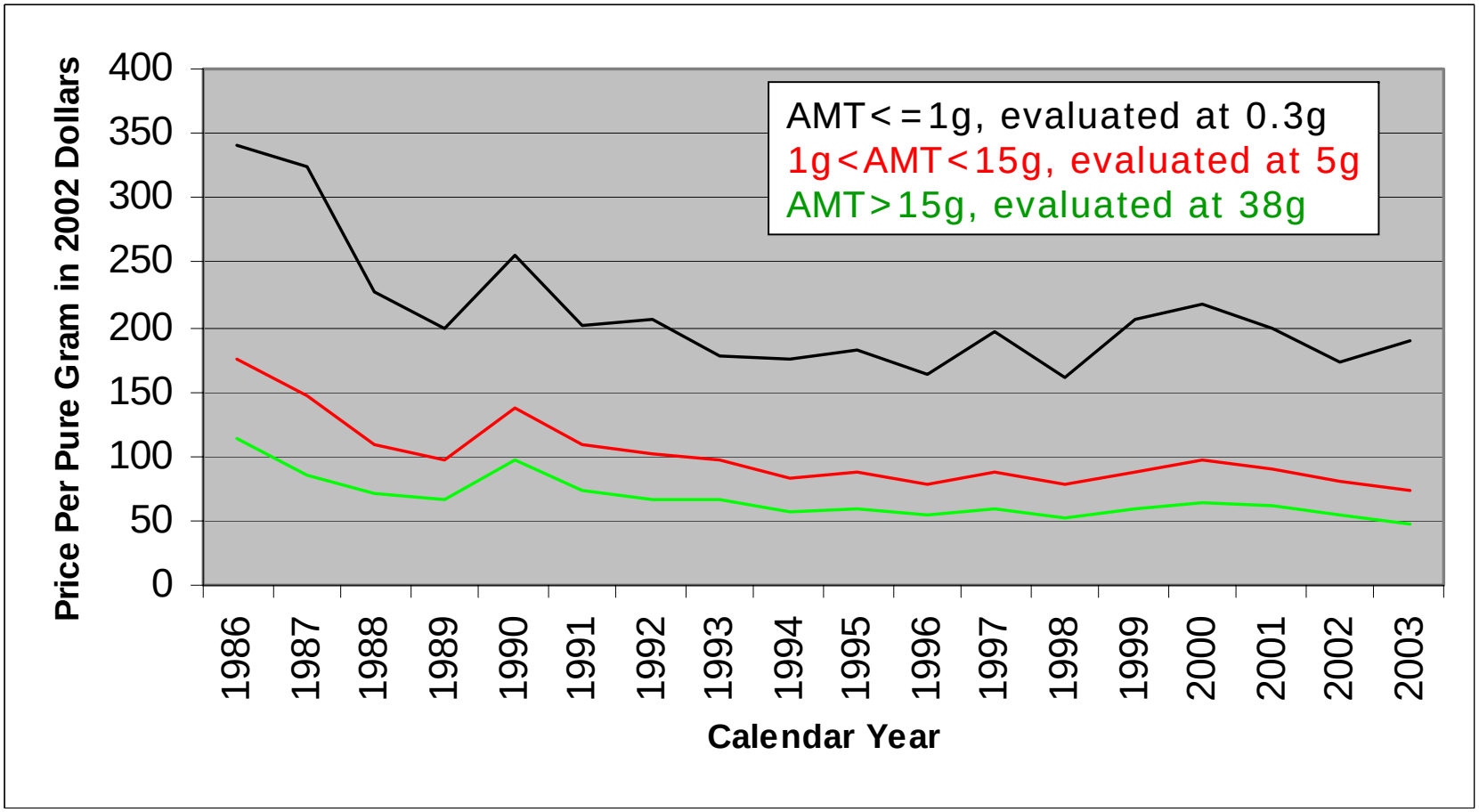

Figure 11. Interquartile Range of the Price of One Expected Pure Gram of Crack Cocaine

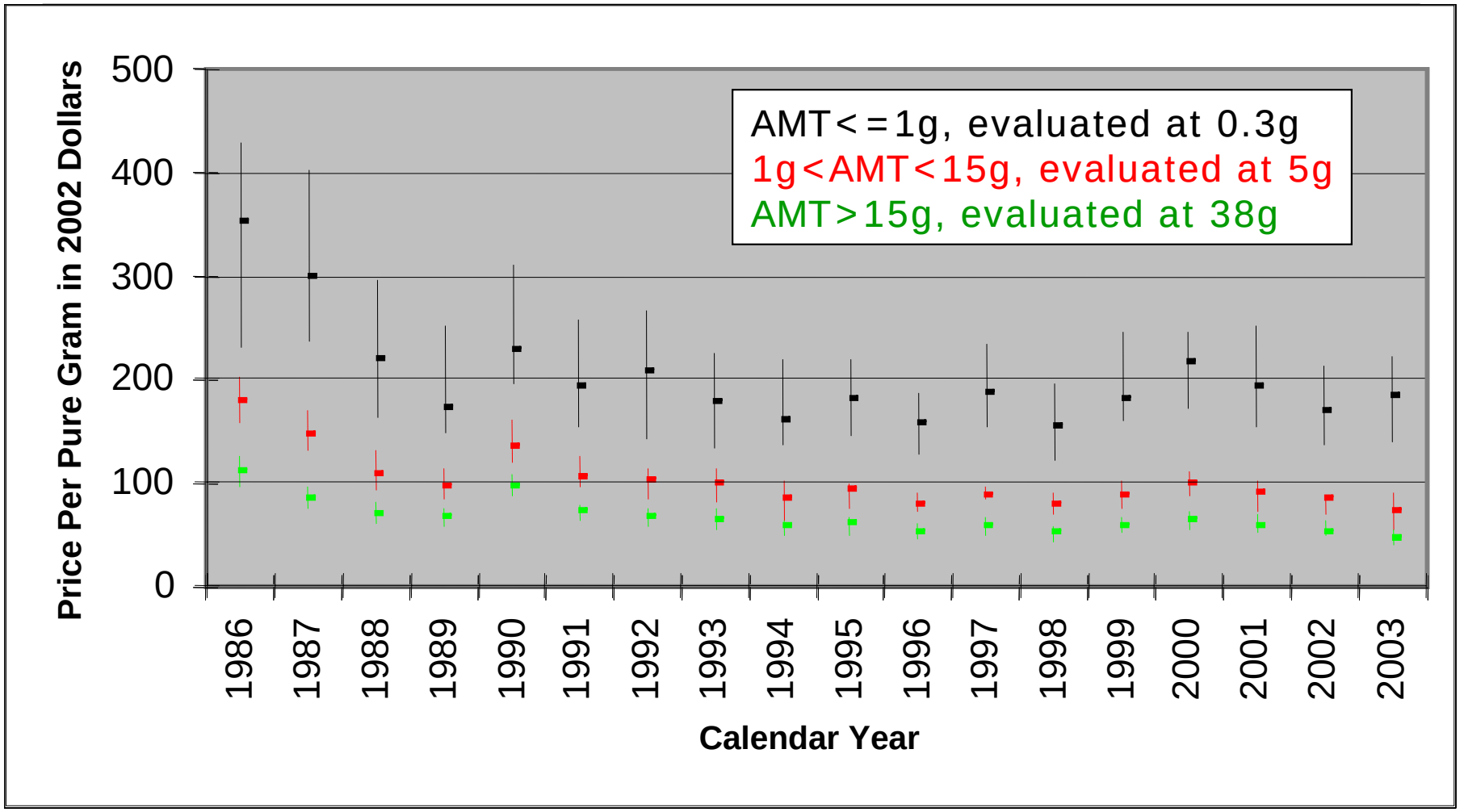

Figure 12. Expected Purity of Crack Cocaine

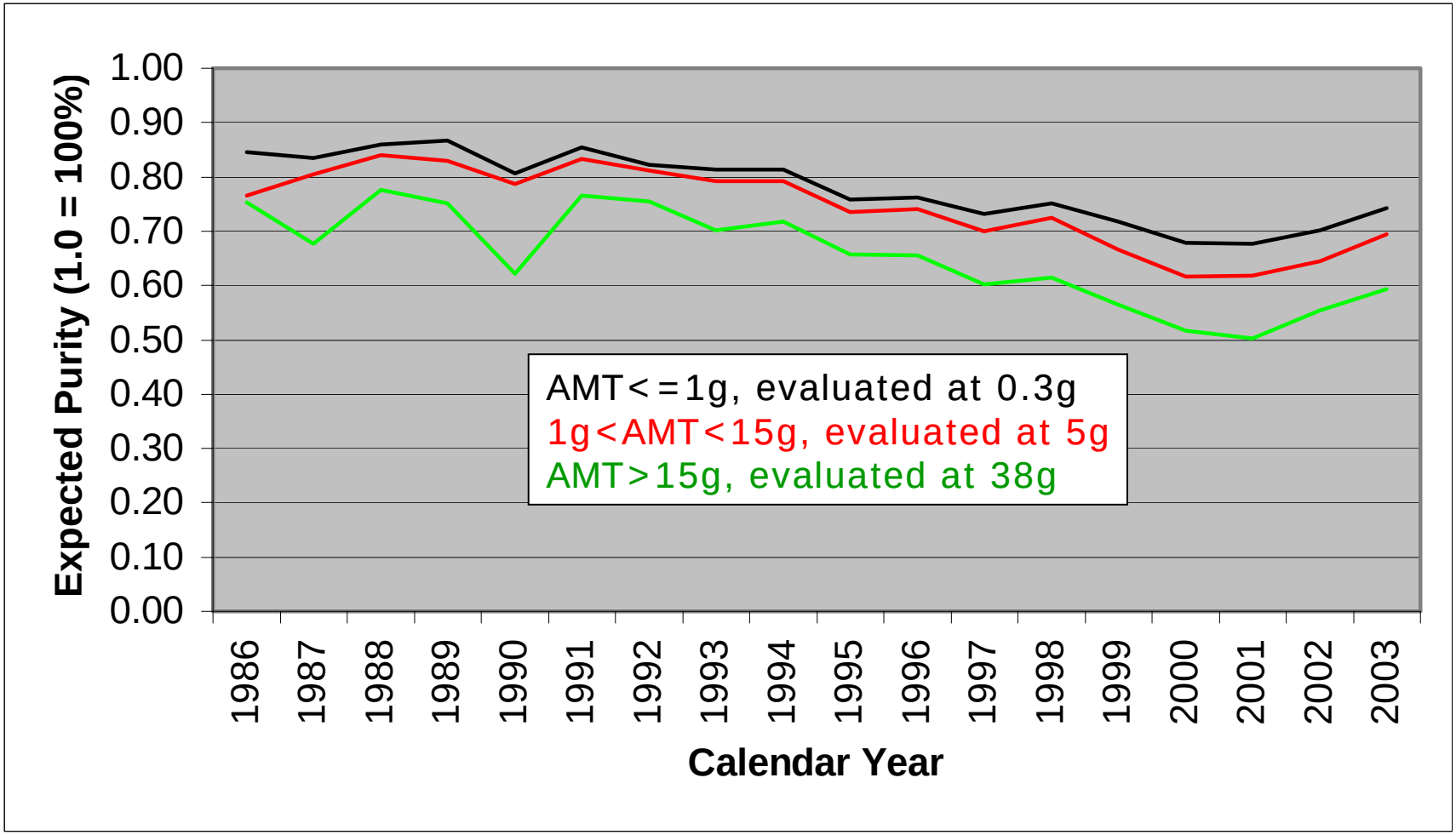

Figure 13. Interquartile Range of Expected Purity of Crack Cocaine

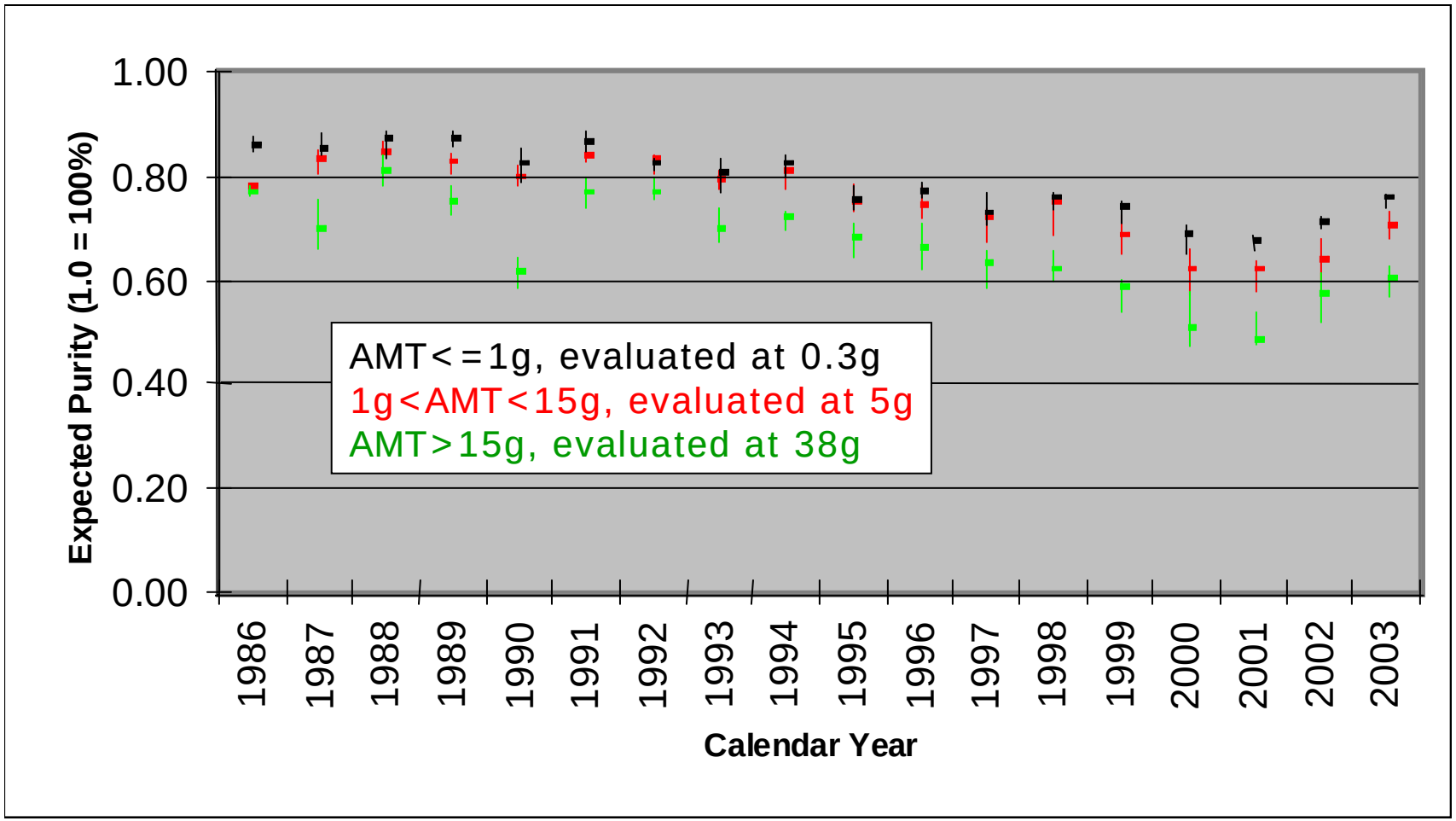

Figure 14. Interquartile Range of Expected Purity of Crack Cocaine -- Highest Quantity Level (Q3)

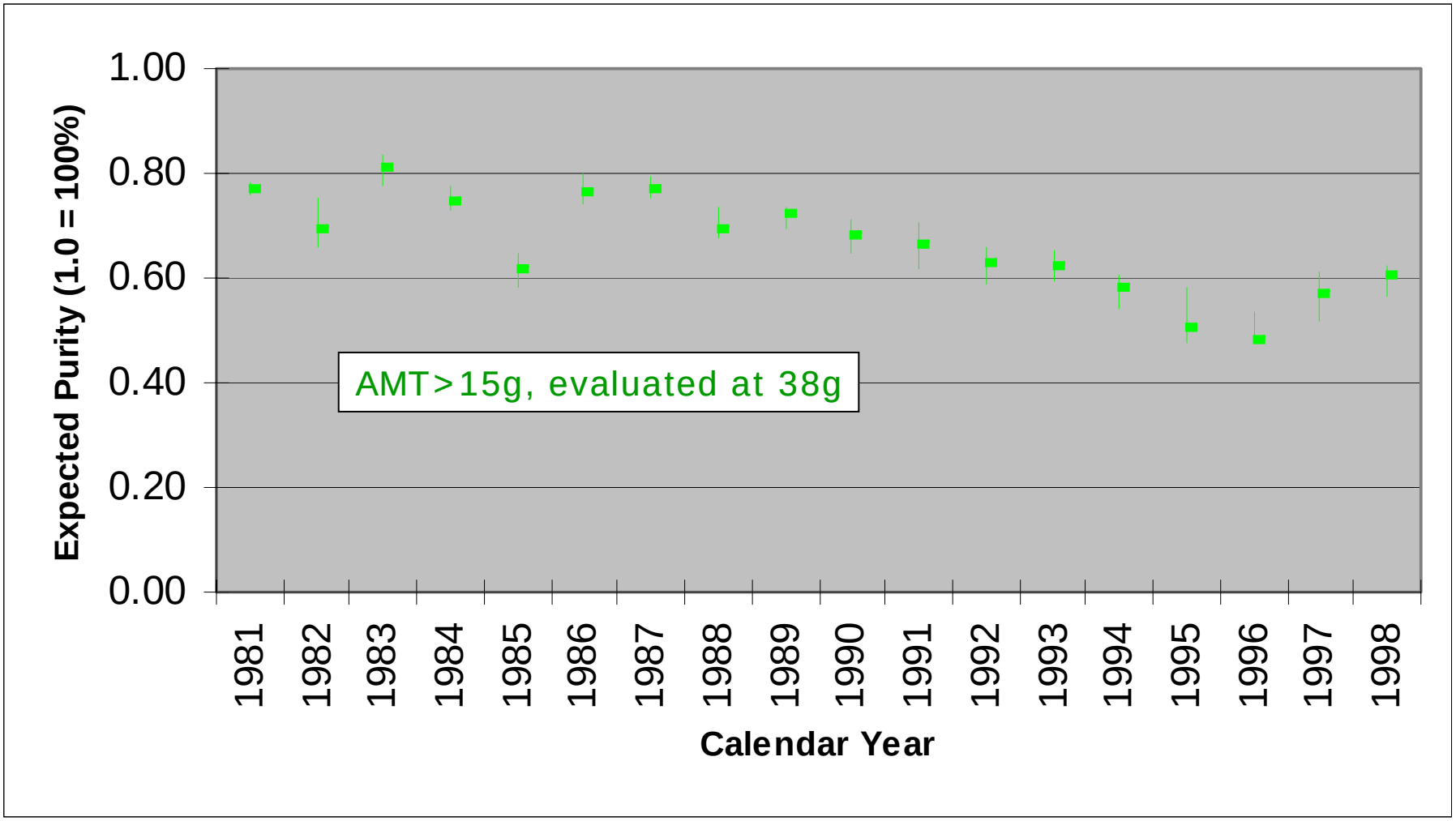

Figure 15. City Retail Prices for One Expected Pure Gram of Crack Cocaine

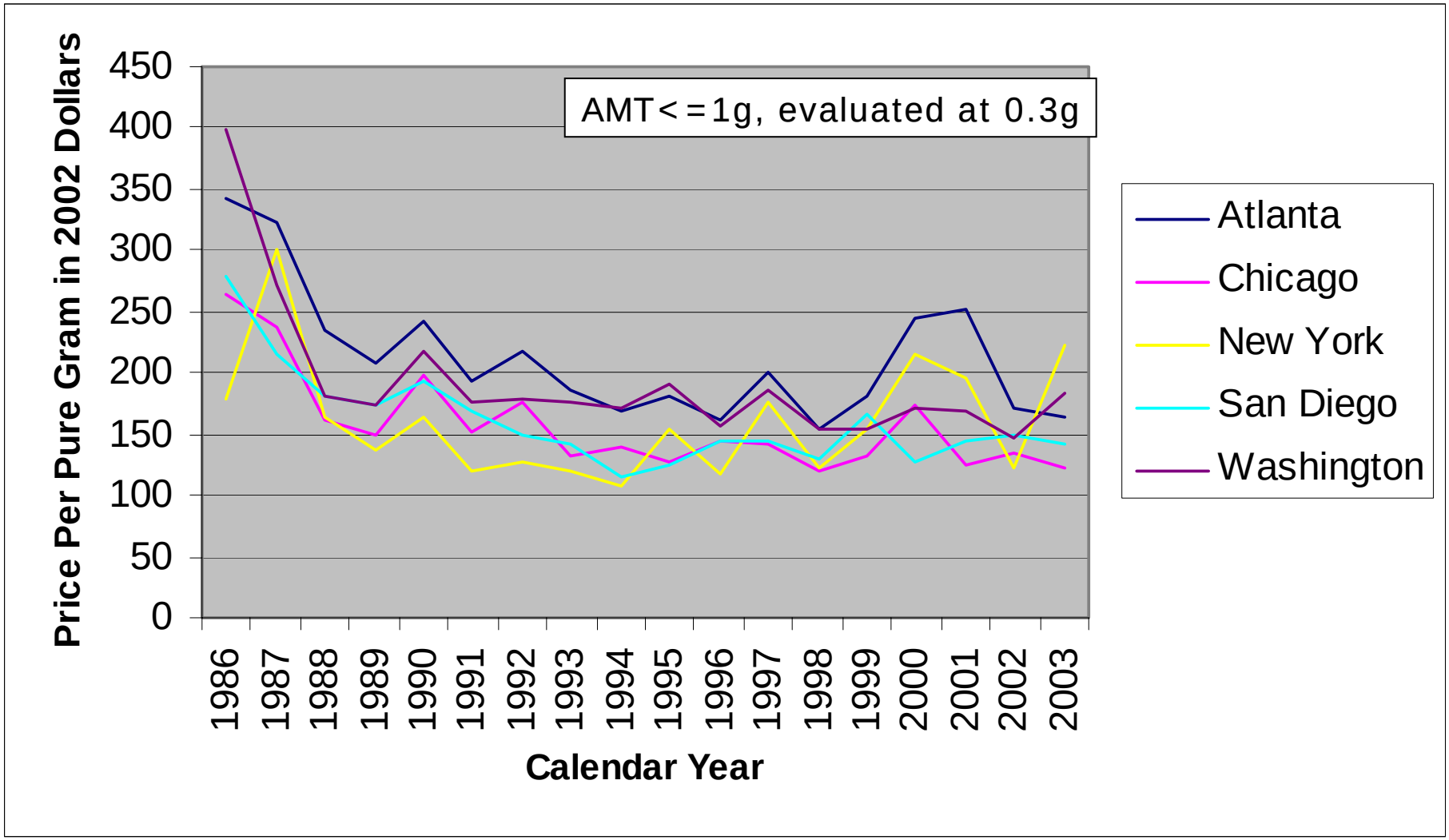

Figure 16. City Retail Predicted Expected Purity of Crack Cocaine

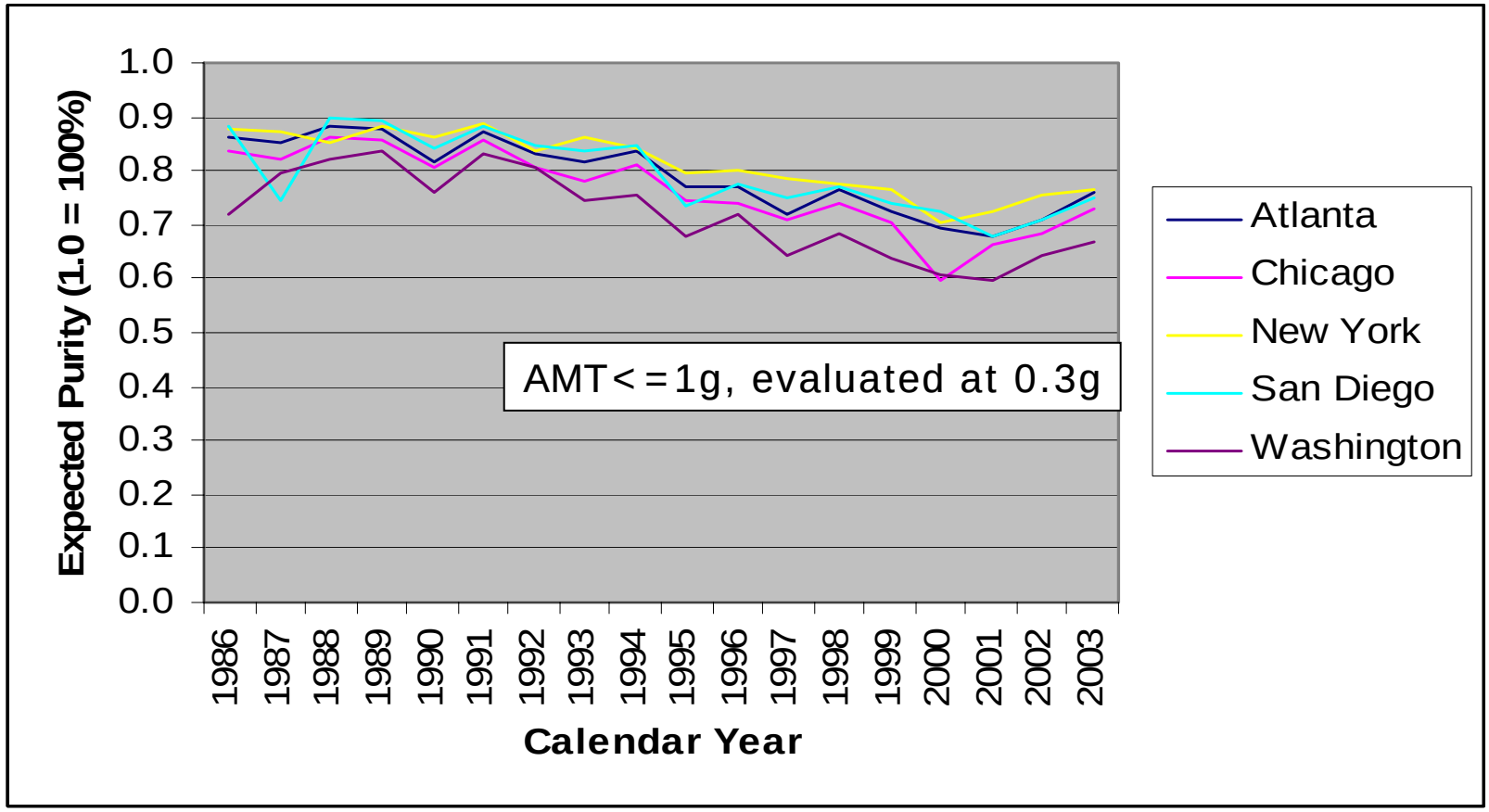

Figure 17. Annual Price of One Expected Pure Gram of Heroin

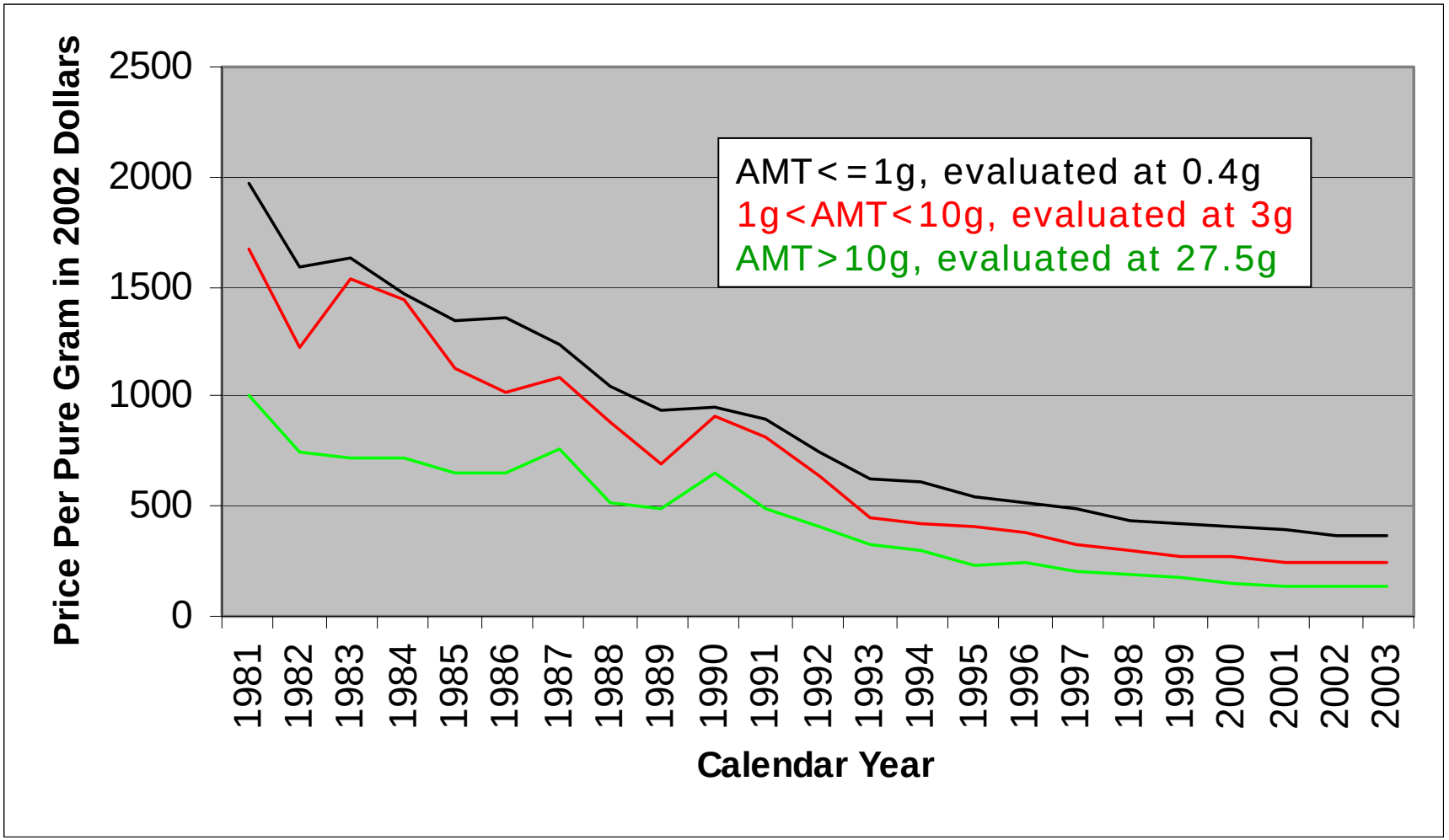

Figure 18. Price of One Expected Pure Gram of Heroin Since 1990

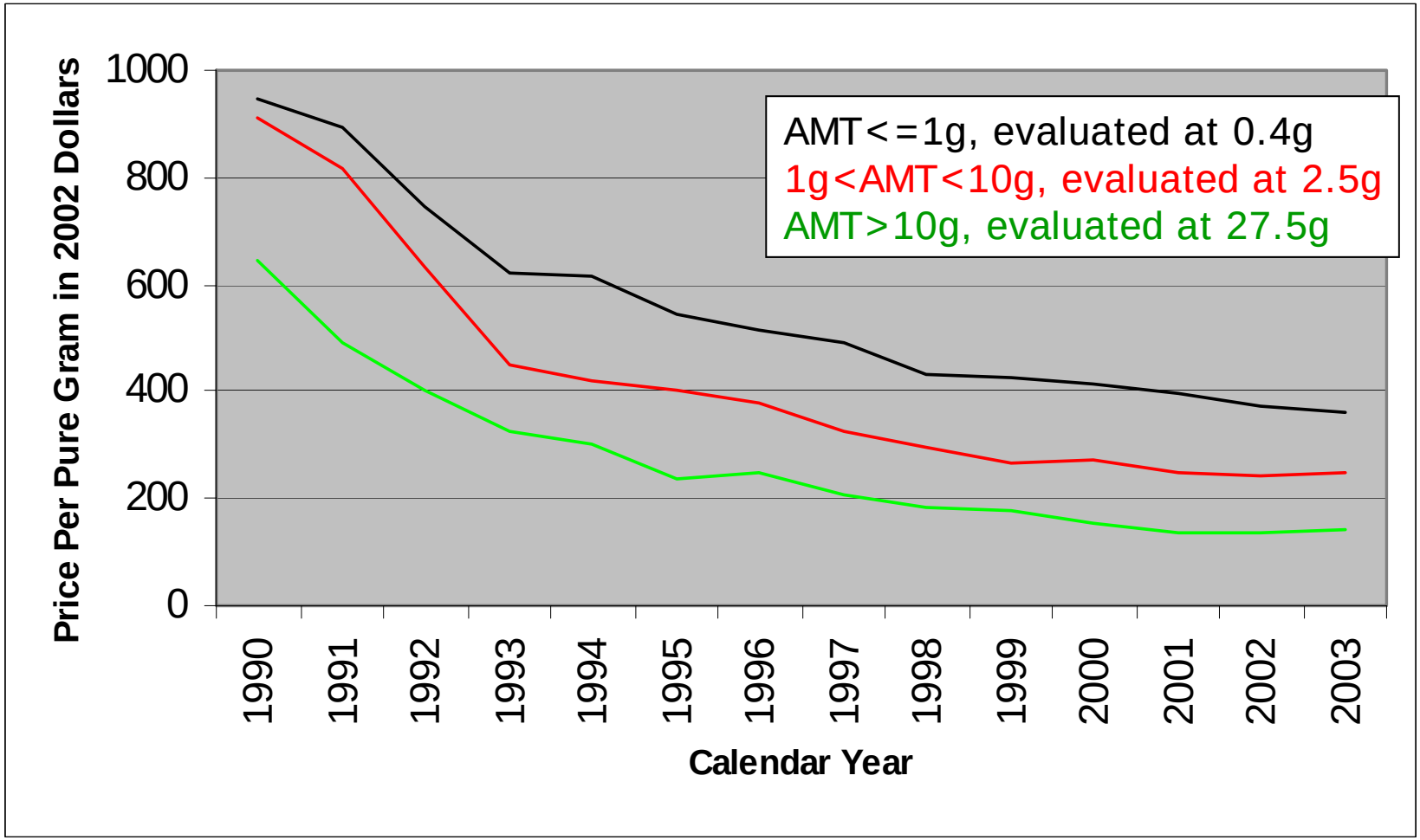

Figure 19. Interquartile Range of Prices for Heroin

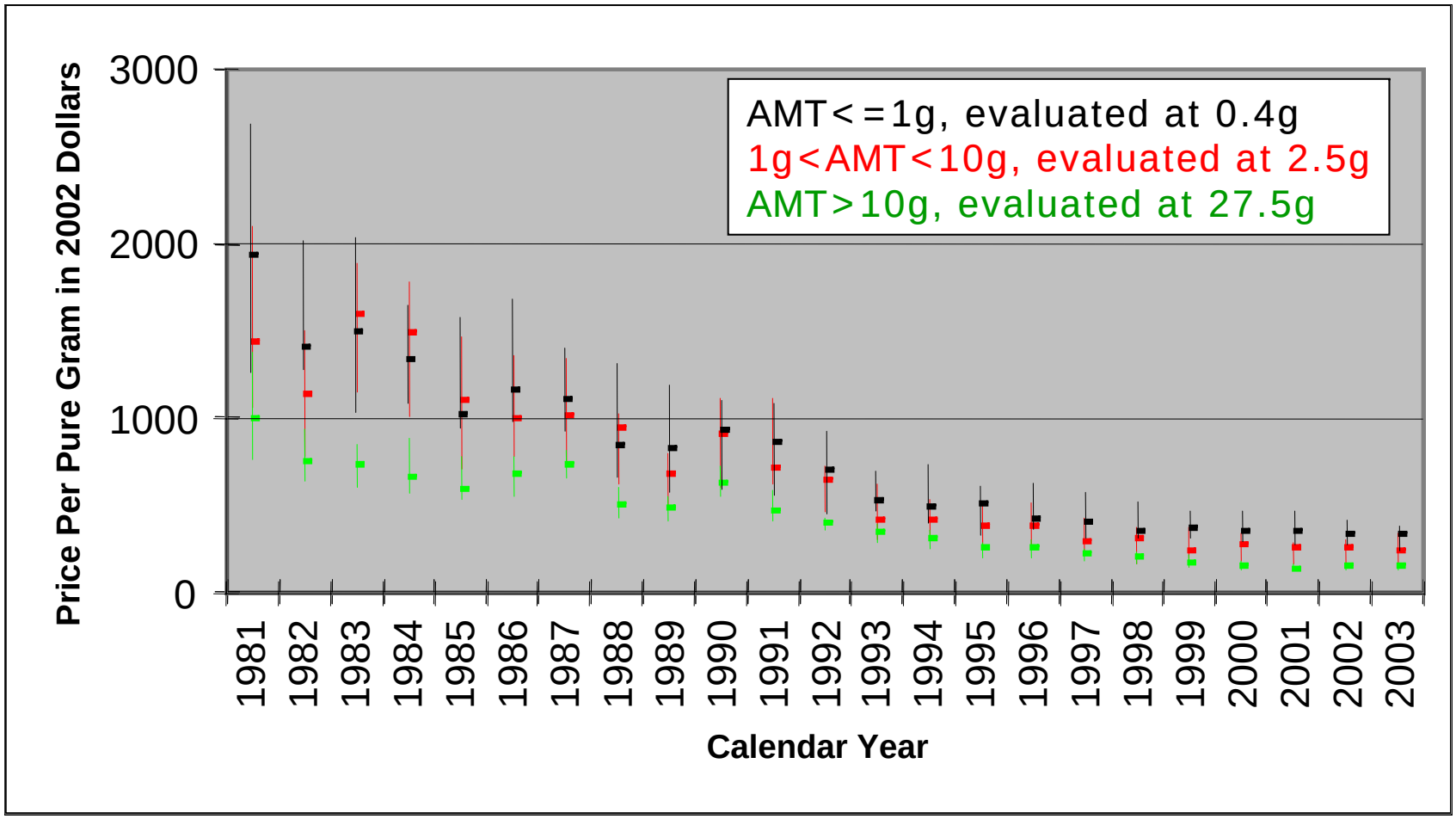

Figure 20. Expected Purity of Heroin

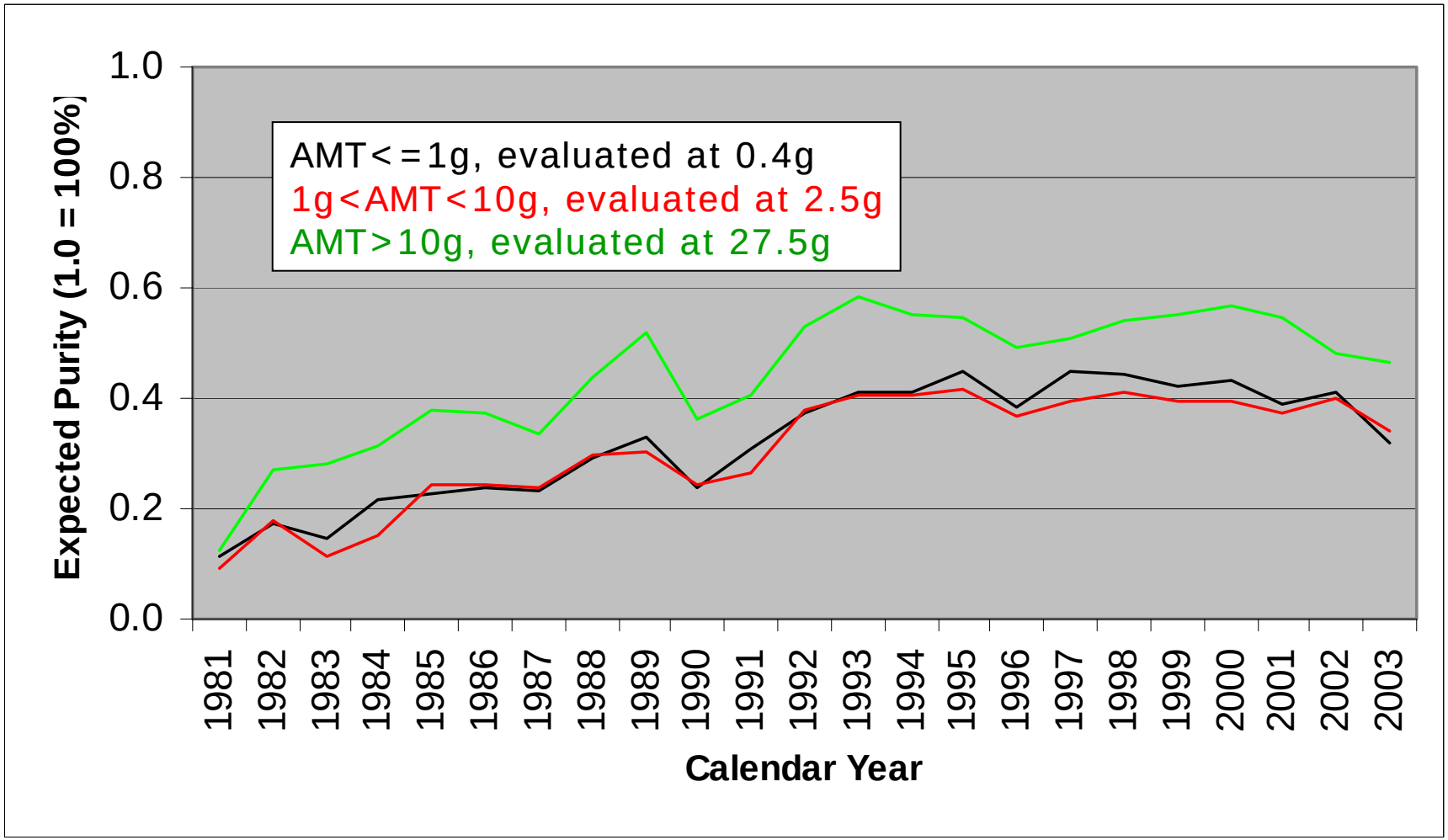

Figure 21. Interquartile Range of Expected Purity of Heroin

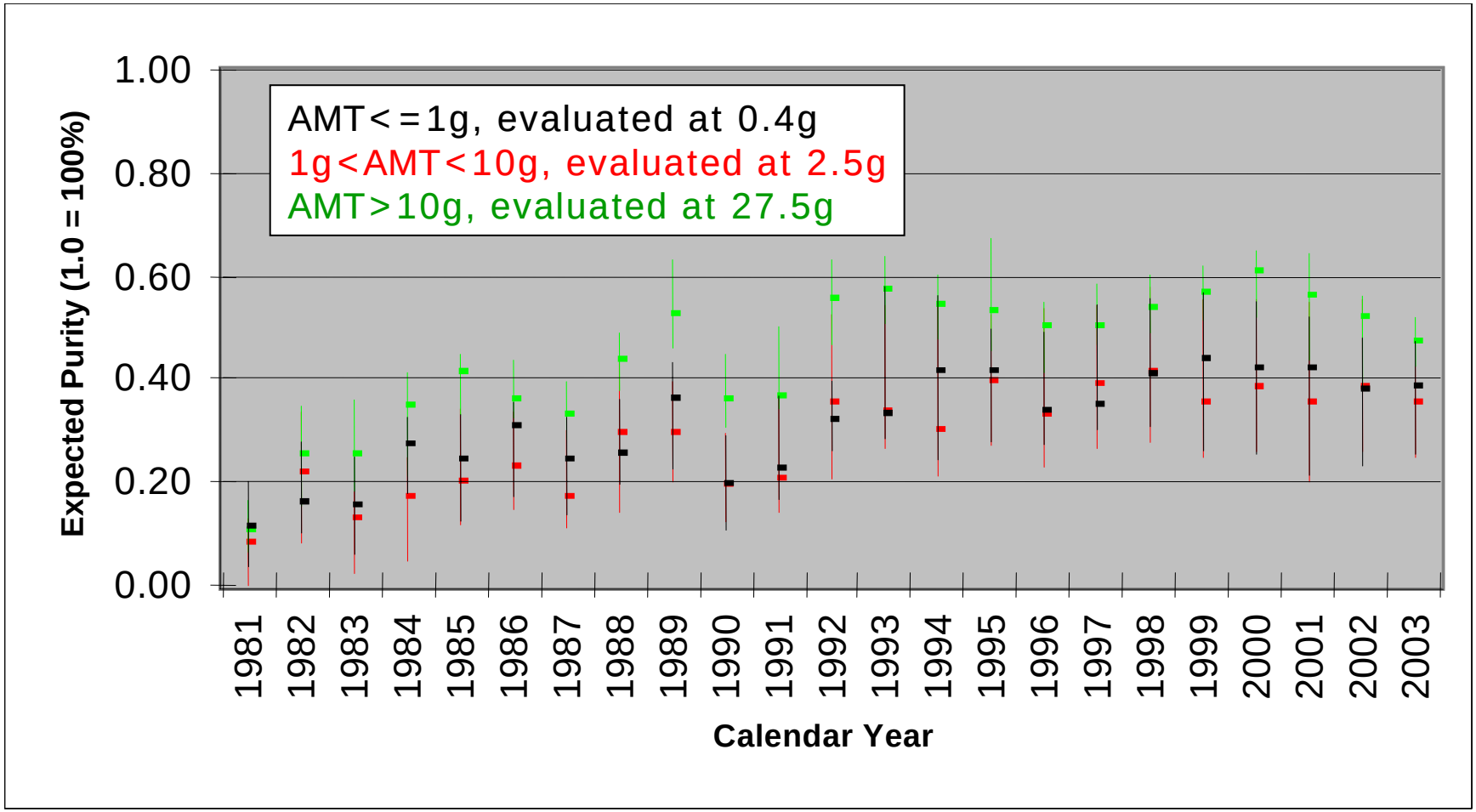

Figure 22. City Retail Prices of One Expected Pure Gram of Heroin

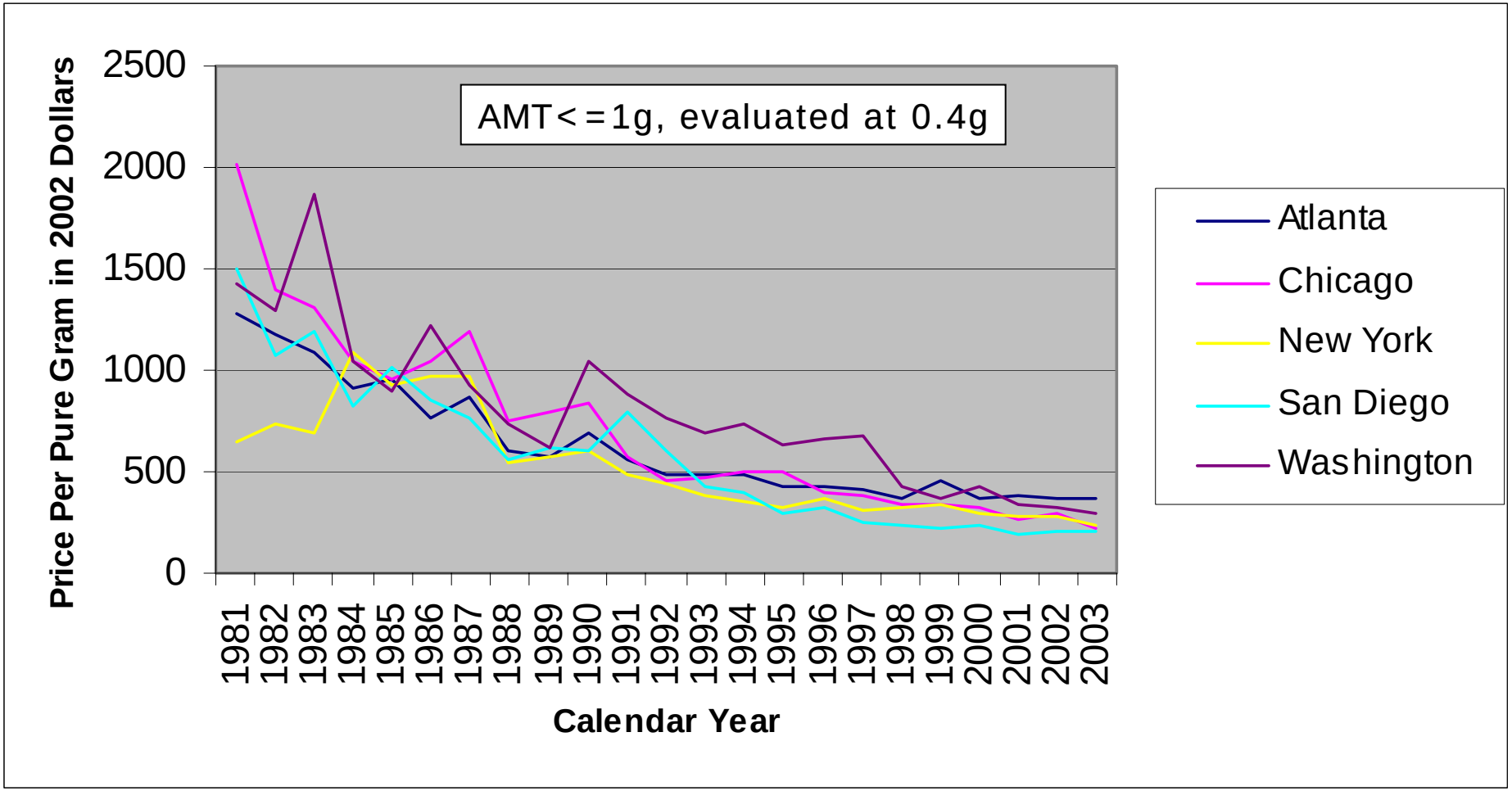

Figure 23. City Retail Expected Purity of Heroin

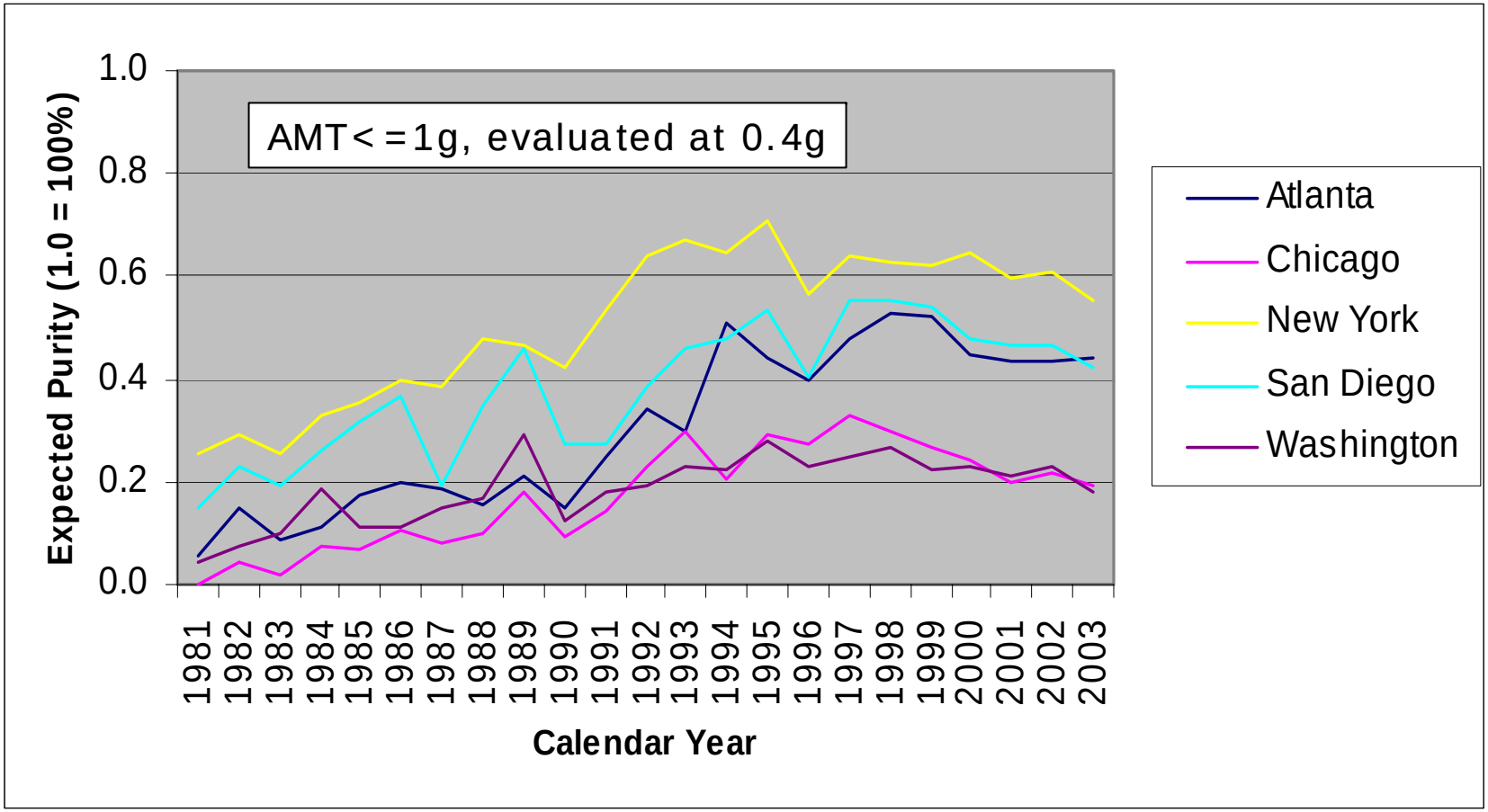

Figure 24. Annual Price of One Expected Pure Gram of d-Methamphetamine

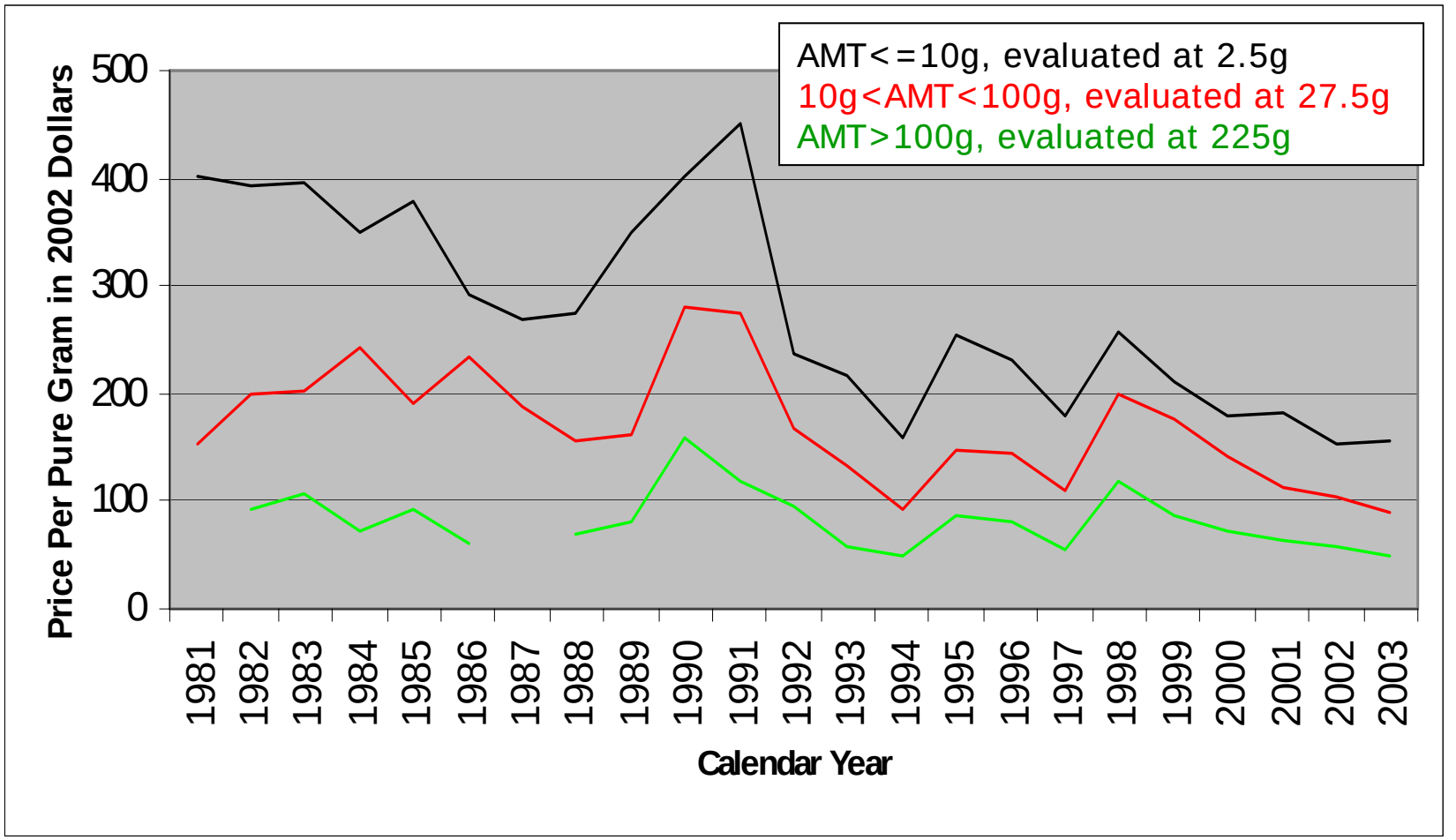

Figure 25. Interquartile Range of Prices for One Expected Pure Gram of d-Methamphetamine

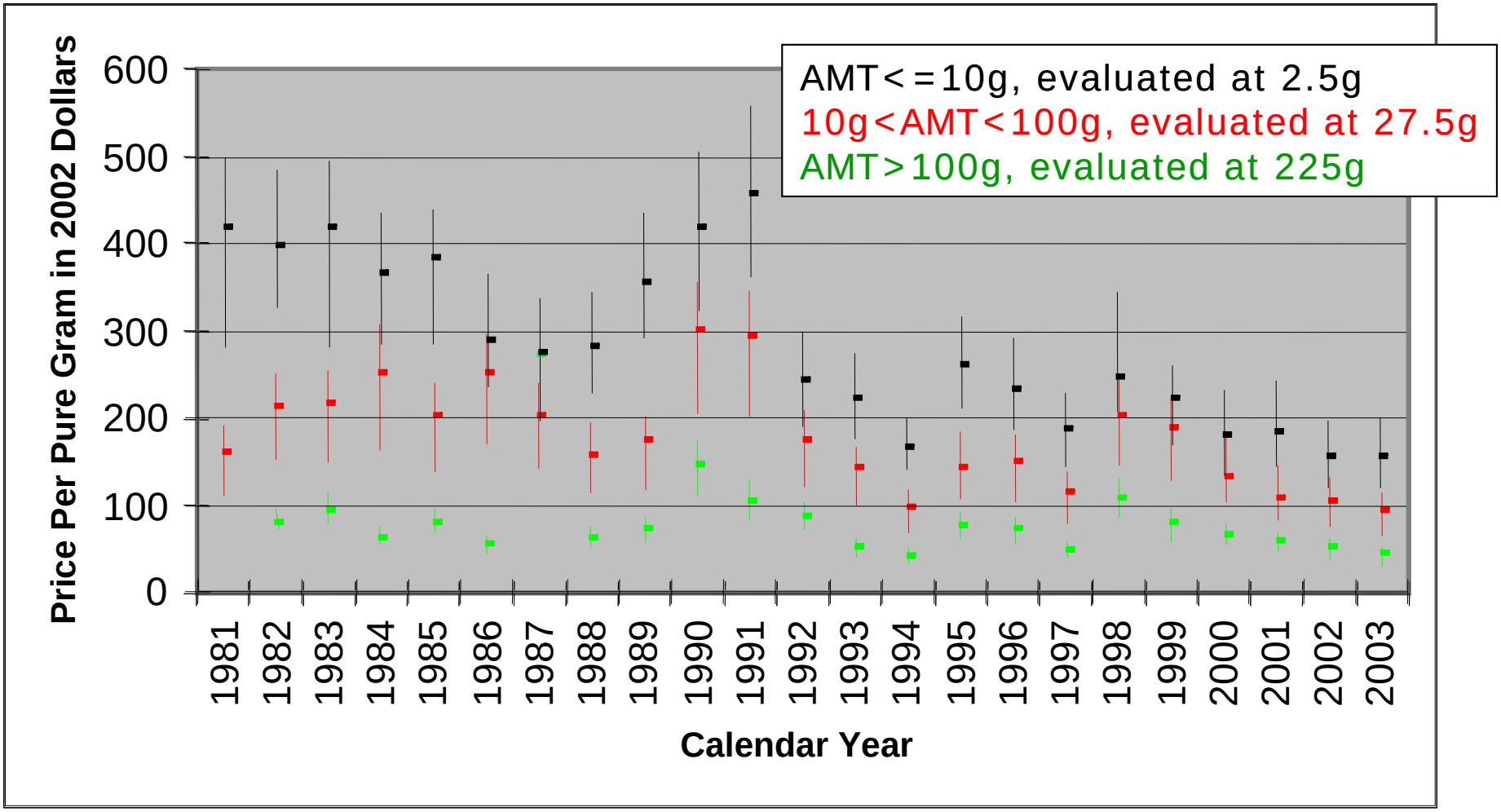

Figure 26. Expected Purity of d-Methamphetamine

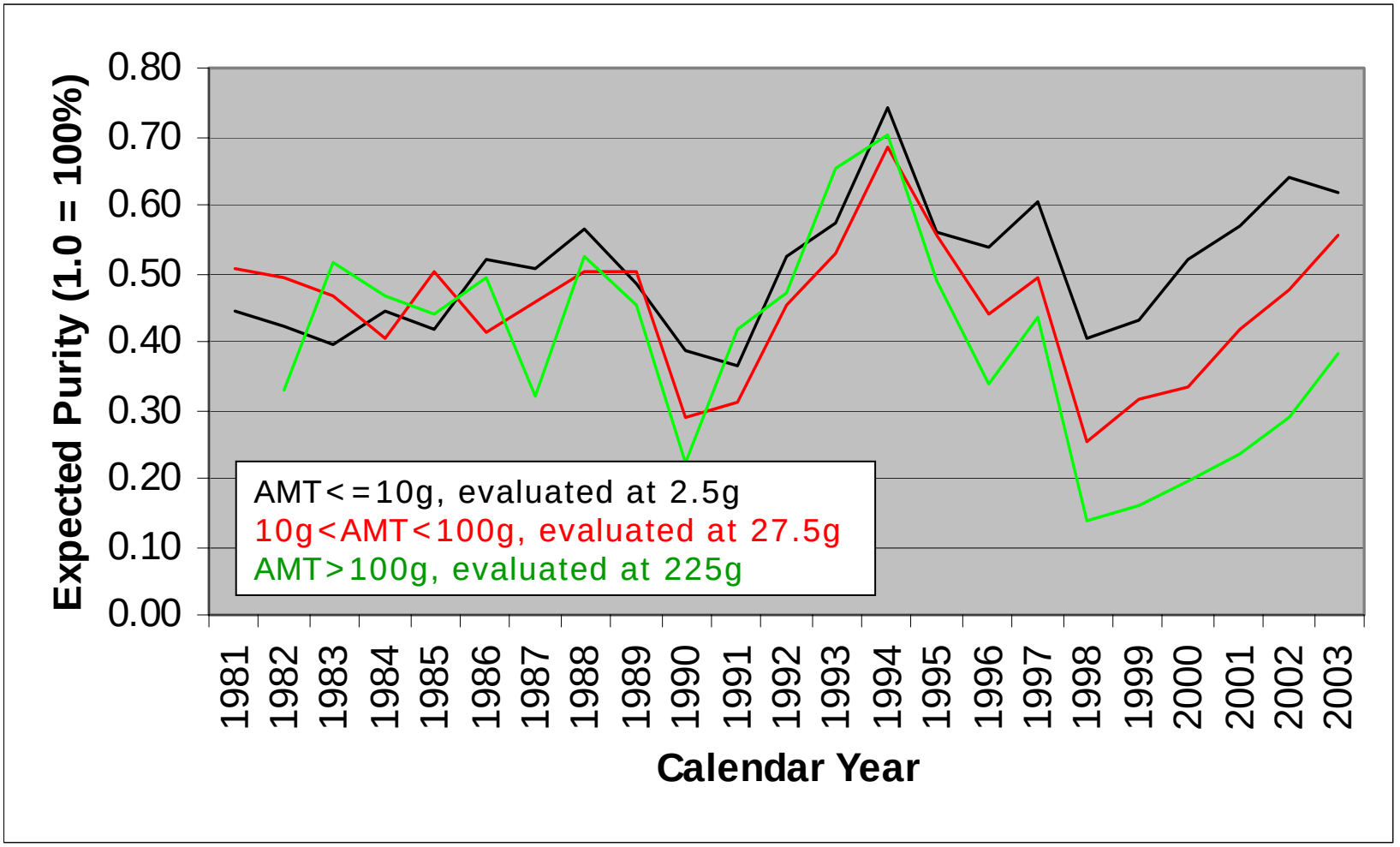

Figure 27. Interquartile Range of Average Expected Purity of d-Methamphetamine

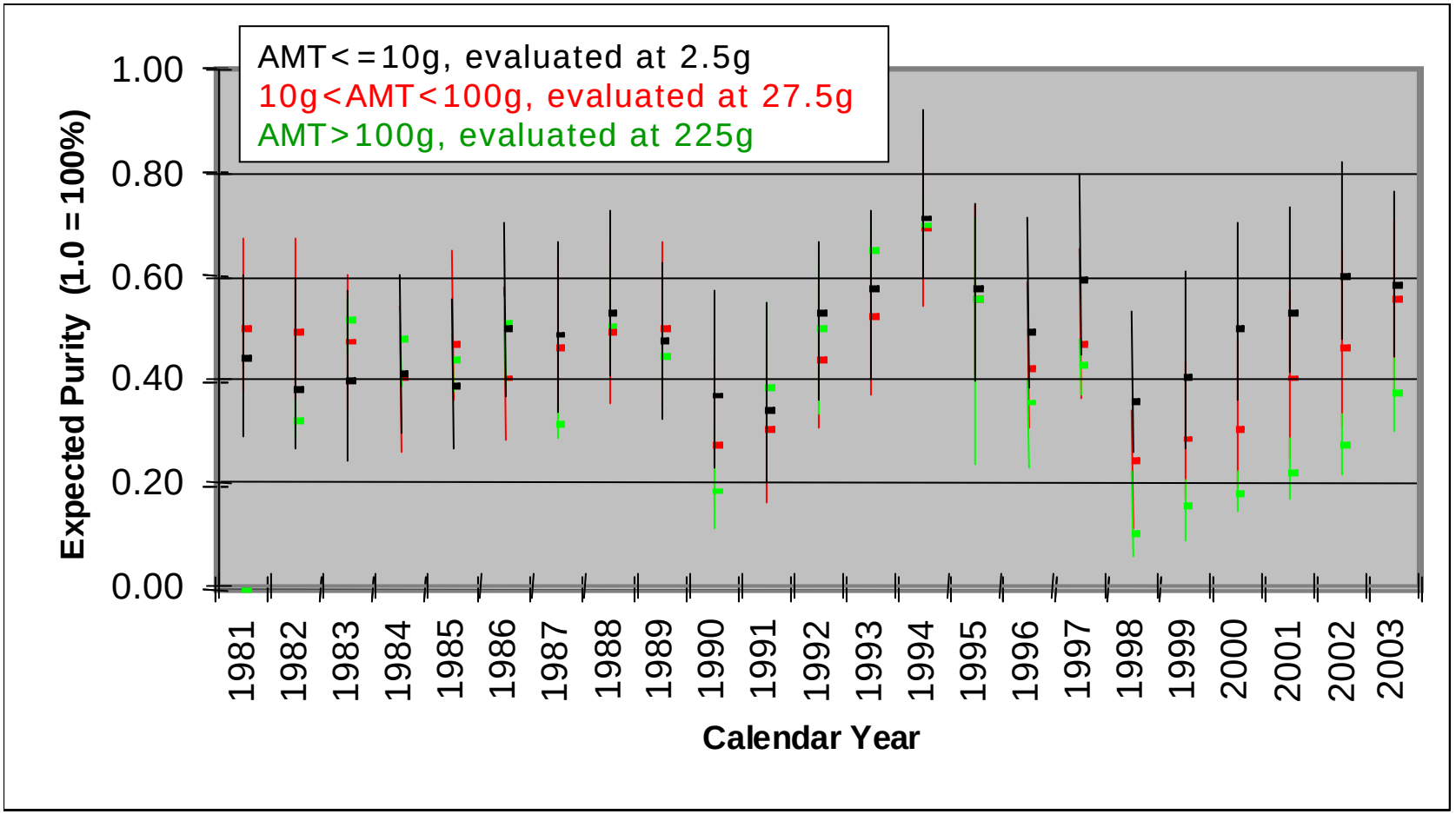

Figure 28. Interquartile Range of Average Expected Purity of d-Methamphetamine -- Lowest Quantity Level (Q1)

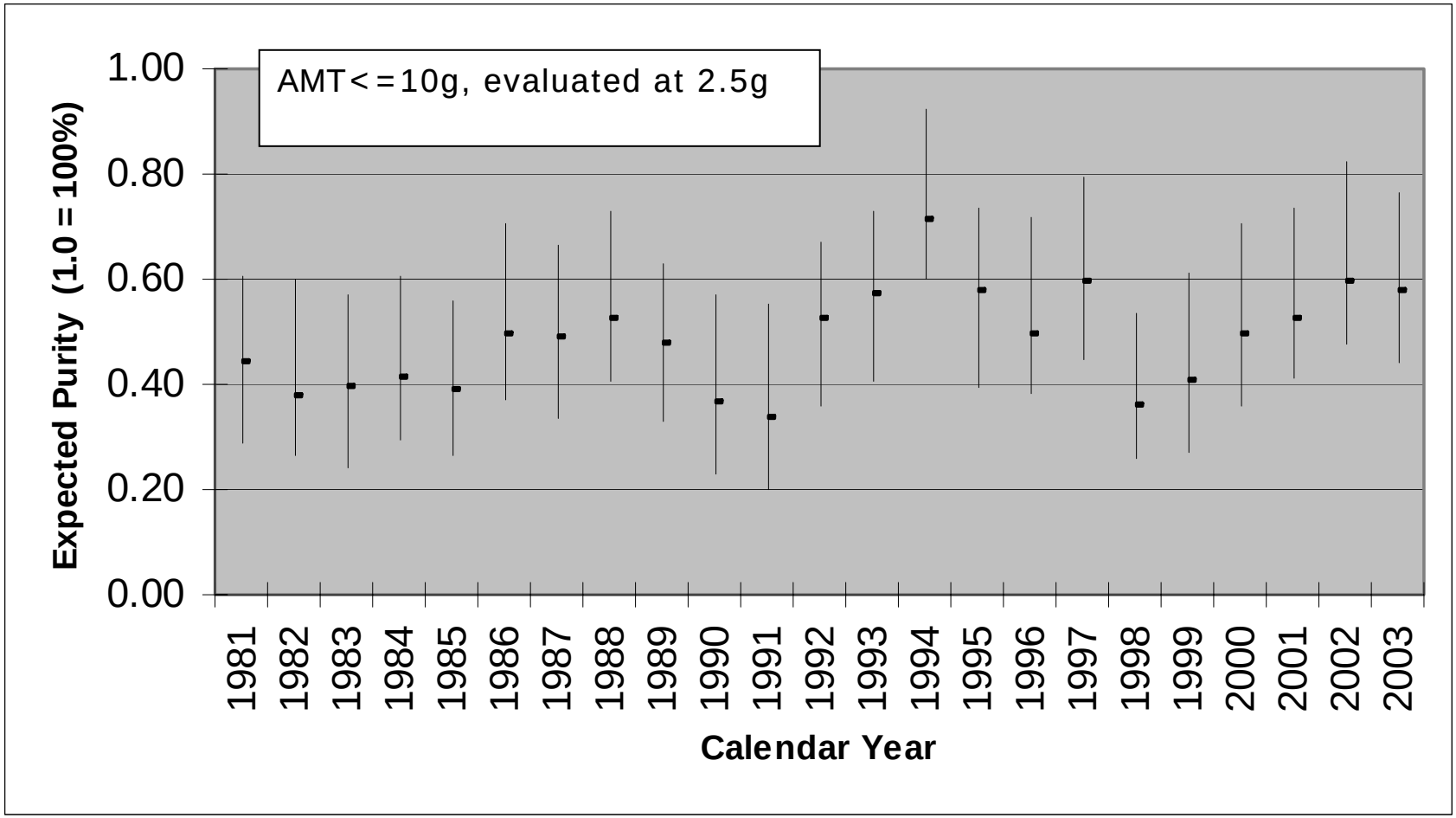

Figure 29. Interquartile Range of Average Expected Purity of d-Methamphetamine -- Second Quantity Level (Q2)

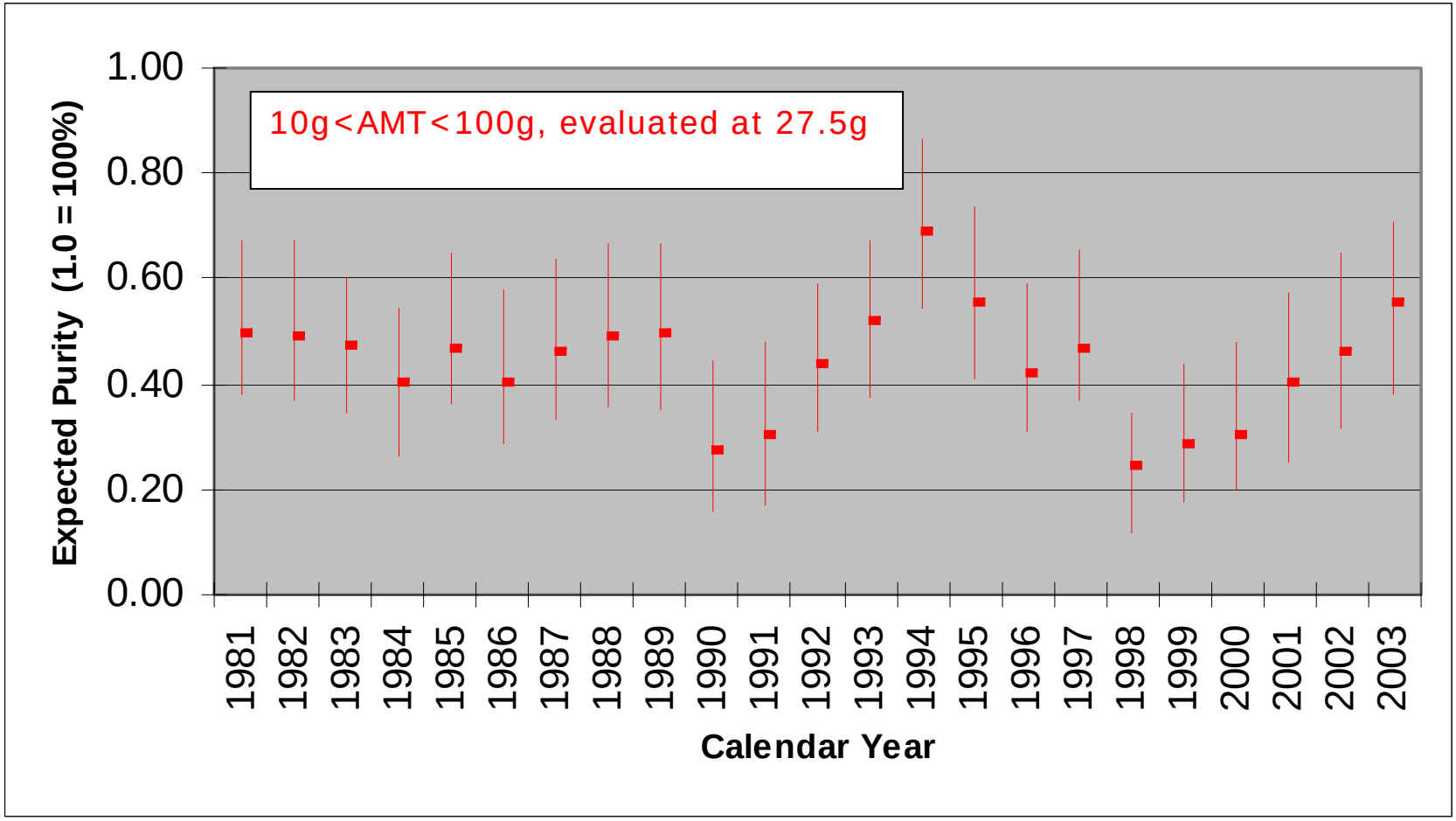

Figure 30. Interquartile Range of Average Expected Purity of d-Methamphetamine -- Highest Quantity Level (Q3)

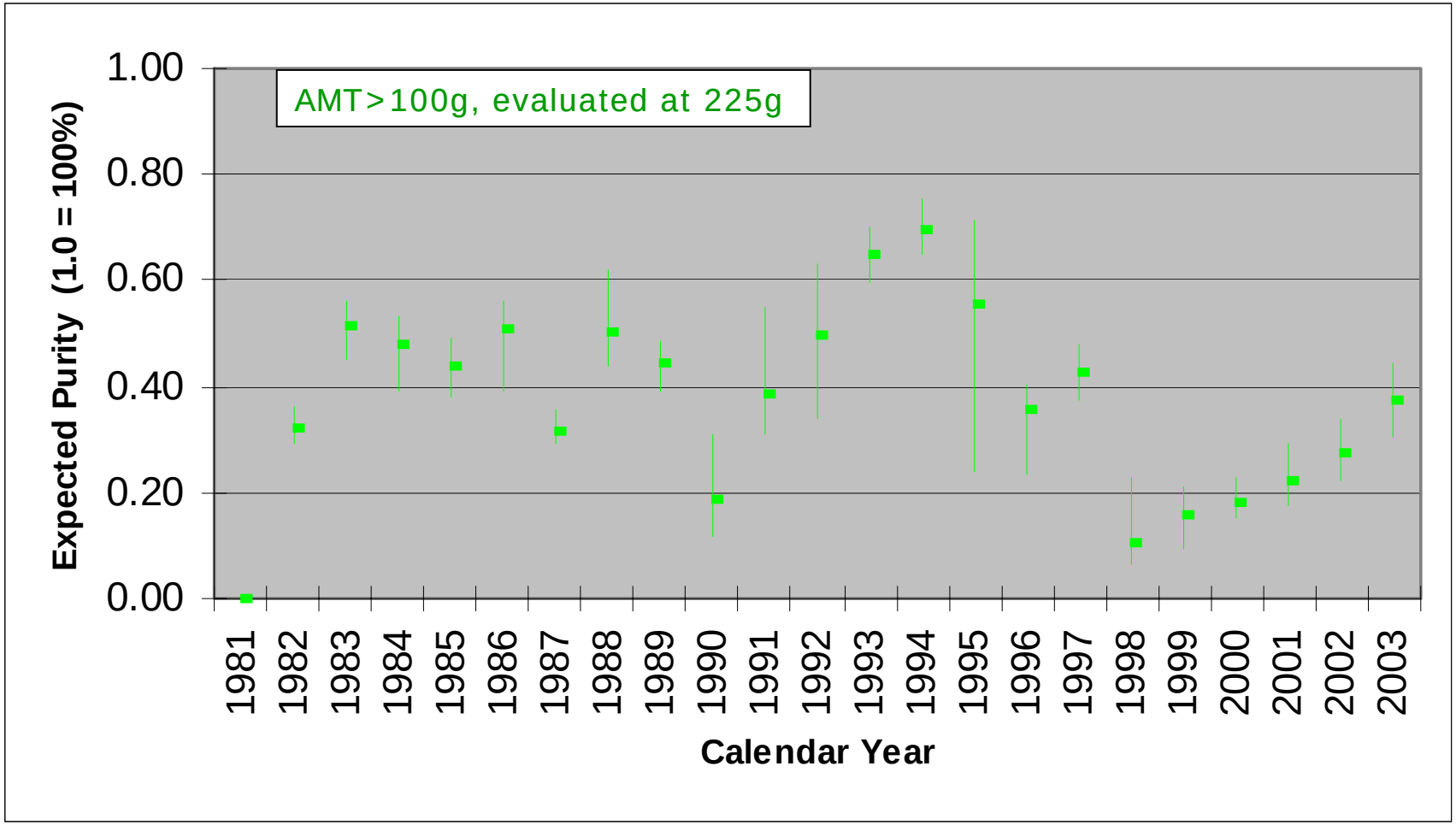

Figure 31. Inverse Relationship of d-Methamphetamine Price and Expected Purity — Lowest Quantity Level (Q1)

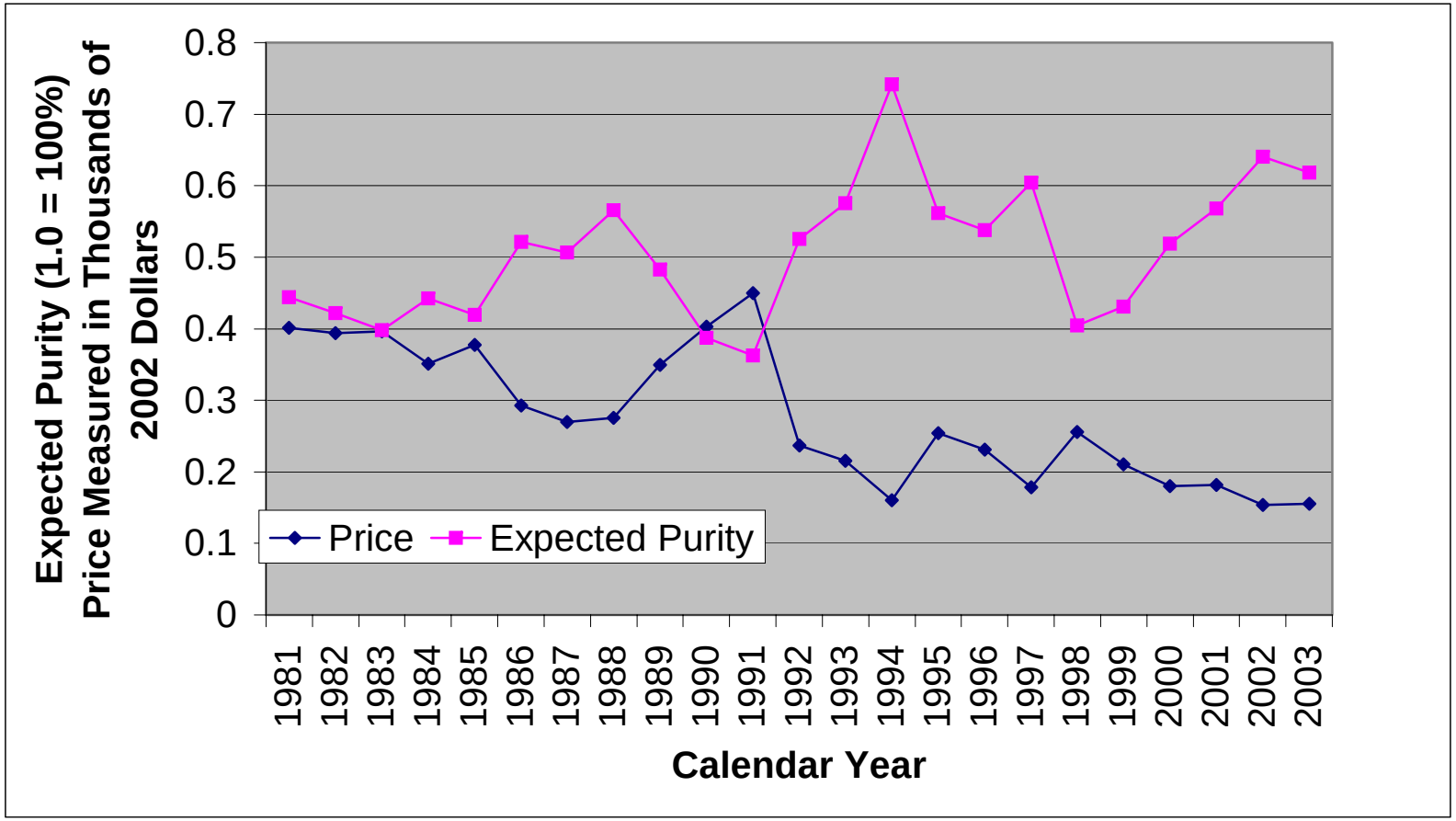

Figure 32. City-Specific Average Prices for d-Methamphetamine – Second Quantity Level (Q2)

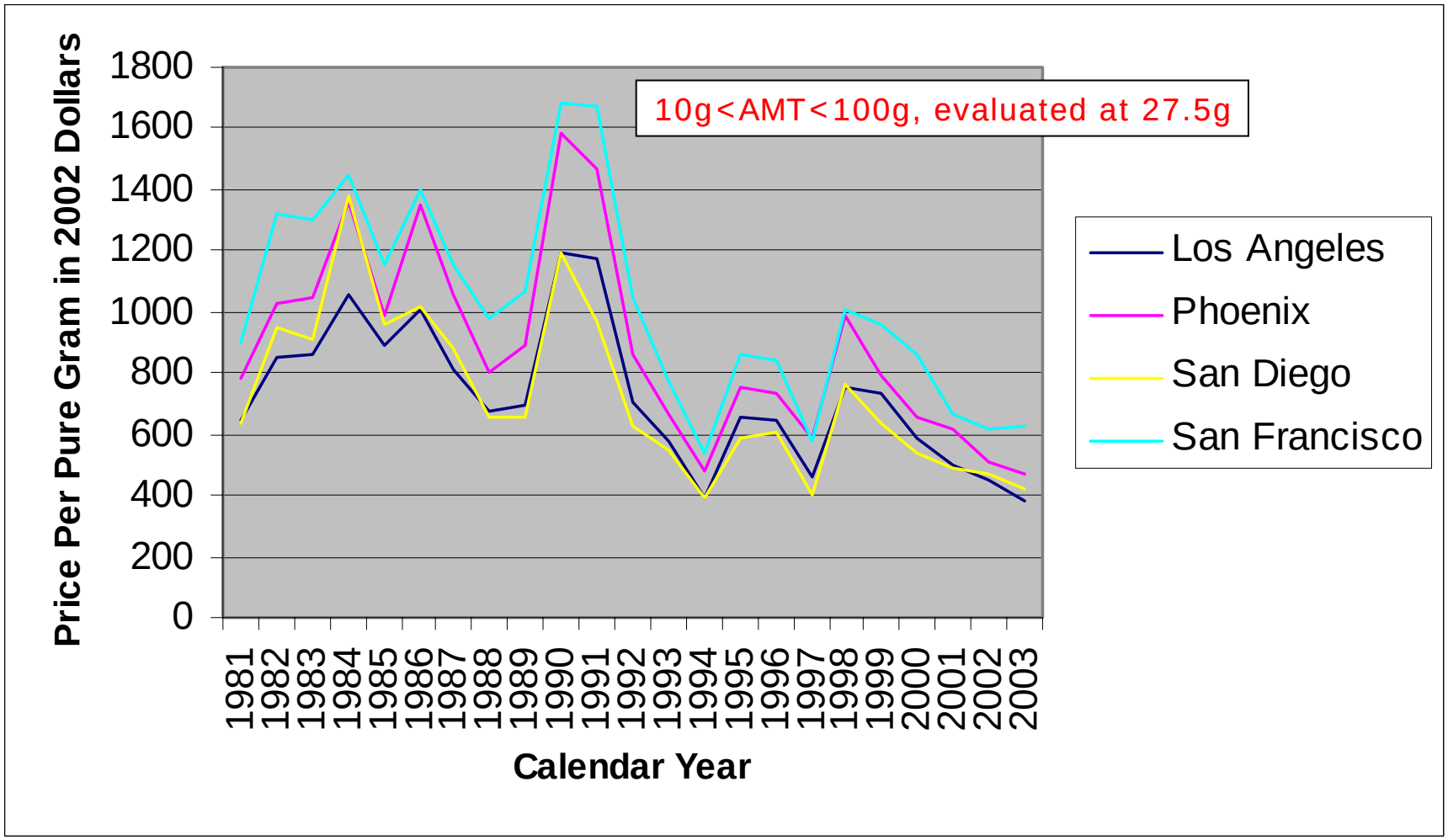

Figure 33. City-Specific Average Expected Purity of d-Methamphetamine – Second Quantity Level (Q2)

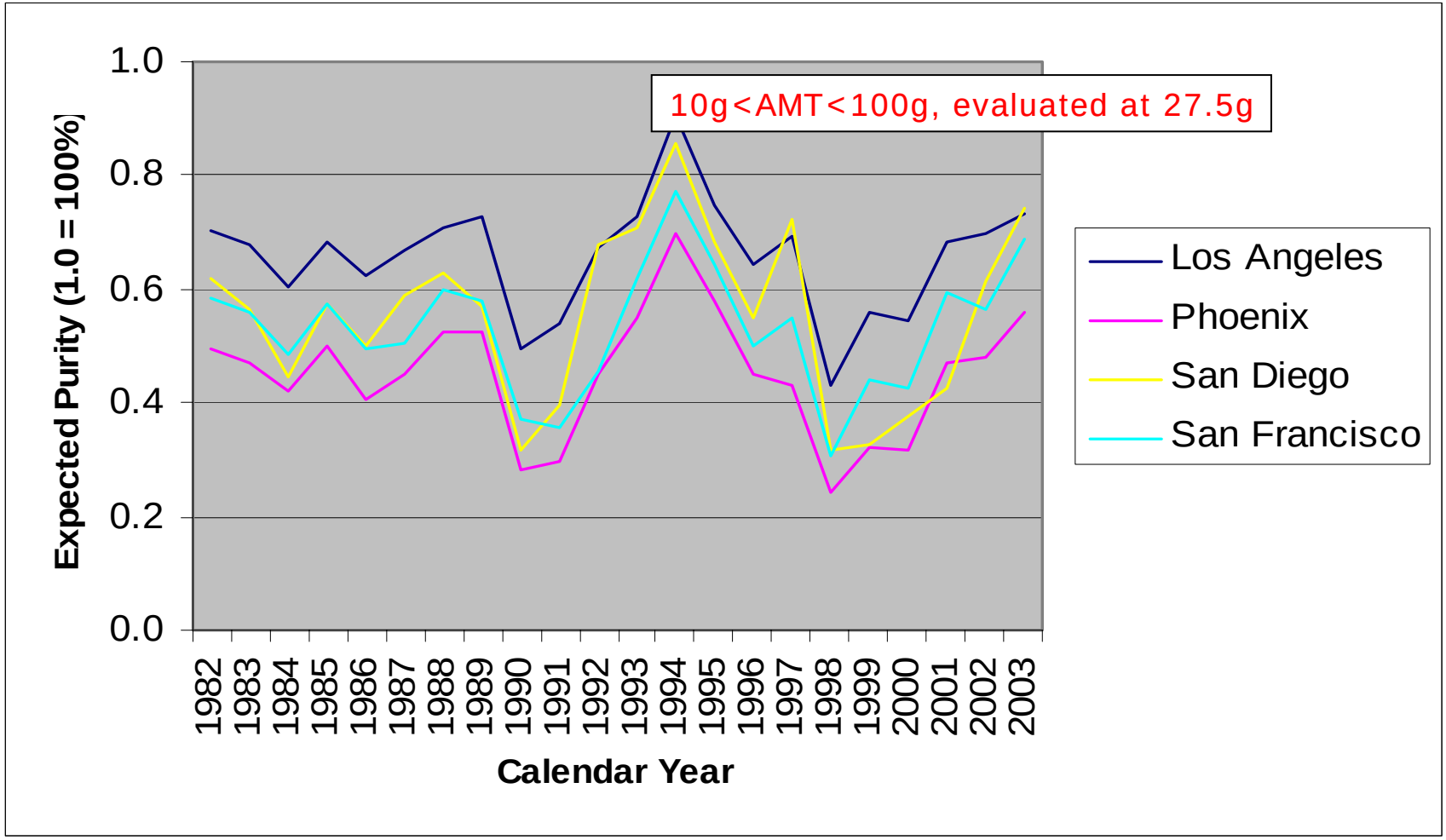

Figure 34. Price of One Bulk Gram of Marijuana

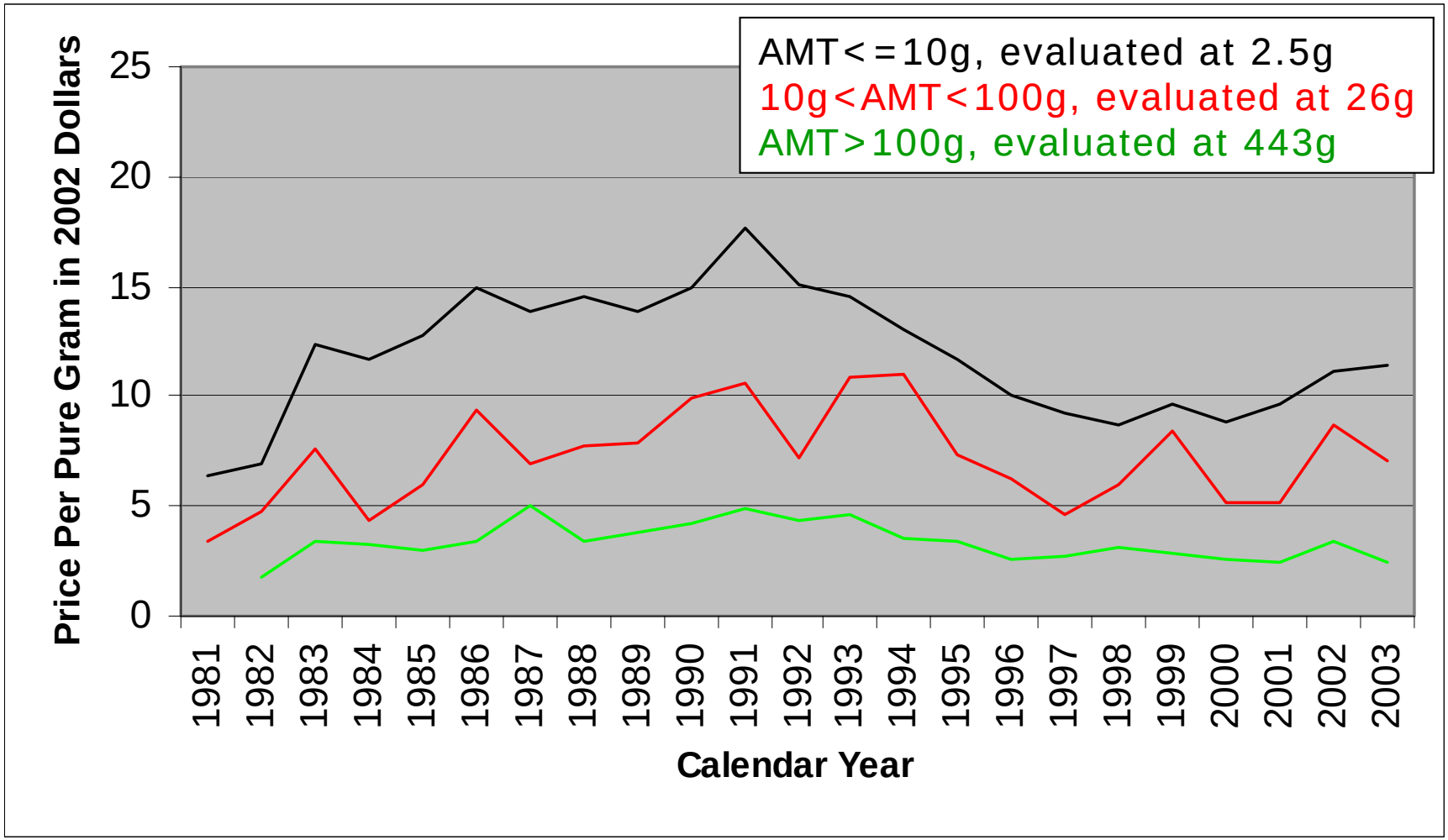

Figure 35. Interquartile Range of Average Price of One Bulk Gram of Marijuana

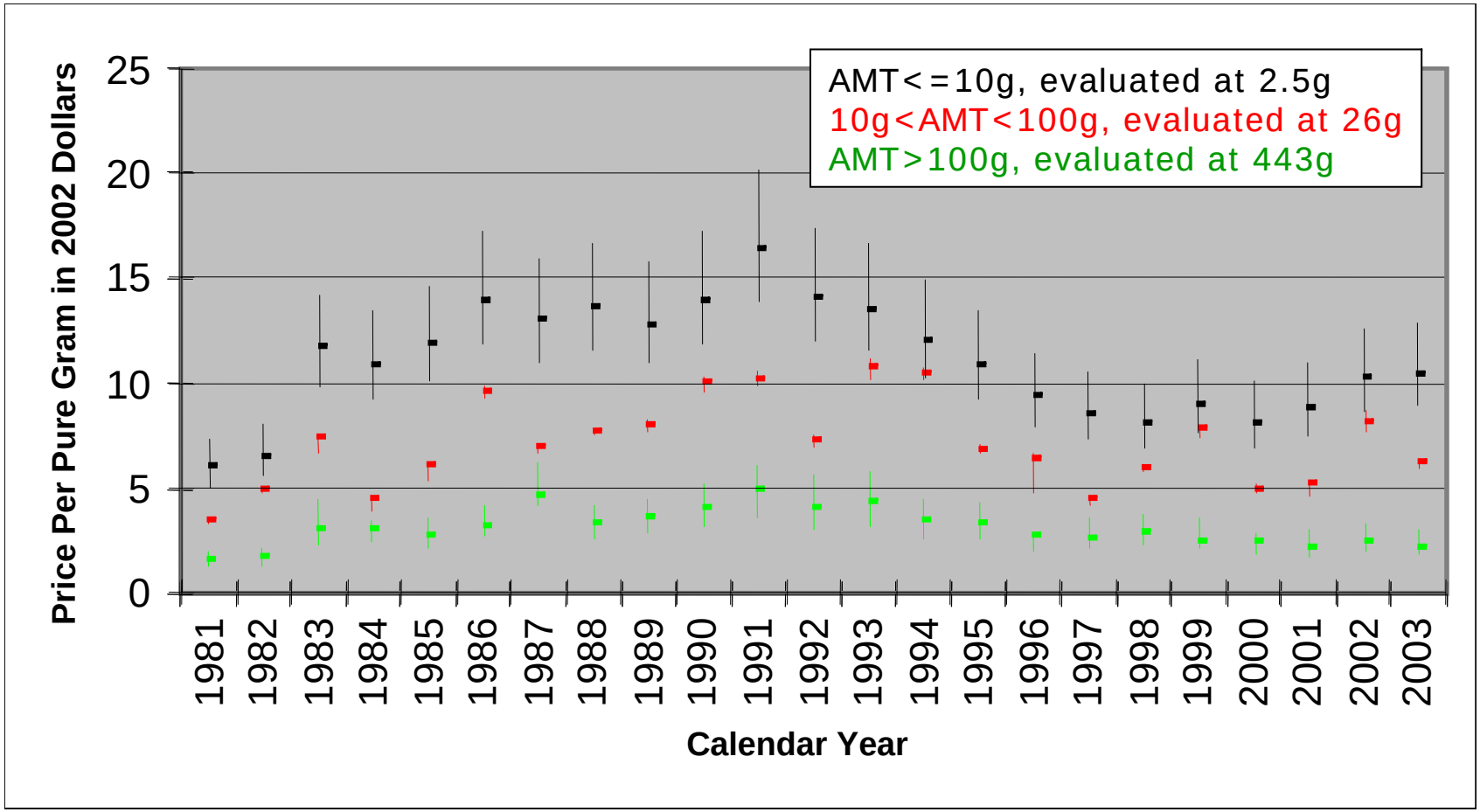

Figure 36. Mean Purity of Heroin When Seizures Are Included

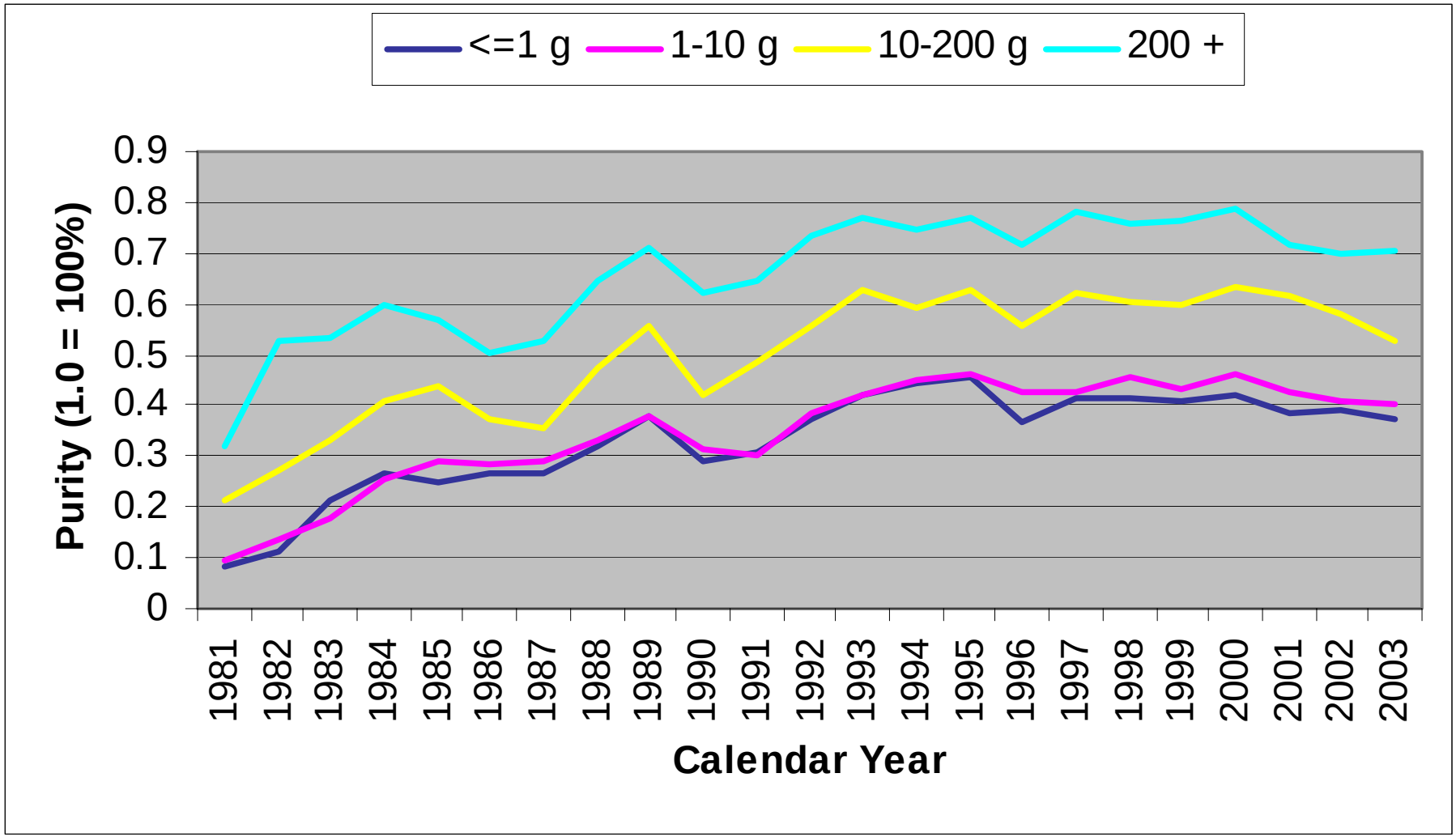

Figure 37. Mean Purity of Powder Cocaine When Seizures Are Included

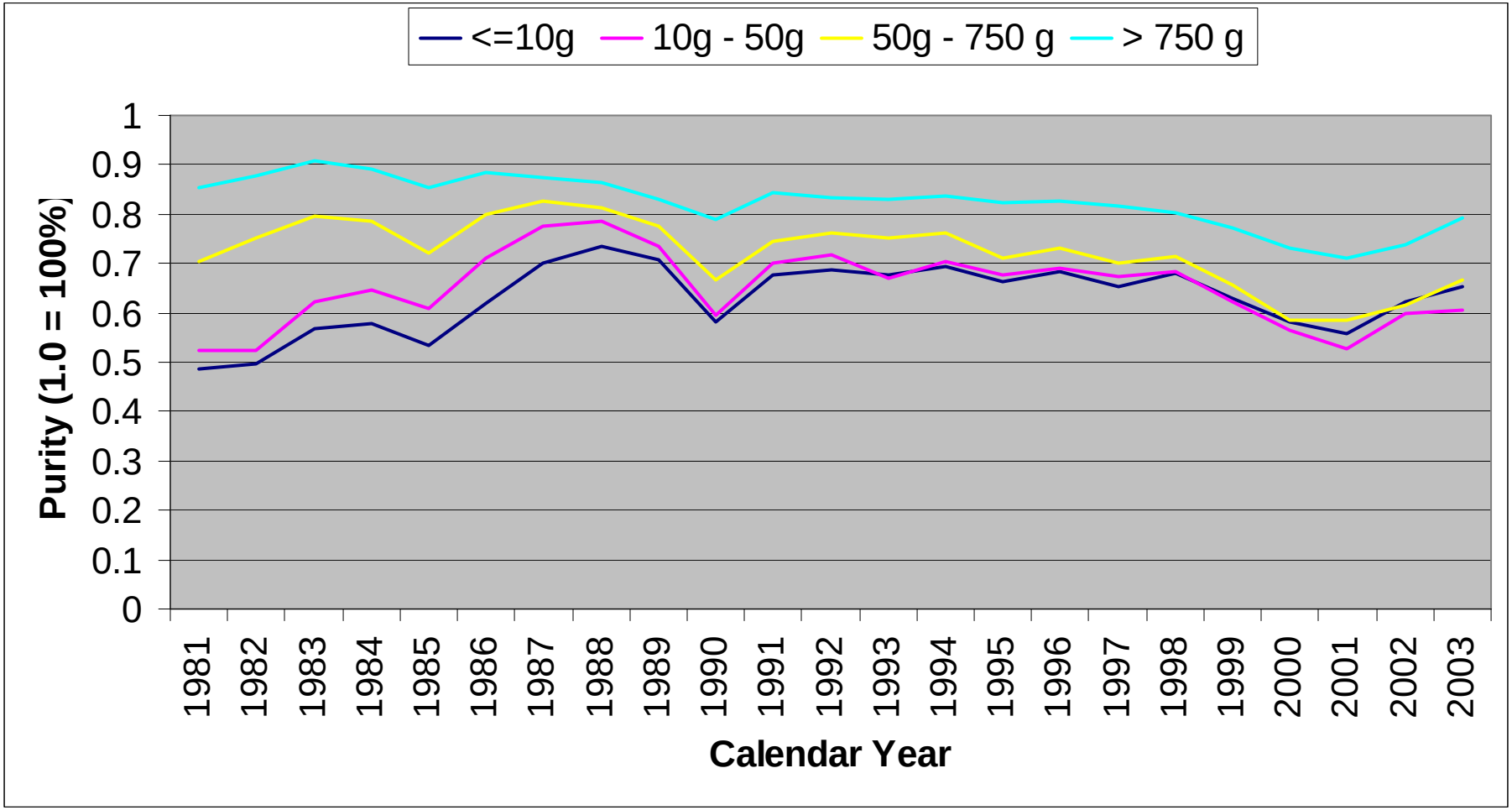

Figure 38. Purity of d-Methamphetamine When Seizures Are Included

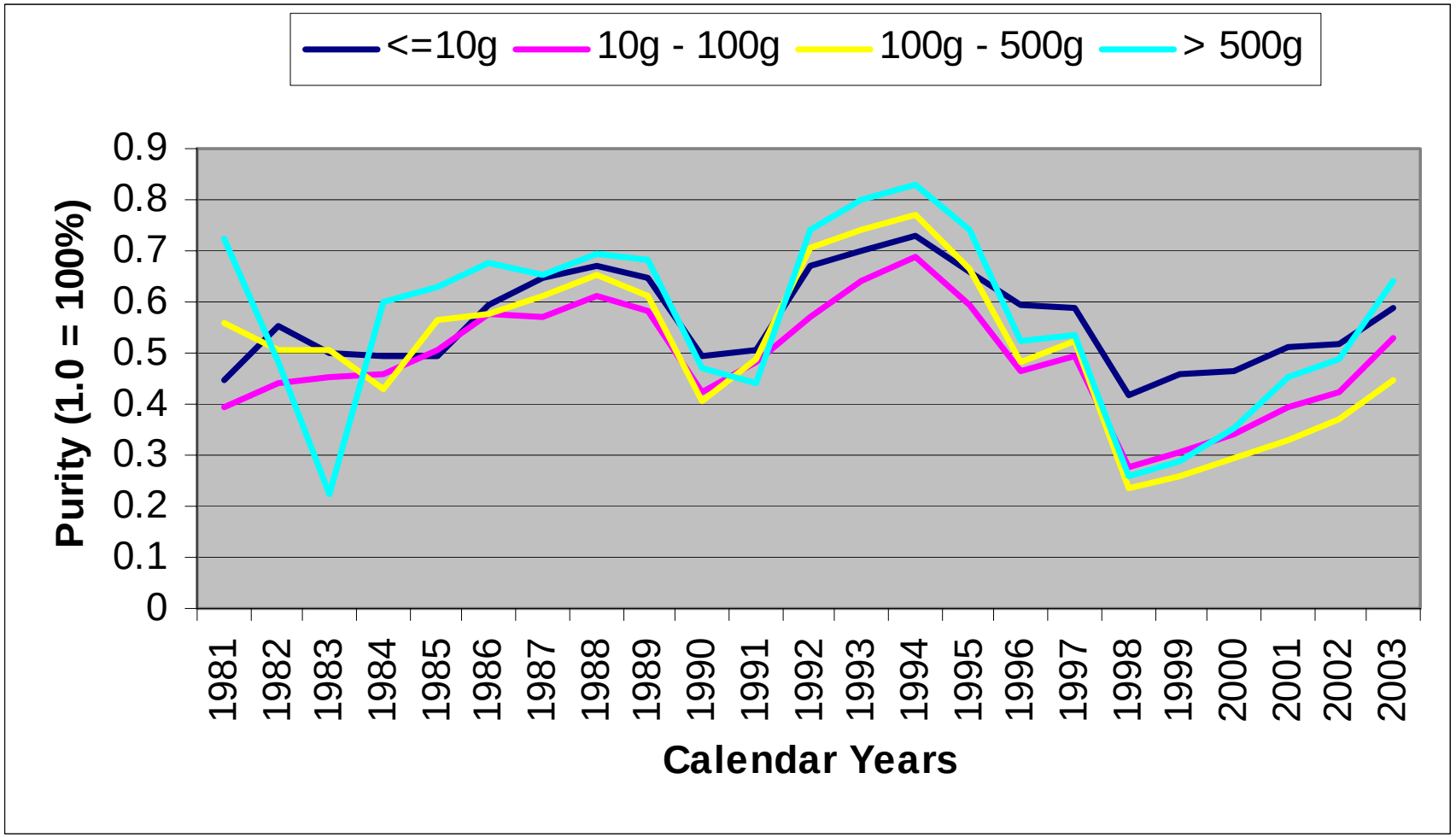

Table 1
Price of One Pure Gram of Powder Cocaine

	< 2 Grams			2 to 10 Grams			10 to 50 Grams			> 50 Grams		
	25th Percentile	Average	75th Percentile	25th Percentile	Average	75th Percentile	25th Percentile	Average	75th Percentile	25th Percentile	Average	75th Percentile
1981	459.93	544.59	630.39	305.18	345.64	391.16	254.40	280.55	307.06	170.57	201.18	226.33
1982	475.52	590.86	637.48	317.57	337.46	375.70	238.20	267.12	295.16	155.54	186.54	205.80
1983	367.71	471.87	545.15	287.87	311.02	353.25	190.17	215.06	235.50	140.39	158.20	174.47
1984	304.44	400.69	469.22	221.88	252.74	286.74	136.27	170.08	187.79	115.08	136.53	152.01
1985	288.67	389.60	450.85	195.41	239.24	256.79	134.53	170.56	187.34	117.85	135.34	151.47
1986	241.79	296.94	353.27	154.82	186.06	209.31	104.33	130.50	146.73	78.70	100.19	115.38
1987	199.89	250.55	291.33	119.32	145.78	159.57	80.52	98.63	110.69	60.58	74.56	84.06
1988	173.68	223.55	256.91	105.67	126.83	149.13	63.82	73.79	86.19	46.99	56.95	63.62
1989	142.81	189.92	226.70	89.48	109.54	129.41	56.30	67.02	76.50	44.25	52.98	59.32
1990	193.84	234.94	283.29	109.43	133.17	159.39	71.68	84.74	97.68	61.33	71.60	79.56
1991	159.11	198.34	243.19	84.06	99.18	113.85	52.08	67.19	77.75	46.59	55.79	61.70
1992	118.07	153.96	183.17	78.68	97.27	111.90	46.97	62.19	72.56	45.57	52.28	58.75
1993	124.20	156.18	185.51	89.60	95.57	105.06	51.53	63.58	73.49	41.83	49.68	55.76
1994	115.40	147.43	174.42	69.63	86.42	99.75	44.39	55.45	64.34	35.91	43.55	49.29
1995	136.32	181.58	213.58	73.47	87.64	97.66	47.04	57.68	64.82	41.65	48.68	55.51
1996	118.30	150.13	174.36	75.04	84.13	93.31	43.21	50.67	56.71	36.84	42.59	47.76
1997	115.89	145.72	168.50	65.48	80.21	89.10	41.84	52.07	58.28	39.30	45.75	50.72
1998	100.62	132.09	153.94	67.06	78.71	91.47	38.75	47.02	56.11	32.24	38.59	45.05
1999	105.15	135.51	154.27	76.19	82.39	90.33	40.08	50.16	58.54	37.90	43.52	48.88
2000	142.86	161.28	182.21	91.34	99.40	113.58	43.89	55.26	64.39	39.91	48.02	53.57
2001	135.73	168.29	204.03	70.75	81.38	92.59	41.63	53.98	59.10	37.15	44.87	50.76
2002	100.71	124.54	147.94	59.84	74.36	86.11	39.06	47.27	53.44	34.94	41.59	46.85
2003*	89.05	106.54	121.71	60.06	70.52	78.88	36.00	44.17	51.45	31.72	37.96	43.80

* 2003 Prices are based on information from only the first two quarters of the year, and thus are likely to be updated in future reports.
All prices are adjusted for inflation and reported in 2002 dollars. Estimates to the penny are provided to facilitate replication/confirmation and not intended to be meaningfully interpreted given how broad the uncertainty bands are.

Source: System to Retrieve Information on Drug Evidence (STRIDE)
Prepared by: RAND Corporation 2/04

Table 2
Annual Expected Purity of Powder Cocaine

	< 2 Grams			2 to 10 Grams			10 to 50 Grams			> 50 Grams		
	25th Percentile	Average	75th Percentile	25th Percentile	Average	75th Percentile	25th Percentile	Average	75th Percentile	25th Percentile	Average	75th Percentile
1981	0.27	0.40	0.53	0.30	0.44	0.58	0.37	0.50	0.63	0.42	0.56	0.66
1982	0.30	0.43	0.56	0.31	0.45	0.59	0.36	0.49	0.62	0.49	0.60	0.72
1983	0.35	0.49	0.62	0.35	0.49	0.64	0.48	0.61	0.74	0.62	0.73	0.85
1984	0.40	0.53	0.66	0.41	0.55	0.70	0.55	0.67	0.80	0.62	0.73	0.85
1985	0.38	0.51	0.64	0.42	0.56	0.71	0.50	0.63	0.76	0.58	0.69	0.81
1986	0.42	0.56	0.69	0.55	0.69	0.84	0.63	0.75	0.89	0.70	0.81	0.93
1987	0.57	0.70	0.83	0.64	0.78	0.93	0.68	0.81	0.94	0.72	0.83	0.95
1988	0.60	0.73	0.86	0.63	0.78	0.92	0.68	0.80	0.94	0.71	0.82	0.94
1989	0.55	0.69	0.82	0.59	0.73	0.88	0.62	0.74	0.87	0.66	0.77	0.89
1990	0.45	0.58	0.71	0.44	0.58	0.72	0.51	0.63	0.76	0.55	0.66	0.78
1991	0.50	0.63	0.77	0.55	0.69	0.84	0.62	0.74	0.87	0.65	0.76	0.88
1992	0.54	0.67	0.80	0.53	0.67	0.82	0.60	0.73	0.86	0.65	0.76	0.88
1993	0.55	0.68	0.81	0.53	0.67	0.81	0.55	0.68	0.81	0.63	0.74	0.86
1994	0.53	0.66	0.79	0.53	0.67	0.82	0.60	0.72	0.86	0.66	0.77	0.89
1995	0.48	0.61	0.74	0.53	0.67	0.81	0.55	0.68	0.81	0.57	0.69	0.81
1996	0.59	0.73	0.86	0.55	0.69	0.84	0.58	0.71	0.84	0.62	0.73	0.85
1997	0.52	0.65	0.79	0.56	0.70	0.84	0.56	0.69	0.82	0.57	0.68	0.80
1998	0.55	0.69	0.82	0.56	0.70	0.85	0.57	0.70	0.83	0.60	0.71	0.83
1999	0.52	0.65	0.78	0.50	0.64	0.78	0.51	0.64	0.77	0.52	0.63	0.75
2000	0.48	0.61	0.74	0.43	0.57	0.72	0.45	0.58	0.71	0.45	0.56	0.68
2001	0.44	0.58	0.71	0.46	0.60	0.74	0.41	0.54	0.67	0.43	0.54	0.66
2002	0.56	0.69	0.83	0.52	0.66	0.80	0.47	0.60	0.73	0.48	0.59	0.71
2003*	0.56	0.70	0.83	0.53	0.67	0.81	0.50	0.62	0.75	0.52	0.63	0.75

* 2003 expected purities are based on information from only the first two quarters of the year, and thus are likely to be updated in future reports.

Source: System to Retrieve Information on Drug Evidence (STRIDE)
Prepared by: RAND Corporation 2/04

Table 3
Price of One Pure Gram of Crack Cocaine

	< 1 Gram			1-15 Grams			> 15 Grams		
	25th Percentile	Average	75th Percentile	25th Percentile	Average	75th Percentile	25th Percentile	Average	75th Percentile
1986	230.91	341.61	428.19	158.01	174.22	204.11	98.50	113.27	126.70
1987	237.71	325.12	401.35	133.63	147.32	170.20	76.37	84.93	96.52
1988	162.94	228.01	294.84	95.36	108.52	130.91	61.03	71.24	82.81
1989	148.72	197.84	252.96	84.32	96.20	115.39	58.24	66.77	76.74
1990	194.14	254.68	309.80	121.42	137.98	162.35	87.92	97.59	108.70
1991	152.70	201.60	256.60	96.70	107.75	125.85	66.17	72.42	79.09
1992	143.03	206.69	265.23	86.75	101.92	115.10	57.53	66.78	76.50
1993	131.92	178.66	225.52	82.20	98.03	113.34	55.19	65.79	76.66
1994	135.57	174.46	219.44	63.33	83.62	102.19	49.27	57.83	65.40
1995	144.52	181.87	219.03	77.22	87.27	100.19	50.88	59.37	67.09
1996	126.25	162.37	187.77	72.13	79.22	90.02	46.70	54.28	61.49
1997	153.85	195.38	233.75	85.51	88.55	97.87	50.83	58.75	66.26
1998	122.06	161.06	195.95	71.59	77.34	91.58	45.33	52.41	59.89
1999	161.03	205.33	244.65	77.08	87.38	103.74	53.40	59.49	68.72
2000	172.92	218.55	245.15	88.62	97.76	112.85	55.72	63.56	72.54
2001	154.78	198.36	252.39	74.97	89.02	103.35	53.80	61.23	71.16
2002	134.85	172.90	212.11	71.85	80.68	88.80	48.61	54.80	63.62
2003*	138.22	189.87	221.66	57.01	74.07	91.55	40.15	47.47	54.88

* 2003 Prices are based on information from only the first two quarters of the year, and thus are likely to be updated in future reports.
All prices are adjusted for inflation and reported in 2002 dollars. Estimates to the penny are provided to facilitate replication/confirmation and not intended to be meaningfully interpreted given how broad the uncertainty bands are.

Source: System to Retrieve Information on Drug Evidence (STRIDE)
Prepared by: RAND Corporation 2/04

Table 4
Annual Expected Purity of Crack Cocaine

	< 1 Gram			1-15 Grams			> 15 Grams		
	25th Percentile	Average	75th Percentile	25th Percentile	Average	75th Percentile	25th Percentile	Average	75th Percentile
1986	0.77	0.84	0.94	0.68	0.77	0.86	0.65	0.75	0.86
1987	0.76	0.83	0.93	0.71	0.80	0.90	0.58	0.68	0.78
1988	0.78	0.86	0.96	0.75	0.84	0.94	0.68	0.78	0.88
1989	0.79	0.87	0.96	0.74	0.83	0.93	0.65	0.75	0.85
1990	0.73	0.81	0.90	0.70	0.79	0.88	0.52	0.62	0.72
1991	0.78	0.86	0.95	0.74	0.83	0.93	0.67	0.76	0.87
1992	0.74	0.82	0.92	0.72	0.81	0.91	0.66	0.76	0.86
1993	0.74	0.81	0.91	0.70	0.79	0.89	0.60	0.70	0.80
1994	0.74	0.81	0.91	0.70	0.79	0.89	0.62	0.72	0.82
1995	0.68	0.76	0.85	0.65	0.74	0.83	0.56	0.66	0.76
1996	0.68	0.76	0.86	0.65	0.74	0.84	0.56	0.65	0.76
1997	0.65	0.73	0.83	0.61	0.70	0.80	0.50	0.60	0.70
1998	0.67	0.75	0.85	0.63	0.72	0.82	0.52	0.62	0.72
1999	0.64	0.72	0.81	0.58	0.67	0.76	0.47	0.57	0.67
2000	0.60	0.68	0.77	0.53	0.62	0.71	0.42	0.52	0.62
2001	0.60	0.68	0.77	0.53	0.62	0.71	0.40	0.50	0.60
2002	0.62	0.70	0.80	0.55	0.64	0.74	0.46	0.55	0.66
2003*	0.66	0.74	0.84	0.61	0.69	0.79	0.49	0.59	0.70

* 2003 expected purities are based on information from only the first two quarters of the year, and thus are likely to be updated in future reports.

Source: System to Retrieve Information on Drug Evidence (STRIDE)
Prepared by: RAND Corporation 2/04

Table 5
Price of One Pure Gram of Heroin

	< 1 Gram			1-10 Grams			> 10 Grams		
	25th Percentile	Average	75th Percentile	25th Percentile	Average	75th Percentile	25th Percentile	Average	75th Percentile
1981	1260.12	1974.49	2680.48	1064.28	1670.02	2093.36	765.27	1007.60	1373.89
1982	1275.48	1587.69	2013.20	775.31	1226.42	1492.52	638.10	744.49	934.43
1983	1026.46	1626.58	2026.90	1140.79	1528.63	1879.94	596.73	726.13	838.93
1984	1093.56	1468.39	1653.55	1003.20	1440.79	1780.91	569.95	715.18	879.67
1985	943.26	1351.65	1573.75	706.52	1128.50	1468.20	526.04	655.43	772.04
1986	977.37	1352.37	1691.38	773.82	1021.65	1350.08	540.95	656.25	781.92
1987	930.12	1230.13	1398.18	731.56	1093.10	1343.06	658.11	754.27	803.29
1988	671.47	1043.78	1317.75	621.89	880.91	1025.54	416.85	511.38	600.91
1989	576.37	933.97	1198.33	468.48	693.87	801.15	398.84	485.84	552.75
1990	601.34	947.70	1100.75	600.20	911.57	1115.62	551.94	647.46	728.09
1991	556.47	895.79	1089.93	611.45	819.38	1109.41	414.47	492.31	589.05
1992	462.94	743.91	931.33	451.10	633.38	730.70	352.99	402.08	430.81
1993	469.23	619.73	695.58	294.45	448.69	626.13	286.13	325.48	380.41
1994	397.00	615.16	734.73	294.16	418.35	521.08	251.49	299.03	346.26
1995	332.58	544.69	614.58	270.04	402.90	507.41	191.14	237.73	282.55
1996	364.25	515.69	633.98	245.83	378.49	518.90	202.55	248.48	292.39
1997	309.40	491.04	580.53	227.76	327.60	430.20	183.26	208.32	244.47
1998	316.42	432.76	518.10	163.51	294.42	368.88	155.57	185.77	227.02
1999	319.30	426.49	467.68	148.56	266.16	376.10	144.05	176.05	208.26
2000	301.96	413.90	466.58	178.86	269.54	332.44	129.30	153.60	183.30
2001	284.30	398.27	475.40	167.30	246.02	283.72	115.96	134.62	159.91
2002	280.39	372.00	428.03	162.03	240.84	306.75	128.18	138.32	158.53
2003*	246.97	361.95	393.88	162.26	246.05	339.87	120.26	139.22	166.82

* 2003 Prices are based on information from only the first two quarters of the year, and thus are likely to be updated in future reports.
All prices are adjusted for inflation and reported in 2002 dollars. Estimates to the penny are provided to facilitate replication/confirmation and not intended to be meaningfully interpreted given how broad the uncertainty bands are.

Source: System to Retrieve Information on Drug Evidence (STRIDE)
Prepared by: RAND Corporation 2/04

Table 6
Annual Expected Purity of Heroin

	< 1 Gram			1-10 Grams			> 10 Grams		
	25th Percentile	Average	75th Percentile	25th Percentile	Average	75th Percentile	25th Percentile	Average	75th Percentile
1981	0.00	0.11	0.18	0.00	0.09	0.15	0.00	0.12	0.26
1982	0.08	0.17	0.26	0.08	0.18	0.26	0.13	0.27	0.41
1983	0.05	0.14	0.23	0.01	0.11	0.19	0.14	0.28	0.42
1984	0.12	0.21	0.30	0.05	0.15	0.23	0.17	0.32	0.46
1985	0.13	0.23	0.31	0.15	0.25	0.33	0.24	0.38	0.52
1986	0.14	0.24	0.32	0.15	0.24	0.33	0.23	0.37	0.51
1987	0.14	0.23	0.32	0.14	0.24	0.32	0.19	0.34	0.48
1988	0.20	0.29	0.38	0.20	0.29	0.38	0.30	0.44	0.58
1989	0.24	0.33	0.42	0.21	0.30	0.39	0.38	0.52	0.66
1990	0.14	0.24	0.32	0.15	0.24	0.33	0.22	0.36	0.50
1991	0.21	0.31	0.39	0.17	0.26	0.35	0.26	0.40	0.54
1992	0.28	0.37	0.46	0.28	0.38	0.46	0.39	0.53	0.67
1993	0.32	0.41	0.50	0.31	0.41	0.49	0.44	0.58	0.72
1994	0.32	0.41	0.50	0.31	0.41	0.49	0.41	0.55	0.69
1995	0.36	0.45	0.54	0.32	0.41	0.50	0.40	0.55	0.69
1996	0.29	0.38	0.47	0.27	0.37	0.45	0.35	0.49	0.63
1997	0.36	0.45	0.54	0.30	0.40	0.48	0.37	0.51	0.65
1998	0.35	0.44	0.53	0.31	0.41	0.50	0.40	0.54	0.68
1999	0.33	0.42	0.51	0.30	0.39	0.48	0.41	0.55	0.69
2000	0.34	0.43	0.52	0.30	0.39	0.48	0.43	0.57	0.71
2001	0.29	0.39	0.47	0.28	0.37	0.46	0.40	0.55	0.69
2002	0.32	0.41	0.50	0.30	0.40	0.48	0.34	0.48	0.62
2003*	0.22	0.32	0.40	0.25	0.34	0.43	0.32	0.46	0.60

*2003 expected purities are based on information from only the first two quarters of the year, and thus are likely to be updated in future reports.

Source: System to Retrieve Information on Drug Evidence (STRIDE)
Prepared by: RAND Corporation 2/04

Table 7
Price of One Pure Gram of d-Methamphetamine

	< 10 Grams			10-100 Grams			> 100 Grams		
	25th Percentile	Average	75th Percentile	25th Percentile	Average	75th Percentile	25th Percentile	Average	75th Percentile
1981	304.26	401.23	496.60	123.61	153.72	191.25			
1982	326.81	393.62	485.68	152.43	200.02	251.62	68.99	91.83	99.07
1983	280.06	396.56	494.33	150.62	202.75	255.58	80.51	106.51	115.60
1984	285.11	350.94	434.55	162.96	242.86	305.95	54.07	72.00	78.11
1985	285.84	377.34	437.68	140.41	190.63	240.88	69.16	91.44	99.31
1986	236.10	292.96	364.65	171.22	234.67	296.37	46.71	61.70	67.08
1987	197.43	269.99	337.15	141.41	188.26	238.27			
1988	246.77	275.85	342.95	115.97	155.62	196.07	51.35	70.12	76.27
1989	290.57	349.45	434.54	121.87	162.63	206.10	60.39	79.77	86.72
1990	324.38	402.48	504.17	205.28	281.30	356.53	112.78	159.52	175.66
1991	359.98	449.78	559.50	209.33	273.82	346.17	84.00	118.20	128.52
1992	190.25	237.00	297.53	123.14	166.31	210.75	72.56	95.66	103.42
1993	175.70	215.37	272.44	102.07	132.99	168.87	41.61	58.22	63.65
1994	137.46	160.35	200.88	68.18	93.58	118.42	34.26	47.83	51.71
1995	203.68	254.27	316.57	105.62	146.02	183.45	61.55	86.32	94.18
1996	186.64	230.79	290.08	105.13	145.01	181.63	57.39	79.98	87.01
1997	143.29	178.26	229.73	80.41	110.69	139.67	41.35	55.05	59.71
1998	205.98	256.02	343.57	145.51	200.19	252.42	86.86	119.60	131.42
1999	168.75	210.60	260.62	130.75	177.22	222.45	60.92	86.91	97.19
2000	133.66	179.87	231.46	102.92	141.21	177.25	54.33	73.20	80.03
2001	144.69	181.72	240.61	94.89	113.50	147.91	48.13	64.51	70.82
2002	120.99	153.77	197.31	76.07	104.02	131.06	39.79	58.39	63.30
2003*	120.81	155.61	200.20	67.00	90.77	114.04	32.76	48.28	52.26

* 2003 Prices are based on information from only the first two quarters of the year, and thus are likely to be updated in future reports.
All prices are adjusted for inflation and reported in 2002 dollars. Estimates to the penny are provided to facilitate replication/confirmation and not intended to be meaningfully interpreted given how broad the uncertainty bands are.

Source: System to Retrieve Information on Drug Evidence (STRIDE)
Prepared by: RAND Corporation 2/04

Table 8
Annual Expected Purity of d-Methamphetamine

	< 10 Grams			10-100 Grams			> 100 Grams		
	25th Percentile	Average	75th Percentile	25th Percentile	Average	75th Percentile	25th Percentile	Average	75th Percentile
1981	0.30	0.44	0.59	0.37	0.51	0.63			
1982	0.27	0.42	0.57	0.35	0.49	0.61	0.21	0.33	0.38
1983	0.25	0.40	0.54	0.33	0.47	0.59	0.41	0.52	0.58
1984	0.29	0.44	0.59	0.27	0.41	0.52	0.36	0.46	0.53
1985	0.27	0.42	0.57	0.36	0.50	0.62	0.33	0.44	0.50
1986	0.37	0.52	0.67	0.27	0.41	0.53	0.39	0.49	0.57
1987	0.36	0.51	0.65	0.32	0.46	0.58	0.24	0.32	0.41
1988	0.42	0.57	0.71	0.36	0.50	0.62	0.42	0.52	0.59
1989	0.33	0.48	0.63	0.36	0.50	0.62	0.34	0.45	0.52
1990	0.24	0.39	0.53	0.15	0.29	0.41	0.11	0.22	0.28
1991	0.21	0.36	0.51	0.17	0.31	0.43	0.32	0.42	0.49
1992	0.38	0.53	0.67	0.31	0.45	0.57	0.36	0.47	0.53
1993	0.43	0.58	0.72	0.39	0.53	0.65	0.54	0.65	0.72
1994	0.60	0.74	0.89	0.54	0.69	0.80	0.58	0.70	0.75
1995	0.41	0.56	0.71	0.41	0.56	0.67	0.37	0.49	0.55
1996	0.39	0.54	0.68	0.30	0.44	0.56	0.22	0.34	0.39
1997	0.46	0.60	0.75	0.35	0.49	0.61	0.32	0.44	0.49
1998	0.26	0.40	0.55	0.11	0.26	0.37	0.02	0.14	0.19
1999	0.28	0.43	0.58	0.17	0.32	0.43	0.05	0.16	0.23
2000	0.37	0.52	0.67	0.19	0.33	0.45	0.09	0.20	0.27
2001	0.42	0.57	0.71	0.28	0.42	0.54	0.13	0.23	0.30
2002	0.49	0.64	0.79	0.33	0.47	0.59	0.18	0.29	0.35
2003*	0.47	0.62	0.77	0.42	0.56	0.67	0.29	0.38	0.46

*2003 expected purities are based on information from only the first two quarters of the year, and thus are likely to be updated in future reports.

Source: System to Retrieve Information on Drug Evidence (STRIDE)
Prepared by: RAND Corporation 2/04

Table 9
Price of One Bulk Gram of Marijuana

	< 10 Grams			10-100 Grams			> 100 Grams		
	25th Percentile	Average	75th Percentile	25th Percentile	Average	75th Percentile	25th Percentile	Average	75th Percentile
1981	5.02	6.34	7.30	3.37	3.42	3.57	1.29		1.99
1982	5.51	6.97	8.02	4.76	4.82	5.11	1.34	1.79	2.15
1983	9.77	12.36	14.21	6.72	7.58	7.61	2.37	3.36	4.46
1984	9.20	11.64	13.39	3.99	4.32	4.67	2.42	3.33	3.49
1985	10.07	12.74	14.65	5.41	5.92	6.28	2.24	2.95	3.68
1986	11.86	15.01	17.25	9.31	9.43	9.85	2.70	3.42	4.23
1987	10.96	13.87	15.94	6.72	6.86	7.11	4.15	5.05	6.25
1988	11.51	14.57	16.74	7.49	7.74	7.90	2.56	3.42	4.15
1989	10.90	13.80	15.85	7.76	7.92	8.33	2.92	3.79	4.54
1990	11.82	14.96	17.20	9.62	9.90	10.31	3.20	4.26	5.27
1991	13.92	17.63	20.24	9.84	10.62	10.56	3.69	4.85	6.09
1992	11.95	15.15	17.39	6.92	7.20	7.51	3.12	4.30	5.62
1993	11.50	14.58	16.73	10.12	10.82	11.14	3.25	4.63	5.84
1994	10.29	13.05	14.96	10.14	10.96	10.81	2.64	3.58	4.52
1995	9.23	11.72	13.43	6.63	7.31	7.06	2.64	3.37	4.31
1996	7.86	9.99	11.44	4.75	6.30	6.65	2.06	2.59	2.82
1997	7.28	9.25	10.58	4.27	4.57	4.58	2.18	2.75	3.59
1998	6.82	8.67	9.92	5.80	5.93	6.15	2.34	3.07	3.74
1999	7.62	9.70	11.09	7.47	8.47	8.03	2.13	2.86	3.60
2000	6.89	8.77	10.02	4.78	5.22	5.21	1.84	2.53	2.97
2001	7.52	9.58	10.94	4.59	5.20	5.38	1.78	2.47	3.04
2002	8.69	11.09	12.65	7.65	8.72	8.70	2.10	3.40	3.41
2003*	8.85	11.37	12.88	6.00	7.12	6.44	1.94	2.47	3.04

* 2003 Prices are based on information from only the first two quarters of the year, and thus are likely to be updated in future reports. All prices are adjusted for inflation and reported in 2002 dollars.

Source: System to Retrieve Information on Drug Evidence (STRIDE)
Prepared by: RAND Corporation 2/04

Table 10
Definitions of Quantity Level Ranges & Number of Observations When Seizure Data Are Included

		Heroin	Cocaine Powder	Meth
Ranges	Level #1	<= 1g	< =10g	< =10g
	Level #2	1-10g	10g - 50g	10g - 100g
	Level #3	10- 200g	50g - 750g	100g-500g
	Level #4	> 200g	> 750 g	> 500g
Number of Obs.	Level #1	20881	40627	18887
	Level #2	13655	30838	13011
	Level #3	14290	34228	9155
	Level #4	13320	35667	4544
	Total	62146	141360	45597

Table 11
The Mean and Median Purity for Powder Cocaine
When Seizures Are Included

	≤ 10 Grams		10-50 Grams		50 - 750 Grams		> 750 Grams	
Year	Mean	Median	Mean	Median	Mean	Median	Mean	Median
1981	0.49	0.46	0.52	0.50	0.70	0.76	0.85	0.88
1982	0.50	0.45	0.52	0.50	0.75	0.83	0.88	0.90
1983	0.57	0.54	0.62	0.63	0.80	0.87	0.91	0.92
1984	0.58	0.56	0.65	0.67	0.78	0.85	0.89	0.91
1985	0.53	0.49	0.61	0.61	0.72	0.80	0.85	0.89
1986	0.62	0.63	0.71	0.78	0.80	0.87	0.88	0.90
1987	0.70	0.80	0.77	0.84	0.83	0.88	0.88	0.89
1988	0.74	0.83	0.79	0.85	0.81	0.86	0.86	0.89
1989	0.71	0.79	0.73	0.81	0.77	0.84	0.83	0.87
1990	0.58	0.58	0.60	0.60	0.67	0.73	0.79	0.86
1991	0.68	0.76	0.70	0.76	0.74	0.82	0.84	0.88
1992	0.69	0.78	0.72	0.79	0.76	0.83	0.83	0.88
1993	0.68	0.75	0.67	0.72	0.75	0.82	0.83	0.87
1994	0.69	0.78	0.70	0.77	0.76	0.82	0.84	0.86
1995	0.66	0.73	0.68	0.73	0.71	0.78	0.82	0.86
1996	0.68	0.75	0.69	0.74	0.73	0.80	0.83	0.86
1997	0.65	0.72	0.67	0.72	0.70	0.78	0.82	0.85
1998	0.68	0.76	0.68	0.75	0.71	0.79	0.80	0.83
1999	0.63	0.68	0.62	0.66	0.66	0.72	0.77	0.81
2000	0.58	0.59	0.56	0.59	0.59	0.65	0.73	0.78
2001	0.56	0.59	0.53	0.55	0.58	0.65	0.71	0.74
2002	0.62	0.68	0.60	0.65	0.62	0.68	0.74	0.78
2003	0.65	0.74	0.60	0.65	0.67	0.74	0.79	0.84

* 2003 purities are based on information from only the first two quarters of the year, and thus are likely to be updated in future reports.

Source: System to Retrieve Information on Drug Evidence (STRIDE).
Prepared by: RAND Corporation, February 2004.

Table 12
The Mean and Median Purity for Heroin When Seizures Are Included

	≤ 1 Gram		1-10 Grams		10 - 200 Grams		> 200 Grams	
Year	Mean	Median	Mean	Median	Mean	Median	Mean	Median
1981	0.08	0.04	0.09	0.04	0.21	0.04	0.32	0.22
1982	0.11	0.05	0.13	0.04	0.27	0.07	0.52	0.67
1983	0.22	0.10	0.18	0.07	0.33	0.21	0.53	0.60
1984	0.26	0.13	0.26	0.14	0.41	0.41	0.60	0.62
1985	0.25	0.14	0.29	0.18	0.44	0.45	0.57	0.57
1986	0.26	0.16	0.28	0.18	0.37	0.34	0.51	0.50
1987	0.27	0.17	0.29	0.18	0.35	0.30	0.53	0.48
1988	0.32	0.25	0.33	0.27	0.47	0.48	0.64	0.70
1989	0.38	0.35	0.38	0.38	0.56	0.59	0.71	0.81
1990	0.29	0.22	0.31	0.24	0.42	0.39	0.62	0.68
1991	0.31	0.23	0.30	0.22	0.49	0.51	0.65	0.69
1992	0.37	0.31	0.38	0.35	0.55	0.55	0.73	0.82
1993	0.42	0.35	0.42	0.35	0.62	0.66	0.77	0.84
1994	0.44	0.38	0.45	0.40	0.59	0.64	0.74	0.82
1995	0.46	0.38	0.46	0.42	0.63	0.66	0.77	0.86
1996	0.37	0.30	0.43	0.40	0.55	0.57	0.71	0.80
1997	0.42	0.33	0.43	0.37	0.62	0.68	0.78	0.84
1998	0.41	0.33	0.45	0.42	0.60	0.62	0.76	0.83
1999	0.41	0.34	0.43	0.41	0.60	0.63	0.76	0.82
2000	0.42	0.35	0.46	0.47	0.63	0.67	0.78	0.84
2001	0.38	0.31	0.42	0.40	0.62	0.67	0.71	0.81
2002	0.39	0.35	0.41	0.38	0.58	0.60	0.70	0.80
2003	0.37	0.32	0.40	0.37	0.53	0.55	0.70	0.75

* 2003 purities are based on information from only the first two quarters of the year, and thus are likely to be updated in future reports.

Source: System to Retrieve Information on Drug Evidence (STRIDE).
Prepared by: RAND Corporation, February 2004.

Table 13
The Mean and Median Purity for d-Methamphetamine When Seizures Are Included

	≤ 10 Grams		10-100 Grams		100 - 500 Grams		> 500 Grams	
Year	Mean	Median	Mean	Median	Mean	Median	Mean	Median
1981	0.45	0.36	0.39	0.31	0.56	0.63	0.72	0.75
1982	0.56	0.54	0.44	0.39	0.50	0.50	0.48	0.43
1983	0.50	0.47	0.45	0.38	0.51	0.54	0.22	0.14
1984	0.49	0.44	0.46	0.43	0.43	0.34	0.60	0.43
1985	0.50	0.46	0.51	0.48	0.56	0.56	0.63	0.83
1986	0.59	0.58	0.57	0.60	0.58	0.61	0.68	0.73
1987	0.65	0.70	0.57	0.56	0.61	0.65	0.65	0.78
1988	0.67	0.75	0.61	0.64	0.65	0.68	0.70	0.71
1989	0.65	0.70	0.58	0.57	0.61	0.65	0.68	0.79
1990	0.49	0.41	0.43	0.32	0.41	0.31	0.47	0.40
1991	0.51	0.41	0.48	0.35	0.49	0.39	0.44	0.32
1992	0.67	0.80	0.57	0.57	0.71	0.85	0.74	0.91
1993	0.70	0.87	0.64	0.73	0.74	0.89	0.80	0.92
1994	0.73	0.88	0.69	0.85	0.77	0.89	0.83	0.93
1995	0.66	0.83	0.60	0.66	0.66	0.82	0.74	0.88
1996	0.60	0.69	0.47	0.36	0.49	0.38	0.52	0.41
1997	0.59	0.54	0.50	0.40	0.52	0.43	0.53	0.45
1998	0.42	0.29	0.27	0.17	0.23	0.18	0.26	0.19
1999	0.46	0.33	0.31	0.21	0.26	0.20	0.29	0.22
2000	0.47	0.35	0.34	0.24	0.29	0.21	0.35	0.23
2001	0.51	0.44	0.40	0.25	0.33	0.22	0.45	0.28
2002	0.52	0.48	0.42	0.29	0.37	0.23	0.49	0.32
2003	0.59	0.62	0.53	0.53	0.45	0.31	0.64	0.76

* 2003 purities are based on information from only the first two quarters of the year, and thus are likely to be updated in future reports.

Source: System to Retrieve Information on Drug Evidence (STRIDE).
Prepared by: RAND Corporation, February 2004.

APPENDIX: Estimated Quarterly Prices and Purity

Table A.1: Estimated Quarterly Price Per Expected Pure Gram of Powder Cocaine, Constant 2002 Dollars

	≤ 2 Grams				2-10 Grams				10-50 Grams					
Period	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	Qu
1981Q1	55	554.08	641.33	736.24	84	267.40	322.06	367.48	126	281.13	307.86	325.12	25	1
1981Q2	53	487.20	558.67	631.95	67	321.61	387.44	420.36	111	253.17	280.52	302.95	13	1
1981Q3	46	368.33	437.35	515.15	52	265.30	335.53	383.01	113	245.68	272.24	304.67		
1981Q4	53	462.40	541.01	638.31	49	306.55	337.54	386.30	53	232.77	261.56	294.99	6	1
1982Q1	87	465.64	607.77	673.79	86	345.71	380.61	426.92	134	241.70	276.66	309.01	15	1
1982Q2	65	509.70	669.05	774.21	94	292.46	324.78	365.89	91	242.07	274.79	311.51	17	1
1982Q3	97	459.73	512.09	593.73	116	304.72	335.15	370.77	146	235.97	255.87	286.35	12	1
1982Q4	86	502.85	574.53	643.63	72	280.44	309.31	346.08	105	220.56	261.15	293.53	8	1
1983Q1	103	435.23	573.04	678.38	109	286.49	320.84	364.66	150	206.98	230.12	254.17	30	1
1983Q2	54	395.30	470.46	540.26	131	280.96	325.71	379.09	183	207.64	237.20	275.65	37	1
1983Q3	62	337.77	424.19	511.52	100	285.22	319.50	362.88	165	170.59	205.52	235.78	45	1
1983Q4	110	327.22	419.81	480.03	145	264.19	278.04	304.65	214	158.56	187.40	203.41	44	1
1984Q1	124	283.21	371.15	441.60	128	244.43	259.62	283.50	225	142.37	169.88	191.25	57	1
1984Q2	99	334.38	436.72	523.74	128	210.99	244.54	287.55	225	136.68	167.24	184.98	64	1
1984Q3	78	319.46	400.27	467.42	122	240.49	259.66	285.19	247	134.40	173.74	186.82	59	1
1984Q4	104	314.41	394.60	461.09	142	215.80	247.14	279.67	281	126.31	169.47	198.55	60	1
1985Q1	129	350.07	451.90	531.38	181	211.22	236.06	257.26	296	131.88	173.54	196.05	70	1
1985Q2	167	288.37	379.12	442.79	160	216.52	245.92	266.77	326	147.85	188.35	207.56	92	1
1985Q3	159	278.83	370.61	455.32	165	192.51	231.57	263.92	382	131.53	165.86	179.15	85	1
1985Q4	143	257.44	356.78	421.85	142	210.51	243.43	268.46	390	128.75	154.50	173.79	122	1
1986Q1	165	226.96	303.97	362.12	165	170.41	200.86	223.95	396	117.31	138.69	150.59	112	
1986Q2	172	265.19	331.01	387.77	183	162.38	192.40	214.36	368	108.75	137.45	152.96	113	
1986Q3	165	237.24	291.87	343.45	147	149.03	180.81	203.23	334	103.99	127.84	146.88	100	
1986Q4	160	219.82	260.92	287.04	126	144.31	170.16	192.56	330	89.82	118.02	139.27	128	
1987Q1	139	239.95	295.71	322.79	86	127.92	149.27	171.94	282	89.81	113.55	129.48	134	
1987Q2	96	222.38	280.86	335.13	117	123.46	152.25	168.94	407	79.12	102.84	122.23	193	
1987Q3	89	176.29	216.14	244.51	115	125.70	148.65	160.32	429	77.82	94.58	110.52	207	
1987Q4	94	157.89	209.50	253.19	111	106.77	132.96	152.20	357	63.26	83.53	94.86	178	
1988Q1	87	157.97	199.98	229.78	134	105.29	135.53	167.32	380	59.79	76.11	92.93	161	
1988Q2	117	174.82	207.95	244.17	109	107.81	137.23	166.85	354	69.63	79.32	89.57	178	

Table A.1: Estimated Quarterly Price Per Expected Pure Gram of Powder Cocaine, Constant 2002 Dollars (Continued)

	≤ 2 Grams				2-10 Grams				10-50 Grams				
Period	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.
1988Q3	110	205.61	282.42	299.86	124	99.75	122.89	139.22	341	57.09	72.99	84.66	241
1988Q4	87	158.83	203.84	245.03	106	91.04	111.68	130.84	329	55.00	66.73	76.66	223
1989Q1	79	146.09	187.51	224.33	138	84.69	110.64	130.43	377	52.75	66.04	75.23	237
1989Q2	86	141.78	182.51	224.54	85	77.76	95.15	112.79	365	50.10	62.26	70.77	203
1989Q3	82	162.13	210.18	242.99	87	88.75	108.98	128.51	291	51.30	65.27	74.32	253
1989Q4	90	121.25	179.46	212.92	98	110.64	123.39	134.81	236	63.11	74.51	87.24	184
1990Q1	95	169.35	210.89	253.67	109	100.75	124.60	139.55	226	61.80	75.35	87.69	175
1990Q2	47	173.07	230.35	280.36	63	130.98	161.45	182.99	190	73.24	86.74	99.63	135
1990Q3	75	206.17	278.02	328.19	77	100.09	121.53	152.23	231	77.55	93.28	112.87	170
1990Q4	69	171.53	220.49	265.47	67	100.35	125.10	155.34	250	64.87	83.61	93.13	157
1991Q1	143	148.14	193.55	236.74	118	88.39	106.68	127.03	334	57.34	74.27	91.71	235
1991Q2	70	148.02	196.25	233.63	85	90.26	98.62	113.65	305	52.97	70.13	81.70	304
1991Q3	47	170.05	215.53	263.17	96	81.64	97.96	113.58	318	49.98	65.08	74.66	287
1991Q4	46	147.19	188.04	222.79	76	75.97	93.47	109.68	266	48.22	59.29	69.69	231
1992Q1	69	109.13	147.31	173.65	88	69.38	85.56	102.29	278	41.69	57.56	64.87	236
1992Q2	48	124.74	157.47	183.71	62	84.37	105.71	121.81	190	59.23	71.59	80.78	152
1992Q3	66	111.22	147.15	176.26	59	80.82	100.07	116.00	223	44.95	61.65	76.42	221
1992Q4	45	130.81	163.91	190.65	44	79.85	97.76	114.75	160	44.35	57.96	65.87	98
1993Q1	44	127.33	155.08	192.83	47	87.40	97.84	109.34	99	50.63	61.71	75.65	74
1993Q2	51	135.70	182.07	220.97	53	72.92	88.24	102.67	141	51.49	64.59	76.09	66
1993Q3	65	106.90	134.62	157.03	54	83.66	104.24	119.84	143	53.21	64.91	74.25	96
1993Q4	58	119.59	152.93	175.67	50	73.56	91.95	112.18	110	50.62	63.13	72.83	78
1994Q1	50	104.91	137.83	166.94	55	73.45	89.71	100.72	139	45.22	56.87	66.57	92
1994Q2	30	133.61	162.28	193.56	51	74.21	91.12	108.54	148	46.01	56.88	69.55	99
1994Q3	55	113.54	139.05	162.30	45	67.10	79.70	89.60	166	42.82	57.05	64.70	147
1994Q4	28	115.41	150.56	178.61	46	68.69	85.13	103.95	139	41.36	51.03	56.47	106
1995Q1	30	121.22	158.67	187.60	63	57.89	70.35	81.92	136	38.49	48.39	52.42	96
1995Q2	24	144.66	192.89	230.80	44	60.77	75.56	87.33	103	41.35	52.53	59.55	108
1995Q3	34	145.78	191.76	232.59	55	90.46	103.53	119.05	105	57.56	69.59	72.64	104
1995Q4	47	146.95	183.00	207.67	36	86.52	101.11	109.75	113	49.24	60.22	67.22	99

Table A.1: Estimated Quarterly Price Per Expected Pure Gram of Powder Cocaine, Constant 2002 Dollars (Continued)

	≤ 2 Grams				2-10 Grams				10-50 Grams				
Period	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.
1996Q1	28	133.95	179.83	206.42	50	65.74	81.59	98.75	120	46.99	55.06	63.49	111
1996Q2	46	124.59	141.69	162.38	55	81.45	92.71	100.87	140	42.31	52.12	60.41	167
1996Q3	31	146.79	171.75	200.61	55	63.83	80.53	91.31	158	41.34	50.97	58.49	189
1996Q4	24	96.63	107.26	123.26	46	71.14	81.69	91.74	150	38.11	44.51	49.52	148
1997Q1	29	129.37	154.28	176.81	77	61.10	76.57	90.54	145	37.46	47.40	54.44	114
1997Q2	55	126.21	149.00	178.33	71	68.56	84.81	98.53	98	47.42	59.50	69.84	88
1997Q3	52	114.98	142.41	169.26	79	64.49	77.64	90.17	154	43.76	55.14	62.98	169
1997Q4	41	112.14	137.21	151.95	57	68.95	81.83	93.24	155	36.54	46.23	55.85	156
1998Q1	35	92.43	114.57	131.18	56	57.20	69.39	77.92	171	37.65	47.56	56.38	145
1998Q2	34	116.13	154.91	183.91	68	67.26	78.98	93.82	163	38.25	46.55	53.62	192
1998Q3	52	95.34	120.69	136.69	70	63.22	71.41	81.94	188	37.19	46.39	55.69	174
1998Q4	44	119.57	138.18	160.58	55	82.08	95.08	107.28	147	37.62	47.58	58.11	159
1999Q1	89	114.72	145.02	168.52	87	77.34	92.74	109.58	134	40.60	48.19	55.90	108
1999Q2	36	91.62	118.14	141.79	70	63.00	77.05	88.43	133	41.05	52.91	64.15	161
1999Q3	67	106.45	135.69	160.26	55	66.45	77.67	85.01	185	41.33	50.26	59.74	239
1999Q4	39	111.15	143.18	167.09	65	68.55	82.10	90.85	146	37.50	49.29	55.16	124
2000Q1	53	131.68	160.42	171.63	71	75.57	89.44	105.20	130	42.97	54.30	64.19	115
2000Q2	37	109.92	146.85	174.09	60	85.63	95.44	105.92	151	51.82	61.67	72.63	174
2000Q3	30	176.68	203.21	241.12	62	73.67	93.73	109.35	179	42.97	54.68	63.18	170
2000Q4	41	106.76	134.63	156.82	66	105.44	119.01	132.26	167	37.96	50.39	59.86	114
2001Q1	41	128.20	166.44	198.40	81	71.95	90.56	102.39	190	47.34	53.70	59.83	184
2001Q2	21	122.01	151.70	181.00	63	81.70	90.13	103.92	167	42.93	54.55	63.46	185
2001Q3	17	143.64	179.85	211.01	41	57.45	72.08	82.30	130	40.00	53.04	61.28	180
2001Q4	20	138.63	175.15	205.47	38	59.42	72.77	82.01	100	42.06	54.65	62.19	133
2002Q1	23	110.97	134.08	163.00	60	59.67	74.29	85.75	120	40.45	51.69	59.39	155
2002Q2	21	79.96	105.61	127.57	60	72.60	80.02	88.88	102	40.63	48.51	52.38	197
2002Q3	22	121.02	152.81	175.04	43	60.98	75.50	85.27	145	37.70	44.54	49.92	208
2002Q4	26	80.18	105.64	128.23	44	54.94	67.63	78.28	115	36.90	44.32	52.15	135
2003Q1	27	92.79	118.96	136.30	72	53.84	68.08	75.63	163	35.61	42.62	51.09	134
2003Q2	13	82.18	94.12	107.33	19	59.84	72.97	83.40	101	37.09	45.71	53.71	89

Source: System to Retrieve Information on Drug Evidence (STRIDE). Prepared by: RAND Corporation, February 2004.

Table A.2
Estimated Quarterly Price Per Expected Pure Gram of Crack Cocaine
Constant 2002 Dollars

	≤ 1 Gram				1-15 Grams				> 15 Grams			
Period	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile
1986Q1	25	297.74	405.85	520.22	8	156.99	172.65	193.86	8	108.73	123.00	140.18
1986Q2	53	252.99	340.46	436.29	24	143.93	164.64	193.73	7	108.16	126.34	141.63
1986Q3	59	229.01	319.82	407.12	22	137.75	158.03	183.12	8	96.06	113.49	129.21
1986Q4	32	222.57	300.30	378.58	15	181.14	201.55	233.52	7	79.37	90.25	102.91
1987Q1	40	353.41	484.72	596.71	16	167.95	186.74	218.34	14	82.44	94.18	107.09
1987Q2	67	236.17	316.92	395.19	33	120.36	153.09	185.02	38	92.32	105.48	119.02
1987Q3	100	213.84	295.54	371.62	99	116.38	129.35	146.82	15	60.25	68.25	78.11
1987Q4	127	151.43	203.28	255.68	27	106.21	120.09	142.66	24	66.39	71.83	80.26
1988Q1	115	165.13	214.58	280.87	39	87.07	95.03	113.02	21	71.83	81.36	92.60
1988Q2	179	174.73	220.89	283.61	49	93.21	103.94	126.10	34	62.48	70.61	81.81
1988Q3	232	156.84	222.21	290.83	81	102.69	122.24	141.80	66	54.93	66.33	78.92
1988Q4	274	185.75	254.34	319.78	69	92.25	112.85	131.45	46	59.06	66.67	77.33
1989Q1	282	151.24	199.58	258.22	76	88.75	97.32	112.44	72	54.46	64.09	74.62
1989Q2	407	162.43	218.93	256.07	103	84.35	90.59	106.41	79	52.07	62.92	73.29
1989Q3	315	134.28	193.85	246.95	116	80.30	95.23	112.95	102	51.96	60.65	68.56
1989Q4	214	129.92	179.02	212.74	56	89.20	101.65	117.59	55	71.22	79.44	88.66
1990Q1	290	161.63	211.61	255.67	88	106.12	117.34	133.24	82	80.76	90.97	98.75
1990Q2	205	208.16	270.04	314.46	87	122.17	156.68	190.98	64	93.80	109.71	123.54
1990Q3	338	208.20	278.71	351.53	117	123.37	146.58	174.10	95	97.85	106.73	118.30
1990Q4	244	177.99	258.36	334.24	125	118.32	131.33	159.58	75	73.97	82.95	93.04
1991Q1	329	179.85	234.30	299.41	167	113.40	127.92	145.29	142	68.01	77.74	84.31
1991Q2	342	156.09	217.09	275.94	167	104.08	115.96	133.47	199	64.77	75.11	83.74
1991Q3	327	151.27	202.38	253.11	115	77.09	96.19	117.54	181	60.55	72.52	79.25
1991Q4	271	113.82	152.64	192.17	148	78.36	90.94	106.68	149	58.75	64.29	71.03
1992Q1	236	135.92	187.98	219.57	219	66.23	87.80	103.65	186	51.64	61.63	70.56
1992Q2	209	187.80	244.84	308.71	152	103.57	114.35	133.30	133	65.70	75.66	85.03
1992Q3	216	151.25	216.65	282.56	243	90.36	103.57	121.24	207	59.24	68.79	77.43
1992Q4	178	123.66	177.28	215.11	178	88.32	101.95	116.12	165	48.12	61.02	71.62
1993Q1	148	138.49	179.77	224.80	161	78.81	97.43	118.56	129	54.90	63.29	72.15
1993Q2	138	139.73	186.36	235.82	195	86.42	101.52	116.07	159	65.95	74.80	83.09
1993Q3	105	124.45	162.59	204.58	177	85.87	103.05	119.37	166	55.32	64.28	73.09
1993Q4	126	127.75	185.93	232.48	192	70.45	90.12	110.52	136	48.28	60.81	69.82
1994Q1	111	139.31	184.08	228.65	217	62.13	81.01	94.65	189	52.13	59.28	66.48
1994Q2	122	123.12	176.50	210.01	250	68.95	90.27	110.24	177	48.12	59.52	68.83
1994Q3	173	114.46	169.95	199.70	327	66.68	84.47	96.50	269	51.82	58.04	66.02
1994Q4	86	111.20	167.32	202.80	304	62.73	78.72	95.06	268	45.00	54.51	62.00

Table A.2
Estimated Quarterly Price Per Expected Pure Gram of Crack Cocaine
Constant 2002 Dollars (Continued)

	≤ 1 Gram				1-15 Grams				> 15 Grams			
Period	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile
1995Q1	92	112.76	163.99	211.71	369	59.19	78.16	91.12	297	45.72	54.34	60.91
1995Q2	126	123.73	166.64	201.50	238	67.07	85.05	97.07	205	49.37	56.72	64.14
1995Q3	195	135.86	179.10	210.13	216	93.65	99.43	111.08	189	52.84	63.87	70.65
1995Q4	127	181.16	217.74	258.05	207	68.38	86.43	100.31	180	55.61	62.53	70.25
1996Q1	111	113.15	153.33	185.42	294	70.58	81.27	92.35	254	48.15	55.94	64.26
1996Q2	142	110.76	148.51	180.71	303	66.13	76.20	82.95	304	46.35	54.84	61.17
1996Q3	132	130.58	169.48	191.40	302	73.27	78.99	89.99	306	44.23	52.35	60.43
1996Q4	182	134.89	178.15	223.74	348	70.38	80.43	91.90	264	47.39	53.98	60.71
1997Q1	198	120.42	165.55	209.04	350	70.73	78.73	90.58	332	41.34	53.59	62.04
1997Q2	190	179.71	234.48	298.72	322	93.30	102.67	118.61	252	56.53	67.71	75.02
1997Q3	187	144.38	189.33	233.98	325	84.02	90.20	98.95	402	52.83	60.82	71.67
1997Q4	98	147.84	192.17	237.18	271	76.09	82.60	92.38	317	45.08	52.87	60.67
1998Q1	103	125.26	169.82	215.35	338	65.67	74.85	85.00	392	44.86	53.62	62.65
1998Q2	162	125.43	165.61	197.74	312	70.08	77.12	88.98	398	45.43	51.53	58.49
1998Q3	161	114.44	146.31	170.08	339	74.15	78.62	87.64	357	44.95	50.23	55.76
1998Q4	196	116.47	162.50	196.66	333	70.81	78.78	89.82	301	44.17	54.27	62.95
1999Q1	246	187.84	256.25	299.10	350	77.14	95.92	109.73	246	62.20	67.85	78.03
1999Q2	262	134.70	193.93	235.11	385	75.93	83.54	98.16	330	53.18	58.75	66.84
1999Q3	363	125.27	181.67	232.29	441	66.20	81.08	97.44	393	48.30	55.94	62.41
1999Q4	299	139.29	189.46	224.75	443	72.11	88.98	104.15	291	47.23	55.44	60.61
2000Q1	309	158.15	214.16	242.75	517	85.26	99.46	117.01	296	56.53	67.50	76.43
2000Q2	307	185.69	232.64	286.98	478	86.22	95.86	108.35	421	57.79	66.43	75.58
2000Q3	211	157.37	215.77	266.28	476	84.76	99.24	112.00	483	54.94	62.80	71.63
2000Q4	271	159.43	211.64	254.97	412	75.65	96.49	111.77	339	49.09	57.49	66.20
2001Q1	228	165.15	227.09	277.27	526	72.31	91.98	108.25	424	52.74	61.37	70.41
2001Q2	286	139.04	182.80	231.12	488	71.29	90.48	107.25	458	56.28	62.77	71.89
2001Q3	183	136.33	182.10	218.00	390	70.06	84.56	97.19	379	48.81	57.99	67.94
2001Q4	244	154.31	201.44	244.70	253	86.22	89.07	98.43	246	54.95	62.79	73.43
2002Q1	207	131.95	191.45	245.22	394	65.81	79.69	93.34	409	53.37	57.99	65.22
2002Q2	169	128.36	165.26	204.09	353	78.68	87.43	101.27	460	51.49	57.68	66.25
2002Q3	132	121.48	165.23	191.51	354	73.32	80.74	93.32	438	47.43	53.12	60.62
2002Q4	124	131.51	169.65	209.49	255	69.58	74.87	86.46	286	44.56	50.42	56.32
2003Q1	111	156.20	220.10	282.08	327	56.91	74.41	88.15	377	42.07	48.03	54.29
2003Q2	96	118.83	159.63	201.06	222	59.79	73.72	90.99	245	39.16	46.91	53.88

Source: System to Retrieve Information on Drug Evidence (STRIDE).
Prepared by: RAND Corporation, February 2004.

Table A.3
Estimated Quarterly Price Per Expected Pure Gram of Heroin
Constant 2002 Dollars

	≤ 1 Gram				1-10 Grams				>10 Grams			
Period	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile
1981Q1	110	1138.04	2309.35	3087.25	89	1041.37	1587.34	1601.86	69	968.66	1355.43	1684.14
1981Q2	99	1236.24	1991.45	2427.00	81	972.76	1866.77	2137.70	79	637.20	815.81	1012.45
1981Q3	111	1233.85	1893.89	2721.15	103	767.15	1747.10	1957.41	70	929.73	1188.42	1520.82
1981Q4	159	1295.18	1703.25	2097.00	68	716.68	1478.85	1581.55	42	503.78	670.76	792.78
1982Q1	142	1242.93	1639.73	2018.08	147	687.79	1241.08	1264.09	68	501.94	634.83	803.40
1982Q2	125	904.91	1435.82	1771.55	90	784.00	1370.74	1344.97	75	598.30	806.01	1040.23
1982Q3	137	1470.14	1715.54	2112.35	93	440.47	1219.22	1245.01	61	476.38	700.74	920.64
1982Q4	57	1015.28	1559.67	1958.33	62	490.92	1074.65	1091.20	44	777.99	836.37	1062.11
1983Q1	88	1156.59	1615.04	1849.95	85	990.25	1812.22	2069.15	54	650.42	836.36	1090.23
1983Q2	69	1239.41	1899.66	2427.50	66	871.43	1583.98	1617.45	55	541.42	757.55	943.61
1983Q3	82	879.28	1368.15	1633.23	89	1013.32	1535.45	1406.85	84	627.29	848.48	1015.95
1983Q4	59	1026.74	1623.48	2008.58	52	591.89	1182.86	1291.74	43	367.80	462.13	589.66
1984Q1	60	1223.49	1587.44	1780.83	53	947.43	1564.86	1592.90	60	637.56	775.53	882.47
1984Q2	59	1233.93	1714.22	2030.80	48	694.09	1353.60	1550.73	53	501.17	676.39	724.44
1984Q3	58	856.14	1382.74	1656.35	69	793.07	1644.99	1866.05	64	509.04	658.22	807.35
1984Q4	44	809.14	1189.17	1467.15	37	673.94	1199.69	1185.29	60	565.76	750.60	902.02
1985Q1	61	943.73	1423.86	1783.60	75	793.80	1259.41	1440.19	61	429.41	549.83	710.29
1985Q2	46	787.52	1230.01	1517.45	67	618.66	1302.41	1496.02	76	451.91	609.24	683.71
1985Q3	53	715.45	1180.69	1372.88	71	531.13	1209.52	1345.26	84	565.52	700.64	848.36
1985Q4	55	1039.16	1572.06	1935.48	43	353.49	742.66	791.61	65	664.60	762.03	849.28
1986Q1	61	1031.74	1303.25	1535.68	54	433.39	811.62	853.17	91	473.27	652.55	796.63
1986Q2	51	1175.50	1498.32	1881.05	51	485.23	839.06	768.09	64	480.66	560.27	679.63
1986Q3	53	778.18	1228.88	1506.23	30	520.67	916.76	1032.88	55	654.53	724.78	833.93
1986Q4	32	990.83	1379.04	1566.38	18	877.81	1519.16	1550.33	60	567.99	687.40	758.26
1987Q1	38	1064.29	1417.06	1728.03	28	608.72	1217.30	1287.01	66	739.37	915.37	985.56
1987Q2	44	902.64	1207.99	1427.63	36	615.94	1167.21	1088.77	60	610.92	719.76	860.76
1987Q3	52	654.93	1070.56	1257.28	37	637.26	1196.28	1346.14	63	677.50	735.97	811.14
1987Q4	92	772.01	1224.90	1555.70	59	452.90	791.59	750.78	60	547.58	645.98	757.68
1988Q1	86	721.27	1068.53	1513.55	45	433.14	810.90	835.09	77	352.22	488.39	560.78
1988Q2	143	635.90	1076.25	1163.38	43	429.25	821.88	1009.93	71	428.14	517.80	565.34

Table A.3
Estimated Quarterly Price Per Expected Pure Gram of Heroin
Constant 2002 Dollars (Continued)

	≤ 1 Gram				1-10 Grams				>10 Grams			
Period	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile
1988Q3	114	662.46	1041.92	1278.90	64	632.60	1036.38	1026.95	74	469.04	543.30	657.07
1988Q4	86	651.28	988.43	1204.40	49	486.20	854.49	912.71	51	398.77	496.05	539.70
1989Q1	66	581.78	866.53	1065.93	47	464.23	750.40	701.49	53	466.15	530.50	574.00
1989Q2	56	632.59	927.89	1174.75	33	374.96	792.30	950.30	59	398.80	476.13	568.31
1989Q3	85	544.18	947.09	1178.80	54	351.47	628.74	709.68	79	372.41	465.94	572.01
1989Q4	58	633.67	994.35	1332.18	39	356.80	604.02	628.71	71	446.23	470.81	533.28
1990Q1	102	688.10	1059.32	1330.18	49	515.53	978.74	1039.32	58	464.70	605.46	739.86
1990Q2	113	569.18	857.02	1079.13	28	474.35	803.35	917.99	69	559.34	603.08	677.14
1990Q3	88	745.41	1142.59	1459.30	45	584.22	1031.42	1089.56	57	487.71	609.59	705.57
1990Q4	100	527.79	731.88	886.85	25	521.71	832.76	877.48	48	588.50	771.71	907.51
1991Q1	173	503.97	914.77	1072.48	55	581.30	1042.36	1177.64	46	521.17	615.79	683.05
1991Q2	181	541.83	925.51	1202.50	67	520.73	845.31	863.39	61	389.77	514.38	591.10
1991Q3	155	582.74	951.32	1272.48	69	436.10	736.63	758.00	69	357.48	404.81	473.63
1991Q4	83	523.67	791.58	1006.93	32	371.63	653.21	754.69	40	403.23	434.24	507.81
1992Q1	125	502.93	824.50	945.20	51	377.85	639.38	623.52	53	346.57	421.39	488.13
1992Q2	116	422.66	746.09	960.10	39	378.50	659.02	698.70	77	336.32	417.39	470.00
1992Q3	92	414.86	768.59	943.23	43	402.72	732.02	772.93	72	349.93	395.29	421.19
1992Q4	131	446.56	636.45	763.88	38	284.51	503.08	506.45	53	288.19	374.23	433.31
1993Q1	172	413.86	657.32	729.95	67	254.89	497.02	516.29	55	272.51	338.42	405.37
1993Q2	156	399.73	613.27	756.70	71	159.78	379.04	480.06	58	248.14	315.82	351.35
1993Q3	173	416.44	607.90	694.68	99	252.88	444.94	490.07	118	241.43	305.08	339.59
1993Q4	134	383.10	600.43	711.60	61	280.32	473.75	515.20	48	282.75	342.58	425.54
1994Q1	196	445.89	658.99	710.40	93	221.24	395.57	386.99	67	272.27	331.75	368.74
1994Q2	173	371.89	583.16	626.25	83	267.44	443.33	451.28	79	267.85	338.38	391.76
1994Q3	192	406.26	647.89	697.85	84	217.88	419.32	478.93	86	224.13	280.58	305.44
1994Q4	173	312.27	570.61	665.80	85	237.88	415.17	437.20	68	193.37	245.39	313.44
1995Q1	197	316.01	547.59	695.70	79	242.42	408.00	426.55	104	182.07	245.76	309.62
1995Q2	223	394.71	542.00	611.80	92	212.74	359.09	367.96	76	189.35	218.70	268.40
1995Q3	202	386.54	576.32	708.58	104	204.35	418.08	492.79	102	163.30	236.50	282.45
1995Q4	187	331.57	512.86	548.73	68	241.18	426.41	457.64	54	226.70	249.97	266.15

Table A.3
Estimated Quarterly Price Per Expected Pure Gram of Heroin
Constant 2002 Dollars (Continued)

	≤ 1 Gram				1-10 Grams				>10 Grams			
Period	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile
1996Q1	214	386.42	515.03	660.30	93	178.05	388.91	424.10	62	240.16	258.08	311.54
1996Q2	224	330.96	541.10	683.95	111	208.78	384.19	436.81	99	212.44	277.18	343.75
1996Q3	187	343.96	502.79	599.03	99	202.81	389.20	431.12	93	196.23	237.48	287.63
1996Q4	197	318.81	503.82	623.65	92	173.27	351.66	396.87	73	187.60	221.19	248.18
1997Q1	280	321.53	493.94	657.90	90	182.69	328.91	315.58	87	181.03	221.20	247.95
1997Q2	248	318.27	529.13	644.03	119	192.04	340.70	355.47	106	154.58	189.74	222.75
1997Q3	218	294.21	486.55	595.05	99	168.32	306.82	363.62	95	187.01	225.09	273.24
1997Q4	52	290.61	454.54	539.80	41	193.46	333.96	374.91	79	162.62	197.25	241.32
1998Q1	314	302.07	472.51	576.88	142	128.82	295.89	319.41	99	151.58	203.40	240.57
1998Q2	210	310.73	431.11	511.80	140	150.06	287.25	287.09	141	153.30	167.67	204.40
1998Q3	160	322.34	441.91	564.40	124	159.23	289.14	302.26	105	141.03	172.69	205.54
1998Q4	202	256.40	385.51	411.70	120	141.32	305.41	374.30	100	161.71	199.32	248.45
1999Q1	265	286.13	415.09	533.18	163	142.86	271.82	290.73	111	162.60	197.94	221.85
1999Q2	257	291.52	440.17	473.70	158	144.53	281.97	289.14	98	143.75	186.69	230.25
1999Q3	254	316.70	409.30	496.28	161	130.01	270.59	309.09	112	139.67	165.52	175.80
1999Q4	194	303.95	441.40	512.75	104	112.97	240.25	293.81	87	126.52	154.05	172.41
2000Q1	258	323.89	428.43	444.83	131	126.46	259.00	323.44	100	122.60	153.13	192.45
2000Q2	216	290.34	413.43	510.30	164	127.47	272.67	298.48	117	123.48	145.67	174.96
2000Q3	222	300.89	405.47	446.55	155	144.79	251.39	253.66	112	138.77	174.43	210.13
2000Q4	209	306.50	408.26	479.80	86	163.35	295.08	331.85	64	102.28	141.16	171.55
2001Q1	218	284.15	391.98	440.08	164	141.78	256.02	246.05	84	116.09	152.42	184.84
2001Q2	219	273.31	407.51	563.70	140	138.93	238.68	269.23	105	93.64	139.39	172.82
2001Q3	218	265.30	396.78	477.85	118	145.26	260.00	275.99	105	110.42	132.61	162.70
2001Q4	223	285.42	396.83	453.03	81	128.19	229.36	242.67	60	81.06	114.06	142.91
2002Q1	228	305.58	392.39	424.23	111	141.58	253.80	275.33	81	118.77	143.57	158.71
2002Q2	225	285.31	405.35	453.75	149	114.46	229.55	250.27	83	100.10	130.27	157.67
2002Q3	225	280.38	388.20	494.18	134	142.69	256.93	282.95	114	129.66	148.69	183.67
2002Q4	79	196.76	302.06	367.50	67	128.85	223.08	221.18	50	111.91	130.74	156.53
2003Q1	215	261.38	361.76	391.95	110	111.02	227.97	253.51	60	111.98	128.84	142.08
2003Q2	52	238.51	362.14	403.98	51	157.83	264.13	289.52	43	119.70	149.60	184.44

Source: System to Retrieve Information on Drug Evidence (STRIDE).
Prepared by: RAND Corporation, February 2004.

Table A.4
Estimated Quarterly Price Per Expected Pure Gram of d-Methamphetamine, Constant 2002 Dollars

	≤ 10 Grams				10-100 Grams				>100 Grams			
Period	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile
1981Q1	19	228.40	327.92	403.14	20	112.81	154.10	192.64				
1981Q2	11	397.84	476.90	596.95	9	117.83	159.53	199.21				
1981Q3	8	262.76	353.51	439.55	10	101.70	139.00	171.95				
1981Q4	8	405.31	446.60	548.72	8	119.01	162.23	201.22				
1982Q1	14	285.86	349.66	427.50	19	162.13	219.48	274.11	8	68.99	91.83	99.07
1982Q2	16	377.69	492.24	610.78	8	134.77	186.82	234.07				
1982Q3	22	295.64	358.50	442.14	14	156.36	211.77	264.35				
1982Q4	25	287.90	374.09	462.30	16	151.21	182.01	233.95				
1983Q1	29	377.33	533.01	666.04	8	147.02	196.45	248.57				
1983Q2	31	309.31	370.58	462.58	12	202.91	274.34	344.36				
1983Q3	17	272.62	387.56	481.21	14	124.10	187.91	238.26				
1983Q4	25	245.75	295.09	367.51	8	112.37	152.28	189.98	8	80.51	106.51	114.33
1984Q1	31	273.25	349.14	434.90	8	252.82	347.82	433.78	8	59.28	77.94	85.58
1984Q2	31	240.64	288.55	359.88	28	153.12	226.14	287.48	12	44.13	59.02	63.38
1984Q3	19	316.05	398.14	491.22	13	143.45	213.49	269.32	13	44.50	59.52	63.90
1984Q4	32	294.63	367.94	452.20	19	124.22	183.99	233.22	6	68.37	91.50	98.18
1985Q1	37	363.82	449.95	487.32	32	144.30	204.20	257.02	12	49.72	65.88	71.40
1985Q2	11	230.98	318.49	396.43	13	178.23	261.43	328.11				
1985Q3	24	236.34	333.16	417.17	9	89.24	120.03	150.88				
1985Q4	28	319.04	407.77	495.87	16	131.46	176.88	222.27	7	88.59	116.99	127.20
1986Q1	39	260.20	334.03	417.66	22	155.61	229.14	292.15				
1986Q2	23	208.73	254.12	315.64	15	212.22	276.60	346.77	6	68.20	89.94	97.95
1986Q3	28	268.48	335.29	417.28	14	202.56	278.42	350.82	6	35.54	48.58	52.41
1986Q4	24	205.96	248.40	308.01	9	104.27	154.51	195.76	5	32.75	46.58	50.11
1987Q1	25	232.56	289.88	361.45	18	147.68	198.19	248.84	5	230.53	306.57	330.99
1987Q2	30	210.78	275.44	345.28	25	143.08	186.71	241.91				
1987Q3	22	168.64	210.13	262.12	12	141.23	188.94	237.18				
1987Q4	43	233.88	304.50	379.74	18	131.13	179.20	225.93				
1988Q1	64	205.70	239.00	297.44	39	109.31	147.51	184.82	9	52.67	74.13	80.59
1988Q2	60	266.53	324.38	398.60	30	102.16	138.38	176.01	9	54.81	72.58	78.72

Table A.4
Estimated Quarterly Price Per Expected Pure Gram of d-Methamphetamine, Constant 2002 Dollars (Continued)

	≤ 10 Grams				10-100 Grams				>100 Grams			
Period	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile
1988Q3	29	206.76	256.34	321.35	36	138.16	186.43	233.60	8	48.30	73.28	80.07
1988Q4	29	228.02	283.67	354.41	27	111.34	150.17	189.86	8	42.96	60.48	65.72
1989Q1	35	205.94	257.08	320.09	33	110.90	150.61	191.07	8	56.68	79.77	86.72
1989Q2	26	207.42	258.19	322.37	20	117.77	159.56	204.54				
1989Q3	23	388.42	468.21	580.88	21	104.12	142.01	179.39				
1989Q4	30	331.24	414.34	514.82	18	144.75	198.35	248.55				
1990Q1	25	204.31	254.31	317.55	25	233.73	284.39	361.71				
1990Q2	16	431.39	531.48	670.49	26	273.02	375.06	474.20	8	169.74	240.64	265.38
1990Q3	21	277.11	344.33	430.70	28	147.86	202.15	256.81	10	96.61	136.85	149.36
1990Q4	17	399.84	479.79	597.96	15	193.52	263.61	333.42	8	76.71	101.07	110.16
1991Q1	32	457.08	580.08	710.42	22	140.15	191.66	241.47	10	78.62	103.46	112.90
1991Q2	18	363.13	450.15	564.39	29	272.62	361.34	460.92	9	58.44	82.09	89.41
1991Q3	16	360.04	445.76	559.58	21	179.24	243.99	308.81	8	87.66	123.47	134.13
1991Q4	9	259.68	323.11	403.60	25	219.50	298.30	376.90	8	116.11	163.78	177.62
1992Q1	11	195.32	232.44	290.76	31	147.94	185.07	233.78	8	111.94	156.20	171.26
1992Q2	18	191.50	251.18	317.78	28	140.01	186.97	236.72	13	70.28	92.67	100.91
1992Q3	22	189.23	233.34	294.11	29	113.02	154.05	195.22	12	42.82	60.06	65.52
1992Q4	12	184.96	231.04	287.47	28	102.50	139.15	176.61	8	52.72	73.70	80.65
1993Q1	28	177.75	218.24	276.27	18	129.78	157.48	196.79	7	51.10	71.45	78.17
1993Q2	21	200.99	249.37	312.38	20	114.23	154.71	196.15				
1993Q3	25	198.26	244.80	308.14	34	90.87	111.59	140.63	16	37.07	51.92	56.72
1993Q4	39	106.85	149.08	192.95	31	81.16	108.17	137.22	11	36.66	51.29	56.08
1994Q1	28	140.57	172.44	218.48	34	75.97	103.61	131.94	28	38.07	52.64	57.14
1994Q2	32	139.42	173.58	216.68	53	73.94	100.06	125.00	22	32.57	45.41	49.83
1994Q3	32	97.33	119.66	151.28	57	63.04	86.14	107.06	20	32.51	45.90	49.74
1994Q4	38	153.38	175.73	217.07	41	62.24	84.52	106.87	23	33.86	47.36	51.80
1995Q1	51	137.78	170.40	214.14	70	80.27	109.63	135.72	26	31.73	41.41	45.56
1995Q2	40	147.39	180.62	229.08	102	66.86	91.91	115.19	42	27.05	39.24	42.97
1995Q3	67	143.02	178.33	222.29	56	81.09	109.91	136.64	24	47.91	67.19	73.29
1995Q4	55	401.72	487.72	600.76	33	199.09	272.63	345.79	17	149.63	197.43	219.59

Table A.4
Estimated Quarterly Price Per Expected Pure Gram of d-Methamphetamine, Constant 2002 Dollars (Continued)

	≤ 10 Grams				10-100 Grams				>100 Grams			
Period	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile
1996Q1	27	194.01	238.95	301.54	56	139.79	193.01	240.85	16	78.53	109.45	120.15
1996Q2	42	170.68	213.23	265.28	53	102.42	138.13	172.59	32	50.01	69.62	76.50
1996Q3	24	243.49	299.97	380.08	40	99.82	139.27	172.83	46	50.07	69.80	75.75
1996Q4	35	138.37	171.02	215.06	77	80.11	109.64	139.14	50	51.08	71.04	77.12
1997Q1	47	158.36	195.42	246.12	99	74.15	101.66	128.80	43	32.21	46.08	49.87
1997Q2	48	117.12	149.59	193.26	114	80.72	110.33	140.21	57	45.39	59.37	65.19
1997Q3	60	125.70	155.80	195.38	133	79.45	109.30	137.99	51	36.91	53.32	58.26
1997Q4	72	171.99	212.24	267.32	143	88.04	121.48	151.68	66	47.10	61.42	67.63
1998Q1	77	167.38	209.90	260.15	154	94.25	129.45	166.80	79	49.71	69.64	73.63
1998Q2	72	192.89	246.63	299.80	150	170.34	232.88	287.61	66	98.50	129.12	142.62
1998Q3	61	257.86	319.52	415.64	132	179.43	250.86	311.65	85	114.69	160.34	178.69
1998Q4	41	205.23	248.05	320.09	145	141.28	187.57	242.59	94	89.82	119.32	130.08
1999Q1	61	204.85	254.13	318.13	115	167.18	228.07	288.04	92	77.92	109.37	119.62
1999Q2	59	163.31	200.63	249.79	102	125.68	173.98	216.53	91	60.72	81.38	89.70
1999Q3	75	162.52	203.54	252.59	165	105.58	142.58	181.91	119	57.50	80.15	89.90
1999Q4	63	144.33	184.08	242.45	122	118.00	164.25	203.31	99	52.33	76.74	84.94
2000Q1	69	105.06	148.31	185.45	130	96.89	133.22	168.29	130	53.25	73.22	79.13
2000Q2	79	163.85	208.98	263.52	167	113.12	156.77	196.47	106	58.56	79.63	86.88
2000Q3	51	156.14	186.41	240.18	139	98.42	142.78	182.71	122	47.61	71.95	76.68
2000Q4	44	142.27	175.77	233.66	96	98.67	132.09	180.14	100	46.76	68.00	73.57
2001Q1	74	140.83	175.86	218.89	124	84.60	120.64	146.93	110	53.69	70.95	78.46
2001Q2	63	150.39	187.95	248.15	151	88.22	119.16	141.29	139	41.10	61.96	70.34
2001Q3	77	147.86	182.60	239.62	145	71.34	99.41	134.99	157	42.41	58.10	63.21
2001Q4	68	144.89	180.46	225.20	128	86.13	114.77	139.36	86	44.15	67.02	73.68
2002Q1	74	140.27	180.01	230.09	142	74.45	100.34	127.84	111	41.47	60.54	65.91
2002Q2	88	118.79	150.53	191.04	153	76.58	105.49	133.02	104	39.41	57.54	63.11
2002Q3	58	125.02	157.57	201.06	144	79.23	105.21	134.64	111	45.69	66.17	71.72
2002Q4	55	99.87	126.96	164.80	97	78.13	105.04	137.44	79	32.78	49.30	53.23
2003Q1	82	115.71	143.43	181.81	179	66.25	90.94	114.15	89	33.67	46.31	50.26
2003Q2	39	134.34	167.79	207.88	104	67.75	90.60	114.39	54	38.21	50.26	54.26

Source: System to Retrieve Information on Drug Evidence (STRIDE).
Prepared by: RAND Corporation, February 2004.

Table A.5
Estimated Quarterly Price Per Gram of Marijuana, Constant 2002 Dollars

	≤ 10 Grams				10-100 Grams				>100 Grams			
Period	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile
1981Q1	16	5.07	6.40	7.37	24	3.73	3.79	3.95	3	1.32	1.72	2.05
1981Q2	35	5.03	6.36	7.32	7	3.28	3.36	3.51	2	1.21	1.57	1.88
1981Q3	41	4.83	6.10	7.02	13	3.23	3.31	3.46	11	1.27	1.65	1.97
1981Q4	38	5.15	6.51	7.49	12	3.17	3.21	3.35	1	1.34	1.74	2.08
1982Q1	10	5.56	7.04	8.09	11	5.27	5.34	5.66	6	1.38	1.84	2.15
1982Q2	17	5.53	6.99	8.04	12	4.68	4.74	5.03	3	1.27	1.68	1.97
1982Q3	8	5.30	6.71	7.71	9	4.61	4.67	4.95	8	1.33	1.76	2.06
1982Q4	10	5.65	7.15	8.22	4	4.48	4.53	4.80	13	1.40	1.86	2.18
1983Q1	10	9.86	12.48	14.35	10	7.62	8.40	8.43	2	2.51	3.45	4.58
1983Q2	27	9.80	12.39	14.25	9	6.77	7.46	7.50	6	2.24	3.16	4.20
1983Q3	18	9.40	11.89	13.67	8	6.51	7.35	7.38	8	2.34	3.31	4.40
1983Q4	11	10.02	12.68	14.58	18	6.32	7.13	7.16	18	2.55	3.50	4.65
1984Q1	18	9.29	11.76	13.52	9	4.41	4.78	5.17	5	2.49	3.42	3.56
1984Q2	35	9.23	11.68	13.43	10	3.92	4.25	4.59	9	2.28	3.13	3.14
1984Q3	18	8.86	11.20	12.88	9	3.86	4.19	4.52	7	2.38	3.28	3.29
1984Q4	16	9.44	11.94	13.73	13	3.75	4.06	4.39	7	2.48	3.47	3.48
1985Q1	28	10.17	12.87	14.79	12	5.99	6.55	6.95	13	2.31	3.04	3.63
1985Q2	22	10.10	12.78	14.69	9	5.32	5.82	6.18	18	2.11	2.78	3.47
1985Q3	16	9.69	12.26	14.09	5	5.24	5.73	6.08	6	2.21	2.91	3.59
1985Q4	9	10.33	13.07	15.03	6	5.09	5.56	5.90	9	2.34	3.08	3.79
1986Q1	8	11.97	15.15	17.41	5	10.31	10.45	10.91	6	2.77	3.51	4.36
1986Q2	10	11.89	15.05	17.30	2	9.05	9.28	9.69	3	2.54	3.22	3.99
1986Q3	12	11.41	14.44	16.59	2	9.02	9.14	9.55	3	2.66	3.37	4.18
1986Q4	17	12.16	15.39	17.69	4	8.75	8.87	9.26	5	2.81	3.56	4.42
1987Q1	29	11.06	14.00	16.09	5	7.44	7.60	7.88	11	4.27	5.19	6.22
1987Q2	19	10.99	13.91	15.98	4	6.61	6.75	7.00	26	3.91	4.75	5.69
1987Q3	9	10.54	13.34	15.33	5	6.51	6.65	6.89	9	4.09	4.98	5.97
1987Q4	4	11.24	14.22	16.34	6	6.32	6.45	6.68	3	4.33	5.26	6.30
1988Q1	15	11.61	14.70	16.89	3	8.29	8.57	8.75	10	2.60	3.52	4.27
1988Q2	12	11.54	14.60	16.78	10	7.37	7.61	7.78	3	2.41	3.22	4.03

Table A.5
Estimated Quarterly Price Per Gram of Marijuana
Constant 2002 Dollars (Continued)

	≤ 10 Grams				10-100 Grams				>100 Grams			
Period	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile
1988Q3	10	11.07	14.01	16.10	3	7.25	7.49	7.66	2	2.50	3.38	4.10
1988Q4	6	11.80	14.94	17.16	9	7.03	7.27	7.43	8	2.64	3.57	4.33
1989Q1	8	11.00	13.93	16.00	5	8.59	8.77	9.23	16	3.00	3.89	4.71
1989Q2	6	10.93	13.84	15.89	6	7.63	7.79	8.20	6	2.75	3.57	4.31
1989Q3	10	10.48	13.28	15.25	4	7.52	7.67	8.07	8	2.88	3.74	4.52
1989Q4	10	11.18	14.15	16.26	2	7.29	7.44	7.83	2	3.04	3.95	4.73
1990Q1	8	11.94	15.11	17.36	9	10.65	10.97	11.42	17	3.29	4.38	5.57
1990Q2	10	11.86	15.01	17.24	4	9.46	9.74	10.15	11	3.02	4.01	4.97
1990Q3	8	11.38	14.40	16.55	1	9.32	9.59	9.99	4	3.16	4.20	5.35
1990Q4	14	12.13	15.35	17.64	12	9.04	9.31	9.69	23	3.34	4.44	5.50
1991Q1	14	14.05	17.79	20.44	30	10.90	11.76	11.69	32	3.97	4.99	6.18
1991Q2	16	13.96	17.67	20.30	8	9.68	10.45	10.39	11	3.63	4.57	5.66
1991Q3	5	13.39	16.96	19.48	5	9.53	10.29	10.23	5	3.81	4.79	5.93
1991Q4	4	14.27	18.08	20.76		9.25	9.98	9.93	31	4.02	5.06	6.03
1992Q1	12	12.07	15.29	17.55	7	7.66	7.97	8.31	20	3.21	4.43	5.78
1992Q2	18	11.99	15.19	17.44	12	6.81	7.08	7.25	23	3.07	4.05	5.00
1992Q3	25	11.50	14.57	16.73	7	6.70	6.97	7.27	35	3.08	4.25	5.55
1992Q4	14	12.26	15.54	17.83	8	6.50	6.77	7.05	26	3.39	4.49	5.86
1993Q1	23	11.61	14.72	16.89	4	11.21	11.98	12.39	14	3.34	4.76	6.01
1993Q2	27	11.53	14.62	16.77	8	9.96	10.65	10.97	13	3.06	4.36	5.50
1993Q3	37	11.06	14.03	16.09	13	9.93	10.48	10.84	14	3.20	4.57	5.76
1993Q4	27	11.80	14.96	17.16	9	9.52	10.17	10.51	13	3.31	4.83	6.09
1994Q1	12	10.38	13.17	15.10	6	11.23	12.14	11.97	18	2.72	3.68	4.65
1994Q2	21	10.31	13.09	15.00	3	9.98	10.78	10.63	26	2.49	3.37	4.26
1994Q3	9	9.90	12.56	14.39	6	9.83	10.62	10.47	15	2.61	3.54	4.46
1994Q4	15	10.55	13.39	15.35	22	9.53	10.30	10.16	13	2.76	3.73	4.71
1995Q1	14	9.32	11.83	13.55	17	7.25	8.10	7.82	21	2.71	3.47	4.41
1995Q2	9	9.25	11.75	13.46	8	6.52	7.19	6.95	37	2.55	3.18	4.06
1995Q3	13	8.88	11.27	12.92	4	6.42	7.08	6.84	20	2.68	3.33	4.26
1995Q4	43	9.47	12.02	13.77	18	6.23	6.87	6.64	18	2.83	3.52	4.50

Table A.5
Estimated Quarterly Price Per Gram of Marijuana
Constant 2002 Dollars (Continued)

	≤ 10 Grams				10-100 Grams				>100 Grams			
Period	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile
1996Q1	23	7.94	10.08	11.54	16	5.26	6.98	7.37	23	2.11	2.66	3.00
1996Q2	22	7.88	10.01	11.47	11	4.67	6.20	6.55	23	1.94	2.44	2.75
1996Q3	15	7.56	9.61	11.00	13	4.60	6.10	6.45	27	2.03	2.55	2.88
1996Q4	12	8.06	10.24	11.73	6	4.46	5.92	6.25	13	2.14	2.70	3.04
1997Q1	44	7.34	9.34	10.68	16	4.79	5.06	5.07	28	2.24	2.83	3.69
1997Q2	40	7.29	9.27	10.61	28	4.25	4.49	4.51	33	2.05	2.59	3.38
1997Q3	26	7.00	8.90	10.18	16	4.19	4.42	4.44	35	2.15	2.72	3.54
1997Q4	20	7.46	9.48	10.85	7	4.06	4.29	4.30	19	2.27	2.87	3.74
1998Q1	10	6.88	8.76	10.01	13	6.43	6.57	6.81	27	2.37	3.15	3.85
1998Q2	34	6.84	8.70	9.95	12	5.71	5.83	6.05	35	2.17	2.89	3.53
1998Q3	24	6.56	8.35	9.54	6	5.62	5.75	5.95	27	2.28	3.03	3.69
1998Q4	25	6.99	8.90	10.17	10	5.46	5.57	5.78	18	2.44	3.20	3.90
1999Q1	31	7.69	9.79	11.19	7	8.28	9.39	8.89	23	2.19	2.94	3.70
1999Q2	61	7.64	9.73	11.12	11	7.35	8.34	7.90	29	2.01	2.70	3.39
1999Q3	97	7.33	9.33	10.67	11	6.73	8.21	7.78	26	2.10	2.82	3.55
1999Q4	22	7.82	9.95	11.37	11	6.53	7.97	7.54	22	2.22	2.98	3.75
2000Q1	32	6.95	8.85	10.11	11	5.30	5.78	5.78	33	1.89	2.61	3.06
2000Q2	24	6.90	8.79	10.04	3	4.70	5.13	5.13	27	1.78	2.39	2.80
2000Q3	11	6.62	8.44	9.64	6	4.57	5.05	5.05	26	1.87	2.50	2.93
2000Q4	39	7.06	8.99	10.27	10	4.49	4.90	4.90	16	1.97	2.64	3.10
2001Q1	29	7.59	9.67	11.04	14	5.09	5.76	5.96	31	1.83	2.54	3.15
2001Q2	39	7.54	9.61	10.97	4	4.52	5.11	5.29	9	1.68	2.32	2.86
2001Q3	49	7.23	9.22	10.52	9	4.45	5.04	5.21	20	1.76	2.44	3.00
2001Q4	76	7.71	9.83	11.22	11	4.32	4.89	5.06	12	1.86	2.57	3.19
2002Q1	55	8.78	11.19	12.77	12	8.47	9.66	9.64	16	2.16	3.49	3.51
2002Q2	60	8.72	11.12	12.68	8	7.62	8.58	8.56	24	1.98	3.20	3.21
2002Q3	51	8.36	10.67	12.17	3	7.41	8.45	8.43	11	2.07	3.35	3.37
2002Q4	79	8.92	11.37	12.97	3	7.19	8.20	8.18	19	2.19	3.54	3.55
2003Q1	66	8.94	11.41	13.00	13	6.64	7.55	7.14	26	1.99	2.57	3.13
2003Q2	10	8.88	11.33	12.91	8	5.90	6.70	6.34	18	1.82	2.36	2.86

Source: System to Retrieve Information on Drug Evidence (STRIDE).
Prepared by: RAND Corporation, February 2004.

Table A.6: Estimated Purity Per Gram of Powder Cocaine, Quarterly Series

	≤ 2 Grams				2-10 Grams				10-50 Grams					
Period	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	Qu
1981Q1	56	0.31	0.32	0.36	86	0.43	0.48	0.53	127	0.45	0.47	0.50	25	
1981Q2	53	0.34	0.39	0.42	67	0.36	0.41	0.46	113	0.44	0.50	0.55	13	
1981Q3	48	0.43	0.48	0.54	53	0.36	0.42	0.47	113	0.47	0.51	0.56		
1981Q4	52	0.34	0.41	0.46	52	0.37	0.43	0.48	53	0.45	0.51	0.59	6	
1982Q1	87	0.34	0.38	0.42	86	0.32	0.37	0.41	138	0.45	0.49	0.53	15	
1982Q2	64	0.36	0.42	0.46	96	0.41	0.46	0.50	92	0.40	0.46	0.49	21	
1982Q3	95	0.42	0.47	0.55	116	0.38	0.44	0.50	150	0.45	0.50	0.54	19	
1982Q4	86	0.38	0.45	0.50	72	0.44	0.51	0.56	107	0.46	0.50	0.55	8	
1983Q1	111	0.40	0.45	0.48	112	0.40	0.48	0.51	151	0.54	0.59	0.65	30	
1983Q2	56	0.47	0.51	0.54	133	0.45	0.48	0.52	184	0.51	0.55	0.60	38	
1983Q3	61	0.43	0.47	0.53	100	0.41	0.47	0.51	169	0.58	0.62	0.67	45	
1983Q4	116	0.43	0.51	0.60	147	0.49	0.54	0.59	217	0.61	0.67	0.74	46	
1984Q1	129	0.45	0.52	0.58	128	0.47	0.54	0.59	227	0.64	0.69	0.72	60	
1984Q2	98	0.49	0.55	0.64	131	0.52	0.59	0.64	230	0.65	0.69	0.75	64	
1984Q3	81	0.48	0.53	0.58	125	0.50	0.55	0.59	246	0.60	0.66	0.72	61	
1984Q4	106	0.47	0.53	0.59	146	0.48	0.54	0.60	282	0.60	0.65	0.70	60	
1985Q1	129	0.42	0.50	0.55	183	0.49	0.57	0.61	295	0.56	0.62	0.67	71	
1985Q2	172	0.42	0.53	0.58	163	0.48	0.53	0.57	332	0.47	0.57	0.67	94	
1985Q3	162	0.43	0.49	0.54	170	0.48	0.54	0.59	384	0.59	0.63	0.70	87	
1985Q4	145	0.48	0.53	0.57	145	0.52	0.60	0.66	390	0.61	0.68	0.72	110	
1986Q1	161	0.47	0.57	0.65	168	0.57	0.62	0.69	400	0.68	0.73	0.77	113	
1986Q2	170	0.54	0.56	0.66	184	0.63	0.68	0.72	369	0.69	0.75	0.80	112	
1986Q3	142	0.57	0.54	0.67	150	0.69	0.73	0.77	335	0.69	0.76	0.81	102	
1986Q4	135	0.66	0.55	0.75	128	0.70	0.72	0.76	346	0.71	0.78	0.85	124	
1987Q1	150	0.67	0.66	0.78	88	0.72	0.76	0.80	291	0.75	0.80	0.85	136	
1987Q2	96	0.71	0.71	0.78	121	0.74	0.79	0.84	411	0.76	0.79	0.85	200	
1987Q3	95	0.71	0.73	0.77	121	0.72	0.77	0.82	440	0.77	0.81	0.85	214	
1987Q4	94	0.67	0.71	0.75	113	0.77	0.80	0.84	369	0.79	0.84	0.87	182	
1988Q1	88	0.72	0.76	0.80	136	0.72	0.77	0.81	397	0.81	0.84	0.88	171	
1988Q2	121	0.63	0.67	0.70	115	0.68	0.74	0.80	362	0.74	0.78	0.82	181	

Table A.6: Estimated Purity Per Gram of Powder Cocaine, Quarterly Series (Continued)

	≤ 2 Grams				2-10 Grams				10-50 Grams					
Period	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	Qu
1988Q3	111	0.69	0.73	0.79	127	0.76	0.79	0.84	353	0.74	0.78	0.83	255	
1988Q4	87	0.74	0.77	0.81	112	0.76	0.80	0.83	348	0.79	0.82	0.86	239	
1989Q1	84	0.71	0.74	0.78	144	0.71	0.75	0.80	387	0.78	0.80	0.84	247	
1989Q2	81	0.69	0.74	0.77	89	0.74	0.79	0.83	374	0.71	0.74	0.80	206	
1989Q3	84	0.63	0.66	0.73	92	0.67	0.72	0.75	309	0.69	0.74	0.79	265	
1989Q4	81	0.56	0.60	0.65	102	0.63	0.67	0.71	250	0.65	0.69	0.73	185	
1990Q1	96	0.57	0.62	0.65	111	0.56	0.61	0.64	231	0.60	0.66	0.70	180	
1990Q2	49	0.51	0.59	0.69	66	0.45	0.50	0.55	196	0.56	0.60	0.65	142	
1990Q3	74	0.45	0.52	0.56	82	0.53	0.58	0.62	240	0.54	0.60	0.68	184	
1990Q4	70	0.56	0.59	0.63	73	0.56	0.61	0.65	263	0.60	0.67	0.72	161	
1991Q1	145	0.53	0.61	0.65	126	0.58	0.62	0.68	342	0.65	0.71	0.76	238	
1991Q2	66	0.58	0.61	0.66	87	0.66	0.70	0.79	311	0.67	0.73	0.80	309	
1991Q3	49	0.62	0.67	0.71	101	0.61	0.68	0.73	325	0.71	0.76	0.82	298	
1991Q4	49	0.57	0.64	0.69	78	0.69	0.76	0.81	276	0.75	0.78	0.82	241	
1992Q1	70	0.61	0.68	0.73	90	0.61	0.67	0.74	295	0.71	0.76	0.79	241	
1992Q2	47	0.59	0.63	0.69	66	0.62	0.65	0.68	193	0.62	0.67	0.72	156	
1992Q3	68	0.64	0.68	0.73	61	0.62	0.66	0.70	229	0.69	0.73	0.79	224	
1992Q4	45	0.67	0.71	0.74	46	0.65	0.70	0.74	165	0.72	0.76	0.80	103	
1993Q1	43	0.65	0.68	0.72	48	0.58	0.65	0.70	100	0.63	0.68	0.72	78	
1993Q2	44	0.66	0.69	0.70	57	0.69	0.73	0.78	148	0.63	0.67	0.72	71	
1993Q3	52	0.64	0.69	0.71	54	0.59	0.65	0.70	147	0.64	0.68	0.71	97	
1993Q4	46	0.65	0.68	0.71	52	0.59	0.64	0.69	113	0.64	0.67	0.69	84	
1994Q1	51	0.65	0.70	0.74	56	0.67	0.72	0.77	143	0.66	0.71	0.75	96	
1994Q2	30	0.61	0.63	0.67	54	0.64	0.68	0.72	156	0.69	0.74	0.78	101	
1994Q3	61	0.61	0.63	0.66	53	0.63	0.68	0.72	171	0.67	0.71	0.76	150	
1994Q4	29	0.66	0.68	0.72	47	0.58	0.61	0.66	141	0.70	0.74	0.77	109	
1995Q1	32	0.68	0.70	0.75	69	0.71	0.75	0.79	145	0.73	0.76	0.80	102	
1995Q2	25	0.48	0.52	0.56	45	0.62	0.68	0.72	112	0.66	0.71	0.76	112	
1995Q3	33	0.56	0.61	0.66	57	0.57	0.62	0.68	107	0.57	0.60	0.65	108	
1995Q4	48	0.57	0.60	0.63	38	0.58	0.62	0.67	118	0.61	0.65	0.68	102	

Table A.6: Estimated Purity Per Gram of Powder Cocaine, Quarterly Series (Continued)

	≤ 2 Grams				2-10 Grams				10-50 Grams					
Period	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	Qu
1996Q1	29	0.66	0.68	0.72	53	0.66	0.70	0.75	124	0.64	0.68	0.72	114	
1996Q2	45	0.67	0.69	0.73	55	0.60	0.64	0.69	143	0.61	0.67	0.73	173	
1996Q3	31	0.66	0.70	0.74	59	0.63	0.69	0.75	164	0.65	0.70	0.74	193	
1996Q4	24	0.81	0.84	0.86	46	0.70	0.73	0.78	155	0.72	0.77	0.81	151	
1997Q1	29	0.64	0.69	0.74	79	0.64	0.69	0.73	149	0.68	0.73	0.79	117	
1997Q2	55	0.55	0.59	0.64	74	0.64	0.68	0.72	99	0.58	0.63	0.67	90	
1997Q3	50	0.60	0.65	0.71	80	0.65	0.71	0.76	160	0.61	0.66	0.71	172	
1997Q4	40	0.65	0.69	0.72	63	0.67	0.71	0.76	158	0.71	0.74	0.77	164	
1998Q1	34	0.72	0.75	0.78	57	0.67	0.71	0.76	178	0.65	0.68	0.75	149	
1998Q2	34	0.64	0.67	0.73	71	0.68	0.73	0.76	169	0.68	0.72	0.77	195	
1998Q3	52	0.60	0.63	0.66	75	0.62	0.67	0.72	199	0.69	0.71	0.75	181	
1998Q4	38	0.67	0.69	0.71	56	0.66	0.70	0.73	157	0.64	0.67	0.70	164	
1999Q1	81	0.59	0.62	0.65	92	0.59	0.63	0.68	141	0.59	0.65	0.71	107	
1999Q2	34	0.58	0.61	0.64	71	0.60	0.65	0.71	134	0.60	0.63	0.69	168	
1999Q3	61	0.63	0.67	0.70	57	0.58	0.63	0.67	193	0.57	0.63	0.69	239	
1999Q4	36	0.67	0.70	0.72	67	0.59	0.64	0.69	148	0.61	0.64	0.70	127	
2000Q1	51	0.57	0.63	0.67	74	0.51	0.56	0.60	137	0.56	0.60	0.64	117	
2000Q2	32	0.58	0.62	0.65	58	0.54	0.58	0.64	156	0.48	0.53	0.57	178	
2000Q3	29	0.55	0.58	0.64	65	0.54	0.59	0.64	181	0.56	0.61	0.66	172	
2000Q4	40	0.57	0.62	0.65	65	0.50	0.55	0.60	171	0.52	0.58	0.62	119	
2001Q1	41	0.57	0.60	0.65	85	0.55	0.60	0.65	192	0.50	0.53	0.57	186	
2001Q2	21	0.53	0.55	0.58	64	0.57	0.62	0.66	169	0.51	0.54	0.58	188	
2001Q3	15	0.61	0.64	0.66	37	0.53	0.57	0.62	131	0.50	0.55	0.59	178	
2001Q4	17	0.49	0.52	0.55	38	0.56	0.59	0.65	98	0.48	0.52	0.55	126	
2002Q1	17	0.62	0.65	0.70	59	0.62	0.66	0.71	119	0.50	0.54	0.58	157	
2002Q2	21	0.68	0.71	0.75	63	0.58	0.63	0.69	109	0.55	0.59	0.65	201	
2002Q3	21	0.72	0.75	0.78	45	0.60	0.65	0.71	149	0.60	0.65	0.69	215	
2002Q4	27	0.65	0.67	0.69	44	0.64	0.68	0.73	120	0.56	0.61	0.65	136	
2003Q1	29	0.66	0.71	0.74	75	0.64	0.69	0.74	175	0.59	0.63	0.67	138	
2003Q2	13	0.66	0.69	0.72	20	0.60	0.65	0.69	108	0.57	0.61	0.66	91	

Source: System to Retrieve Information on Drug Evidence (STRIDE).
Prepared by: RAND Corporation, February 2004

Table A.7
Estimated Purity of One Gram of Crack Cocaine, Quarterly Series

	≤ 1 Gram				1-15 Grams				> 15 Grams			
Period	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile
1986Q1	24	0.87	0.88	0.91	8	0.75	0.76	0.78	6	0.72	0.73	0.75
1986Q2	45	0.85	0.86	0.88	23	0.75	0.76	0.80	6	0.71	0.74	0.76
1986Q3	50	0.79	0.78	0.84	21	0.76	0.79	0.80	9	0.74	0.75	0.76
1986Q4	25	0.85	0.86	0.89	14	0.74	0.75	0.77	10	0.79	0.80	0.83
1987Q1	42	0.75	0.77	0.80	16	0.75	0.79	0.81	18	0.70	0.72	0.75
1987Q2	68	0.74	0.76	0.79	35	0.75	0.77	0.79	39	0.61	0.64	0.67
1987Q3	103	0.89	0.91	0.93	100	0.77	0.78	0.80	17	0.63	0.65	0.68
1987Q4	122	0.89	0.90	0.93	26	0.86	0.87	0.90	24	0.68	0.70	0.75
1988Q1	116	0.87	0.88	0.92	42	0.82	0.83	0.85	21	0.67	0.69	0.72
1988Q2	172	0.77	0.80	0.83	51	0.82	0.84	0.86	35	0.75	0.77	0.79
1988Q3	228	0.86	0.86	0.89	83	0.81	0.83	0.85	70	0.79	0.81	0.82
1988Q4	253	0.90	0.90	0.94	71	0.85	0.86	0.88	52	0.81	0.84	0.86
1989Q1	285	0.86	0.87	0.89	79	0.82	0.85	0.86	72	0.71	0.74	0.77
1989Q2	399	0.85	0.86	0.89	104	0.82	0.84	0.86	85	0.76	0.79	0.81
1989Q3	313	0.85	0.86	0.89	120	0.80	0.81	0.82	108	0.72	0.76	0.79
1989Q4	216	0.86	0.87	0.90	59	0.80	0.82	0.84	54	0.70	0.72	0.73
1990Q1	298	0.78	0.79	0.83	88	0.78	0.79	0.81	85	0.57	0.61	0.63
1990Q2	213	0.79	0.79	0.83	88	0.73	0.74	0.77	65	0.51	0.54	0.57
1990Q3	349	0.76	0.79	0.81	119	0.76	0.76	0.81	101	0.59	0.61	0.64
1990Q4	240	0.84	0.85	0.89	130	0.84	0.85	0.87	78	0.70	0.73	0.77
1991Q1	339	0.86	0.87	0.89	171	0.82	0.83	0.85	148	0.76	0.77	0.78
1991Q2	339	0.82	0.84	0.86	166	0.81	0.83	0.85	198	0.77	0.78	0.80
1991Q3	312	0.84	0.85	0.89	121	0.82	0.83	0.85	186	0.72	0.74	0.76
1991Q4	269	0.85	0.86	0.90	150	0.82	0.84	0.87	150	0.77	0.78	0.79
1992Q1	233	0.81	0.83	0.85	228	0.82	0.85	0.87	190	0.77	0.79	0.81
1992Q2	207	0.77	0.78	0.80	154	0.78	0.79	0.81	136	0.69	0.72	0.77
1992Q3	221	0.81	0.84	0.85	256	0.75	0.77	0.79	210	0.74	0.75	0.78
1992Q4	178	0.83	0.84	0.87	177	0.81	0.83	0.87	168	0.74	0.76	0.80
1993Q1	147	0.78	0.81	0.84	164	0.77	0.80	0.82	134	0.67	0.70	0.73
1993Q2	135	0.81	0.83	0.86	202	0.76	0.79	0.81	164	0.66	0.68	0.71
1993Q3	108	0.76	0.79	0.83	183	0.76	0.79	0.81	171	0.69	0.72	0.75
1993Q4	125	0.80	0.83	0.85	191	0.78	0.80	0.82	139	0.66	0.71	0.74
1994Q1	108	0.80	0.82	0.85	226	0.80	0.80	0.84	190	0.71	0.73	0.75
1994Q2	122	0.78	0.80	0.83	257	0.76	0.78	0.81	185	0.70	0.72	0.74
1994Q3	142	0.82	0.79	0.84	346	0.77	0.79	0.81	270	0.68	0.71	0.74
1994Q4	84	0.82	0.84	0.87	311	0.78	0.80	0.83	274	0.70	0.72	0.73

Table A.7
Estimated Purity of One Gram of Crack Cocaine, Quarterly Series (Continued)

	≤ 1 Gram				1-15 Grams				> 15 Grams			
Period	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile
1995Q1	92	0.80	0.81	0.84	385	0.77	0.78	0.80	300	0.68	0.71	0.73
1995Q2	124	0.75	0.75	0.79	241	0.75	0.74	0.77	208	0.65	0.66	0.69
1995Q3	201	0.70	0.72	0.74	217	0.65	0.69	0.71	196	0.57	0.61	0.66
1995Q4	105	0.73	0.75	0.77	208	0.72	0.74	0.77	191	0.61	0.65	0.70
1996Q1	102	0.76	0.78	0.80	301	0.74	0.76	0.78	263	0.63	0.65	0.69
1996Q2	143	0.71	0.72	0.74	313	0.70	0.72	0.76	320	0.63	0.66	0.70
1996Q3	133	0.74	0.76	0.78	307	0.70	0.73	0.77	317	0.62	0.65	0.70
1996Q4	187	0.77	0.79	0.81	362	0.74	0.75	0.77	271	0.64	0.66	0.68
1997Q1	191	0.76	0.78	0.80	354	0.71	0.74	0.78	341	0.61	0.63	0.66
1997Q2	192	0.63	0.65	0.67	326	0.62	0.63	0.67	258	0.53	0.55	0.59
1997Q3	183	0.73	0.76	0.78	318	0.67	0.70	0.73	398	0.55	0.59	0.61
1997Q4	101	0.72	0.73	0.76	275	0.73	0.74	0.77	335	0.61	0.64	0.68
1998Q1	98	0.74	0.76	0.77	350	0.72	0.74	0.77	405	0.60	0.63	0.67
1998Q2	156	0.75	0.76	0.79	328	0.70	0.74	0.77	412	0.61	0.63	0.67
1998Q3	150	0.76	0.79	0.80	345	0.68	0.71	0.75	367	0.58	0.60	0.63
1998Q4	184	0.69	0.70	0.73	342	0.70	0.71	0.73	312	0.56	0.60	0.64
1999Q1	227	0.67	0.70	0.72	352	0.64	0.66	0.70	247	0.51	0.53	0.56
1999Q2	224	0.70	0.71	0.73	368	0.64	0.66	0.69	333	0.55	0.58	0.62
1999Q3	334	0.70	0.73	0.75	424	0.65	0.67	0.71	393	0.56	0.58	0.61
1999Q4	300	0.71	0.73	0.76	451	0.63	0.67	0.70	292	0.54	0.57	0.61
2000Q1	285	0.68	0.69	0.73	501	0.60	0.63	0.66	299	0.48	0.51	0.56
2000Q2	236	0.64	0.66	0.68	475	0.55	0.59	0.62	400	0.46	0.49	0.52
2000Q3	171	0.66	0.69	0.71	455	0.58	0.60	0.64	476	0.50	0.52	0.54
2000Q4	229	0.66	0.68	0.70	388	0.62	0.64	0.68	331	0.52	0.55	0.58
2001Q1	225	0.67	0.69	0.70	532	0.61	0.64	0.65	426	0.48	0.51	0.55
2001Q2	252	0.63	0.66	0.67	420	0.59	0.61	0.63	426	0.48	0.51	0.52
2001Q3	173	0.67	0.69	0.70	358	0.60	0.63	0.66	373	0.47	0.50	0.52
2001Q4	210	0.64	0.67	0.68	244	0.56	0.58	0.60	236	0.47	0.49	0.52
2002Q1	196	0.68	0.70	0.72	373	0.63	0.63	0.66	390	0.50	0.52	0.57
2002Q2	139	0.68	0.69	0.71	333	0.61	0.63	0.66	435	0.50	0.52	0.58
2002Q3	125	0.68	0.71	0.73	358	0.60	0.64	0.67	439	0.54	0.56	0.60
2002Q4	126	0.69	0.71	0.74	256	0.66	0.68	0.70	265	0.58	0.61	0.63
2003Q1	104	0.71	0.73	0.76	319	0.63	0.69	0.72	377	0.57	0.59	0.63
2003Q2	81	0.74	0.75	0.77	217	0.67	0.70	0.74	247	0.55	0.59	0.63

Source: System to Retrieve Information on Drug Evidence (STRIDE).
Prepared by: RAND Corporation, February 2004.

Table A.8
Estimated Purity of One Gram of Heroin, Quarterly Series

	≤ 1 Gram				1-10 Grams				>10 Grams			
Period	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile
1981Q1	128	0.01	0.13	0.15	104	0.01	0.09	0.14	85	0.01	0.06	0.10
1981Q2	114	0.01	0.09	0.15	93	0.01	0.09	0.16	101	0.10	0.15	0.21
1981Q3	126	0.01	0.10	0.15	123	0.01	0.10	0.18	95	0.08	0.14	0.19
1981Q4	174	0.04	0.14	0.22	78	0.01	0.07	0.12	64	0.08	0.14	0.17
1982Q1	160	0.01	0.13	0.24	168	0.02	0.17	0.26	90	0.17	0.25	0.30
1982Q2	145	0.06	0.18	0.27	95	0.04	0.19	0.32	98	0.19	0.24	0.31
1982Q3	143	0.11	0.20	0.27	104	0.10	0.23	0.34	74	0.22	0.29	0.35
1982Q4	61	0.06	0.18	0.27	78	0.02	0.12	0.19	51	0.25	0.30	0.35
1983Q1	100	0.02	0.11	0.18	90	0.01	0.09	0.15	69	0.17	0.24	0.31
1983Q2	84	0.03	0.13	0.22	86	0.01	0.12	0.17	73	0.18	0.27	0.33
1983Q3	94	0.07	0.17	0.25	93	0.01	0.11	0.17	89	0.23	0.29	0.37
1983Q4	66	0.06	0.17	0.27	60	0.03	0.14	0.24	67	0.28	0.33	0.37
1984Q1	71	0.01	0.12	0.19	55	0.01	0.13	0.21	61	0.29	0.34	0.42
1984Q2	65	0.14	0.28	0.37	49	0.02	0.14	0.28	54	0.22	0.27	0.33
1984Q3	66	0.20	0.26	0.32	71	0.06	0.15	0.27	63	0.29	0.33	0.38
1984Q4	44	0.09	0.20	0.26	40	0.09	0.18	0.24	61	0.26	0.33	0.41
1985Q1	62	0.12	0.23	0.29	80	0.13	0.21	0.31	64	0.27	0.35	0.43
1985Q2	48	0.09	0.21	0.30	67	0.17	0.27	0.39	75	0.35	0.38	0.46
1985Q3	60	0.16	0.24	0.31	69	0.09	0.22	0.32	87	0.35	0.38	0.46
1985Q4	55	0.07	0.23	0.30	43	0.14	0.27	0.38	62	0.36	0.40	0.44
1986Q1	56	0.19	0.30	0.39	59	0.22	0.29	0.37	87	0.33	0.36	0.46
1986Q2	47	0.09	0.20	0.30	53	0.10	0.20	0.31	64	0.37	0.41	0.46
1986Q3	45	0.20	0.29	0.42	30	0.15	0.26	0.36	55	0.31	0.35	0.41
1986Q4	39	0.05	0.17	0.25	17	0.09	0.22	0.33	57	0.31	0.36	0.42
1987Q1	43	0.05	0.17	0.23	21	0.04	0.25	0.27	66	0.22	0.27	0.32
1987Q2	46	0.13	0.25	0.30	36	0.13	0.24	0.37	60	0.24	0.30	0.37
1987Q3	53	0.17	0.28	0.37	37	0.14	0.25	0.37	64	0.36	0.41	0.47
1987Q4	96	0.11	0.22	0.32	62	0.10	0.21	0.36	60	0.32	0.37	0.43
1988Q1	90	0.14	0.27	0.40	46	0.15	0.30	0.42	78	0.38	0.44	0.49
1988Q2	142	0.15	0.29	0.38	53	0.13	0.25	0.39	71	0.38	0.43	0.48

Table A.8
Estimated Purity of One Gram of Heroin, Quarterly Series (Continued)

	≤ 1 Gram				1-10 Grams				>10 Grams			
Period	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile
1988Q3	117	0.22	0.35	0.45	66	0.15	0.31	0.45	75	0.40	0.45	0.52
1988Q4	87	0.15	0.27	0.39	53	0.21	0.32	0.43	52	0.39	0.43	0.50
1989Q1	67	0.20	0.33	0.45	48	0.17	0.27	0.40	53	0.45	0.50	0.56
1989Q2	60	0.18	0.31	0.40	37	0.17	0.26	0.33	62	0.43	0.49	0.59
1989Q3	83	0.25	0.39	0.44	55	0.20	0.33	0.47	79	0.44	0.54	0.64
1989Q4	58	0.17	0.28	0.39	40	0.25	0.35	0.44	71	0.44	0.54	0.64
1990Q1	108	0.09	0.22	0.27	53	0.10	0.21	0.29	58	0.32	0.37	0.41
1990Q2	119	0.12	0.24	0.30	31	0.13	0.23	0.33	69	0.29	0.35	0.43
1990Q3	89	0.12	0.18	0.27	46	0.12	0.22	0.33	61	0.32	0.36	0.42
1990Q4	99	0.13	0.31	0.32	26	0.21	0.32	0.38	48	0.27	0.38	0.41
1991Q1	167	0.15	0.35	0.30	56	0.10	0.23	0.38	46	0.20	0.31	0.38
1991Q2	188	0.18	0.31	0.38	68	0.15	0.27	0.38	61	0.34	0.40	0.48
1991Q3	156	0.18	0.29	0.38	68	0.16	0.30	0.45	71	0.38	0.44	0.49
1991Q4	83	0.15	0.29	0.33	33	0.15	0.26	0.33	40	0.42	0.46	0.52
1992Q1	131	0.19	0.32	0.42	52	0.22	0.37	0.51	53	0.49	0.53	0.60
1992Q2	117	0.28	0.43	0.47	41	0.23	0.35	0.50	81	0.39	0.45	0.57
1992Q3	93	0.22	0.35	0.42	43	0.26	0.37	0.50	72	0.48	0.53	0.59
1992Q4	131	0.27	0.40	0.45	38	0.30	0.41	0.56	54	0.55	0.60	0.65
1993Q1	174	0.26	0.37	0.41	70	0.27	0.40	0.55	56	0.50	0.56	0.61
1993Q2	157	0.28	0.41	0.49	72	0.33	0.43	0.56	60	0.54	0.59	0.64
1993Q3	170	0.30	0.41	0.46	100	0.24	0.36	0.50	118	0.52	0.57	0.65
1993Q4	120	0.30	0.44	0.50	60	0.30	0.43	0.54	48	0.56	0.61	0.70
1994Q1	199	0.22	0.36	0.48	96	0.29	0.40	0.48	68	0.51	0.56	0.64
1994Q2	175	0.21	0.41	0.58	85	0.23	0.39	0.51	81	0.46	0.53	0.58
1994Q3	203	0.31	0.44	0.55	87	0.30	0.40	0.55	87	0.50	0.56	0.62
1994Q4	176	0.28	0.43	0.65	85	0.28	0.44	0.60	70	0.50	0.56	0.66
1995Q1	198	0.26	0.41	0.52	77	0.25	0.41	0.50	106	0.45	0.56	0.66
1995Q2	223	0.33	0.49	0.54	92	0.27	0.43	0.53	77	0.53	0.58	0.67
1995Q3	196	0.28	0.46	0.52	107	0.26	0.40	0.53	102	0.47	0.55	0.62
1995Q4	181	0.32	0.43	0.55	69	0.30	0.42	0.52	55	0.42	0.48	0.55

Table A.8
Estimated Purity of One Gram of Heroin, Quarterly Series (Continued)

	≤ 1 Gram				1-10 Grams				>10 Grams			
Period	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile
1996Q1	216	0.23	0.37	0.44	95	0.25	0.34	0.42	62	0.42	0.48	0.57
1996Q2	226	0.28	0.37	0.46	113	0.23	0.37	0.50	101	0.35	0.39	0.46
1996Q3	191	0.25	0.40	0.46	102	0.25	0.36	0.48	94	0.47	0.53	0.58
1996Q4	197	0.26	0.39	0.50	94	0.28	0.41	0.55	73	0.51	0.56	0.62
1997Q1	269	0.29	0.45	0.52	94	0.23	0.37	0.49	87	0.39	0.49	0.58
1997Q2	236	0.28	0.40	0.48	120	0.31	0.39	0.51	107	0.44	0.50	0.58
1997Q3	220	0.29	0.45	0.57	103	0.26	0.40	0.54	95	0.44	0.49	0.55
1997Q4	50	0.36	0.50	0.59	42	0.36	0.43	0.55	79	0.49	0.54	0.61
1998Q1	318	0.31	0.44	0.56	147	0.29	0.41	0.51	100	0.49	0.54	0.63
1998Q2	215	0.32	0.48	0.58	142	0.29	0.44	0.54	141	0.51	0.55	0.62
1998Q3	160	0.29	0.40	0.50	127	0.24	0.37	0.51	108	0.45	0.50	0.56
1998Q4	206	0.28	0.46	0.60	118	0.25	0.42	0.58	101	0.50	0.56	0.63
1999Q1	258	0.28	0.41	0.56	167	0.25	0.40	0.58	111	0.47	0.53	0.59
1999Q2	255	0.25	0.41	0.51	161	0.23	0.37	0.52	98	0.43	0.48	0.56
1999Q3	250	0.25	0.44	0.54	167	0.23	0.42	0.58	112	0.52	0.60	0.66
1999Q4	190	0.23	0.43	0.56	108	0.26	0.39	0.55	88	0.52	0.59	0.65
2000Q1	252	0.27	0.44	0.51	135	0.31	0.40	0.54	101	0.48	0.56	0.63
2000Q2	205	0.26	0.43	0.53	167	0.22	0.38	0.54	114	0.43	0.53	0.61
2000Q3	212	0.24	0.44	0.49	155	0.26	0.42	0.56	113	0.55	0.58	0.66
2000Q4	210	0.27	0.41	0.48	87	0.22	0.37	0.53	65	0.56	0.61	0.69
2001Q1	217	0.24	0.39	0.54	167	0.22	0.37	0.52	87	0.48	0.53	0.58
2001Q2	219	0.24	0.40	0.50	140	0.26	0.39	0.55	103	0.50	0.58	0.64
2001Q3	217	0.21	0.36	0.46	114	0.21	0.38	0.47	104	0.45	0.52	0.64
2001Q4	217	0.23	0.40	0.53	79	0.21	0.36	0.45	60	0.49	0.55	0.61
2002Q1	217	0.29	0.46	0.49	112	0.28	0.41	0.54	82	0.41	0.47	0.56
2002Q2	224	0.24	0.39	0.51	147	0.28	0.40	0.54	83	0.45	0.50	0.57
2002Q3	229	0.28	0.39	0.48	136	0.23	0.38	0.52	113	0.41	0.47	0.54
2002Q4	79	0.24	0.40	0.52	69	0.28	0.40	0.55	50	0.42	0.49	0.56
2003Q1	220	0.23	0.34	0.45	109	0.22	0.35	0.47	61	0.42	0.46	0.52
2003Q2	42	0.23	0.29	0.43	51	0.23	0.33	0.41	43	0.41	0.46	0.52

Source: System to Retrieve Information on Drug Evidence (STRIDE).
Prepared by: RAND Corporation, February 2004.

Table A.9
Estimated Purity of One Gram of d-Methamphetamine, Quarterly Series

	≤ 10 Grams				10-100 Grams				>100 Grams			
Period	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile
1981Q1	20	0.19	0.35	0.51	20	0.33	0.48	0.68				
1981Q2	11	0.34	0.50	0.66	7	0.41	0.55	0.76				
1981Q3	8	0.19	0.36	0.52	10	0.39	0.51	0.70				
1981Q4	7	0.40	0.56	0.72	8	0.33	0.48	0.67				
1982Q1	14	0.28	0.44	0.61	19	0.33	0.48	0.67	8	0.29	0.33	0.37
1982Q2	16	0.23	0.40	0.56	8	0.30	0.46	0.65				
1982Q3	22	0.31	0.48	0.64	13	0.38	0.54	0.72				
1982Q4	27	0.20	0.38	0.53	16	0.38	0.50	0.70				
1983Q1	29	0.16	0.33	0.48	8	0.36	0.47	0.63				
1983Q2	32	0.25	0.42	0.58	12	0.25	0.36	0.54				
1983Q3	17	0.20	0.37	0.52	15	0.36	0.48	0.66				
1983Q4	25	0.30	0.47	0.62	8	0.41	0.57	0.76	7	0.48	0.52	0.56
1984Q1	31	0.19	0.36	0.49	8	0.16	0.30	0.47	8	0.43	0.46	0.49
1984Q2	29	0.39	0.55	0.71	28	0.37	0.46	0.64	12	0.48	0.51	0.55
1984Q3	18	0.26	0.43	0.59	13	0.22	0.38	0.57	12	0.50	0.53	0.57
1984Q4	32	0.28	0.43	0.60	19	0.34	0.49	0.68	6	0.33	0.36	0.40
1985Q1	37	0.16	0.32	0.49	32	0.36	0.44	0.62	13	0.44	0.47	0.51
1985Q2	11	0.28	0.45	0.61	13	0.29	0.39	0.50				
1985Q3	21	0.35	0.51	0.67	9	0.60	0.68	0.86				
1985Q4	28	0.23	0.40	0.56	16	0.40	0.49	0.68	8	0.37	0.40	0.44
1986Q1	39	0.33	0.49	0.66	22	0.30	0.44	0.63				
1986Q2	22	0.41	0.58	0.74	14	0.28	0.40	0.58	6	0.37	0.40	0.44
1986Q3	29	0.30	0.46	0.62	14	0.33	0.44	0.63	6	0.53	0.56	0.60
1986Q4	23	0.40	0.55	0.72	9	0.23	0.37	0.56				
1987Q1	25	0.39	0.56	0.72	18	0.35	0.51	0.70	5	0.28	0.32	0.36
1987Q2	29	0.37	0.52	0.69	25	0.31	0.43	0.62				
1987Q3	22	0.34	0.51	0.67	13	0.31	0.46	0.64				
1987Q4	41	0.27	0.44	0.59	18	0.28	0.43	0.62				
1988Q1	66	0.40	0.56	0.72	40	0.33	0.49	0.68	9	0.48	0.52	0.56
1988Q2	59	0.41	0.58	0.75	30	0.38	0.54	0.72	9	0.45	0.49	0.53

Table A.9
Estimated Purity of One Gram of d-Methamphetamine, Quarterly Series (Continued)

	≤ 10 Grams				10-100 Grams				>100 Grams			
Period	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile
1988Q3	29	0.38	0.55	0.71	36	0.31	0.47	0.66	8	0.38	0.43	0.47
1988Q4	29	0.40	0.57	0.73	27	0.39	0.52	0.70	8	0.62	0.65	0.69
1989Q1	35	0.40	0.57	0.73	33	0.40	0.53	0.71	8	0.39	0.45	0.49
1989Q2	27	0.38	0.55	0.70	20	0.43	0.56	0.74				
1989Q3	23	0.25	0.43	0.58	22	0.35	0.51	0.70				
1989Q4	30	0.22	0.38	0.54	17	0.29	0.42	0.60				
1990Q1	25	0.27	0.43	0.59	25	0.10	0.26	0.45				
1990Q2	16	0.17	0.34	0.50	27	0.09	0.24	0.43	8	0.09	0.13	0.16
1990Q3	19	0.21	0.37	0.53	26	0.18	0.33	0.52	10	0.16	0.19	0.23
1990Q4	18	0.23	0.41	0.64	16	0.25	0.33	0.51	8	0.31	0.34	0.38
1991Q1	32	0.20	0.37	0.61	27	0.24	0.38	0.57	10	0.31	0.34	0.38
1991Q2	17	0.23	0.39	0.55	28	0.17	0.33	0.52	10	0.37	0.41	0.44
1991Q3	17	0.26	0.43	0.59	26	0.13	0.28	0.47	9	0.26	0.30	0.34
1991Q4	10	0.10	0.26	0.42	25	0.09	0.26	0.43	8	0.58	0.63	0.66
1992Q1	11	0.29	0.46	0.62	31	0.22	0.37	0.56	9	0.12	0.17	0.19
1992Q2	17	0.42	0.60	0.75	28	0.24	0.40	0.58	14	0.40	0.44	0.48
1992Q3	24	0.46	0.62	0.78	32	0.38	0.53	0.70	12	0.67	0.70	0.74
1992Q4	12	0.25	0.42	0.58	29	0.34	0.51	0.70	8	0.54	0.57	0.61
1993Q1	28	0.48	0.64	0.80	18	0.31	0.47	0.66	8	0.62	0.66	0.70
1993Q2	22	0.39	0.56	0.72	21	0.27	0.42	0.57				
1993Q3	25	0.25	0.41	0.58	35	0.46	0.62	0.81	17	0.59	0.62	0.66
1993Q4	37	0.53	0.69	0.85	33	0.43	0.59	0.78	11	0.64	0.68	0.71
1994Q1	28	0.55	0.71	0.87	37	0.50	0.66	0.85	32	0.66	0.69	0.73
1994Q2	31	0.61	0.76	0.94	55	0.46	0.66	0.86	26	0.68	0.72	0.76
1994Q3	37	0.59	0.76	0.92	59	0.58	0.73	0.92	20	0.70	0.72	0.77
1994Q4	39	0.57	0.74	0.90	46	0.56	0.69	0.88	23	0.65	0.68	0.71
1995Q1	50	0.52	0.68	0.84	74	0.57	0.67	0.86	26	0.71	0.75	0.78
1995Q2	40	0.53	0.70	0.86	105	0.57	0.70	0.82	41	0.64	0.69	0.72
1995Q3	71	0.40	0.55	0.72	57	0.43	0.60	0.78	24	0.39	0.42	0.45
1995Q4	54	0.16	0.32	0.41	35	0.10	0.26	0.44	17	0.05	0.09	0.12

Table A.9
Estimated Purity of One Gram of d-Methamphetamine, Quarterly Series (Continued)

	≤ 10 Grams				10-100 Grams				>100 Grams			
Period	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile	Num. Obs.	1st Quartile	Average	3rd Quartile
1996Q1	29	0.34	0.52	0.72	61	0.25	0.41	0.60	16	0.15	0.19	0.23
1996Q2	44	0.32	0.48	0.57	60	0.23	0.38	0.58	32	0.33	0.37	0.41
1996Q3	25	0.37	0.54	0.70	49	0.34	0.46	0.65	47	0.37	0.41	0.45
1996Q4	38	0.45	0.62	0.78	85	0.35	0.51	0.70	52	0.33	0.37	0.41
1997Q1	46	0.50	0.67	0.82	101	0.39	0.54	0.73	44	0.40	0.45	0.48
1997Q2	45	0.53	0.71	0.87	118	0.36	0.49	0.68	57	0.41	0.45	0.49
1997Q3	56	0.40	0.55	0.72	141	0.39	0.51	0.65	52	0.40	0.44	0.48
1997Q4	74	0.34	0.49	0.66	151	0.29	0.44	0.59	66	0.37	0.41	0.44
1998Q1	76	0.37	0.54	0.77	164	0.26	0.37	0.47	79	0.22	0.25	0.29
1998Q2	71	0.21	0.37	0.54	156	0.10	0.20	0.29	65	0.07	0.11	0.14
1998Q3	63	0.16	0.34	0.49	143	0.08	0.18	0.31	86	0.04	0.08	0.11
1998Q4	47	0.20	0.37	0.43	153	0.15	0.27	0.41	95	0.05	0.10	0.13
1999Q1	64	0.18	0.36	0.51	125	0.11	0.24	0.39	93	0.06	0.10	0.13
1999Q2	58	0.26	0.42	0.59	105	0.17	0.31	0.50	89	0.12	0.15	0.19
1999Q3	73	0.30	0.47	0.63	166	0.20	0.37	0.55	120	0.16	0.19	0.23
1999Q4	67	0.31	0.48	0.64	127	0.18	0.35	0.52	97	0.17	0.20	0.23
2000Q1	72	0.29	0.46	0.62	136	0.20	0.31	0.51	132	0.18	0.22	0.24
2000Q2	82	0.36	0.54	0.71	170	0.18	0.30	0.46	108	0.16	0.19	0.22
2000Q3	49	0.32	0.49	0.65	154	0.19	0.35	0.52	124	0.15	0.19	0.22
2000Q4	39	0.41	0.58	0.74	106	0.21	0.37	0.52	102	0.15	0.19	0.23
2001Q1	69	0.36	0.52	0.69	134	0.23	0.40	0.65	112	0.15	0.18	0.22
2001Q2	57	0.42	0.58	0.74	157	0.21	0.40	0.57	142	0.19	0.22	0.25
2001Q3	74	0.47	0.62	0.78	155	0.26	0.49	0.74	158	0.24	0.28	0.31
2001Q4	66	0.38	0.55	0.71	136	0.23	0.38	0.51	85	0.22	0.25	0.29
2002Q1	74	0.48	0.64	0.85	156	0.32	0.48	0.65	118	0.22	0.25	0.29
2002Q2	95	0.49	0.61	0.82	161	0.28	0.45	0.64	104	0.24	0.28	0.31
2002Q3	60	0.48	0.65	0.84	154	0.32	0.50	0.69	115	0.26	0.30	0.33
2002Q4	55	0.49	0.66	0.87	98	0.30	0.47	0.72	79	0.30	0.34	0.37
2003Q1	79	0.40	0.59	0.75	184	0.47	0.56	0.69	89	0.29	0.34	0.37
2003Q2	39	0.48	0.64	0.81	105	0.42	0.55	0.74	55	0.38	0.42	0.46

Source: System to Retrieve Information on Drug Evidence (STRIDE).
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