Report

to

D.A. Warren Montgomery

by

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Report of Findings

Economic Reasonableness of St. Tammany Operations

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An Economic Report on the Budgetary Reasonableness of the 22nd Judicial District, Louisiana, Office of the District Attorney for the Period 2015-2018

I. Introduction

Louisiana government has a legal and ethical responsibility, in the interest of maintaining an orderly civil society, to provide citizens with certain basic services. Parish government has a legal mandate to fund certain costs of the parish's criminal justice system.[1] Citizens in St. Tammany pay sales and property taxes to parish government to fund much of the operating and capital costs in the criminal justice system. Local governments invariably contend with the enduring financial challenge of adequately delivering vital human services to its citizens from a funding source of limited, tax revenues.

The parish criminal justice system is divided into several component parts. Each part works in concert with every other part, in the public interest, but each still are independently managed and has an individual role and mission (See the text box insert for a complete description of the agencies in the local criminal justice system).

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[1] The alimentary tax is for general operating cost of the Parish including State mandated support for the DA's office and other mandated agencies. This alimentary tax is also required to be used to pay for the cost of incarceration of Parish prisoners from date of arrest to date of sentencing.

COMPONENTS OF THE LOCAL CRIMINAL JUSTICE SYSTEM

The parish criminal justice system is divided into several parts. Each part works in concert with every other part, in the public interest, but still has an individual role and mission: the sheriff's office responds to citizen's calls, makes criminal arrests, collects evidence, and refers criminal charges for review and prosecution; the parish Jail has responsibility for housing and supervising incarcerated individuals; the coroner's office assists criminal investigations and oversees the investigation and certification of deaths; the clerk of court's office maintains legal records associated with a criminal proceeding; the public defender's office provides legal services to indigent defendants; courts decide whether a defendant poses a minimal risk to the public and should therefore be permitted to pay a bond to remain out of prison while he awaits trial, or whether a defendant poses an unacceptable risk to the public and should remain incarcerated between the time of his arrest and the final adjudication of his case; courts also adjudicate a defendant's guilt or innocence and decide defendant's sentencing; DA's offices represent the People's interest by deciding which cases to prosecute, who to treat as pre-trial interventions, or to dismiss; the DA's office also represents the Public's interest at trials, at bond hearings and at appeals [1]

    For purposes of the present report, it is important to appreciate that each part of the criminal justice system is inextricably linked to every other part: actions taken, or policies adopted, by one part of the criminal justice system will invariably affect the financial cost incurred by other parts of the system. For example, the professional quality of investigations conducted by the sheriff's office, or the other law enforcement agencies, may materially affect—either positively or negatively—the legal outcome of trials or defendant plea arrangements negotiated by the DA's office, and materially affect, for better or worse, the overall costs to the criminal justice system; actions taken, or policies adopted, by the DA's office may materially affect—either positively or negatively—the sheriff's office's inmate incarceration costs, and materially affect, for better or worse, the overall costs to the

criminal justice system; the quality of a court's decision in processing a defendant's case, or the merits of a court's ruling to set or deny a defendant bond out of prison while awaiting his trial, may significantly affect, for better or worse, the sheriff's office's inmate incarceration costs, or the DA's office's expenses. The critical point is that local taxpayers incur through their Parish Government the costs of keeping defendants in jail.

Since his 2015 election to the 22nd Judicial District, District Attorney Warren Montgomery has implemented a number of strategic initiatives designed to improve the office's operational efficiency. For example, he has sought to ensure that the DA's office works more closely with other governmental agencies, develop a more robust technology system, create enhanced case screening methods, and establish a financial assistance program for indigent defendants[2]. Additional significant actions the DA's office has taken include meeting with members of the Northshore business community, and with members of Parish President Pat Brister's Streamlining 2019 Budget Workgroup, to solicit the groups' perspective on how the DA's office might further improve its operational efficiency[3].

Of note, the DA's office made the strategic decision in 2015 to hire additional experienced ADAs and staff who, on balance, provided an enhanced ability to adjudicate cases[4]. Employing these accomplished associates resulted in the DA's office incurring a higher average salary expense than the DA's office's historical average salary expense[5]. These associates made changes including new case screening methods designed to improve the administration of criminal justice in the 22nd Judicial District. This study postulates that the enhanced case screening methods did, in fact, improve the court's judicial process in the administration of criminal justice;

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[2] Per discussions with DA's office executives
[3] Interviews with Chief of Administration Tony Sanders
[4] Discussions with Chief of Administration Tony Sanders
[5] Records prior to 2015 are sketchy. Prior to 2015, the 22nd district had 31 ADA's in the criminal division. The number increased under Montgomery to 38 in 2015-16 before declining to an average of 35 in 2018. Total staff in the criminal division was 122 in 2014 but rose to 130 in 2015 but has declined to an average of 120 in 2018. The civil division count is excluded from total staff because it was partly parish administered and partly DA administered during the period of this report.

and that, in turn, the improvements in the court's judicial administrative process resulted in a substantial reduction in the Parish's obligation for St. Tammany Jail's inmate incarceration costs, and in the St. Tammany Sheriff's Office's operating expenses. The study further posits that the parish Jail's reduction in inmate incarceration costs and the parish Sheriff's office's decrease in operating expenses will result in a substantial net financial savings to parish government—and ultimately to the taxpayer.

Considering the foregoing, it is imperative that taxpayers have an impartial, objective, and transparent basis to evaluate whether tax dollars spent to maintain each part of the parish's criminal justice system—and particularly for purposes of the present study the DA's office—are spent effectively in the administration of criminal justice.

Historically, the cost of salary administration is by far the highest continuous annual expense incurred by the DA's office[6]. Accordingly, in an effort to ensure that its increased salary administration expense is a judicious expenditure of taxpayer dollars—particularly by materially reducing the overall costs and improving the operationally efficiency of St. Tammany Parish's criminal justice system--the DA's office engaged TAIMERICA Management Company (TAIMERICA), a professionally qualified economic consulting group, to perform an objective, independent assessment of the economic reasonableness of the DA's office's increased ADA and staff salary administration costs for the period 2015- 2018. TAIMERICA's present assessment focuses on how experienced ADAs and staff, employed by the DA's office during Warren Montgomery's tenure as District Attorney, have utilized new management practices which resulted in a substantial reduction in the St. Tammany Parish jail's annual incarceration costs, and in the operating costs of the St. Tammany Parish Sheriff's Office.

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[6] Pie charts showing the distribution of costs for the 22nd District are publicly available on the DA's website: www.damontgomery.org

Louisiana law mandates that government agencies, including parish district attorneys, are obligated to operate with an expense structure which meets a standard of economic reasonableness. Hence, ***the central or primary question TAIMERICA' s present study seeks to answer is: whether the St. Tammany Parish District Attorney's office's salary administration budget, for the period 2015-2018, meets the legally mandated budgetary requirement of economic reasonableness?***

The Body of the report, divided into seven parts, provides information and analysis necessary to answer the study's primary research question. Finally, the report's Conclusion and Recommendations for Additional Research section answers the report's primary research question, and provides recommendations for additional research which the St. Tammany District Attorney's office might undertake to ensure that future annual salary and expense budgets the office submits for funding to St. Tammany Parish government continue to meet the legally mandated test for economic budgetary reasonableness.

Part I will describe the legal holding ***of Reed v. Washington Parish Police Jury,*** the Louisiana Supreme Court case which established the test for determining whether a parish agency's salary and expense budget is economically reasonable[7] .

Part II will explain the study's reliance upon a Multivariate research methodology and the evidentiary value of sources of information TAIMERICA draws upon to arrive at the various conclusions included in this report. An effort will be made to show that the study's statistical analysis and modeling conform to currently accepted statistical and econometrics standards, and the definition and meaning of Multivariate Modeling will be provided. In sum, this section of the report will support the academic legitimacy of the study's reliance upon statistical and economic modeling to answer the study's primary research question.

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[7] 518 So.2d 1044 (La. 1988)

Part III will identify and briefly explain the essential purpose or function of the agencies which comprise St. Tammany Parish's criminal justice system.

Part IV will describe and compare the St. Tammany Parish DA's office's staffing levels, case types, and volume of cases for the period 2015-2018.

Part V will provide statistical data and other metrics to calculate the St. Tammany Parish Jail's inmate incarceration costs paid by local taxpayers, and St. Tammany Parish Sheriff's Office salary administration cost for the period 2015-2018.

Part VI will show how, and to what extent, the St. Tammany Parish's DA's office's staffing levels and case screening methods, used during the period 2015-2018, have significantly contributed to an improvement in certain aspects of the St. Tammany Parish's 22nd Judicial District Court's administration of criminal justice process, and how, and to what extent, that such improvements corelate with a reduction in the parish Jail's inmate incarceration costs and Sheriff's office's salary administration costs for the period under review.

Part VII will offer a summary statement of the study's primary research findings.

Part VIII will provide the study's central or primary finding that the St. Tammany Parish District Attorney's office's salary administration cost, for the period 2015-2018, meets the legally mandated budgetary requirement of economic reasonableness articulated in the *Reed* case.

Part IX will offer suggestions for further research the St. Tammany Parish District Attorney's office might undertake to ensure its Future Annual Salary and Expense Budgets Satisfy the Requirements of Reed's Test for Economic Budgetary Reasonableness.

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II. Body of the Report

I. Legal holding of Reed v. Washington Parish Police Jury, the Louisiana Supreme Court Case which Establishes the Test for Determining Whether a Parish Agency's Salary and Expense Budget is Economically Reasonable

The legal decision in Reed v. Washington Parish Police Jury is that parish governments must fully fund costs which are economically reasonable, a term which had no prior legal definition. Reed articulates a two-part test for budgetary reasonableness. First, the DA's office must demonstrate that the *functions* performed by the ADA's or staff are related to the purposes of the office. Second, that the DA's office must show that the salaries and benefits paid to ADA's and/or staff are *quantifiably reasonable*.

An economist would define reasonable by comparing operations within the subject entity with operations in comparable entities because relative costs, not absolute costs, are the benchmark for determining reasonableness. The units of comparison could be district attorney's offices in comparably sized judicial districts (which should have similar operating cost structures). Since costs, particularly wage costs, can vary between judicial districts located in different labor markets, the units of comparison could be government jurisdictions within the same labor market--St. Tammany Parish.

Finally, reasonable comparisons could be a function of both time and geography (changes in costs within a single entity over a defined time period). For purposes of this report, the comparison is within the operations of the St. Tammany division of the District Attorney over the period of 2015-2018.

The test of reasonableness across the DA's offices in seven comparably sized districts (which showed that the staffing levels in the 22nd judicial district are typical of staffing in peer districts), are attached in the

appendix to this report[8]. Likewise, the test of reasonableness within the St. Tammany labor market (which was inconclusive due to changes in accounting practices within other jurisdictions over the 2015-2018 time period) is also attached in the appendix to this report. The single comparison contained in the body of this report is the cost comparison of the operations of the St. Tammany portion of the District Attorney's office for the period 2015-2018.

II. Research Methodology and Sources of Information

Proof that the DA's office has hired staff members whose function is related to the purposes of the office is, in part, satisfied by their job description and the actual duties performed.   From this study's perspective the qualitative portion of the test can be performed by comparing the operations of a district attorney to those in other professional services, such as legal, accounting, or insurance practices, where payroll is the principal cost of operation. Professionals in these offices expend their time working on multiple cases. As the workload of cases increases, the weekly time that professionals can spend on individual cases decreases, meaning that the final outcomes of cases take more weeks of time to process.

While the length of time between case opening and closing does not have a significant economic cost to clients in other professional services, the length of processing time between arrest and adjudication has a significant cost in the criminal justice system, due to the need to incarcerate prisoners awaiting trial. The length of time of open cases in the district attorney's office is therefore a good measure of the efficiency of the operations in the office. Increases in time between arrest and adjudication suggest that

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[8] This finding was subsequently confirmed in the survey conducted by the National Prosecutor's Consortium for the Louisiana District Attorneys' Association. The average number of attorneys per 1000 felony and misdemeanor cases in large judicial districts in LA was 5 per 1000 cases in 2018 while the average computed by this research team for the St. Tammany portion of the 22nd Judicial District was 4.98 in 2018. Interested readers can review the LDAA study: National Prosecutors' Consortium Survey Highlights: Louisiana. May 2019. The report contains statistics for 40 of the 42 judicial districts in Louisiana.

operating costs in the entire system, from jails through courts, are increasing, while decreases in time suggest that operating costs are declining. The average time of incarceration is a statistical measure that summarizes the distribution of incarceration times. The best measure of economic reasonable consequently is the average time between arrest and adjudication for St. Tammany cases.

The complications in measuring the average time between arrest and adjudication of cases consists in finding accurate data that measure incarceration time and finding a methodology that can measure changes in processing times while controlling for changes due to other variables in the workload, such as the types of crime (murder trials, for instance, take much longer to process than speeding tickets). Variables that can also influence incarceration time, such as type of crime, type of plea, and whether a trial is conducted in front of a jury, also have to be incorporated into the model to isolate the average effect over time.

The Metropolitan Crime Commission (MCC) independently assembled a database of jail, district attorney and court records that captured the dates of arrest and adjudication for more than 19,000 arrests between 2015-2018. The MCC data included more than 1500 variables that could be used to investigate the sources of variation in average case processing time. Slightly more than 11,000 observations in the data involved the operations of the District Attorney[9].

Due to the large number of cases processed in St. Tammany Parish (more than 10,000 defendants between 2015-2018), the methodology needs statistical techniques capable of analyzing a large number of records. Multivariate analysis is the established statistical tool in economics for isolating the change in one variable (average time between arrest and adjudication in this study) when the researcher has many variables that can also influence the average time of incarceration.

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[9] Not all arrests booked into the St. Tammany Parish jail involve the offices of the district attorney. Jail Inmates also include arrests by state and federal law enforcement agencies.

Multivariate models also determine whether the changes in a time trend are due to random chance or whether they are statistically significant. For these two reasons, the researcher used a multivariate statistical model to analyze changes in average incarceration time between 2015-2018. Further details about the multivariate technique are discussed in the Statistical Appendix to this report.

The preliminary step in building the multivariate model in this study was to examine the dataset to identify variables which could also influence incarceration times. Variables found to affect incarceration time are year of arrest and year of case closure; type of crime; case disposition (plea agreement, dismissal, etc.); bond status; and whether the case included a sanity hearing or jury trial.   The raw data examined by the researcher for this task are contained in Tables 13-18 in the appendix.

The average days of incarceration calculated by the statistical model are meaningless unless quantified as a cost to taxpayers. This study estimates the cost of incarceration day in the St. Tammany Parish jail paid by local taxpayers using the financial reports for the St. Tammany Parish Sheriff's office. The method determines the fixed and variable costs of operation of the jail, the portion of those costs paid by local taxpayers, resulting in the cost per day of incarceration paid by local taxpayers through the budget of Parish Government.

III. Description of the Function and Expenses of Governmental Agencies Comprising the St. Tammany Parish Criminal Justice System

In the case of St. Tammany Parish, the principal responsibilities for criminal justice are divided among the Sheriff, police departments, the District Attorney, and the courts in the 22nd Judicial District. The responsibility for local law enforcement rests with the Sheriff and 9 local police departments. (More than half of arrests and investigations occur at

just two of the ten agencies: Slidell Police Department and the St. Tammany Parish Sheriff Office.)   The prosecution of charges made by local police jurisdictions falls to the elected District Attorney for the 22nd Judicial District.

The expenses for criminal justice are paid by a combination of federal, state, and local sources, although the majority of expense falls on local taxpayers in St. Tammany Parish.   The portion of the Sheriff's budget for jail operations and incarceration is $20.5 million, of which 54 percent is paid by local taxpayers (St. Tammany Parish Budget 2018). Almost three-quarters of local taxes for public safety are spent to incarcerate prisoners (See Figure 1).

District attorney operations are funded largely through general funds of St. Tammany and Washington Parishes. The DA's office represents approximately 20 percent of the expenses in the criminal justice system in St. Tammany. The General Fund and Justice Complex funds of St. Tammany Parish Government provide approximately half of funding for the office through these two sources.

Courts in Louisiana are funded, except for judges' salaries, through the budget of St. Tammany Parish Government. The salaries of judges, which is the largest expense, are paid by the State of Louisiana through an annual appropriation. The costs paid by local taxpayers in St. Tammany in 2017 are approximately $1.3 million (St. Tammany Parish budget 2018), or about 8 percent of the total costs in the system.

As is apparent from Figure 1, the costs of incarceration, excluding the costs of police and law enforcement, are the single largest expense to local taxpayers in the criminal justice system.

Costs to Local Taxpayers of Criminal Justice in St. Tammany in 2017

■ Jail ■ DA ■ Courts
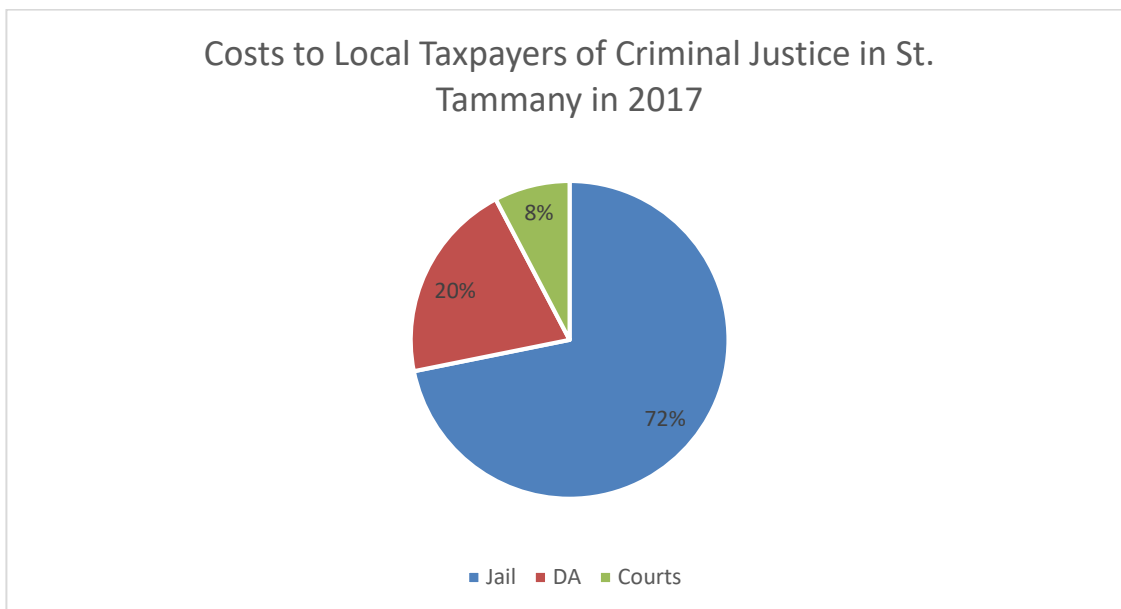
Figure 1

Policy decisions and staffing in the DA's office also affect costs of incarceration and courts-- by lengthening or shortening incarceration times. Figure 1 suggests that DA policies have a disproportionate effect on total costs in the system, because four-fifths of the cost in the system are external to the operations of the DA's office.

IV. Comparison of Peer District and St. Tammany Parish District Attorney's Office Case Types, Volume of Cases, and Jury Trials for the Period 2015-2018.

Under ideal circumstances, an economic analyst would compare staffing levels over time within the St. Tammany portion of the DA's office and across peer districts against differences in case loads to determine the economic reasonableness of the subject office. Since budget data for peer districts is not available, and budget data for the 22nd District is sketchy prior to 2015, the analyst is unable to conduct the ideal analysis. Proxy measures, consequently, are the best data for making peer district comparisons.

A summary review of the proxy data shows that trends in the number of criminal cases in St. Tammany, both felony and misdemeanor, are typical

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of those in 17 urban parishes in Louisiana for 2012-2017. The steady case
load suggests that incarceration times should not vary over 2012-2017.
Additional details about case types and volumes are discussed later in this
section of the report, as well as in the appendix.

The one significant difference between St. Tammany and other urban
parishes was in the number of criminal jury trials (See Figure 5, reproduced
below from the appendix).

Figure 5: Jury Trials per Year
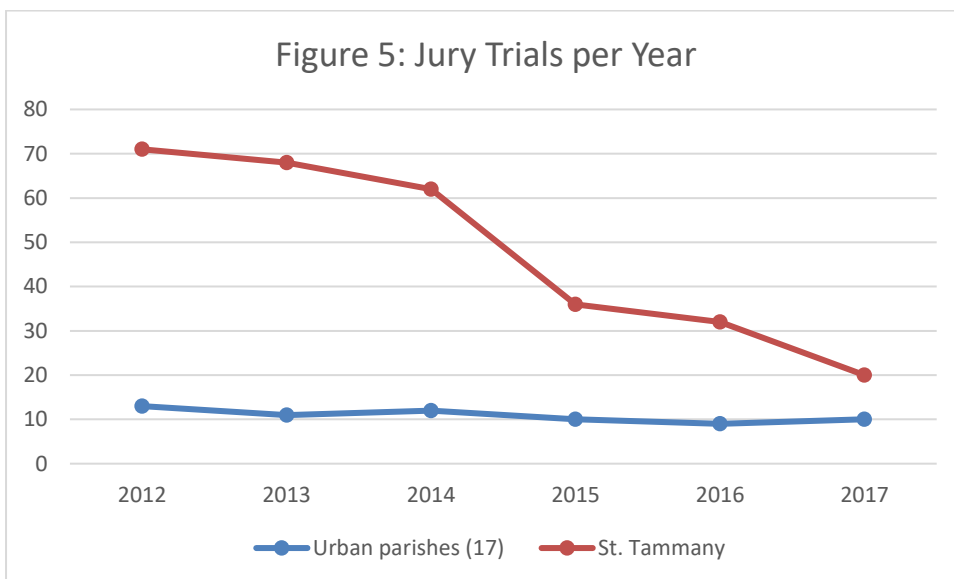
The number of cases presented to juries was much higher in St. Tammany
prior to 2015, and the difference is statistically significant. The number
dropped abruptly in 2015 and is not higher in 2017, in terms of statistical
significance, than the average in other urban districts. The jury trial quota
under the previous District Attorney, eliminated in 2015 by DA Montgomery,
is a plausible explanation for the decline[10]. Since jury trails are the most
expensive means of case disposition, the reduction in trials should also

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[10]See Gordon Russell " Reed's office tactic picking jury, deal offer questioned" in New Orleans Advocate,
June 4, 2014, for a complete explanation of the jury trial quota and the "pick-and-plea" system of case
disposition under the previous District Attorney for the 22nd Judicial District.

manifest in the costs of incarceration in the Sheriff's budget for jail operations.

The detailed proxy data in the appendix show that the number of defendants and number of felony and misdemeanor charges in St. Tammany have been level since 2015 (See Figures 2-4 in the appendix). Incarceration times should have remained stable since the case load was stable.[11] The MCC data shows that policy changes under the current DA have led to reductions in processing time (See Table 19-20 in the appendix). The percentage of cases that are dismissed has declined while the percentage settled by plea has increased since 2015. The percentage of cases that are settled by jury trial have declined since 2014[12]. The percentage of defendants that bond out of jail has declined since 2014. The percentage of cases refused by the District Attorney has dropped since 2015. These simple trends indicate that these other variables must be incorporated into the multivariate model to accurately estimate changes in time between adjudication and arrest due to policy changes implemented by DA Warren Montgomery.

Additional data and analysis of the raw case data is contained in Tables 13-18 of the appendix to this report. One point to note before concluding this section of the report: Of the adjudicated cases in St. Tammany, 86 percent resulted in guilty verdicts. The percent of cases where the defendant in St. Tammany pleads guilty to charges is higher than normal in Louisiana.

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[11] Additional data and explanation about the statistically significant relationship between DA's office staffing and case loads is shown in Table 12 and its explanation on pages 17-19 of the appendix.
[12] The rate of jury trials in the 22nd District were three times the rate in similar sized Judicial Districts in 2014 but the rate in 2017 for St. Tammany was statistically equivalent in 2017, due to changes in district policies about jury trials.

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V. St. Tammany Parish Jail's Cost of Incarceration from Local Prisoners attributable to the Local Taxpayers for the Period 2015-2018

The cost of incarceration of prisoners is incurred by the St. Tammany Parish Sheriff. The Sheriff prepares an annual budget that breaks out jail costs from the other expenses incurred by the sheriff's office, such as law enforcement costs. These budgets and the financial reports prepared by the Sheriff provide a complete record of the revenues and expenses of jail operation in St. Tammany Parish. Parish taxpayers reimburse the sheriff for the portion of jail costs attributed to the keeping of defendants awaiting trial[13].

Some costs of jail operation, such as debt service and insurance, are fixed costs that do not vary with the number of incarcerated prisoners. Such costs should be subtracted from total costs to arrive at the daily per prisoner cost of jail operation needed to estimate the costs incurred by the sheriff for defendants awaiting trial. Likewise, the cost of operations funded by state or federal revenue sources, such as the "Keeping of Prisoners" reimbursements by the Louisiana Department of Corrections, should also be subtracted to determine the share of total costs incurred by taxpayers in St. Tammany Parish.

A calculation based on the data collected by the Metropolitan Crime Commission in its 2018 Criminal Justice Accountability Study shows that the percent of local prisoners housed in parish jail dropped by 28 percent between 2015-2017 (See Table 1). Moreover, the proportion of local prisoners in the jail dropped from 51 percent in 2015 to 42 percent in 2017 (Table 1). As Table 1 shows, the majority of prisoners in the jail in 2017 are not local prisoners awaiting trial. (Details about the calculations shown in Table 1 and the explanation of the calculations are in the appendix to this report).

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[13] The Annual Survey of Jails compiled by the Bureau of Justice Statistics suggests that the portion of inmates in St. Tammany awaiting trial is about 50 percent of the jail population in 2015, a number that validates the estimates made using the MCC collected data.

Table 1

Percent Cases linked to DA Office Records

Panel D

Year	Days of incarceration for Local cases	ADP*	Total Jail Days for all Prisioners	Local Days as % Total Jail Days	Change from 2015 in Local Days (%)
2015	201,290	1076	392,740	51.3%	0%
2016	217,208	997	363,905	59.7%	8%
2017	144,216	950	346,750	41.6%	-28%

Sources: Compiled from jail records compiled by Metropolitan Crime Commission
*ADP (Average Daily Population)from Sheriffs Office Financial Reports

In order to answer a critical component of the research question (the costs of delay in adjudication paid by the local taxpayers) we must make another cost calculation based on the budget for the St. Tammany jail. We must calculate the variable costs of jail operations paid by local taxpayers. This figure is lower than the total costs of jail operation, since bonded debt and fixed costs of jail operation are incurred whether the jail operates at capacity or is empty.   The Sheriff's budget provides a breakout of 13 budget categories for the jail special revenue fund. Eight of the categories, such as debt service, capital outlay, and repairs & maintenance, represent fixed costs while the remainder represent costs that vary with the number of prisoners. We estimate that the fixed costs in FY 2015 and FY 2016 represent about 18-14 percent of total costs (See Table 2). Approximately 82-86 percent of costs, therefore, represent costs that vary with the number of prisoners.

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Table 2

Costs of Operation of St. Tammany Parish Jail

	FY 2016	FY 2017	FY2018
Total Costs	$ 17,181,796	$ 16,549,161	$ 15,551,297
Fixed Costs	$ 3,143,154	$ 2,648,515	$ 2,246,589
Variable Costs (Total minus Fixed)	$ 14,038,642	$ 13,900,646	$ 13,304,708
Variable Costs as Percent of Total Costs	82%	84%	86%
Local Variable Costs per Inmate Day			
Average Daily Population (ADP)	1,077	997	940
Total Incarceration Days (ADP * 365)	393,105	363,905	343,100
Variable Costs/ Inmate Day	$ 35.71	$ 38.20	$ 38.78

Source: Calculated from Sheriff's budget reports

Statistical models support the allocation of the costs of jail staff as variable costs. The regression model of the number of corrections staff and the ADP (average daily population of inmates) was statistically significant at conventional levels. The model suggests that an additional corrections officer is required for an increase in four ADPs. The model for total jail staff and number of prisoners indicates that 41 of the jail staff should be allocated to fixed costs with 175 of the 216 employees in 2015 representing variable costs. The later model suggests that an additional staff member is added to the jail function for an increase in ADP by 6.4 inmates. An alternative interpretation is that the jail staff increases by 1 for every additional 2330 inmate days of incarceration.

Variable costs of housing inmates, based on these methods, was $35.71 per day in FY 2016, $38.20 per day in FY 2017 and $38.78 per day in FY 2018 (see Table 2).

The final statistic of interest is the estimate of the cost of prisoners housed in the jail awaiting trial by year. The cost per prisoner/day (from Table 2) multiplied by the number of prisoner days for local cases handled by the DA office (Table 1), provides the local cost of prisoners awaiting trial borne by the St. Tammany taxpayer (Table 3).

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Table 3

Trends in Variable Costs of Incarceration paid by Local Taxpayers

Year	Days of incarceration for Local cases	Local Variable Cost/ Inmate Day	Annual Local Variable Cost	Change from 2015 (%)	Change from 2015 ($)
2015	201,290	$ 35.71	$ 7,188,074	0	0
2016	217,208	$ 38.20	$ 8,297,341	15%	$ 1,109,267
2017	144,216	$ 38.78	$ 5,592,679	-33%	$ (1,595,395)

The total jail days of incarceration for cases adjudicated by the 22nd District dropped from 201,290 in 2015 to 144,216 days in 2017. The reduction of 57,074 days of incarceration is equivalent to a reduction in ADP of 156 inmates. These statistics exclude defendants who were not screened by an Assistant District Attorney, as well as prisoners who are being held for other jurisdictions. As Table 3 shows, the costs of housing local prisoners awaiting trial dropped by 34 percent or by $1.595 million between 2015-2017. This drop could be due to changes in management practices at the DA office, as well as by the types and complexity of cases. The multivariate model discussed in the next section provides a tool for estimating the effects due to management practices in the DA office while controlling for other sources of variation in the data.

VI. Multivariate Analysis of the Decrease in Days of Incarceration in St. Tammany Parish Jail related to Cases handled by the 22nd Judicial District

The multivariate (MV) model constructed to assess average incarceration time by year is discussed fully in the Appendix of this report and its Statistical Appendix. The final model has 14 variables that are highly

significant, and the details of the statistical measures are shown in appendix Tables 13-20. The model estimates the average days of incarceration for defendants in St. Tammany handled by the 22nd Judicial District. Since the MV model accounts for the multiple sources of variation in processing time, average processing time by year is a proxy for changes due to policy and staffing decisions in the management of the DA office.

The coefficients in the model represent average days of incarceration for each variable while holding all other variables constant. The constant term of 127.3 days in 2015, for example, represents the days of incarceration for defendants that do not have the characteristics represented by the other variables (See Table 4). As the reader can see from examining Table 4, the average time of incarceration differs somewhat between the two methods of measurement. Average days by 'year of arrest' measures incarceration for cases opened in a given year while the average by 'year of case closure' measures backward, often including cases opened in an earlier year. The average incarceration times differ somewhat between the two concepts when the average incarceration time is changing over time. The correct statistical treatment is to average the two concepts in calculating average jail time by year (See Table 4).

Table 4

MV Model Avg. Jail Time by Year (in days)

Year	Year of Basis		Ratio		
	Arrest	Closed	Arrest	Closed	Blended
2015	117.2	127.3	1.00	1.00	1.00
2016	116.9	124.3	1.00	1.02	1.01
2017	100.7	110.9	1.16	1.15	1.16

Note: Difference between 2015-2016 not statistically significant
        Difference between 2015-2017 significant at the .01 level

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The reduction in case processing time since 2015 that was observed in the raw data also manifests as a pronounced trend of reduced jail times in the multivariate model. The decline in jail time persists when the effects of variations in types of crimes, in case dispositions, and in case events are controlled for. The multivariate (MV) model indicates that the average days between arrest and case adjudication fell by 15 percent (-16.4 days) when measured by year of case closure (Table 4). The average days of incarceration, when measured by year of arrest, fell by a 16 percent (-16.5 days) between 2015-2017. The blended or average rate for the two concepts is 16 percent (-16.45 days). The decline is statistically significant for both measures. The odds that the relationship in the model is due to chance is less than 1 in 100,000.

The blended average rate (average by year of arrest and year of case closure) suggests that average processing times declined by 1 percent between 2015-2016 and by 16 percent between 2015-2017.

Because the variables in the multivariate model are statistically significant, the model results can be used to estimate the reduction in jail costs due to the increase in case processing speeds. We use a counterfactual argument to make the estimate. We calculate the increase in defendant jail time that would have occurred if processing times had remained at 2015 levels[14]. Those calculations are shown in Table 5.

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[14] The estimate of defendant days in jail were assembled by the Metropolitan Crime Commission from records maintained by the St. Tammany Sheriff. This estimate is lower than the estimate made by extrapolating the statistics from the *Annual Survey of Jails*. The MCC statistics, being the most conservative of the two, are used as the basis for our counterfactual argument.

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Table 5

Offset in Jail Costs from Reductions in Case Processing Times

	2015	2016	2017
Actual Defendant Days in Jail (MV model using MCC data)	201,290	217,208	144,216
Defendant Days in Jail (estimate from ASJ data)*	205,495	NA	NA
Processing Time Ratio**	1.000	1.010	1.160
Defendant Days adjusted for differences in processing time since 2015	201,290	219,380	167,291
Total Defendant Days Saved from Management Practices	-	2,172	23,075
Variable costs per inmate day	$ 35.71	$ 38.20	$ 38.78
Savings from Changes in DA Management Practices	-	82,973	894,831

* ASJ= Annual Survey of Jails publication (Bureau of Justice Statistics)

** avg processing days per case in year of arrest + year case closed/ avg processing days in 2015

If processing times had not fallen between 2015-2017, the taxpayers of St. Tammany would have incurred costs on an additional 2,172 inmate days in 2016 and an additional 23,075 inmate days in 2017 (see Table 5). These statistics are equivalent to an increase of the Annual Daily Population (ADP) of 6 inmates in 2016 and 63 inmates in 2017. Applying the variable cost of $38.11 per inmate day calculated in an earlier section, we estimate that the savings in incarceration costs for local taxpayers was $82,778 in 2016 and $879,371 in 2017 (see Table 5).

Since the calculations in Table 5 are based on a sample of the jail population, they require the calculation of a margin of error. The margin of error is plus or minus 11 percent for 2016 and plus or minus 10 percent for 2017. The local costs could vary by plus or minus $8,300 in 2016 and plus or minus $89,483 in 2017.

The MV model suggests that approximately 53% of the variation in case processing time between 2015-2017 is directly due to changes in case processing at the DA office while the remainder is attributed to variations in

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incarceration time from types of crime, differences in ratios of defendants who bond out, and the other variables in the model.

VII. *Summary Statement of the Study's Primary Research Findings*

Taimerica finds that the St. Tammany Parish District Attorney's office's salary administration budget, for the period 2015-2018, meets the legally mandated budgetary requirement of economic reasonableness, as confirmed through different sources and methods discussed in this report.

VIII. Conclusions

We also find that economic efficiency in the District Attorney's office affects incarceration costs. The costs of jail operations shown in Figure 1 are 3.5 times the costs of the District Attorney's office. Increased spending to improve the efficiency of DA's office operations has a multiplier effect on the avoided costs of incarceration. Money spent by the DA to reduce average incarceration times is more than offset by reductions in the costs of incarceration borne by local taxpayers. Based on the ratio of variable costs in the two arms of the criminal justice system, a dollar of additional costs in the office of the DA, when used to reduce case processing times, appears to save nearly $2 in incarceration costs incurred by the Sheriff.

The MV model provides proxy estimates of the costs of various types of crimes and of various outcomes of cases. Homicides, rapes, and robberies are far more expensive crimes to adjudicate than other types of felonies. Pleas by defendants are half as costly to adjudicate as judge or jury trials based on the processing times estimated by this MV model. Dismissals incur costs but at half of the cost of the average felony.

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IX. Recommendations for Additional Research the St. Tammany District Attorney's Office Might Undertake to Ensure its Future Annual Salary and Expense Budgets Satisfy the Requirements of Reed's Test for Economic Budgetary Reasonableness

The statistical database built for this project, whose data was originally compiled with diligence and precision by the MCC, provides a rich source of information on the operations of the components of the criminal justice system in St. Tammany. This study is merely a preliminary look at the evidence about economic efficiency in the DA's office. The data provides a resource for further increasing the efficiency and production of the office.

Our recommendation is that leaders in the DA's office should formulate additional policy and economic questions that they would like to explore with this data. Since the costs of building the data are sunk costs, additional analysis can be done expeditiously and at a lower unit cost.

Among the issues that Taimerica recommends for further investigation are the following:

- The relative cost of diversion can't be estimated accurately by the model since the data is calculated for the date that diversion ends, not the date that it begins. An investigation of cost savings from diversion is warranted if the relevant dates for modeling can be added to the model.
- Update the MCC data to incorporate all of 2018 and subsequent years. Studying changes in incarceration times is helpful in identifying new management practices that could further enhance the efficiency in the criminal justice system.
- Supplement the examination of peer district staffing with an examination of peer district budgets in LA using the 2018 data collected by the National Prosecutor's Association.
- Examine the economic and court costs of jury trials for the 22nd Judicial District. The economic cost includes time lost to

employers and wages lost to employees, as well as the costs incurred by the court in empaneling a jury.

- Incorporate 'case extenders' into the DA office management database and examine their effect on incarceration times. Case extenders are variables that national research has shown to affect the time needed to process a case, such as child victims/witnesses, domestic violence, and out of state defendants, witnesses and victims.

- Examine in detail the relationship between incarceration times and the workloads required to adjudicate a case. Time studies, such as the example done by the National District Attorney's Association for the New Mexico Sentencing Commission, provide a template for collecting the data. It appears that the data collected by MCC that was used in this study has many if not all of the classification attributes needed to correlate this database with prior time studies of prosecutor's office, such as the example from New Mexico.

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APPENDIX- DETAILED CALCULATIONS AND ANALYSIS

TABLE OF CONTENTS

Introduction to Appendix

This document supplements Taimerica's report of findings on the efficiency of the operations of the 22nd Judicial District. The supplement includes a benchmarking of operations for eight judicial districts in Louisiana of similar population size. Some of the urban districts, such as Judicial Districts D and G, are larger in population than the 22nd district while others, such as the Judicial District A and the Judicial District E, are smaller in size. The benchmark districts were chosen so that St. Tammany would be near the center of the distribution. All of the districts within the population range of 200,000 to 439,000 as of 2015 are included in the panel. The purpose of this design is to eliminate any bias that might occur from selecting a sample of large Louisiana jurisdictions. In order to insure than the results provide an objective, independent assessment, the consultants developed the sample methodology without oversight or approval from staff in the 22nd district. This supplement provides Taimerica's findings, and therefore does not necessarily represent the opinions of the leadership of the 22nd Judicial District.

Methodology

These findings are assembled from an analysis of records compiled by the Supreme Court of Louisiana from clerks of court in the eight Judicial Districts, from statistics compiled by the Department of Justice in Washington, D.C., as well as data reported by the jurisdictions to the District Attorney's Association of Louisiana. The primary data in this report, however, was compiled by the Metropolitan Crime Commission during late 2018 from records maintained by the Sheriff, Clerk of Courts, and District Attorney.

The analysis and modeling in this report conforms to accepted practices in statistics and econometrics as of 2018. Unless otherwise noted, the reported statistics and model results in this report are statistically significant at conventional levels of inference.

Because the operations of district attorneys fall between the operations of police jurisdictions and courts, they are the critical path in the criminal justice system. Delays or mistakes in the district attorney's office can affect the costs or outcomes in the balance of the criminal justice system. Delays in accepting or prosecuting cases can increase the costs of incarceration paid by the sheriff's office to house inmates held for trial. Decisions to prosecute in the absence of strong evidence can increase the costs incurred by courts. Decisions to prosecute rather than to negotiate pre-trial interventions or pleas to lesser charges likewise increase the costs incurred by courts as well as the costs of incarceration for inmates awaiting trial.

The Composition of the Criminal Justice System

The criminal justice system in Louisiana is divided among a number of layers of government. Police jurisdictions, typically a number within a court jurisdiction, respond to calls,

make arrests, collect evidence, and file charges. District attorneys represent the people's interests by deciding which cases to prosecute, which to treat as pre-trial interventions, and which to dismiss. Courts are the unit in the system where the innocence or guilt of defendants is decided. Courts also decide whether to allow defendants to bond out awaiting trial or whether to require them to remain in jail awaiting trial.   The District Attorney represents the public's interest in these trials and bond hearings.

Defendants that judges deem a risk to the public remain incarcerated until their cases are adjudicated. Defendants unable to post bond also remain incarcerated between arrest and adjudication. Local taxpayers incur the costs of keeping these defendants in jail.

As this report confirms, up to half of the inmates in the St. Tammany Jail are, in fact, defendants awaiting trial. (This fact is validated through two sources: statistics compiled by the Bureau of Justice Statistics and statistics compiled from jail records by the Metropolitan Crime Commission).   Delays anywhere in the criminal justice system therefore have an economic impact on taxpayers as well as on the overall economy in the parish. Taxpayers pay to incarcerate defendants awaiting trial. Society incurs an economic cost as defendants that remain incarcerated are not able to work. They lose wage income during incarceration and their employers lose revenues that the defendants would have produced if they had been working. Government loses the tax revenues that such workers and companies would have produced in the absence of incarceration.

Criminal Justice Costs in St. Tammany Parish

The criminal justice system in Louisiana is divided by the constitution among a number of elected officials. In the case of St. Tammany Parish, the principal divisions of responsibility are among the Sheriff, police departments, the District Attorney, and the courts in the 22nd Judicial District. The responsibility for local law enforcement rests with the Sheriff and 9 local police departments. (More than half of arrests and investigations occur at just two of the ten agencies: Slidell Police Department and the St. Tammany Parish Sheriff Office.)   The prosecution of charges made by local police jurisdictions falls to the elected District Attorney for the 22nd Judicial District. The courts of the 22nd Judicial District conduct hearings and trials and the judges in the district render judgements and sentences on defendants.

Actions or policies adopted in one division of the system can affect costs in other divisions. Poor investigations by law enforcement can affect the outcomes of trials or pleas negotiated by the District Attorney. Policies or actions adopted by the District Attorney can affect the costs of incarceration incurred by the Sheriff. Dismissal and bonding actions of judges in the district can also affect the costs of incarceration incurred by the Sheriff.

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The expenses for criminal justice are paid by a combination of federal, state, and local sources, although the majority of expenses fall on local taxpayers in St. Tammany Parish.   The Sheriff's department has an annual operation budget of $69 million, of which two-thirds is funded by local property and sales taxes. The portion of the budget for jail operations and incarceration was about $20.5 million in 2015, of which 54 percent is paid by local taxpayers (St. Tammany Parish Budget 2018).

District attorney operations are funded largely through general funds of St. Tammany and Washington Parishes. About half of operating funds are from St. Tammany accounts, six percent from Washington Parish accounts, 10 percent from the State and Louisiana and one-third are generated by the District Attorney's office (DA Budget for 2017). The General Fund and Justice Complex funds of St. Tammany Parish Government provide approximately half of funding for the office through these two sources.

Courts in Louisiana are funded, except for judges' salaries, through the budget of St. Tammany Parish Government. The salaries of judges, which is the largest expense, are paid by the State of Louisiana through an annual appropriation. The costs paid by local taxpayers in St. Tammany in 2017 are approximately $1.3 million (St. Tammany Parish budget 2018).

As is apparent from Figure 1, the costs of incarceration, excluding the costs of police and law enforcement, are the single largest expense to local taxpayers. Almost three-quarters of local taxes for public safety are spent to incarcerate prisoners.

Figure 1

Costs to Local Taxpayers of Criminal Justice in St. Tammany in 2017
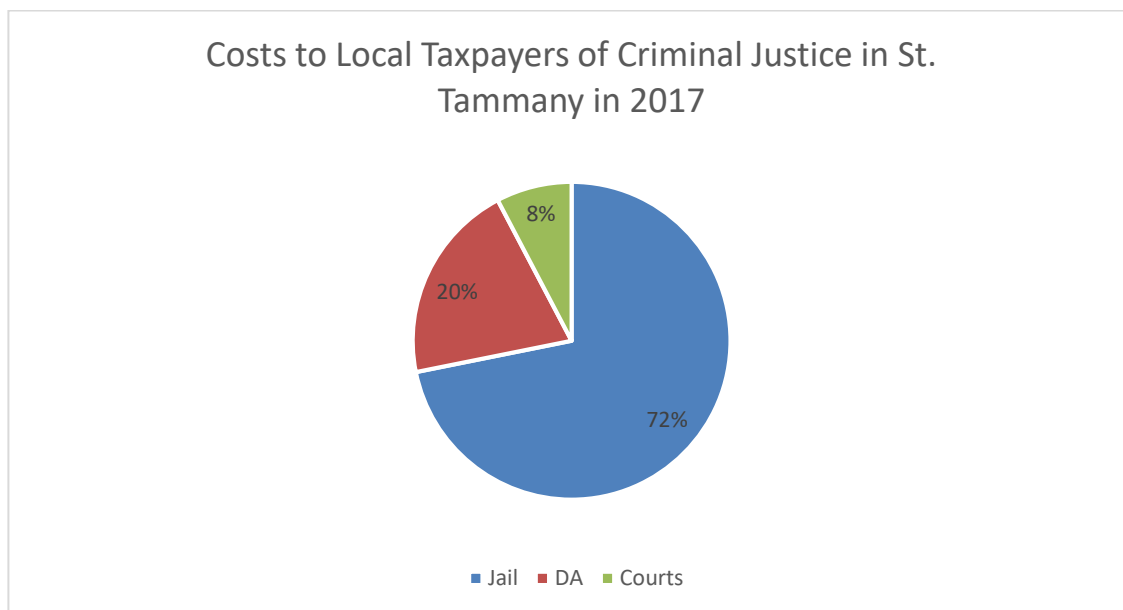
- Jail
- DA
- Courts

Unlike jails in other urban jurisdictions, not all of the jail expenses in St. Tammany are for incarceration of prisoners awaiting trial (see Table 1). A sizeable share of prisoners housed in the local jail are held for Immigration, the Marshall's Service, other Louisiana jurisdictions, or Louisiana State Police. These jurisdictions reimburse the sheriff for the costs of incarceration. In FY 2017, reimbursements accounted for 38 percent of jail operations.

The primary research question in this study is measuring the costs of delay in adjudication paid by the local taxpayers. To arrive at this estimate, we must first calculate the variable costs of jail operations paid by local taxpayers. This figure is lower than the total costs of jail operation, since bonded debt and fixed costs of jail operation have to be paid whether or not the jail operates at capacity or is empty. The second calculation involves estimating the proportion of prisoners housed in the jail awaiting trial. These two calculations allow the analyst to calculate the local annual cost and the daily cost per inmate for the portion of inmates held for trial without bond.

Table 1

Comparison of Jail Populations in 2015

Facility	ADP	Convicted(#)	Convicted(%)	Unconvicted	Felony	Misdemeanor	Felony(%)
Calcasieu	1279	365	31%	825	875	291	74%
Lafayette	898	274	35%	509	314	465	40%
Orleans	2022	558	31%	1242	609	279	34%
Caddo	1044	298	30%	699	499	442	50%
St. Tammany	1075	462	45%	563	640	385	62%
East Baton Rouge	1514	54	4%	1427	1265	216	85%
Jefferson Parish	815	891	93%	72	963	0	100%

Source: Annual Survey of Jails 2015

Records compiled by the Metropolitan Crime Commission for the 2018 Criminal Justice Accountability Study provide the data needed to estimate the proportion of days of incarceration for inmates awaiting trial for 2015-2017. The file contains more than 34,000 records of jail bookings in St. Tammany over the last 3.5 years. Records prepared by the MCC from DA's office and Court documents provide a means of estimating the days between arrest and adjudication for incarcerated and bonded defendants. This data provides a means of estimating the costs incurred by the District Attorney's office in screening and trying cases in St. Tammany. When compared to earlier reports by the MCC, these sources provide estimates of the reasonableness of DA's office expenses over time, one of the key efficiency metrics.

The estimate of incarceration times is based on the sample of jail records that include both arrest and release dates. The sample sizes are large relative to the jail populations for 2016 and 2017. While the percent of records for 2015 is smaller, the sample size is large enough to allow valid statistical inferences. Confidence intervals are calculated to show the margin of error by year and by type of crime and bond/no-bond status (See Panel A of Table 2). The overall CI for 2016-17 (CI weighted by percent of bonded & non-bonded felonies & misdemeanors) is 20% for 2015, 11% for 2016 and 10% for 2017.

The data indicate that half of misdemeanor defendants who bond out are released within 1 day of arrest while half of felony defendants who bond out are released within 2 days of arrest. (NOTE: the median is the statistic that measures the midpoint in the sample.) The data also shows that the average days of incarceration for bonded misdemeanor defendants has dropped since 2015 (the differences for averages by year for felony bonded defendants are not statistically significant). The averages for non-bonded misdemeanors and felonies both show a pattern of dropping dramatically for cases closed in 2017. The differences between 2016-2017 for both felony and misdemeanor defendants are statistically significant. The raw data suggests that case processing times were reduced between 2016 and 2017.

Since the jail data is a sample, the number of cases in the population are required to estimate the aggregate days of incarceration by year (See Panel B in Table 2). The number of felony and misdemeanor cases in Panel B are the number of respective cases closed by the 22nd District in each year. The estimates of bonded and non-bonded cases are estimated from the proportions calculated in the sample of jail records.

The aggregate days of incarceration for misdemeanor and felony defendants in Panel C represents the number of cases in Panel B multiplied by the average days of incarceration from Panel A.

The statistics in Panel D represent the percentage of jail days linked to the operations of the 22nd Judicial District. These statistics exclude defendants who were not screened by an Assistant District Attorney. The statistics in the second column of Panel D therefore exclude prisoners who are being held for other jurisdictions. The ADP (Average Daily Population) and total days of jail in Panel D are data reported by the Sheriff's office in financial reports. The calculations suggest that the percent of jail time accounted for by the 22nd Judicial District was 51 percent in 2015 but dropped to 42% in 2017.

The Survey of Jails for 2015, published by the Bureau of Justice Statistics, indicates that the percent of jail inmates awaiting trial is 52 percent, well within the margin of error for the estimate calculated from jail records (this is the only year in which the records overlap). The conformance of the two data sources validates the accuracy of the methodology.

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Table 2

Sample Statistics for Defendants involving the 22nd Judicial District
(By Year Case Closed)

Panel A (Units are days of incarceration unless otherwise noted)

	Misdemeanors				Felonies			
Year	Number of Obs.	Avg.	Median	C.I.*	Obs.	Avg.	Median	CI*
	Bonded							
2015	344	3.4	1	20%	181	7.0	2	22%
2016	828	4.0	1	11%	561	6.7	2	11%
2017	860	2.4	1	10%	684	6.6	2	11%
	Non-bonded							
2015	41	113.9	99	18%	47	217.5	215	12%
2016	102	117.7	82	11%	178	199.9	166	6%
2017	101	80.1	61	9%	173	154.3	125	7%

* CI = 95% confidence interval. Same as the margin of error in a survey. Includes Finite population adjustment

Number of Cases by Year Closed by Bond Status

Panel B

Year	Total Misdemeanors	Bonded	Non-Bonded	Total Felonies	Bonded	Non-Bonded	Total Defendants
2015	5857	5233	624	2227	1768	459	8084
2016	7498	6676	822	1765	1340	425	9263
2017	7692	6884	808	1722	1374	348	9414

Days of Jailtime by Year Case Closed*

Panel C

	Misdemeanors		Felonies		Misd. + Felonies		
Year	Bonded	Non-Bonded	Bonded	Non-Bonded	Bonded	Non-Bonded	TOTAL
2015	17,982	71,060	12,415	99,834	30,396	170,894	201,290
2016	26,412	96,797	9,028	84,971	35,440	181,768	217,208
2017	16,777	64,770	9,046	53,623	25,823	118,393	144,216

Percent Cases linked to DA Office Records

Panel D

Year	Days of incarceration for Local cases	ADP*	Total Jail Days for all Prisioners	Local Days as % Total Jail Days	Change from 2015 in Local Days (%)
2015	201,290	1076	392,740	51.3%	0%
2016	217,208	997	363,905	59.7%	8%
2017	144,216	950	346,750	41.6%	-28%

Sources: Compiled from jail records compiled by Metropolitan Crime Commission
*ADP (Average Daily Population)from Sheriffs Office Financial Reports

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The cost of incarceration of prisoners is incurred by the St. Tammany Parish Sheriff. The Sheriff prepares an annual budget that breaks out jail costs from the other expenses incurred by the sheriff's office, such as law enforcement costs. These budgets and the financial reports prepared by the Sheriff provide a complete record of the revenues and expenses of jail operation in St. Tammany Parish.

Some costs of jail operation, such as debt service and insurance, are fixed costs that do not vary with the number of incarcerated prisoners. Such costs should be subtracted from total costs to arrive at the daily per prisoner cost of jail operation needed to estimate the costs incurred by the sheriff for prisoners awaiting trial. Likewise, the cost of operations funded by state or federal revenue sources, such as the "Keeping of Prisoners" reimbursements by the Louisiana Department of Corrections, should also be subtracted to determine the share of total costs incurred by taxpayers in St. Tammany Parish.

The Sheriff's budget provides a breakout of 13 budget categories for the jail special revenue fund. Eight of the categories, such as debt service, capital outlay, and repairs & maintenance, represent fixed costs while the remainder represent costs that vary with the number of prisoners. We estimate that the fixed costs in FY 2015 and FY 2016 represent about 18-19 percent of total costs. Over eighty percent of costs, therefore, represent costs that vary with the number of prisoners.

Statistical models support the allocation of the costs of jail staff as variable costs. The regression model of the number of corrections staff and the ADP (average daily population of inmates) was statistically significant at conventional levels. The model suggests that an additional corrections officer is required for an increase in four ADPs. The model for total jail staff and number of prisoners indicates that 41 of the jail staff should be allocated to fixed costs with 175 of the 216 employees in 2015 representing variable costs. The later model suggests that an additional staff member is added to the jail function for an increase in ADP by 6.4 inmates. An alternative interpretation is that the jail staff increases by 1 for every additional 2330 inmate days of incarceration.

Variable costs of housing inmates, based on these methods, was $35.71 per day in FY 2016 and $38.78 per day in FY 2018 (see Table 3). The variable cost per inmate is the same, whether the inmate cost is paid by local taxpayers or by other entities. The variable cost in calendar 2015 for housing local inmates awaiting trial was $7.188 million. The amount fell to $5.592 million in 2017 (see Table 4). The raw numbers, unadjusted for the mix of felonies/misdemeanors and bonded/non-bonded defendants, indicate that the portion of local taxpayer-supported operating costs influenced by the operations of the 22nd Judicial District has dropped by $1.595 million between 2015-2017. The multivariate model presented later in this report will calculate changes while controlling for these and other variables.

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The estimate of local prisoners made by examining jail records collected by MCC (shown in Table 4) conform to the estimate from records collected by the Bureau of Justice Statistics for the Annual Survey of Jails (ASJ). The ASJ provides uniform statistics on the inmate population at all major jails in the United States for each calendar year (see Table 5). The deviation between the two sources for the overlapping year of 2015 is not statistically significant. We can conclude that the data compiled by the MCC is a representative sample of the jail population in St. Tammany for the years of this study. Inferences about jail costs made using the MCC data are well founded.

Table 3

Jail Fund Calculations for FY 2016-2018

Category	Type	FY2015	Actual Expenses FY2016	FY2017	FY2018
Personnel	Variable	$ 8,133,671	$ 8,284,997	$ 8,140,708	$ 8,007,067
Benefits	Variable	$ 2,630,092	$ 2,781,609	$ 2,770,804	$ 2,578,416
Insurance	Fixed	$ 335,933	$ 446,376	$ 132,717	$ 157,237
Operating Expenses	Variable	$ 2,513,302	$ 2,430,101	$ 2,413,621	$ 2,200,342
Communications	Fixed	$ 63,289	$ 56,976	$ 27,737	$ 30,337
Rentals	Fixed	$ 6,751	$ 6,557	$ 11,892	$ 9,636
Repair & Maintenance	Fixed	$ 711,256	$ 581,012	$ 399,852	$ 328,933
Professional Fees - Maint. contract	Variable	$ 193,326	$ 114,280	$ 195,501	$ 140,765
Maintenance contract portion	Fixed	$ 120,410	$ 116,127	$ 119,843	$ 205,620
Materials & Supplies	Variable	$ 336,759	$ 401,924	$ 347,476	$ 348,468
Travel	Variable	$ 12,065	$ 8,598	$ 18,866	$ 17,594
Education & Training	Variable	$ 20,394	$ 17,133	$ 13,670	$ 12,056
Debt Service	Fixed	$ 1,865,570	$ 1,877,356	$ 1,882,656	$ 1,420,255
Capital Outlay	Fixed	$ 157,017	$ 58,750	$ 73,818	$ 94,571
TOTAL COST		$ 17,099,835	$ 17,181,796	$ 16,549,161	$ 15,551,297
Total Fixed Costs		$ 3,260,226	$ 3,143,154	$ 2,648,515	$ 2,246,589
Variable costs		$ 13,839,609	$ 14,038,642	$ 13,900,646	$ 13,304,708
Fixed Cost as % of total(%)			19%	18%	16%	14%
Variable costs as % of total (%)			81%	82%	84%	86%
ADP*			1075	1077	997	940
Inmate days			392,375	393,105	363,905	343,100
Variable Cost/Inmate Day		$ 35.27	$ 35.71	$ 38.20	$ 38.78

*ADPs for FY 2016-2018 from sheriff's budget reports. ADP for 2015 is calendar year as reported in Annual Survey of Jails

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Table 4

Trends in Variable Costs of Incarceration paid by Local Taxpayers

Year	Days of incarceration for Local cases	Local Variable Cost/ Inmate Day	Annual Local Variable Cost	Change from 2015 (%)	Change from 2015 ($)
2015	201,290	$ 35.71	$ 7,188,074	0	0
2016	217,208	$ 38.20	$ 8,297,341	15%	$ 1,109,267
2017	144,216	$ 38.78	$ 5,592,679	-33%	$ (1,595,395)

Source: Calculated from MCC collected jail-DA-Court records

Table 5: St. Tammany Parish Jail Statistics

Year	2012	2013	2014	2015
Avg. Daily Population (ADP)	986	1058	1031	1076
Convicted	523	550	549	462
Un-convicted	523	550	549	563
Awaiting trial*	472	405	409	419
Awaiting transfer	5	97	110	
Total convicted+ un-convicted	1046	1052	1068	1025
Felony inmates				640
Misdemeanor inmates				385
# Admissions	179	177	155	8245*
# Releases	180	187	180	7654*
Total Jail Staff	195	196	210	216
Corrections staff	119	142	134	137
Ratio-Admission/Release	0.99	0.95	0.86	1.08

*Annual Survey of Jails switched accounting methods for tabulation of admissions and releases in 2015. Admissions and releases for 2015 are not comparable to prior years

Source: Annual Survey of Jails (prisoner stats) & Sheriff office financial reports (staffing levels)

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The statistics from jail records demonstrate a strong statistical relationship between the ADP (Average Daily Population) and the number of staff in the jail division. When the ADP increases, the staff in the jail division also increases, and the relationship is statistically significant. This supports the division of costs for jail operation into fixed and variable costs. When prison populations increase, payroll costs of jail operations also increased.

A comparison of the estimated reductions in local prisoners estimated from the MCC data (Table 4) is also reflected in the ADP of the jail reported by the sheriff (Table 3). The ADP of the jail dropped by 135 inmates between 2015 and FY 2018. The ADP for the St. Tammany jail in FY 2018 was lower than it had been since at least 2012 (Table 5).   All of the sources tell a story of declining numbers of local inmates awaiting trial since 2015.

Differences in Costs over Time among Parish-wide Jurisdictions

The economy and population of St. Tammany Parish historically have grown at faster rates than the balance of the State of Louisiana. Since the growth in the demand for government services is tied to economic and population growth, it is appropriate to measure changes in budgets of government entities serving the same geographic area as one index of reasonableness. For the operations of the District Attorney, the comparison should examine units of government with parish-wide jurisdictions. Three parish-wide entities meet this screen: St. Tammany Council and Government, St. Tammany School Board, and St. Tammany Parish Sheriff.

Comparisons include two periods: the last 5 budget years and the last 3 budget years. The 5-year comparison covers multiple councils, district attorneys, and sheriffs. The last 3 years provide a picture of changes under the current District Attorney, Sheriff, and Parish President and Council.

Comparisons include two budget numbers for the District Attorney: total costs of St. Tammany portion of the 22nd Judicial District budget and the General Fund portion of 22nd J.D. operations. Three benchmarks are provided for comparison, which are parish-wide GDP, retail sales tax collections, and property tax digest. The tax measures provide indices for comparing how the parish-wide tax base is growing relative to the size of government.

A cursory review indicates that the budget for DA operations has grown slower than sales tax receipts and faster than property tax receipts since 2012 (see Table 6). The DA budget appears to have grown faster than budgets for Parish, Sheriff, and School Board since 2012 but direct comparisons are skewed by increases in interfund transfers by parish government for reimbursement of general fund and justice center operations (see Attachment 1). Interfund charges added to the District Attorney budget by the Parish increase the budget for the office but are not part of the direct operating costs managed by DA personnel.   When these charges are subtracted, the increase in operating budget has grown approximately 16 percent since 2015. As

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will be shown in later sections of this report, the increase in operating costs at the DA's office have been offset by decreases in jail operating costs due to shorter incarceration time for St. Tammany defendants awaiting trial. The topics will be explored again later in this report.

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Table 6: Budget Comparisons of St. Tammany Parishwide Jurisdictions

	2012	2013	2014	2015	2016	2017	2012-17*	2015-2017
St. Tammany primary government expenses	$ 109,303,712	$ 102,957,671	$ 121,893,163	$ 131,565,183	$ 142,691,363	$ 138,025,894	26%	5%
St. Tammany School Board	$ 355,839,393	$ 381,363,146	$ 385,110,857	$ 401,650,894	$ 399,165,667	$ 408,972,437	15%	2%
St. Tammany Sheriff	$ 68,309,445	$ 71,854,006	$ 70,650,543	$ 70,763,769	$ 71,386,067	$ 71,682,777	5%	1%
District Attorney portion of St. Tammany Gen. Fund**	$ 2,055,542	$ 2,078,671	$ 2,185,551	$ 2,686,300	$ 3,141,791	$ 3,197,678	NA	19%
St. Tammany share of Total DA Office Expense***				$ 6,835,464	$ 7,620,239	$ 7,942,308	NA	16%
St. Tammany Population	$ 239,139	$ 242,073	$ 245,511	$ 249,320	$ 252,772	$ 256,327	7%	3%
St. Tammany GDP in Real $	$ 8,605,272	$ 8,532,669	$ 10,510,731	$ 11,688,922	NA	NA	36%	NA
St. Tammany Retail Sales Tax Collections	79456319	$ 88,365,292	$ 91,640,592	$ 96,473,029	$ 102,233,039	$ 123,197,979	55%	28%
St. Tammany Property Tax Digest ($000)	$ 2,170,547	$ 2,213,019	$ 2,279,063	$ 2,336,177	$ 2,474,599	$ 2,529,120	17%	8%

* Growth in GDP is for 2012-2015
** changes in GF accounting by parish in 2015 distort comparisons with earlier years
*** trends in DA expenses since 2015 not comparable to trends for Sherrif or School board due to changes in parish general fund & justice center transfers. See footnote
Sources: Budget documents for jurisdictions; St. Louis FRED; Bureau of Economic Analysis

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Differences in Case Load and Jury Trials between 22nd Judicial District and Peer Districts

Comparisons of operations in the 22nd Judicial District and the offices of other district attorneys in Louisiana are meaningful only if the districts are comparable. Districts that have large numbers of crimes due to higher populations or to high crime rates are not directly comparable. Taimerica identified seven judicial districts in Louisiana that are comparable in total population to serve as peers to the St. Tammany portion of the 22nd Judicial District.

This section of the report is based on a benchmarking of operations for eight judicial districts in Louisiana of similar population size. Some of the urban districts are larger in population than the 22nd District while others are smaller in size. The benchmark districts were chosen so that St. Tammany would be near the center of the distribution. All of the districts within the population range of 200,000 to 439,000 as of 2015 are included in the analysis. The purpose of this design is to eliminate any bias that might occur from selecting a sample of large Louisiana jurisdictions.

Since the amount of time that ADAs and Investigators spend on cases depends on the type of crimes involved in the arrests and bills, the ideal method of comparison is to build a multivariate statistical model that allows researchers to compare levels of staff efforts between judicial districts while holding the effects of crime type constant. These models require a minimum of 40 observations which require researchers to collect annual data on crime types and staffing by jurisdiction for at least six years for the 22nd judicial district and its six peers. Crime levels are available for the time period but staffing levels are only available for 2018, since the Association of District Attorneys does not keep archives of staffing rosters. This left the second-best option for our investigation, a comparison of staffing levels adjusted by felony crime rates for St. Tammany and peer jurisdictions. An additional investigation was to determine if trends in crime levels in St Tammany differ from trends in the peer jurisdictions. Are crime rates in St. Tammany atypical of urban districts in Louisiana and are the rates converging or diverging over time? The analysts excluded misdemeanor crimes since they consume a small share of the total staffing in DA's offices.

The trends in criminal cases and in jury trials differ between St. Tammany and the 17 parishes in the seven peer districts (see Figures 2-4). The data in the charts is supplied to the Louisiana Supreme Court by Clerks of Court using common definitions and procedures. The data is therefore consistent for comparisons across jurisdictions. Comparisons across the six years in the time series suggest that St. Tammany does not differ from its peers in terms of criminal cases, but the trends in felony cases are steady in St. Tammany but have witnessed a declining trend in the peer districts (Figure 3). St. Tammany trends in misdemeanor cases, however, are steady while the trend is a decline in peer district (Figure 4).

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Figure 2: Criminal Cases
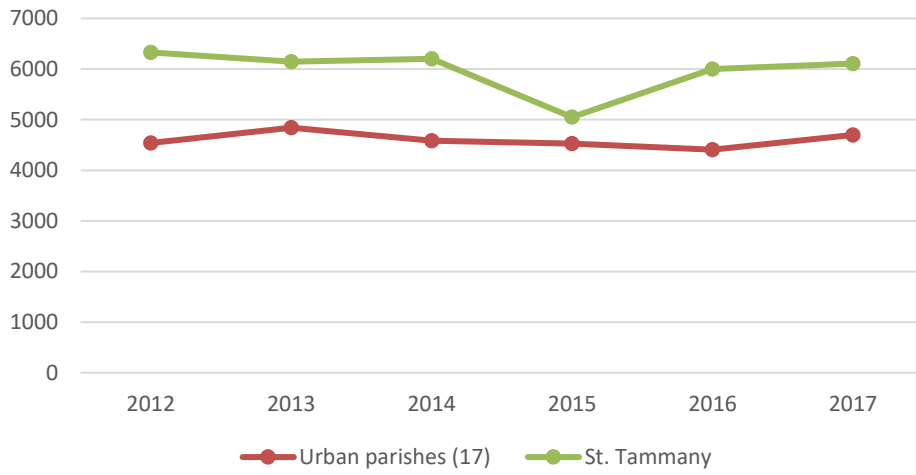
Figure 3: Felony Charges
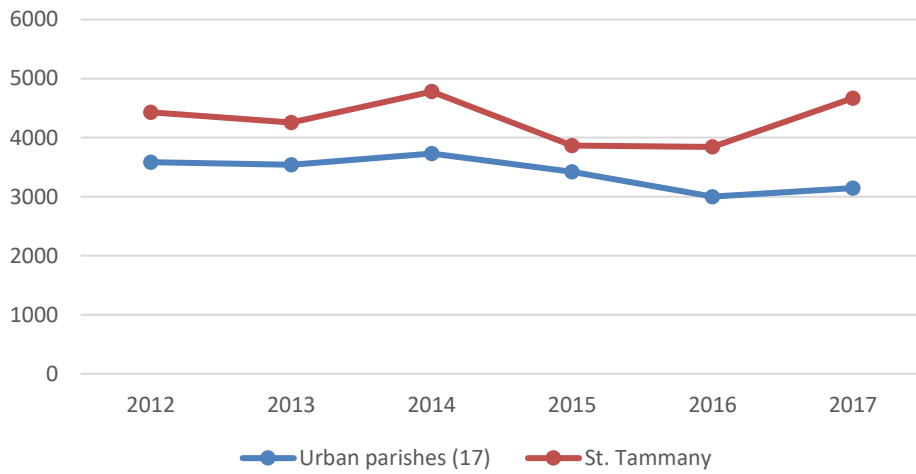
Figure 4 Misdemeanor Cases
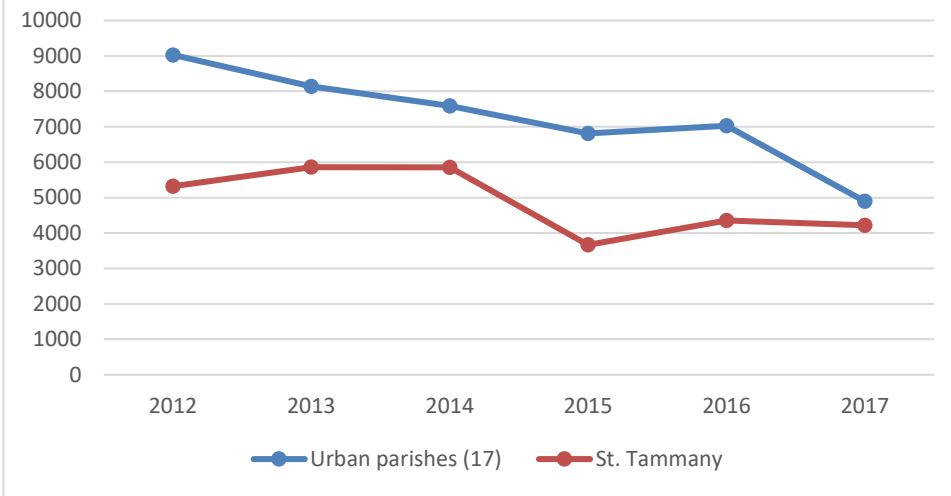
The biggest deviation between St. Tammany and its peers is the decline in the number of jury trials over time*. St. Tammany was disproportionate in the number of jury trials under the previous District Attorney (Figure 5). The ratio of jury trials per 10,000 criminal cases in St. Tammany in 2012 was 4-5 times the rate in peer districts in 2012-13 but has dropped to 1.5 times the rate in peer districts in 2017 (see Table 7).

Figure 5: Jury Trials per Year
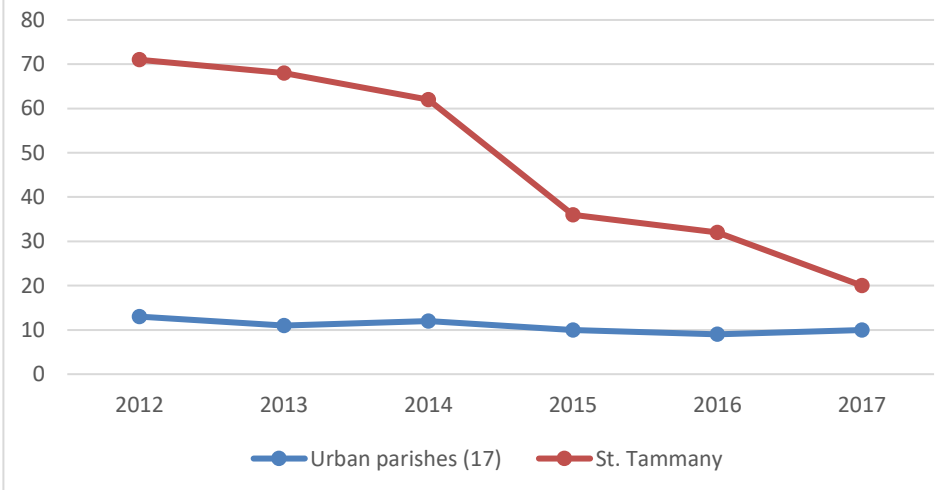
*In 2013 only 67% of cases where a jury was selected were actually argued to the jury to verdict; 33% of cases ended in a guilty plea after the jury was selected. In 2013 only 75% of cases where a jury was selected were actually argued to the jury to verdict; 20% of the cases ended in a guilty plea after the jury was selected. Under the new administration, in 2018, 92% of cases where a jury was selected were actually argued to the jury to verdict; only 8% of the cases ended in a guilty plea after the jury was selected.

Source: District Attorney's Office, 22nd Judicial District

Table 7: Jury Trials per 10000 criminal cases

	2012	2013	2014	2015	2016	2017
Urban Districts (17)	6.300	3.650	3.620	3.570	2.410	2.550
St. Tammany	11.700	12.000	9.990	7.920	5.660	3.430
SE Mean	2.556	1.285	1.128	1.271	0.723	0.483
T-Statistic	2.112	6.496	5.648	3.423	4.497	1.823

Note: S-statistics > 2.0 is significant at
conventional levels
Source: Compiled from LA Supreme Court records

Another metric for comparing criminal activity in St. Tammany with peers is the number of criminal trials adjusted for population. The number of criminal cases per urban parish, on average, has declined in Louisiana since 2012 from 75 cases per 1000 population to 58 cases per 1000 (see Table 8). The metric has always been lower in St. Tammany Parish than in other urban jurisdictions. St. Tammany, in fact, has the second lowest ratio among the 17 parishes in the peer districts (only Judicial District A has a lower ratio of crimes per 1000 population). While the ratio is consistently lower in St. Tammany Parish between 2012-15, the difference was not statistically significant until 2015. The dramatic drop in criminal cases adjusted for population that began in 2015 is statistically significant at the .05 level, meaning that the chance that the difference occurred due to random events is less than 5 percent.

Table 8: Criminal Cases per 1000 Population

Year	2012	2013	2014	2015	2016	2017
Avg. Urban Parishes (17)	75.1	68.6	68	65.6	65.2	57.9
St. Tammany	45.4	45.9	47.3	34	36.8	38.5
SE Mean	19.2	15.3	13.8	13.4	15.2	7.9
T-Statistic	1.55	1.48	1.50	2.36	1.87	2.46

Note: T-Statistics above 2.0 are statistically significant at conventional levels.
Source: Calculated from LA Supreme Court records

Correlations between District Activity Levels and Staffing

Because cases are handled individually with automation only of records, the activities involved in criminal justice are not subject to the economies of scale witnessed in agriculture, manufacturing, and mining. District attorneys' offices should mirror the production characteristics of other professional services. Increasing case levels, in theory, should require either: 1) proportionally more staffing, or 2) longer processing times to resolve cases.

Staffing data collected by the District Attorney's Association of Louisiana and activity levels collected by the Supreme Court of Louisiana provide a method of examining the statistical relationship between activity levels and staffing levels in district attorney offices.

Staff levels in the peer districts vary between 94 and 249 employees in 2018 (see Table 9). St. Tammany is in the middle of the distribution, Judicial District A the smallest, and Judicial District D is much larger than the other six districts at 249 employees.

Table 9

Staffing Levels in 2018 by Classification and District

Classification	Judicial District						
	A	B	C	D	E	22	F
Deputy DA/Administration	2	2	1	1	2	3	1
ADA	30	33	28	50	20	36	72
Investigator	12	0	2	27	4	17	34
Support Staff	41	89	55	57	55	50	126
Trial Assistant		10					
Coordinator	3	1	3		4	1	4
IV-D Assistant ADA	3		3	6	5	3	5
Process Server						8	2
VAC	3			17		4	3
Total	96	138	94	160	100	116	249

The distribution of employees is similar in all districts, except for the proportion in support activities (see Table 12). The proportion of ADAs that try cases is fairly uniform except for Judicial District E. The percentage in support activities varies from 36% in Judicial District D to 64% in Judicial District B.

Table 10

Percent of District Staffing by Classification

Classification	District						
	A	B	C	D	E	22	F
ADAs	31%	24%	30%	31%	20%	31%	29%
Investigators	13%	0%	2%	17%	4%	15%	14%
Support	43%	64%	59%	36%	55%	43%	51%

Criminal activity levels vary significantly within the peer districts (Table 13). The number of criminal defendants and charges differs significantly in Judicial District D from the other districts. Despite the largest population, Judicial District F has the same level of criminal cases and defendants as the smaller districts. The extremely high staffing and proportionally lower-case load makes Judicial District F an outlier that can distort statistical tests. Judicial District F, therefore, was dropped from the statistical correlations.

Table 11

District Activity Levels in 2017

Supreme Court Data	District						
	A	B	C	D	E	22	F
Civil Petitions	5336	4132	8439	11095	5670	6446	8865
Civil Jury Trials	5	7	12	14	11	6	18
Total Criminal Charges	2265	21546	17273	56972	14400	12975	14428
Total Criminal Defendants	1480	14985	9342	20300	11405	7465	9606
Total Criminal Cases	9437	14718	8638	9794	8510	7318	8867

The Pearson R is the oldest measure of correlation in statistics. It is simple to calculate and provides evidence that a relationship between two variables is meaningful and not random. Tests are available to determine the level of statistical significance of the Pearson R, even in samples of the size used in this study (6 observations). The Pearson R ranges between the values of 0 and 1.0. A correlation coefficient of 1.0 signifies a perfect correlation between two variables. In a perfect correlation, the movement of one variable in the correlation ensures that the other variable will move proportionally.

Statistical correlations are subject to random and measurement error. Tests of statistical significance are used to determine whether correlations are due to chance events or represent a statistically significant relationship. The norm in statistics is to consider a relationship meaningful if the probability that it is random is less than 5 percent (.05 level). The Pearson R correlations

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between staffing levels in the six Judicial Districts and activity levels identified four relationships that are statistically significant (see Table 12).

Table 12

Correlation of Outputs and Staff Inputs for Six Judicial Districts

Measure	ADAs	Investigators	Support Staff	Total Staff
Civil petitions	0.657	0.670	-0.295	0.420
Criminal charges	0.795*	0.595	0.257	0.862**
Criminal defendants	0.554	0.255	0.585	0.836**
Criminal cases	0.124	-0.373	0.88**	0.470

*significant at .05 level

**significant at .01 level

The correlations suggest that the number of criminal charges and criminal cases are proportional to staffing levels in district attorney offices. The number of ADAs in an office is correlated with the number of criminal charges; likewise, the number of criminal cases is correlated with the number of support staff. The number of criminal charges and criminal defendants is correlated with the total number of staff in the office.

The identified correlations are significant at the .05 or lower level. In other words, the probability that the identified relationships are due to chance is lower than 5 percent, while the probability of three of the four identified relationships is lower than .01 or 1 percent. Just one sample in 100 will be due random at this level of significance. The analysts are safe in concluding that staffing and activity levels in district attorney offices are proportional and statistically significant. Our hypothesis that increasing crime levels either increases staffing levels in offices or lengthens time between acceptance and adjudication is supported by this correlation study.

Differences over Time within the St. Tammany Criminal Justice System

One way of determining legal reasonableness of expenses (equivalent to economic efficiency) is to measure cost per unit over time. If costs per unit of output are decreasing over time or growing at rates below those of peer organizations, the organization can make a claim of reasonableness. If the office of the DA in St. Tammany is processing more cases per employee or per ADA today than they did in past years, the office is becoming more efficient and therefore the resources used to transact its business are "reasonable" in economic terms.

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While this methodology is simple to grasp conceptually, it is difficult to measure in practice. The first challenge is to determine what to measure. The number of cases processed by the office is a logical unit of measure, but cases differ in complexity. A murder case tried before a jury consumes far more legal and investigative resources than a speeding ticket or a fraudulent check case where the defendants pleads guilty as charged at the first hearing. To use cases as the unit of measure, one must find a weight that fairly measures the complexity of individual cases.

The District Attorney's office has a finite amount of staff to allocate among cases during a budget year. The intellectual abilities, education, and work experience of these staff are the critical resources that the DA uses to conduct its business. The finite time of the office's 36 ADAs and its 17 investigators is the critical cost factor that must be measured in determining reasonableness or economic efficiency of operations. The days of staff time per case is a good proxy for determining efficiency. The more cases that come before the office in a year, the less time that prosecutors have to process each case or alternatively, the longer the time between arrest and adjudication. The latter option raises costs in the Sheriff's jail budget when defendants are incarcerated.

The work process in the DA's office provides a template for measurement of efficiency. Each case must be examined by a staff attorney before the office accepts the case for prosecution. The case then requires the time of Assistant District Attorneys and Investigators to prepare for trial or to otherwise negotiate an outcome. Support staff must maintain detailed records on all defendants and cases throughout the process. In terms of an economic model, the production of cases in the DA's office consists of the variable costs of ADA and Investigators and the fixed costs of support staff and of office overhead. The unit of measure that captures these costs, both fixed and variable, are days of staff time expended on a case.

The efficiency of operations in the district attorney's office affect costs incurred by other divisions of the criminal justice system. The efficiency of the district attorney's operations affects the level of costs that taxpayers incur for housing defendants in jail awaiting trial. The amount of time that the DA's office incurs in processing cases is affected in turn by the resources available for public defense and the proportion of cases in which defendants must rely on public defenders for their legal representation. The total cost of justice also is affected by the number of events in the case. Sanity hearings and jury trials add time and hence expense to the processing of cases. The number of charges filed by police against a defendant and the number accepted by the DA's office might affect the complexity and hence the cost of a case. Diversion programs reduce the amount of time between case acceptance and verdict, which, in turn, lowers costs. Defendants that plead guilty also have shorter times to disposition than those that plea bargain or plead not guilty, again influencing the cost incurred by the DA's office. The outcomes and dispositions of cases therefore affects the amount of resources expended in reaching a verdict.

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Statistical models require large data sets to make inferences about the relationships between production measures.   Because of the large number of cases the district office transacts, statistical methods can be used to measure changes in efficiency over time in St. Tammany. Statistical methods allow Taimerica to determine whether observed changes in processing time are statistically significant or merely due to random events.

The statistical data for this analysis were meticulously compiled by the Metropolitan Crime Commission from records produced by the Sheriff, District Attorney, and Clerk of Courts. More than 21,000 observations were collected and cross referenced by defendant, which is a major data achievement.

The statistical model that is constructed will be biased unless all the primary variables that affect processing times are built into the model. Multivariate statistical methods, such as multiple regression with categorical variables, allow us to reach conclusions on whether screening time, DA decision times, and case processing times have declined over time. Declines over time in processing time indicate that the office is using its resources more efficiently than in past years. A detailed discussion of the statistical methodology and interpretations of the multivariate statistical model used by Taimerica are presented in the appendix to this report.

The preliminary step in building a multivariate model is to examine variation in individual variables that are candidates for inclusion in the full model. A number of candidate variables are discussed here to determine those that are good candidates for inclusion in the final model.

The raw data show that the number of defendants and number of charges have grown since 2015. The percentage of cases that are dismissed has declined while the percentage settled by plea has increased since 2015 (see Table 13). The percentage of cases that are settled by trial has always been below 2 percent of cases. The percentage appears to have declined since 2014, although the sample is too small to make inferences about the statistical significance of the trends. On the surface, the production statistics suggest that activity levels have risen since 2015 and that the number of closed cases have grown.

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Table 13

Production Measures by Year of Arrest

Year	Arrests	Defendants	Charges	Dismissals	Pleas	Trials	Closed Cases	Pleas*	Dismissals*	Trials*
2014*	763	749	1459	121	551	11	683	81%	18%	1.6%
2015	2335	2335	4751	509	3013	37	3559	85%	14%	1.0%
2016	5774	1469	3031	408	3589	35	4032	89%	10%	0.9%
2017	6275	3636	7228	333	3427	29	3789	90%	9%	0.8%

*On most serious charge

*2014 is a small sample and not comparable to data for 2015-2017

About two-thirds of the cases in the data were closed by June 2018. Of the closed cases during the period, 15 percent were dismissed and 84 percent resulted in a plea of guilty by the defendant (see Table 14). Less than one percent of the cases were tried in the 22nd Judicial District. Of the adjudicated cases, 86 percent resulted in guilty verdicts. The statistics suggest that the percent of cases where the defendant in St. Tammany pleads guilty to charges is higher than normal in Louisiana. Variations in dismissals and pleas over time affect processing times and therefore should be included in the model.

Table 14

Case Disposition by Arrest Year*

Status	2015	2016	2017	Total	Percent
Open	**1,227**	**1,881**	**2,565**	**5,673**	**34.1%**
Dismissed	507	490	614	1,611	14.7%
FGAC Judge	9	11	17	37	0.3%
FGAC Jury	12	12	5	29	0.3%
FGLC Jury	6	2	2	10	0.1%
FNG Judge	0	4	1	5	0.0%
FNG Jury	4	1	2	7	0.1%
PGAC	2,355	2,642	2,569	7,566	68.9%
PGLC	478	728	500	1,706	15.5%
Quashed	3	3	0	6	0.1%
Closed	**3374**	**3893**	**3710**	**10977**	**65.9%**
Total Cases	4,601	5,774	6,275	16,650	100%

*Limited to first charge

Statistics on the percentage of defendants who were indigent and therefore represented by public defenders are available for 2014-17. They suggest that between half and a quarter of

defendants in St. Tammany are indigent (see Table 15). This variable and its variation could affect the time between arrest and disposition and is therefore included in the statistical model.

Table 15

Indigent Status by Year of Arrest

Status	2014*	2015	2016	2017
Not Indigent	393	2,898	3,844	4,704
Indigent	370	1,703	1,930	1,571
Total	763	4,601	5,774	6,275
Indigent (%)	48%	37%	33%	25%

*Data for 2014 is a small sample and not comparable to 2015-2017

The percentage of defendants that bond out of jail has also changed since 2014 (see Table 16). Since these numbers represent closed rather than total cases, the annual percentages could be biased by the proportion of closed and open cases. The multivariate model will adjust for this variation. The variable represents a key policy variable and hence must be included in the final model.

Table 16

Bond Status by Arrest Year

Status	2014*	2015	2016	2017	Total
Jailed	763	2,002	2,640	3,363	12,754
Bonded	0	2,599	3,134	2,912	8,645
Total	763	4,601	5,774	6,275	21,399
Bonded(%)	0	56%	54%	46%	40%

*Data for 2014 is a small sample and not comparable to 2015-2017

The percentage of cases refused by the District Attorney has dropped since 2015. The drop could be attributed to differences in policy between the former and present district attorneys (see Table 17). The variance in this variable is significant and therefore should be incorporated in the final model.

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Table 17

Percent of Cases Refused by DA by Arrest Year

Case Status	2014*	2015	2016	2017	Total
Accepted	178	3,940	5,188	5,695	15,001
Refused	14	493	356	350	1,213
Under Review	0	7	76	83	166
Refused (%)	8%	13%	7%	6%	8%
Total	192	4,440	5,620	6,128	16,380

*Data for 2014 is a small sample and not comparable to 2015-2017

Previous analysis by the Metropolitan Crime Commission demonstrates that processing times vary significantly by the type of crime. A homicide case, for instance, takes much longer to adjudicate than a traffic case. Variations in the type of crimes therefore affect average case processing times. Data for St. Tammany demonstrates that the distribution of crime types has changed over time (see Table 18). Crime type, therefore, should be incorporated into the multivariate model of processing times.

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Table 18

Defendants by Most Serious Charge

	2015	2016	2017	Increase
Unclassified	691	631	631	-9%
Homicide	9	16	23	156%
Criminal Damage	73	83	103	41%
DWI	786	849	774	-2%
Other	727	1270	1,116	54%
Traffic	83	110	312	276%
Rape/Sex Crime	51	59	74	45%
Robbery	28	32	26	-7%
Battery/Assault	509	606	642	26%
Drug Distribution	246	236	200	-19%
Burglary	137	182	209	53%
Drug Possession	602	833	1,226	104%
Weapons	70	110	125	79%
Theft	589	757	814	38%
Total	4601	5774	6275	36%

The variance in processing time is diffused among a number of variables. The final model should consist of a multivariate type which measures the effects of each source of variance in processing time while controlling for the effects of the other sources of variance. Multivariate models provide a tool for examining screening and processing times while controlling for the many sources of variation that are inherent in the operations of district attorneys.

Raw Processing Times

Two measures are analyzed in examining trends in case processing times. The first measure is the time between arrest and decision to prosecute by the DA, which we refer to as screening time. Screening time can be further divided into two components: Police Time (time between arrest and receipt of police report by the DA) and DA decision time (the time the district attorney requires to drop or accept the case). The raw numbers suggest that both portions of screening time have dropped significantly since 2015. The average time between arrest and decision to accept charges has dropped by an average of 30 days since 2015 (see Table 19).

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Table 19

**Mean Screening Time Breakout by
Arrest Year**

Year	Cases	Days		
		Police	**DA**	**Screen**
2015	4,601	27.8	60.3	87.9
2016	5,774	14.3	56.5	70.8
2017	6,275	11.4	42.2	53.5

The second processing time metric is the days between case acceptance and case disposition. This metric is called processing time. Processing times also appear to have dropped substantially since 2014 (see Table 20). The raw numbers suggest that mean processing time has dropped by 100 days since 2015. The difference could be due to differences in the distribution of crimes over time or because of changes in policies adopted by the new district attorney. The multivariate model provides a tool for controlling for such differences.

Table 20

Average Processing Days by Arrest Year

Arrest Year	Freq.	Mean	Std. Dev.	SE Mean
2013*	202	186.3	126.7	40.1
2014*	763	184.5	167.0	6.4
2015	4,601	185.3	158.7	3.0
2016	5,774	129.7	104.1	1.7
2017	6,275	113.7	84.3	1.7

Note: Average for all charges in case

*Data for 2013 & 2014 are small samples and not comparable to 2015-2017

Tradeoff between Processing Speed and Jail Costs

The multivariate model constructed for this analysis is discussed fully in the Statistical Appendix. The final model has 14 variables that are highly significant. The model estimates the average days of incarceration for defendants in St. Tammany handled by the 22nd Judicial District. The data includes bonded and non-bonded defendants. The model captures incarceration times

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by year cases closed as well as by year of arrest used for construction of Tables 13-20. Year of arrest is a better metric for measuring changes that occur early in adjudication (such as percentage of defendants who bond out) while the year a case closed is the better metric for examining changes in incarceration times when averages are falling over time. For purposes of this report, we have averaged the two concepts to provide a blended rate.

The coefficients in the model represent average days of incarceration for each variable while holding all other variables constant. The constant term of 127.3 days in 2015 represents the days of incarceration for defendants that do not have the characteristics represented by the other variables, such as the defendant bonded out of jail or the case was decided by a jury trial. It therefore is a good proxy for capturing incarceration times due to management policies in the DA's office.

The coefficients are additive in a multivariate model. While the average incarceration time is 127.3 days for the 10,622 defendants in the model, defendants who bond out have jail times that average 4 days (127.3 days-123.3 days). Misdemeanor defendants who do not bond out haver average incarceration times of 104.9 days (127.3 days-22.4 days). Plea agreements and dismissals reduce incarceration below the base time of 127.3 days while violent felonies, sex crimes, and robberies result in longer jail times. Sanity hearings and jury trials also lengthen jail stays. One variable in the model that bears special mention is "pubdef" (defendant represented by a public defender). Defendants represented by a public defender have jail times that are nine days longer than defendants represented by private counsel. The coefficient on this variable is highly statistically significant. The difference could be due to the higher proportion of incarcerated defendants represented by public defenders, although the exact reason for the difference cannot be determined with the data used in this study.

The reduction in case processing time since 2015 that was observed in the raw data also manifests as a pronounced trend of reduced jail times in the multivariate model. The decline in jail time persists when the effects of variations in types of crimes, in case dispositions, and in case events are controlled for. The multivariate (MV) model indicates that the average days between arrest and case adjudication fell by 16.5 days between 2015-2017, a 16 percent drop (Table 21). These statistics account for the other sources of variation in processing time included in the model that affect incarceration times outside of management practices. The decline is statistically significant. The odds that the relationship in the model is due to chance is less than 1 in 100,000.

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Table 21

MV Model Avg. Jail Time by Year

Year	Year of Basis		Ratio		
	Arrest	**Closed**	**Arrest**	**Closed**	**Blended**
2015	117.2	127.3	1.00	1.00	1.00
2016	116.9	124.3	1.00	1.02	1.01
2017	100.7	110.9	1.16	1.15	1.16

Because the variables in the model are statistically significant, the results can be used to estimate the reduction in jail costs due to the increase in case processing speeds of both bonded and non-bonded defendants. We use a counterfactual argument to make the estimate. We calculate the increase in defendant jail time that would have occurred if processing times had remained at 2015 levels.

The estimate of defendant days in jail were assembled by the Metropolitan Crime Commission from records maintained by the St. Tammany Sheriff. This estimate is lower than the estimate made by extrapolating the statistics from the *Annual Survey of Jails*. The MCC statistics, being the most conservative of the two, are used as the basis for our counterfactual argument.

If processing times had not fallen between 2015-2017, the taxpayers of St. Tammany would have incurred costs on an additional 2,172 inmate days in 2016 and an additional 23,075 inmate days in 2017. These statistics are equivalent to an increase of the Annual Daily Population (ADP) of 6 inmates in 2016 and 63 inmates in 2017. (The ADPs reported by the sheriff show a parallel trend, with a slight increase in 2016 and a decline of 78 inmates in FY 2017 and an even larger decline of 135 local inmates in FY 2018).

Applying the variable cost of $38.20 per inmate day in FY 2017 and $38.78 per inmate day in FY 2018 (calculated in an earlier section), we estimate that the savings in incarceration costs for local taxpayers was $82,973 in 2016 and $894,831 in 2017 (see Table 22).

Table 22

Offset in Jail Costs from Reductions in Case Processing Times

	2015	2016	2017
Actual Defendant Days in Jail (MV model using MCC data)	201,290	217,208	144,216
Defendant Days in Jail (estimate from ASJ data)*	205,495	NA	NA
Processing Time Ratio**	1.000	1.010	1.160
Defendant Days adjusted for differences in processing time since 2015	201,290	219,380	167,291
Total Defendant Days Saved from Management Practices	-	2,172	23,075
Variable costs per inmate day	$ 35.71	$ 38.20	$ 38.78
Savings from Changes in DA Management Practices	-	82,973	894,831

* ASJ= Annual Survey of Jails publication (Bureau of Justice Statistics)
** avg processing days per case in year of arrest + year case closed/ avg processing days in 2015

Since the calculations in Table 22 are based on a sample of the jail population, they require the calculation of a margin of error. The margin of error is plus or minus 11 percent for 2016 and plus or minus 10 percent for 2017. The local costs could vary by plus or minus $$8,297 in 2016 and plus or minus $89,483 in 2017.

This finding that efficiency at the District Attorney's office affects incarceration costs is not surprising when one compares the local taxpayer costs of jail operations and district attorney operations. The costs of jail operations shown in Figure 1 are 3.5 times the costs of the District Attorney's office. The finding is also supported by a comparison of the variable costs of jail and district attorney operations. The variable costs of the jail were $13.9 million in 2017 (see Table 3). The variable costs of the St. Tammany portion of the 22nd Judicial District office of the District Attorney were under $8 million (Table 6). Money spent on improving the efficiency of the DA's office operations is sure to have a multiplier effect on the avoided costs of incarceration simply due to the ratios of variable costs.

The MV model has additional byproducts for managing the efficiency of the DA's office. The MV model provides proxy estimates of the costs of various types of crimes (Table 23) and of various outcomes of cases. Homicides, rapes, and robberies are far more expensive crimes to adjudicate than other types of felonies. Pleas by defendants are half as costly to adjudicate as judge or jury trials based on the processing times estimated by this MV model. Dismissals incur costs but at half of the cost of the average felony. The relative cost of diversion can't be

estimated accurately by the model since the data is calculated for the date that diversion ends, not the date that it begins. Perhaps the model estimates will provide a tool for assigning cases to assistant district attorneys.

Table 23

Processing Days by Type of Charge in 2017

Type of Felony	Days	Index
Other Felonies	303	1.00
Violent Felony	321	1.06
DWI	330	1.09
Homicide	497	1.64
Rape/Sex Crime	385	1.27
Robbery	370	1.22

Conclusions and Recommendations

The analysis done by Taimerica on the data collected by the MCC demonstrates that the operations of jails and of district attorneys' offices, in economic terms, exhibit constant returns to scale.   This translates into a proportional relationship between DA staffing and crime levels. Increases in case referrals, in the absence of increases in staff, result in an increase in processing time (due to the rise in the backlog of cases per ADA and per staff member). The relationship is statistically significant at conventional levels of inference.

An analysis of jail operations also is statistically significant at conventional levels. The jail model indicates that jail staffing rises by 1 employee for every 6.4 increase in the annual ADP of the jail.   The decline in processing times in 2016 and 2017 are equivalent to a drop in ADP of 6 inmates in 2016 and of 63 inmates in 2017, which translates to a drop in jail staffing of 1 employees in 2016 and 10 employees in 2017. This equates to a savings of $83,000 in 2016 and of $895,000 in 2017 when other variable costs, such as food, are included in the calculations.

The findings in this study are that the operations of the District Attorney for the 22nd Judicial District are economically reasonable. Three measures of reasonableness were compared: 1) across peer districts, 2) against the historic staffing trends in the 22nd District, and across other parish-wide jurisdictions. The St. Tammany staffing of the 22nd District are comparable to those in peer districts and comparable or lower than the historic trend within the 22nd District while the

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budget for the District Attorney has risen faster than those of other parish-wide jurisdictions since 2015. Policies and procedures adopted by the DA's office since 2015 have resulted in a 26 percent decrease in defendant processing speeds. The faster speed of case processing results in a fall in the overall costs of criminal justice in St. Tammany Parish. Because the variable costs of incarceration in the jail are almost twice the variable costs in the offices of the district attorney, every dollar of salaries in the DA's office (the largest component of its variable costs) have a disproportionate effect on incarceration costs. Reductions in staffing at the DA's office are likely to stimulate disproportionate increases in the costs borne by St. Tammany taxpayers for incarceration of defendants awaiting trial. The increase in budgets, therefore, is reasonable.

The statistical database built for this project, which was compiled with diligence and precision by the MCC, provides a rich source of information on the operations of the components of the criminal justice system in St. Tammany. This study is merely a preliminary look at the evidence about economic efficiency in the DA's office. The data provides a resource for further increasing the efficiency and production of the office. Our recommendation is that leaders in the DA's office should formulate additional policy and economic questions that they would like to explore with this data. Since the costs of building the data are sunk costs, additional analysis can be done expeditiously and at a lower unit cost.

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ATTACHMENT #1

St. Tammany Parish Interfund Charges

Legend:
- GF - Admin Costs
- JC - Facility O & M
- JC - Admin Costs / Technology
- Civil - Facility O & M

Data points:
- $600,000
- $504,720
- $438,439
- $500,000
- $400,000
- $300,000
- $291,420
- $200,375
- $200,000
- $97,048
- $96,665
- $106,193
- $107,573
- $90,697
- $100,383
- $100,000
- $48,203
- $20,382
- $-

X-axis:
- 2015 - $97,048
- 2016 - $117,047
- 2017 - $213,766
- 2018 - $705,095
- 2019 - $878,445
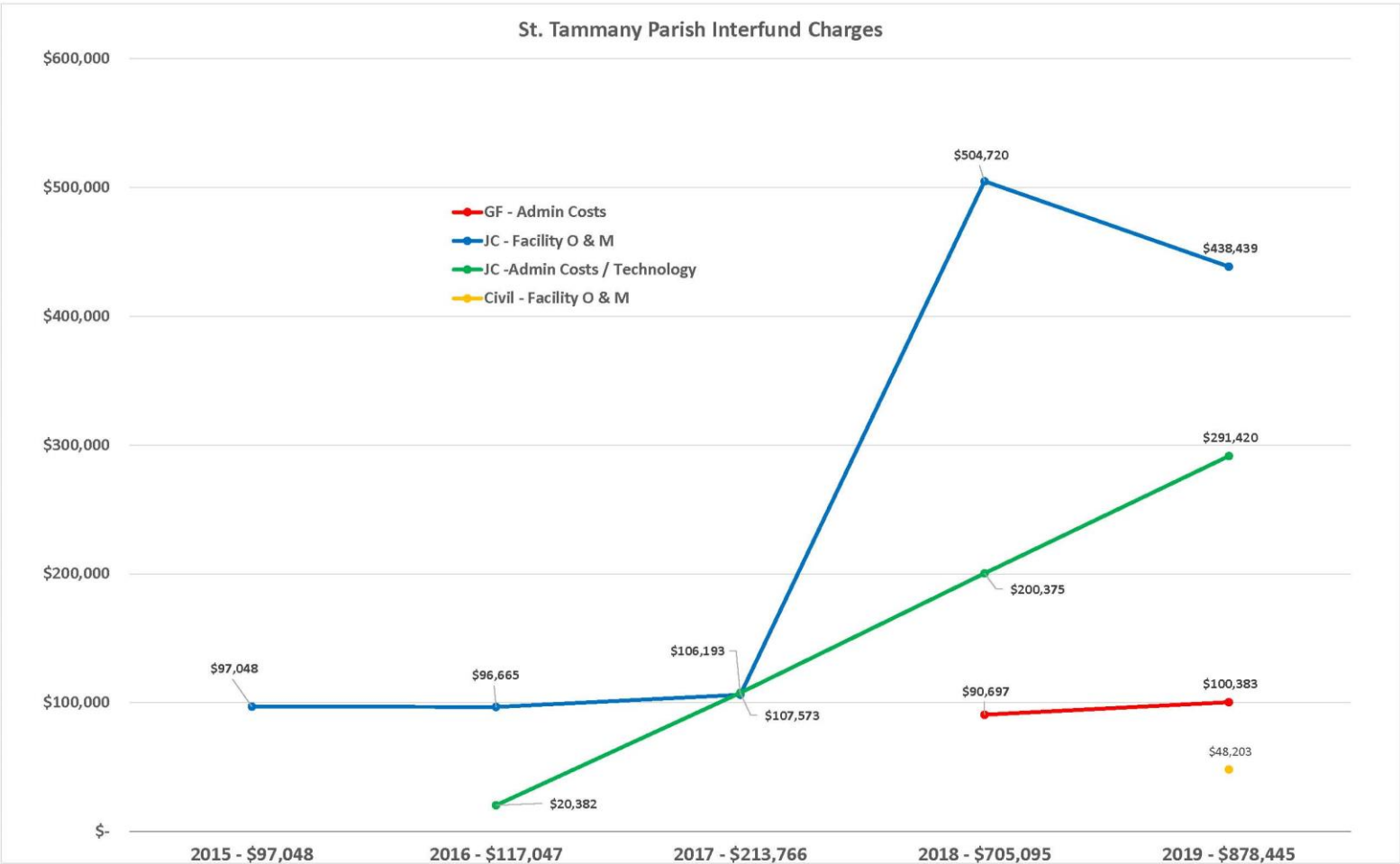
APPENDIX-STATISTICAL

Statistical Appendix

One of the challenges in statistical analysis is determining whether changes in a variable over time are meaningful or whether they are due to measurement error or chance events. Statisticians use a metric called statistical significance to determine whether trends are meaningful. If the probability that a relationship is by chance is less than 1 in 20, the statistical relationship is considered statistically significant. The measure used to determine statistical significance, called the standard error of the mean, is also used to determine the margin of error in political polling, opinion surveys, and statistical studies. The larger the number of observations in the sample or database being modeled, the smaller the margin of error in the calculations.

An additional challenge in statistical methods is determining the true effect from a single variable when many variables might be contributing to a trend. An example in the case of DA's office operations will illustrate the challenge. Is the drop in jail time since 2015 due to changes in bond and diversion policy, to the types of crimes for which defendants have been arrested, to other events such as a drop in sanity hearings or the proportion of cases where defendants are represented by public defenders, or is it due to efficiency in the DA's office?

Multivariate statistical tools have been developed in economics and social sciences in the last 75 years to answer these kinds of questions. Multiple regression, one of these tools, provides measurements of the effects of one variable (such as time) while controlling

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for the effects of other variables, such as changes in types of crime or in the proportion of defendants who are bonded awaiting trial. The method allows the use of binary variables such as "bond or no bond" or "sanity hearing" as well as interval scaled variables such as the number of charges filed against a defendant.

The current district attorney for the 22nd Judicial District has adopted a number of new policies and procedures that appear to have lowered the days of screening and processing time of adjudication, hence reducing days of jail time between arrest and trial. Multiple regression is the perfect tool for examining the effects that these changes have had on the efficiency of DA operations and the speed of justice.

Taimerica used multiple regression on the dataset of St. Tammany cases assembled by the Metropolitan Crime Commission (MCC) to examine the efficiency of DA's office operations since 2015. Our analysis was limited to cases handled by the DA's office. After excluding cases with missing dates, the examined dataset had 10,622 observations. We set a high bar for determining if a variable was meaningful in explaining changes in jail times: A variable in our models is meaningful only if the probability that the relationship was due to chance was less than 5 percent (p>t less than .05). We used robust standard errors for inference to ensure that the tests for statistical significance were not influenced by heteroskedasticity. The large number of observations in the MCC database allowed us to build models with many policy variables. We are confident that the decrease in jail time calculated by our models is statistically significant and not due to random events, such as changes in the types of crimes.

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The initial work in multivariate modeling is to determine what to measure. The days of incarceration for felony and misdemeanor cases is the logical dependent variable for measuring changes in incarceration times. The dependent variable of jail time provides a robust statistical model explaining 50% of the variance in the collected data.

A second task in multivariate modeling is to identify the variables that influence the amount of processing and screening time. Because the MCC database contains more than 1200 variables, analysts had a plethora of variables to consider. We were able to narrow our model variables after discussions with leadership in the District Attorney's office. The variables that were thought to influence jail time were:

- Year the case closed

- Type and number of charges

- Bonded or incarcerated awaiting trial

- Indigent or represented by private attorney

- Sanity hearing conducted

- Judge or jury trial

- Other type of disposition (plea, etc.)

- Diversion program or not

An important issue in the model is how to categorize the year of the cases. Cases could be classified by the year of arrest or by the year the case closed. Since many cases close in the year after arrest, the choice can affect the coefficients in the model (see Table

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AA). The final choice was to run models with both classifications and average the results in calculating the average time by year.

The final models have 12 variables (by year of case closure) and 11 variables (by year of arrest) that are statistically significant at high levels (See Tables BA and BB).   As commonly happens in multivariate analysis, some of the variables that are significant in simple correlations are insignificant when combined with other sources of variation. The coefficients for the constant and for each of the years, which are the variables used to calculate changes in jail time, were all statistically significant at high levels.

The final models included over 10,000 observations and explained 47 percent of the variance in jail time (as measured by the R-square). The probability that the model estimates are due to chance is less than 1 in 10,000. The final models provide statistically robust estimates of the effects that various conditions and events have on the time between acceptance of charges and completion of cases.

All of the variables in the final models, except for jail time, consist of categorical variables. A categorical variable has two discrete values, 1 if the condition is present and 0 if absent. The regression model calculates coefficients for the presence of conditions. The model coefficient for 2015, for example, represents the number of days of processing time for cases closed during 2015. Since the model is linear, the presence of two or more conditions is additive. A defendant that is bonded on a misdemeanor charge, on average, will have 123-124 less days of incarceration than the global average represented by the

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base case. A defendant facing a charge on a property crime will have an average incarceration of 127 days if arrested in 2017 (104.3+16.1+6.6 days).

The constant represents the average days of jail time for a defendant (called the "base case") in the absence of all other conditions in the model (See Table CA). The base case for these model is for an incarcerated defendant charged with a felony in 2015 (other than for crimes such as violent felony or weapons charge that have their own classifications), who did not have their case settled by plea, diversion, dismissal, quash, or trial.

The coefficients on year (2015- 2017) are adjustments for the days of processing by year. Higher coefficients indicate that average jail time in a given year was longer than in earlier or later years. The differences in jail time were not statistically different for cases closed in 2015 or 2016 but significantly shorter in 2017.

The estimate of average days of jail time per year, controlling for other sources of variance, provides a measure of the jail cost savings from new management practices in the 22nd Judicial District. The model indicates that mean jail time, controlling for the influence of other variables, dropped from 127.3 days in 2015 to 110.9 days in 2017 (See Table CB) when measured by year case closed. The decline is somewhat larger when measured by year of arrest (from 117.2 to 100.7 days). The blended or average rate for the two concepts is a decline in jail times of 16 percent between 2015-2017.

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Table AA

Cases by Year of Arrest & Year Case Closed

Arrest Yr	Year case closed				
	2015	2016	2017	2018	Total
2015	1048	1297	275		2654
2016		1776	1772		3561
2017			1403	996	2399
Total	1048	3073	3450	1037	

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Tables BA & BB

Mutivariate Model by Year Case Closed

Variable	Coef. In Days	Robust Std. Err.	t*	P>t	Confidence Interval in Days	
Case Closed 2015	23.0	3.0	7.57	0.000	17.0	29.0
Case Closed 2016	20.0	2.1	9.4	0.000	15.8	24.1
Case Closed 2017	6.6	1.9	3.45	0.001	2.9	10.4
Case Closed 2018	11.9	2.4	4.98	0.000	7.2	16.6
Violent Felony	19.4	3.5	5.58	0.000	12.6	26.1
Property Crime	16.1	3.2	5.06	0.000	9.9	22.4
Drug	15.0	3.1	4.79	0.000	8.8	21.1
Other Crime	4.9	3.0	1.63	0.104	-1.0	10.8
Weapons	62.9	8.2	7.64	0.000	46.7	79.0
Public Defender	11.4	1.3	8.54	0.000	8.8	14.1
Bonded Out	-126.3	2.5	-50.94	0.000	-131.1	-121.4
Multiple Charges	1.6	0.7	2.35	0.019	0.3	3.0
_cons	104.3	3.9	26.97	0.000	96.7	111.9

Number of observations =10575
F(12,10562) = 273.26
Prob. F = .0000
R-square= .4674

Multivariate Model by Year of Arrest

Variable	Coef. In Days	Robust Std. Err.	t*	P>t	Confidence Interval in Days	
2015 arrest	16.5	1.6	10.05	0.000	13.3	19.7
2016 arrest	16.2	1.2	13.64	0.000	13.9	18.6
2017 arrest	0.0					
Violent Felony	19.4	3.5	5.5	0.000	12.5	26.3
Property Crime	15.6	3.3	4.81	0.000	9.3	22.0
Drug	14.8	3.2	4.66	0.000	8.6	21.1
Other Crime	4.0	3.1	1.31	0.191	-2.0	10.1
Weapons	59.8	8.2	7.34	0.000	43.8	75.8
Public Defender	12.9	1.3	9.67	0.000	10.3	15.5
Bonded Out	-127.1	2.5	-51.11	0.000	-132.0	-122.3
Multiple Charges	3.7	0.5	7.06	0.000	2.6	4.7
Constant	100.7	3.8	26.59	0.000	93.3	108.1

Number of observations =10622
F(10,1011) = 350.25.26
Prob. F = .0000
R-square= .4680

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Tables CA & CB

Caclulation of Average Jail Times by Year

	2015	2016	2017
By Year of Arrest			
Base Model Days (Constant)	100.70	100.70	100.7
Adjustment for year	16.50	16.20	0
Adjusted jail time(days)	117.20	116.90	100.70
By Year Case Closed			
Base Model Days (Constant)	104.30	104.30	104.30
Adjustment for year	23.00	20.00	6.6
Adjusted jail time(days)	127.30	124.30	110.90

MV Model Avg. Jail Time by Year

	Year of Basis		Ratio		
Year	Arrest	Closed	Arrest	Closed	Blended
2015	117.2	127.3	1.00	1.00	1.00
2016	116.9	124.3	1.00	1.02	1.01
2017	100.7	110.9	1.16	1.15	1.16

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