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Does the type of criminal defense counsel affect case outcomes? A natural experiment in Taiwan

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ABSTRACT

Taiwan's legal reform in 2003 provides an excellent natural experiment-like setting for empirical investigation. Using trial data from 2004 to 2007, we test whether there has been a systematic difference in trial outcomes between criminal defendants with different types of defense counsel, and examine relevant policy implications. Our study finds that while public defenders and government-contracted legal aid attorneys are about equally effective, they tend to adopt different litigation strategies which will in turn affect their clients' fates. Specifically, the defendants represented by public defenders tend to have higher conviction rates, but shorter sentences if they are convicted. These differences can be explained in term of the inherent differences in the institutional characters for the two types of counsel and the pecuniary incentives they face.

1. Introduction

The right to counsel has been widely recognized in virtually all modern civilized countries. Today, no one will dispute that the availability of effective representation has an important bearing not only on the protection of fundamental human rights but also on the morality and legitimacy of any given criminal justice system. As a result, most civilized countries impose a duty on themselves to provide assistance of counsel for an accused who cannot afford to retain counsel under certain circumstances and requirements. However, concerns arise when it comes to the question of how effective the legal service provided by the government for the indigent defendants is, and whether there is variation in the quality of such services.

In the United States, since the Supreme Court's landmark decisions in Gideon v. Wainwright (372 U.S. 335, 1963), Argersinger v. Hamlin (407 U.S. 25, 1972), and *In re* Gault (387 U.S. 1, 1967) requiring states to provide counsel to indigent defendants, the states had developed various programs to broaden the then-existing indigent defense system, including the assigned counsel program, the contracted attorney program and the traditional public defender program (for a detailed introduction to various indigent defense programs, see Spangenberg & Beeman, 1995). Both the recognition of a constitutional right to counsel and the proliferation of various state indigent defense systems inspired numerous empirical works to test the relative effectiveness of different indigent defense systems. While these studies shared the common concern of whether the type of defense counsel affects case outcomes, their findings are so mixed and conflicting as to make commentators even dispute the status quo of research. Some alleged that the results of most studies indicate that type of defense counsel does not significantly affect case outcomes (see, for example, Feeney & Jackson, 1990-91: 407), while others argued that subsequent studies confirmed the conventional wisdom that private counsels are more effective than public defenders (see, for example, Hoffman, Rubin, & Shepherd, 2005: 224)[1].

The different results reached by these studies reflect the difficulty in overcoming the fundamental methodological question involved in this kid of research—the case selection bias. If one type of defense counsel receives cases/defendants with characteristics different from the other type of defense counsel, any observed

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[1] Despite the unsettled status of research, those who have long deeply cared about the indigent's right to counsel continued to criticize the insufficiency as well as little progress of the indigent defense system and call for dramatic reform. See Ogletree (1995).

variation in case outcomes cannot be attributed to the factor of types of counsel. For example, Hoffman et al. (2005) found in their study that private defense lawyers achieve better outcomes than public defendants but they concluded that this result may be the product of "self-selection" by the marginally indigent, (i.e., those defendants who know their own guilt are less willing to invest in hiring lawyers than those who know their innocence), not the evidence that retained counsel is more effective than public defenders. To overcome this methodological difficulty, earlier studies tried to collect as much information potentially pertinent to case outcomes as possible, and controlled for these collected variables in order to enhance the sophistication of their studies and, therefore, the validity of conclusion reached (for a good example in this regard, see Hermann, Single, & Boston, 1977). Despite this effort, researchers still question whether the selection problem can be fully eliminated because there may be other unobserved case differences which are not controlled for.

Recent studies further overcame the case selection bias through a different approach—taking advantage of the random case assignment system. For example, Iyengar (2006) relied upon the fact that federal indigent defendants are randomly assigned between public defenders and court-appointed private attorneys and made a legitimate claim that public defenders outperform court-appointed private attorneys. Specifically, he found that defendants with court-appointed private attorneys are more likely to be found guilty and to receive longer sentences than defendants with public defenders. He also found that court-appointed private attorneys have less experience and attended lower ranked law schools than public defenders, and attributed some of the differences in their performance to this factor. Similarly, Abrams and Yoon (2007) used the dataset provided by the Clark County Office of the Public Defender in Nevada, which randomly assigns felony cases among public defenders to investigate individual attorney ability and its effect on case outcomes. They found that defendants with more experienced attorneys obtain lower sentences than defendants with less experienced attorneys, while they did not find the attorney's legal educational background affects case outcomes. Both studies use random assignment to address endogeneity concerns.

It is interesting to see that almost all the empirical studies on this topic were conducted in the common law countries, with a predominant majority in the United States, and few similar studies have been directed to the civil law countries (for a summary of studies conducted outside the United States, see Paterson & Sherr, 1999). A convenient explanation for this phenomenon is that most civil law countries adopt the inquisitorial system, in clear contrast to the adversary system in the common law world. In a criminal system where the judge performs the function of rigorously ascertaining the "truth" and dominates the entire adjudication proceeding, there seems to be less concern that an innocent defendant would be convicted simply because he/she does not have adequate legal representation. However, a quick look at the literature in the modern civilian system will soon reveal that this line of explanation is superficial and incomplete. Even without disputing whether the modern civil law criminal procedure should be characterized as an inquisitorial system (for critics of such characterization, see Schlesinger, Baade, Herzog, & Wise, 1998: 511), most civil law countries also emphasize the importance of the right of the accused to counsel (for a detailed introduction, see Bassiouni, 1993: 280–282) and indeed provide the indigent defendants with assistance of counsel by different methods. Some may argue that the indigent defense system available in many civil law countries is even more comprehensive than that in the United States. On the other hand, the dearth of empirical studies on this issue in civil law countries might be simply due to the fact that the indigent defense system is so solid and satisfactory that its effectiveness has seldom been brought into question. Whatever the cause is, this is a research area worthy of exploration.

This article conducts an empirical study on the effect of type of indigent defense counsel on trial outcomes in Taiwan. The reasons for choosing Taiwan as our subject of empirical study are twofold. First, since Taiwan is a civil law country, our study can fill the gap in the current dearth of empirical studies on the performance of indigent defense counsel in the civilian system. Second, and more importantly, Taiwan's reform in 2003 creates a valuable and scarce experiment-like setting to conduct our empirical tests. Specifically, the 2003 reform resulted in a dual indigent defense system, under which two types of counsel—public defenders and legal aid attorneys—are randomly assigned to those defendants who cannot privately retain lawyers. This random assignment allows us to overcome the selection problem and to evaluate the relative effectiveness of these two types of criminal defense counsel by observing case outcomes.

Our study shows that, contrary to the reformers' allegation that legal aid attorneys have better abilities than public defenders, public defenders and legal aid attorneys are essentially equally effective. Nevertheless, our study also indicates that because these two types of counsel tend to adopt different litigation strategies, type of counsel does affect how an indigent defendant fares in the criminal trial. Specifically, although the expected sentence of a defendant represented by one type lawyer is the same as that represented by another type, the details of trial outcomes are different: while defendants represented by public defenders are more likely to be convicted, they tend to, if convicted, receive more lenient penalties than defendants with assigned counsels. We provide our explanation for this tradeoff relationship between the conviction rate and the severity of punishment from the perspective of the inherent difference in institutional characters and pecuniary incentives that the two types of counsel face. We also discuss the implications of this tradeoff from both the perspective of the system's objective function and the perspective of indigent defendants' protection.

It should be noted that we are reluctant to compare our findings with the findings of many studies in the United States. The answer to the question of whether the type of defense counsel affects case outcomes is by nature jurisdiction-based. The fact that one type of counsel outperforms the other type of counsel in one jurisdiction does not necessarily mean that the same is true in another jurisdiction. What kinds of attorneys are attracted to becoming a particular type of counsel matters and may differ from jurisdiction to jurisdiction.

Nevertheless, the results of our study still provide certain references for other jurisdictions' study of this subject. Firstly, the great benefit enjoyed by public defenders in Taiwan helps the system to attract many talented lawyers to indigent defense work for a long period of time. This phenomenon also helps to explain why public defenders do not show systematically lower abilities than private attorneys. Secondly, despite the essentially identical effectiveness as measured by expected sentences, public defenders' institutional character and pecuniary incentives will induce them to adopt different litigation strategies from assigned counsel, resulting in a tradeoff relationship between the conviction rate and the severity of punishment. While this tradeoff is seldom found and addressed in the current literature, it is important and deserves special attention because it affects how an indigent defendant fares.

This article will proceed in the following order. Section II briefly introduces the criminal litigation and the indigent defense system in Taiwan and explains why Taiwan's reform constitutes a great experimental-like setting to conduct this study. Section III explains the methodology and the data used in this study. Section IV reports the findings. Section V discusses the implications. Section VI concludes.

2. Criminal justice system & indigent defense system in Taiwan

2.1. Criminal justice system

As a member of the civil law family, traditionally Taiwan's criminal procedure was derived from the modern civilian system of the German style. This is clearly attested by the fact that the basic structure and fundamental principles of Taiwan's original criminal procedure were predominantly influenced by a German way of thinking (for an introduction to German criminal procedure, see Herrmann, 1987), with the reservation that trial in Taiwan was conducted purely by professional judges instead of a mixed panel in which lay assessors participated.[2] It follows that Taiwan's criminal procedure was also characterized by the judge's dominant role throughout the whole proceeding.

Specifically, after the prosecutor prosecuted the defendant, the subsequent litigation process was entirely controlled by the presiding judge. As a career judicial officer, the judge was expected to find the truth. Therefore, the judge's role in the criminal litigation was more of an active investigator than a passive adjudicator. The judge would investigate the criminal facts, based on the dossier sent by the prosecutor, *sua sponte* in a series of discontinuous hearings. Witnesses were interrogated by the judge, not by the prosecutor or the defendant. There was little role for the prosecutor to play before the court. There was no plea bargaining. There were no evidentiary exclusionary rules. Hearsay evidence was admissible. Although the defendant's confession was often an important piece of evidence, a judge could not convict the accused merely because of the confession. The defendant would be convicted only if the judge obtained the *intime conviction* that the defendant was guilty as charged, according to the principle of free evaluation (for an introduction of the principle of free evaluation, see Damaska, 1995).

The above litigation mechanism was widely criticized as unfair and disadvantageous to the defendant. What the defendant faced in the courtroom was not an impartial judge and an attacking prosecutor, but an active judge playing the prosecutor's role. As a result, in 1999, the President decided to undertake a comprehensive judicial reform and held a "National Judicial Reform Conference." Many critically important conclusions were reached at that Conference. As far as the criminal justice system was concerned, the fundamental decision was to move toward a quasi-adversarial system, a system maintaining the civil-law structure but adopting many common-law principles and devices.

The reform of the criminal justice system was implemented by the 2003 Amendments to Taiwan's Code of Criminal Procedure (TCCP), formally taking effect on September 1st, 2003. Under the 2003 reform, the judge's traditional activeness is significantly reduced, the prosecutor's burden of proof is emphasized, and the criminal defendant is equipped with more safeguards to protect his/her procedural rights. Evidently, Taiwan's transformation from a non-adversary system to a quasi-adversary system will enhance the role played by defense counsel and increase the importance of legal assistance for the defendant. How indigent defendants can obtain effective assistance of counsel then becomes a critical question.

2.2. Indigent defense system

The indigent criminal defense system also underwent dramatic changes after the 2003 reform. To better explain the current indigent defense system and the background against which this empirical study is conducted, we briefly explain Taiwan's traditional public defender system first and then introduce the post-reform legal aid system.

2.2.1. Traditional public defender system

Under the previous non-adversary system, the defendant's right to counsel was not completely ignored, even though Taiwan's legal aid system was not formally established until 2003. According to the previous TCCP, a defendant who was charged with a crime carrying a minimum sentence of three years or more should be represented by counsel. In these so-called "mandatory defense cases," as long as the defendant did not retain counsel, the court would ask the public defender's office to assign a public defender for the defendant. While indigence was not required for the defendant in the mandatory defense case to obtain assistance from the public defender's office, it was generally believed that most defendants with public defenders were in fact financially disadvantaged. On the other hand, in cases other than these mandatory defense cases, the defendant could choose whether to seek legal representation, but if he/she could not afford to hire a lawyer, there was no mandate that the state must provide assistance.

A public defender is a special kind of career judicial officer whose office is affiliated with each district court (court of first instance), administrated by the Judicial Yuan.[3] More importantly, public defenders in Taiwan are a group of elite, experienced and professional defense attorneys, which is attested to by the following facts. First, there is an independent examination for public defenders, and the average passing rate is merely 3%, which is consistently lower than the passing rates of both the judge-and-prosecutor qualification examination and bar examination. To become a public defender, besides passing this extremely difficult examination, another channel is to switch from the position of judge or prosecutor, which is strictly controlled and limited by the judicial Yuan. Second, accordingly to Taiwan's Public Defender Act, public defender's salary is to be paid at the same standard as the salary received by a judge, although the average caseload for a public defender, around 20–30 cases per month, is significantly lower than the caseload faced by a judge, which is constantly over 50 cases per month. From this substantial disparity of salary vis-à-vis workload, it is not difficult to understand why the position of a public defender is attractive to many talented law students. Even some judges, after feeling exhausted in their judicial career, seek to be transferred to the public defender's office. Third, public defender is a career judicial position, and most public defenders choose to stay in that position until satisfying the retirement criterion, at which time they can enjoy the same retirement benefits as retired judges. This means that a long period of day-to-day criminal defense work makes these public defenders extremely experienced.[4]

[2] It has been observed that most civil law countries adopt trial by "a mixed tribunal" in which professional judge or judges are joined by lay assessors and that adjudication solely by professional judges is only employed in the disposition of minor offenses and is definitely not representative of the modern civilian style. See Damaska (1973), p. 536 & n. 65.

[3] The Judicial Yuan is the highest office of judicial administration under the Constitution of Taiwan. The Judicial Yuan exercises the power of judicial administration and the power to interpret the Constitution and to unify the interpretation of laws and orders, to adjudicate cases concerning the impeachment of the President or Vice President or the dissolution of political parties, and to adjudicate cases concerning disciplinary measures with respect to public functionaries.

[4] It has been observed in the United States that while most people agree that public defenders are essential to the constitutional and moral legitimacy of the criminal justice system, attention paid to motivating people to become and remain public defenders is insufficient. As a result, few people are willing to enter indigent defense work and public defenders often burn out after a few years, leaving indigent defendants with a largely young and inexperienced group of attorneys. See Ogletree (1993).

Despite the above, the effectiveness of public defenders was constantly questioned by many private practitioners, alleging that public defenders did not vigorously defend the accused. While no empirical study existed to support this kind of skepticism, it was not entirely clear whether the criticism of the quality of public defenders' defense work came from anecdotal stories or was motivated by private lawyers' self-interests. Whatever the real reason might be and however valid the criticism was, the public defender system was brutally attacked in the 1999 National Judicial Reform Conference on the ground of poor performance. There was virtually no resistance to the proposal that the public defender system should be abolished.[5] As the National Judicial Reform Conference concluded that a comprehensive legal aid system should be established, it also reached the decision that the public defender system would be gradually replaced by an assigned counsel program and no new public defender would be recruited in the future.

2.2.2. Legal aid foundation

In implementing the conclusion reached by the National Judicial Reform Conference, the Legal Aid Act was enacted in 2004, and the Legal Aid Foundation was also established to carry out various duties designated therein. With sufficient funding from the government, the Legal Aid Foundation provides all kinds of legal services for indigent litigants, including representation before the court. The Foundation is governed by a board to be composed of 13 members appointed by the Judicial Yuan, and has 20 branches around the country which are located according to district courts' jurisdictional areas.[6] Each branch has a director, who is appointed by the President of the Judicial Yuan pursuant to the recommendation of the Foundation board. The position of a branch director is without salary and is deemed an honorable part-time job, often filled by a local private attorney with good reputation. The day-to-day business of each branch is mostly run by its salaried administrative staffs who are not practicing attorneys.

The essential function of the Legal Aid Foundation is to act as an intermediary, through its branches, between litigants-applicants and legal aid attorneys. After the application for legal aid is approved, an attorney listed as legal aid attorney in the particular branch of the Legal Aid Foundation will be assigned to the applicant and the fee is to be paid by the legal aid fund. All practicing attorneys without disciplinary records can apply to be listed as legal aid attorney in one or more branches. In other words, legal aid attorneys are essentially private practitioners who maintain their ordinary business while taking cases from the Legal Aid Foundation at the same time.

It should be noted that most private lawyers in Taiwan charge litigation representation on a fixed-fee basis, and only a few firms which are predominantly hired by corporate clients charge by an hourly rate, which is generally more expensive than the fixed-fee arrangement. For criminal defense work, while the fee varies with the complexity of the case and the experience of the attorney, normally most attorneys charge 80,000–100,000 NT dollars (NT$)[7] for legal representation at the district court. The fee paid by the Legal Aid Foundation is substantially lower than the market average. For the same criminal defense representation at the court of first instance, a legal aid attorney receives a fixed fee of NT$ 30,000. Obviously, this fee structure will raise concerns about what kinds of private attorneys volunteer for the legal aid assignment.[8] No study has been conducted on this issue due to unavailability of data. We only know that nearly half of all licensed attorneys are listed in various branches of the Legal Aid Foundation to date.

2.3. Case assignment under a dual indigent defense system

In line with the policy decision that the public defender system is to be abolished gradually, the 2003 reform resulted in a dual indigent defense system where the defendants who do not retain counsel in the mandatory defense cases will receive legal assistance either from a public defender or from a legal aid attorney. What is significant to this study is that the type of counsel an eligible defendant will receive is randomly decided. Given the importance of the random assignment feature to this study, we explain the case assignment mechanism under this dual system in more details.

For each district court, there is an affiliated public defender's office and a branch of the Legal Aid Foundation within its jurisdiction. Each public defender's office and the local legal aid branch periodically agree on the ratio used to assign eligible defendants between them. Based upon the agreed ratio, all eligible defendants are systematically assigned to the public defender's office or the local legal aid branch according to the sequence of case numbers.[9] When a defendant charged with an offense calling for mandatory defense first appears before the court and is not represented by a privately retained counsel, the court will forward the case to an administrative clerk for case assignment. The clerk will then assign the case either to the public defender's office or the local legal aid branch according to the sequence of case number and the predetermined ratio, without regard to characteristics of defendants/cases.[10]

For the cases assigned to the local legal aid branch, an ad hoc panel of three members reviews the case to ensure eligibility and decides the fee to be paid as well as, in the case of multiple defendants, whether there is a conflict of interests between codefendants so that individual assignment is necessary.[11] After the decision is made, the administrative staff of the local branch will contact the listed legal aid attorneys who have indicated willingness to accept criminal defense work on a rotating basis, and an attorney is thereby assigned to a particular defendant. In order to ensure equitable distribution of cases, the Legal Aid Foundation has a formal policy that any individual legal aid attorney can only receive

[5] It is worth noting that 125 representatives were invited to attend the Judicial Reform Conference, including judges, prosecutors, lawyers, scholars, government officials, and social activitists, but no representative from pubic defenders was invited. During the discussion, only one prosecutor opposed to the proposal of abolishing public defenders on the ground that an assigned counsel program is much more expensive than the public defender system. See Judicial Yuan (1999), p. 892, p. 938, p. 1154.

[6] The only exception is the Taipei branch, which covers the jurisdictional areas of both Taipei District Court and Shilin District Court. Consequently, while there are 21 district courts in Taiwan, there are only 20 branches of the Legal Aid Foundation.

[7] The New Taiwan dollar is the official currency of Taiwan. The exchange rate as compared to the United States dollar is around 33 NT dollars per 1 US dollar in recent years.

[8] We do not intend to claim that the attorneys receiving case assignment from the Legal Aid Found are predominantly the attorneys who cannot attract enough clients. Many partners from prestigious law firms, such as Baker Makenzie in Taipei, play active roles in the Legal Aid Foundation. However, there are indeed anecdotal stories that expensive lawyers are less willing to be listed as legal aid counsel.

[9] For example, the public defender's office within the Taipei district court reached an agreement with the Legal Aid Foundation in 2007 to distribute eligible cases on a 3:1 ratio. Accordingly, cases No. 1 to No. 3 will be assigned to the public defender's office and case No. 4 will be assigned to a legal aid attorney, and so on. We obtained this information from the Chief public defender, Mr. De-Jong Tsen, in Taipei district court through telephone interviews.

[10] For a rule formally documenting this assignment procedure, see The Operational Procedure for Assigning Defense Cases by the Taiwan High Court (in Mandarin) (on file with the author).

[11] The ad hoc panel is composed of three members from a pool of qualified reviewing members who are judges, prosecutors, lawyers, and scholars appointed by the Legal Aid Foundation. In the mandatory defense cases, since eligibility is not based on the defendant's financial status and has been determined by the court, the panel mainly focuses on the fee to be paid and whether individual assignment is necessary in the case of multiple defendants.

a maximum of 36 cases, either civil or criminal, per year from all branches of the Legal Aid Foundation where he/she is listed.[12]

As to the cases assigned to the public defender's office, they are assigned among all public defenders within that office on a rotating basis. For the cases with only one defendant without privately retained counsel, the assignment process is very straightforward. However, in the cases with multiple defendants who do not retain counsel, the assigned public defender must determine whether there is a conflict of interest between these codefendants. If a conflict exists, the public defender will decide which one or more defendants are to be represented by himself/herself and forward the rest to the local legal aid branch. In the situation of conflicts of interests, the public defender cannot assign some of the defendants to his/her colleagues.

Based upon the above case assignment mechanism, the type of lawyer assigned to a case is uncorrelated with the latter's nature and characteristics. This is especially true in the case of single eligible defendant. Since the assignment is made by a court clerk on a rotating basis and such clerk does not have incentives to manipulate the assignment process, we have no reason to believe that the cases assigned to one type of counsel are systematically different from the cases assigned to the other type of counsel. This avoids the potential selection bias problem which occurs when the defendants are allowed to choose the type of lawyer, as in that case trial outcomes reflect not merely the effectiveness of legal counsel, but also the nature of the case. However, in the case of multiple eligible defendants and initial assignment to the public defender's office, because the decisions of whether to assign some of the defendants to the local legal aid branch and, if so, which defendant(s) to be reassigned are made by the public defender, it is possible that the public defender may be inclined to forward the defendant(s) of a particular type to the local legal aid branch. Because of this possibility, the data we use in this paper contain only the cases with a single defendant.

3. Data & methodology

3.1. Data description

The data used in this study come from the official computerized database established by the Judicial Yuan of the Taiwan government. This official database includes information about every criminal case terminated in every district court, including the defendant's representation status, the criminal charges, the judgment, and the dates of filing and termination, etc.[13] Due to privacy restriction, we only obtained non-confidential information in the dataset, i.e., we do not know the identity of the attorneys and defendants.[14]

Using the above data, we study the mandatory defense cases which involved a single defendant charged with a single count of serious offense based on the Taiwan Penal Code and were terminated between 2004 and 2007 in every district court in Taiwan.

Several explanations of our selection criterion deserve to be mentioned. First, we focus only on the mandatory defense cases. This control eliminates the possibility that the defendant is not represented at all, and we therefore create a universe where if the defendant does not retain counsel, he/she will receive one of the two types of indigent defense counsel randomly assigned.[15] Second, in order to avoid the intricate interrelationship problem which may inherently occur in the multiple-defendant cases, we study only the single-defendant cases. In the multiple-defendant cases where one defendant has one type of counsel and the other co-defendant has another type of counsel, it is very difficult to separate the influence of one defendant's counsel from the influence of the other co-defendant's counsel in a single trial.[16] Third, in order to effectively control for offense type and to interpret the observed case outcomes, we focus only on the cases with a single count of offense and exclude the cases where the defendants are charged with multiple counts of various offenses. Fourth, we study only the cases with ordinary crimes prescribed in the Taiwan Penal Code. Other cases involving special crimes and prescribed in special statues, such as drug cases, are not included in this study. Finally, since the reform took effect in 2003, we study the cases terminated from 2004 to 2007.

An important feature of this study is that the cases studied are not merely a sample of the whole population but include every case nationwide that satisfies the qualifications mentioned above. This feature further eliminates the possibility that any observed variation in case outcomes arises from sampling error or sampling bias. In total, there are 5821 such cases. Of these 5821 cases (defendants), 33.9% (1972 defendants) were represented by retained counsel, 52.3% (3045 defendants) had a public defender and 13.8% (804 defendants) were represented by assigned counsel. This distribution indicates that almost two-third of defendants in the mandatory defense cases are represented by government-provided counsel.

These mandatory defense cases can be categorized from two different perspectives: one is by type of offense and the other the severity of available penalties. In terms of type of offense, these cases involve 19 kinds of specific crimes which we consolidated into four categories: public-interest case[17], sexual-offence case[18], murder case[19], and robbery case[20]. In terms of penalty severity, it

[12] Given this restriction, it is virtually impossible for private lawyers to maintain a business by this small number of cases. Consequently, even for a solo practitioner, the cases taken from the Legal Aid Foundation are only a relatively small part of his/her entire business.

[13] Specifically, the database contains the following information: (1) the court hearing the case, (2) the date of filing, (3) the date of termination, (4) the number of defendants, (5) the procedure used in the case, (6) method of case disposition, (7) the offense charged, (8) the penalty imposed upon conviction, (9) status of legal representation, and (10) whether an appeal has been taken.

[14] As a result, we do not have the demographic information about the defendant, such as age, gender, and race, nor do we know the background of his/her attorney, such as law school attended, except for whether he/she is a public defender or a legal aid counsel.

[15] It is interesting to note that while the right to self-representation is guaranteed by many countries' constitutions as well as by several international instruments (Bassiouni, 1993: 283–284), there is no discussion in Taiwan to the best of our knowledge, either in scholarly works or in case law, regarding whether this mandatory representation requirement violates a defendant's right to self-representation. It should be noted that this mandatory representation requirement does not deprive the defendant of the absolute right to participate in every phase of the criminal litigation; it only means that the defendant cannot refuse the assistance of counsel. We have no standing on the issue of whether a defendant should have the right to insist on a waiver of legal assistance in a serious charge. We note only that this requirement creates a universe where every defendant has one of three types of defense counsel: retained counsel, public defenders, and assigned counsel.

[16] Moreover, as indicated above, in the mandatory defense cases involving multiple eligible defendants and initially assigned to the public defender's office, since it is the assigned public defender who will decide whether to transfer part of the defendants to the local legal aid branch, exclusion of these cases can further ensure that case assignment is not affected by possible selection bias. Without controlling for whether the case involves single or multiple defendants, there are 7549 cases falling within the case scope as selected by our other criteria, among which 5821 cases (77.11%) involve single defendant and 1728 cases (22.89%) involve two or more defendants.

[17] The public-interest cases include cases involving such crimes as (1) arson in houses with inhabitants, (2) arson in houses without inhabitants, (3) endangerment against public transportation, (4) endangerment against public transportation resulting in death or aggravated body injury, and (5) forgery of negotiable instruments.

[18] The sexual-offense cases include cases involving such crimes as (1) rape, (2) aggravated rape, (3) rape against the disabled, and (4) statutory rape.

[19] The murder cases include cases involving such crimes as (1) homicide, (2) homicide of parents/grandparents, (3) felony murder, and (4) aggravated assault.

[20] The robbery cases include cases involving such crimes as (1) robbery, (2) quasi-robbery, (3) aggravated robbery, (4) robbery with specific conducts, (5) kidnap, and (6) aggravated kidnap.

Table 1
General data for indigent defense cases.

Number of cases (defendants)	3849	
Distribution of type of counsel	Public defenders	3045 (79.1%)
	Assigned counsel	804 (20.9%)
Distribution of type of crime	Public interest	1040 (27.0%)
	Sexual offense	907 (23.6%)
	Murder	604 (15.7%)
	Robbery	1298 (33.7%)
Distribution of offense Class	Class-One	25 (0.7%)
	Class-Two	476 (12.4%)
	Class-Three	1375 (35.7%)
	Class-Four	429 (11.2%)
	Class-Five	1544 (40.1%)
Number of tried cases	3709	
Conviction rate	90.73% (3365 convicted)	
Distribution of type of penalty (if convicted)	Death penalty	16 (0.5%)
	Life sentence	74 (2.2%)
	Fixed sentence	3275 (97.3%)

Source: Judicial Yuan Computerized Database.

should be noted that if the defendant is convicted in the mandatory defense cases, there is no possibility of probation and the only remaining question is the level of penalty the convicted defendant will receive.[21] The Taiwan Penal Code specifies the range of penalties for the court to impose for each kind of offence. According to the severity of available penalties provided by the Penal Code, the mandatory defense cases studied here include offenses of five classes: (1) Class-One offense—death penalty or life sentence, (2) Class-Two offense—death penalty, life sentence or a fixed sentence from 10 to 15 years, (3) Class-Three offense—life sentence or a fixed sentence from 7 to 15 years, (4) Class-Four offense—a fixed sentence from 5 to 12 years, and (5) Class-Five offense—a fixed sentence from 3 to 10 years.

In order to avoid the above-mentioned case selection effect, i.e., a certain type of defendants making the deliberate choice of whether to retain private attorneys[22], we focus only on the comparison between the defendants with public defenders and those with assigned counsel and, therefore, exclude from observation the cases where defendant were represented by retained counsel. That leaves 3849 cases in our data. Table 1 summarizes the general data we used in this study.

It should be noted that plea bargaining is not available in the mandatory defense cases and therefore 96.36% of all cases studied (3709 cases) were decided on the merits, with a clear finding of the defendant's innocence or guilt in the district court's judgment. The remaining 140 cases were disposed of by purely procedural reasons (such as change of venue, death of the defendant, expiration of statute of limitations, etc.). Because these procedural dismissals are initiated by the court *sua sponte*, they are excluded from calculation of the conviction rate. Accordingly, the conviction rate used in this study is the percentage of the guilty judgments among all judgments with a clear finding of innocence/guilt. The average conviction rate for these 3709 cases is 90.73%, i.e., 3365 defendants were convicted.[23] Of all the convicted defendants, 97.3% (4763 defendants) were sentenced to prison for a fixed period of time, 74 defendants (2.2%) received a life sentence, and 16 defendants (0.5%) were given the death penalty.

3.2. Methodology

The fundamental methodological question encountered in comparing effectiveness of legal representation is the case selection bias problem. By comparing case outcomes in accessing the effectiveness of counsel, it is always difficult to ascertain whether some factor other than type of counsel is responsible for the observed variations. Any difference may arise from factors related to the defendants' characteristics (such as prior record, age, gender, etc.) or case characteristics (such as strength of evidence, seriousness of crime charged, etc.). Without adequately controlling for these possible variables, any variation in case outcomes found by research cannot validly be attributed to different types of counsel.

The unique dual system used in Taiwan after the 2003 reform allows us to overcome the difficulty of the case selection effect. As discussed above, after the 2003 reform, the defendants who do not retain private lawyers in the mandatory defense cases are ran-

[21] According to article 74 of Taiwan Penal Code, the court may grant probation only if the imposed sentence is less than two years and certain requirements are met. Since the defendant in the mandatory defense cases is charged with a crime carrying a minimum sentence of three years, it is normally impossible for the defendant to be granted probation.

[22] We predict that if a defendant knows his/her own guilt, he/she will be less likely to invest in retaining counsel. It follows that it is likely that retained counsel will attract more winnable clients than government-provided lawyers. Our prediction is supported by the data, which show that defendants with retained counsel had a conviction rate (81.07%) lower than the conviction rates of both defendants with public defenders (91.42%) and defendants with assigned counsel (88.07%).

[23] Because the conviction rate is a product of many variables, which are different from jurisdiction to jurisdiction, we are reluctant to compare Taiwan's conviction rate with other countries. For example, it has been reported that the conviction rate in the United States is around 60%, while the conviction rate in Japan is over 99%. The Japan's unusually high conviction rate has been a topic of academic interests and debates. Ramseyer and Rasmusen (2001) suggests that the high conviction rate reflects the fact that Japanese prosecutors only prosecute the most obviously guilty defendants and is not a result of pro-prosecution judicial bias, while Upham (2005) questions the correctness of their methodology and conclusion. As explained in the text, since every defendant who the prosecutor believes is guilty will be brought for trial, it helps to explain why the conviction rate reaches the level of 80–90%. It also helps to explain why the conviction rate is often used in Taiwan to evaluate the quality of the prosecutors' performance. For example, one Taiwanese criminal law professor cited the statistics revealed by the Judicial Yuan showing that the conviction rate in public corruption cases is around 50–60% and criticized the prosecutors in a public forum for doing a poor job in the prosecution decision. After this criticism was reported in the newspaper and gained much publicity, the Ministry of Justice apologized for that result and promised to improve the situation. A newspaper report dated June 4, 2008 is available at: http://news.chinatimes.com/2007Cti/2007Cti-Rtn/2007Cti-Rtn-Print/0,4670,110101x112008060401238,00.html (last visited April 18, 2009). On the other hand, Wagner and Jacobs (2008) reported that federal prosecutors in the United States have an 85% conviction rate in public corruption cases between 2001 and 2005.

Table 2
Test for randomness.

	Type of offense				
	No. of cases		Test for randomness (p-value)		
	Public defender	Assigned counsel	Wald test (logit)	Wald test (linear)	Pearson Chi-squared
Murder	458	109	0.506	0.512	0.319
Public interest	856	161	0.000	0.000	0.000
Robbery	995	263	0.620	0.656	0.898
Sexual offense	629	238	0.000	0.000	0.000
	Severity of available penalties				
	No. of cases		Test for randomness (p-value)		
	Public defender	Assigned counsel	Wald test (logit)	Wald test (linear)	Pearson Chi-squared
Class-Five offense	1195	306	0.925	0.936	0.620
Class-Four offense	319	85	0.827	0.841	0.895
Class-Three offense	1046	289	0.687	0.653	0.333
Class-Two offense	358	86	0.452	0.495	0.433
Class-One offense	20	5	0.908	0.773	0.922

Note: Because the characteristic variables considered are binary, we consider two parametric regressions: the Logit model and linear probability model to compare the coefficients associated with different types of counsel. Dependent variables consider are type of offense and severity of available penalties. In addition to counsel type dummy variable, we also take year and locality dummy variables as explanatory variables. For these parametric-based tests, p-values are obtained based on the bootstrapped covariance estimates robust to heteroskedasticity.

Table 3
Conviction rate vis-à-vis average sentence upon conviction.

	Conviction rate		Average sentence upon conviction (month)			
	Public defender	Assigned counsel	Life = 300; death = 600		Life & death excluded	
			Public defender	Assigned counsel	Public defender	Assigned counsel
Murder	92.79%	89.91%	111.79	125.91	81.89	92.22
Public interest	90.19%	89.44%	30.41	35.20	30.41	35.20
Robbery	95.58%	90.87%	82.21	84.28	75.03	78.38
Sexual offense	85.53%	83.19%	48.68	50.51	48.21	50.51
Total	91.42%	88.07%	65.28	70.03	57.33	62.41

Source: Judicial Yuan Computerized Database.

domly assigned to a public defender or a legal aid attorney. The random assignment under the dual system converts the real world litigation in Taiwan into a classic experimental design.[24] Given the nature of this random assignment, we can legitimately assume that the defendants assigned to public defenders are not systematically different from the defendants assigned to legal aid counsel.

Because of the importance of randomness, it is necessary to test for its validity. One way to test randomness is to use defendant characteristics, such as age, race, and gender (Abrams & Yoon, 2007; Iyengar, 2006). Due to the limitation of data described above, we do not have information on defendant characteristics. As a result, we use case characteristics such as "type of offense" and "penalty severity" as the basis for our test.

If the cases are randomly assigned, then observed case characteristics on average should be the same across different types of counsel. A typical method to verify this hypothesis is to regress a case characteristic against types of counsel and other explanatory variables, such as year and locality dummy variables, and then conduct a Wald test for the equality of the coefficients over different defender types. To avoid misspecification in distribution, we also consider the linear probability model with bootstrapped standard errors for robustness. Moreover, we can conduct a simpler nonparametric test, the Pearson Chi-squared test, which compares the observed frequencies within conditioning cells against the theoretical frequency under the null. For example, when case characteristics are binary variables, the test statistic for testing the hypothesis that defendants are randomly assigned across counsel types is given by

$$\pi = \frac{(F_{r,a} - F_{0,a})^2}{F_{0,a}} + \frac{(F_{r,p} - F_{0,p})^2}{F_{0,p}},$$

which has Chi-squared limiting distribution with degree of freedom one, and $F_{r,a}$, $F_{0,a}$, $F_{r,p}$, $F_{0,p}$ denote the observed frequencies of cases represented by legal aid attorneys, expected frequencies of cases represented by legal aid attorneys, observed frequencies of cases represented by public defenders, and expected frequencies of cases represented by public defenders, respectively.

Table 2 reports the Wald test and Pearson Chi-squared test using the above two characteristic variables, separately. First, we consider testing for the hypothesis of no association between types of offense and types of counsel. Both types of tests indicate that we cannot reject the null hypothesis of random assignment for murder and robbery cases, while the test statistics are significant for the public interest cases and sexual offense cases. The probability of assigning a public interest case to a legal aid attorney is about 7.06% lower than to a public defender, while the probability of assigning a sexual offense case to a legal aid attorney is about 8.99% higher than to a public defender. On the other hand, when we test for the hypothesis of no association between the penalty severity and type of attorneys, all p-values are insignificant, which supports the hypothesis that cases are randomly assigned to different types of attorneys.

While we have concerns about the randomness with regard to the public interest cases and sexual offense cases, we think the 7%

[24] Researchers have acknowledged that "the ideal way to isolate the effects of a single given factor is the classic experimental design" but pointed out this design is rarely used in studies of counsel effectiveness because many operational and legal issues would ensue. See Feeney and Jackson (1990-1991), p. 365 n. 20.

difference and the 9% difference are too small to be the result of intentionally assigning one particular type of counsel to a particular type of cases. Moreover, the main results of the paper are not driven by these differences. As discussed below and shown in Table 3, the pattern of defendants with assigned counsel having lower conviction rates but receiving more severe penalty appears not only in the murder and robbery cases, but also in the sexual offense and public interest cases. One possible way to resolve this problem is to eliminate these two types of cases altogether. However, this approach would substantially reduce the number of cases available for this study. Based upon the fact that the criterion of penalty severity verifies randomness, we decide to still include these two case categories in the analysis. For robustness purpose, we also report the result of using only the murder cases and robbery cases in the relevant footnotes. As indicated in the following, the results are consistently identical no matter whether we use all cases or use only the murder and robbery cases for analysis.

4. Results

4.1. Differences in expected sentence

The first measure we use to evaluate comparative effectiveness of two types of counsel is expected sentence, which is the expected value of sentence a defendant with a particular type of counsel faces when he/she is brought to trial. Specifically, expected sentence of a defendant is the product of conviction rate and the length of sentence he/she receives. Differences in expected sentence can be attributed to differences in the overall effectiveness of representation and not to case/defendant characteristics, because public defenders and legal aid attorneys should, on average, have the same underlying distribution of case/defendant characteristics.

In formulating this expected sentence, we must assign a specific figure for the results of acquittal, life sentence, and death penalty, respectively. Intuitively, since acquittal means no prison time, we define its sentence as zero. We then define the lengths of sentence of life sentence and death penalty as 300 months and 600 months, respectively.[25] The results show that a defendant represented by a public defender can expect to receive an average sentence of 59.68 months, while the expected sentence for a defendant with assigned counsel is 61.67 months. There exists a two-month difference. For robustness purpose, we exclude the defendants receiving life sentence or death penalty from calculation altogether. The results show that the two-month difference persists (52.29 months of public defenders vs 54.78 months of assigned counsel).[26]

The difference of two months in expected sentence does not seem to be great in absolute terms. More importantly, the fact that defendants with assigned counsel expect to receive longer sentences than defendants with public defenders indicates that Taiwan's 2003 reform does not seem to have improved the quality of indigent defense representation.

After making the above simple comparison, we then run two sets of unconditional linear regression to estimate the difference in expected sentence between the two types of counsel. The first regression counts life sentence and death penalty as 300 months and 600 months, respectively; the second regression excludes the defendants receiving either of these two penalties from observation. In each regression, we control for the same variables, including termination year,[27] time to case disposition,[28] case category, offense class, locality of court,[29] and attempted offense.[30] The results, as reported in Appendix A, show that the difference in expected sentence between defendants represented by two types of counsel remains quite small (less than two months). More importantly, the coefficients for the assigned counsel show that their differences in the two sets of regression are all statistically insignificant.[31]

4.2. Differences in conviction rate vis-à-vis severity of penalty

The little or no difference in expected sentence indicates that the overall performance of public defenders and legal aid attorneys is essentially identical. This can be taken as an indicator that there exists no systematical difference of ability between public defenders and assigned counsel. It seems to suggest that an indigent defendant will not fare differently simply because he/she is represented by a public defender or a legal aid attorney.

However, if we look closer into the details about trial outcomes, it reveals that the measure of expected sentence does not tell the whole story. By dividing case outcome into the conviction rate, i.e., whether a defendant is convicted, and the average sentence he/she receives upon conviction, we find that defendants with public defenders were more likely to be convicted than defendants with assigned counsel, but once convicted, the former received shorter sentences than the latter. Specifically, the conviction rate for defendants with public defenders is 91.42%, while the conviction rate for defendants with assigned counsel is 88.07%. Moreover, when the life sentence is counted as 300 months and the death penalty is counted as 600 months, convicted defendants with public defenders receive an average sentence of 65.28 months but the average sentence length for convicted defendants with assigned counsel is 70.03 months. This pattern persists in every type of offense and remains the same under the specification that the defendants receiving death penalty or life sentence are excluded. The result is reported in Table 3.

The above observation indicates that although the overall expected sentences received by defendants with two types of counsel do not differ, there seems to exist a tradeoff between the probability of getting convicted and the severity of penalty received upon conviction. In order to ascertain whether this tradeoff indeed exists, we use a more sophisticated statistical model. Before reporting the results of our statistical analyses, we first explain the model in more detail.

[25] In Taiwan, apart from life sentence and death penalty, the maximum sentence a defendant can be given is a fixed sentence of 240 months. It should also be noted that a defendant receiving a life sentence will not be given the chance of parole until he/she has at least served 300 months in prison.

[26] If we only use the murder and robbery cases for analysis, it shows a consistent result. Specifically, under the specification that the death penalty counts as 600 months and a life sentence counts as 300 months, the expected sentence for a defendant with a public defender is 86.50 months and for a defendant with assigned counsel is 87.31 months; under the specification that death penalty and life sentence are excluded, the result is 72.71 months (public defenders) vs. 73.96 months (assigned counsel).

[27] That is, whether a case is terminated in 2004, 2005, 2006 or 2007.

[28] The original unit of time to case disposition (elapsed time from filing to termination) is "day." It is common to capture the nonlinear effects of elapsed time by its squared value. To adjust its coefficient into a reasonable range, we rescale (elapsed time)^2 to (elapsed time/100)^2.

[29] There are 21 district courts. For a directory of the judicial branch in Taiwan, visit the Judicial Yuan's Website at http://www.judicial.gov.tw/en/.

[30] "Attempted offense" is a dummy variable to indicate whether the criminal charge is an ordinary offense or an attempted offense.

[31] Appendix A also reports the result of using only the murder and robbery cases for analysis. The result is consistent with that of using all four types of offenses. For sensitivity analysis, we also apply Tobit regression. When all types of offense are considered, the coefficient (standard error) of the counsel type dummy variable is 0.370 (2.047) under the specification of Life = 300/Death = 600 and is 1.241 (1.289) under the specification that Life and Death cases are excluded, respectively. When only murder and robbery cases are considered, the coefficients (standard errors) are −0.560 (3.649) and 1.638 (2.055) under the above two specifications, respectively. These results indicate that the difference between two types of counsel is still insignificant. The full estimated results of Tobit regression are available upon request.

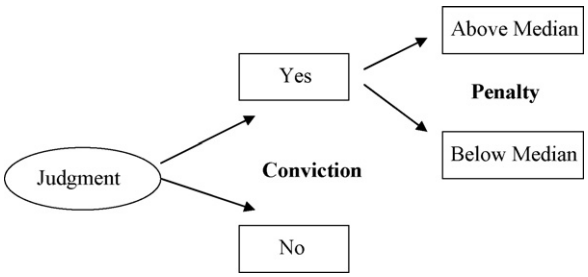

Fig. 1. Sequential steps of conviction and penalty.

In any given criminal trial in Taiwan, the court must first decide the defendant's guilt or innocence. If the defendant is found innocent, the event is concluded by an acquittal judgment. On the other hand, if the defendant is found guilty, the second step is for the court to decide an applicable penalty. It should be noted that the determinations of guilt and penalty in Taiwan, just as in most civil-law countries, are done within the same trial and before the same adjudicators. Accordingly, instead of using two different formulations to compare the effect of type of counsel on the conviction rate and severity of punishment separately, we compare these two measures by using the same statistical formulation under the same model. This two-step determination within the same trial can be depicted in the diagram as shown in Fig. 1 above.

Following this structure, a natural and commonly used estimation method is the sequential logit model. This model fits our structure nicely into the analysis of the two-step proceedings of a trials: the first step is to see whether one type of counsel is more likely to lead to conviction than the other type of counsel, and the second step is to evaluate whether one type of counsel is more likely to obtain a more severe penalty than the other. Moreover, this is numerically easy to implement, in that we can obtain the estimation results by applying the logit regression on each step separately[32].

While there are several possible choices for measuring the severity of penalty, because our sequential logit model requires the dependant variable to be binary, we use the measure of whether a defendant with one type of counsel receives a penalty more severe than the median penalty of all convicted defendants in a given class of offense. To create this measure, we determine a "median penalty" in each class of offense and use that median penalty to divide the defendants involving the same class of offense into two groups—one receiving a more severe penalty than the median and the other receiving a more lenient penalty. In other words, our measure is whether defendants with one type of counsel are more likely to receive a penalty above the median standard.

Accordingly, in Class-Four and Class Five offenses, since a fixed length of sentence is the only available penalty, the respective median length of sentence in each class of offense is used as the dividing standard. In Class-Two and Class-Three offenses where the death penalty and life sentence are also available, these two most serious penalties are deemed to have the longest sentence when we capture the median length of sentence. For example, suppose there are seven defendants involving Class-Two offenses, and each receives a penalty of the death penalty, a life sentence, 20-year sentence, 18-year sentence, 15-year sentence, 12-year sentence, and 10-year sentence, respectively. The dividing standard would be the 18-year sentence, and those defendants who receive a penalty above that standard are viewed as suffering a more severe penalty. In the Class-One offense, since only the death penalty and life sentence are available, the defendants who receive the death penalty are classified as the ones receiving a more severe penalty than the median.

The reasons for choosing the "median" penalty rather than the "mean" penalty as the dividing standard are three-fold. First, the median standard can allow us to avoid the difficulty of how to quantify the life sentence and death penalty. Second, because our measure for evaluating severity of penalty is based on the distribution of penalties received by all defendants charged with the same class of offense, the median penalty appears to be a more sensible dividing standard. Third, this standard also has the advantage of being free from the influence of outliers.

To sum up, in our sequential logit model, the first step is a choice between not guilty (0) and guilty (1 and 2), and the second step is a choice between a lighter penalty (1) and a more severe penalty (2). Against these two sequential dummy variables, the explanatory variable of interest is type of counsel (public defenders v. assigned counsel) and we are interested in seeing how this factor affects the determinations of guilt and penalty, controlling for termination year, time to case disposition, case category, offense class, locality of court, and attempted offense.

The results of our statistical analyses confirm that while the defendants with public defenders are more likely to get convicted, they are less likely to receive a more severe penalty than defendants with assigned counsel. Specifically, the sequential logit regression shows that, at the first step, the defendants with assigned counsel are less likely to get convicted than the defendants with public defenders (with an odds ratio of 0.696). However, at the second step, the convicted defendants with assigned counsel are more likely to receive a more severe penalty than the convicted defendants with public defenders (with an odds ratio of 1.501). Both results are statistically significant, and are reported in Appendix B.[33]

For robustness purpose, we use an additional model to verify our conclusion.[34] The structure in Fig. 1 can be reconsidered as a structure with three outcomes: Innocence, conviction with lighter penalty, and conviction with severer penalty. Therefore, we can use the multinomial logit model to control for the dependence between the first and second stages. Based on the multinomial logit model, Appendix C reports the results of the comparison between cases with public defenders and cases with assigned counsel. This result is consistent with what we observe from the sequential logit model.[35]

[32] The newly developed "seqlogit package" under the STATA software made available in 2007 makes it easy to conduct the "sequential logit model." "Seqlogit" fits by maximum likelihood a sequential logit model. It is not an official command of STATA software and is contributed by a Dutch statistician. See Buis, Maarten L. (2007) "SEQLOGIT: Stat module to fit a sequential logit model," available at http://ideas.repec.org/c/boc/bocode/s456843.html. For its application, see Buis, Maarten L. (2007) "Not all transitions are equal: The relationship between inequality of educational opportunities and inequality of educational outcomes," available at http://home.fsw.vu.nl/m.buis/wp/distmare.html.

[33] The result is essentially identical when we only use the murder cases and the robbery cases for analysis. We report the result in Appendix B.1.

[34] For robustness, we also use the Heckman selection model to revisit our data, in which the dependent variable in the first step is the same as in Appendix 2 and in the second step is the length of sentence. This Heckman selection model indicates that while the defendants with assigned counsel are less likely to get convicted than those with public defenders, the convicted defendants with assigned counsel tend to receive 4.475 more months of the sentence than those with public defenders. This result is qualitatively consistent with the results from our sequential logit model as reported in Appendix B. We do not report the detailed results of the Heckman regression here but are happy to provide upon request. We thank Professor Dan Rubinfeld for suggesting this test.

[35] For simplicity, here we take "Innocence" as the base outcome, and only report the difference between "Innocence—lighter penalty" and "Innocence—severer penalty." Appendix C shows that the estimated coefficients on Assigned Counsel for "Innocence—lighter penalty" and "Innocence—severer penaltyäre −0.562 and −0.203, respectively. By these negative numbers, we can conclude that the cases with assigned counsel are less likely to get convicted than those with public defenders. More precisely, the coefficient on assigned counsel of the left panel of Appendix B is just a weighted average of these two numbers. It is worth noting that the coef-

Accordingly, all the statistical analyses confirm that there is a tradeoff between the probability of getting convicted and the severity of penalty received upon conviction.

5. Discussion

5.1. Explanations for different strategies by two types of counsel

This study has analyzed the difference in performance between public defenders and legal aid attorneys. Under the measure of expected sentence, we find that these two types of counsel do not differ in their effectiveness. A defendant represented by a public defender receives an expected sentence essentially identical to that received by a defendant with assigned counsel. This result suggests that there exists no systematic difference in terms of ability between public defenders and assigned counsel. However, further analyses reveal that these two types of counsel are different in the conviction rate vis-à-vis severity of penalty. Specifically, defendants with public defenders have a higher probability of getting convicted but they are, upon conviction, nevertheless less likely to receive more severe penalties than the defendants with assigned counsel. Although this pattern is clear and significant, the result is somewhat puzzling: why is one type of counsel more effective in getting the client acquitted but the other type of counsel is more effective in obtaining a more lenient penalty?

If one type of counsel were more effective than the other, the result should have been that the defendants with the former are not only less likely to get convicted but also less likely to receive more severe penalties than the defendants with the latter. In light of the fact that the measure of expected sentence has indicated that these two types of counsel have about the same ability, it suggests that public defenders and assigned counsel adopt different strategies in defending the accused. Specifically, public defenders are more inclined to adopt the strategy of confessing to the crime in exchange for more lenient punishment, while assigned counsel is more likely to insist on innocence and fight for acquittal. The effect of this difference in litigation strategy will be apparent in the cases where the defendant has a chance to get acquitted but faces the consequence of receiving a more severe penalty when convicted.

In Taiwan, the defendant's attitude has an important bearing not only on the determination of guilt vs innocence but also on the determination of the penalty imposed. When the defendant chooses to confess to the crime charged, though the likelihood of conviction is enhanced significantly, he/she has a much better chance of being granted the court's mercy.[36] Compared with the defendant who refuses to admit the crime and shows no remorse, the court is much more willing to impose more lenient penalty on the defendant who confesses to the crime and shows regret. When the determinations of guilt and sentence are made in the same proceeding by the same court, as in the criminal litigation in Taiwan, this mechanism creates a dilemma for the defendants.

While the defendant may play a certain role in making the decision, the influence from his/her defense counsel cannot be ignored. Facing such a difficult choice, it is natural for the defendant to consult with the defense counsel for professional advice. After all, provision of professional assistance is what the defense counsel is all about. More importantly, even assuming that there exist some defendants who would make their own choices based on purely personal inclination free from counsel's influence, it is highly unlikely that the distribution of such defendants would show great disparity between public defenders and assigned counsel, given the random assignment. Consequently, the different inclinations in choosing confession to the crime vs insistence of innocence between the two groups of defendants should be a result of their defense counsel's influence and difference in litigation strategies.

To verify our explanation, a straightforward approach is to observe the plea entered by the defendant and to compare the confession rates between defendants with public defenders and defendants with assigned counsel. Unfortunately, this information is not available in the Judicial Yuan dataset. Nevertheless, we still can find good evidence to support our explanation that these two types of attorneys adopt different strategies.

Our theory is that public defenders are more likely to adopt the strategy of confessing to the crime in exchange for more lenient punishment than assigned counsel. In that case, we expect that the defendants with public defenders are less likely to appeal guilty judgments than the defendants with assigned counsel. When a defendant with a public defender has confessed to the crime for a more lenient sentence, he/she has few reasons and incentives to appeal. On the other hand, when a defendant with assigned counsel fights for acquittal but is found guilty, he/she has stronger incentives to appeal. The data indeed show a clear difference in appeal rates of guilty judgments between defendants with different types of counsel. In the cases where the defendant is found innocent, the chances for a prosecutor to appeal are virtually the same between defendants with public defenders (69.05%) and defendants with legal aid attorneys (69.57%). However, upon conviction, the defendants with public defenders appeal much less than the defendants with assigned counsel (56.33% vs 64.51%). After controlling for other variables, the logit regression verifies that the convicted defendants with assigned counsel are more likely to appeal than the convicted defendants with public defenders (with an odds ratio of 1.619).[37] This result is consistent with our proposed explanation.[38]

But, why do public defenders and assigned counsel adopt such different approaches to defend their clients? To be sure, when facing such a situation, a rational litigant will weigh how good the chance to get acquitted is against how much more lenience can be expected in order to make his/her best decision. In the cases where

ficient for the choice between innocence and severer penalty is not significantly different from zero, which indicates that the difference between the effectiveness of public defenders and legal aid attorneys is not significant in the case where the defendants are obviously guilty without valid defense. As to the choice between innocence and lighter penalty, the case with a legal aid attorney is less like to result in conviction. The implied coefficient on assigned counsel between lighter penalty and severer penalty can also be observed by subtracting the coefficients $(-0.203-(-0.562)=0.359)$. This positive coefficient indicates that the convicted cases with assigned counsels are more likely to obtain a more severe penalty. Our hypothesis testing here (the Wald statistic is 10.89) indicates that this implied coefficient is significantly different from zero. When we only use the murder cases and the robbery cases for analysis, it also shows the same the result, which is reported in Appendix C.1.

[36] Article 57 of Taiwan Penal Code provides that the court shall take the defendant's post-crime attitude, among other things, into consideration when deciding the penalty imposed. It should be noted that for each type of crime, Taiwan Penal Code provides both the maximum and minimum penalties available and the court has discretion within the range. In exercising this discretion, the court was required to take 10 factors into consideration, including (1) the motives of committing the crime, (2) whether the defendant was provoked, (3) the means of committing the crime, (4) the living conditions of the defendant, (5) the moral character of the defendant, (6) the educational background of the defendant, (7) the relation between the defendant and the victim, (8) the severity of violation of legal obligations, (9) the danger or damage of the crime, and (10) the defendant's post-crime attitude.

[37] See Appendix D. The result is consistently identical if we only use the murder cases and robbery cases for analysis, as reported in Appendix D.1.

[38] It should be noted that the defendant has an absolute right to appeal from a guilty judgment rendered by the trial court in Taiwan, and the exercise of such right is almost costless for the indigent defendants in the mandatory defense cases. Under this appeal mechanism, it seems that we should expect an appeal rate higher than the range of 55–65%, as Shavell (1995) noted that because there is no fee imposed on appeal, the appeal rate of federal criminal convictions is in the neighborhood of 100 percent. However, because the first appeal in Taiwan adopts the standard of review de novo and allows the prosecutor to seek severer penalty if the convicted defendant recants his/her confession made in the trial court, this mechanism will deter the confessed defendant from making an appeal.

this cost/benefit balancing is clear, public defenders and assigned counsel might just give the same advice and adopt the same strategy. However, this should not be the whole story. In the cases where this choice is a close call, the inherent difference in these two types of counsel's institutional character and pecuniary incentives may induce them to adopt different litigation strategies.

Consider a hypothetical case in which a guilty defendant has a marginal chance of getting acquitted but faces the consequence of receiving a more severe penalty upon conviction, and let us see how the two types of counsel would differ in defending the case.

From the perspective of institutional character, public defenders are career judicial officers. Their affiliation with the state's judicial institution will induce public defenders to think of themselves as a social-welfare type of defense counsel. Their goal, as compared with legal aid attorneys, is more to ensure that justice is served than to push for the defendants' innocence. Consequently, in our hypothetical case above, a public defender will be more inclined to advise the defendant to confess to the crime in exchange for a more lenient penalty, especially when the public defender thinks the defendant is guilty. On the other hand, as a private practitioner, assigned counsel is not affiliated with the official judiciary system. The fact that the legal fee is paid by the governmental fund is unlikely to make assigned counsel think of himself/herself as a judicial officer. His/her sense of justice is built upon the proper function of the criminal justice system, i.e., his/her job is to defend the accused without regard to his/her true innocence or guilt. For assigned counsel, helping the defendant to get acquitted is much more attractive than geting a more lenient penalty, in terms of his/her sense of success. Consequently, when assigned counsel sees a chance of acquittal, he/she is more likely to advise the defendant to fight for the chance.[39]

From the perspective of pecuniary incentives, at the first glance, it appears that both public defenders and assigned counsel have strong incentives to close the case earlier by advising the defendants to confess because case outcomes do not affect their direct financial gains. The former is paid by a fixed wage and the latter is paid by case. However, legal aid attorneys are private lawyers whose reputation is, at least partially, built upon winning the case. Good records on acquittals attract more clients and therefore bring more income in the future. On the other hand, acquittal records do not affect public defenders' future earning, especially when a public defender chooses to stay in that career judicial position until retirement, as most public defenders in Taiwan do. Though Taiwan has decided to gradually abolish the public defender system, this policy decision does not affect the existing public defenders' jobs, which are protected by the law.

It should be emphasized that we do not intend to suggest that public defenders do not value their own reputation and thus represent the defendants poorly. On the contrary, our study shows that public defenders are just as effective as legal aid attorneys. We only argue that the fact that public defenders' reputation on getting acquittals does not affect future earnings of public defendants as much as those of private attorneys tends to induce them to adopt different litigation strategies in the cases with a marginal chance of acquittal. This is especially true from the perspective that public defenders' institutional character dictates that they will not evaluate their own reputation by the standard of acquittal records as strongly as private attorneys do.

[39] Our line of explanation is, to a certain degree, consistent with the "cooperative v. combative" theory proposed in the United States. Sudnow (1965) observed that public defender is more co-opted into the administrative machinery of the criminal justice system and therefore more like a type of "cooperative" attorney. On the other hand, private counsel is more distant from the court and is more "combative."

5.2. A unified framework

This study finds that the type of counsel does affect how an indigent defendant fares in Taiwan's criminal justice system. However, it is because public defenders and legal aid attorneys tend to adopt different litigation strategies, not because one type of counsel is systematically more effective than the other. In fact, these two types of counsel are about equally effective in terms of expected sentence.

It might be useful to explain Taiwan's reform on the indigent defense system and its results in a unified framework.[40] The criminal justice system itself can be assumed to have an objective in minimizing a weighted sum of type I (innocent defendants falsely convicted) and type II (guilty defendants falsely acquitted) errors. Specifically, let p_{I} and p_{II} be the probabilities that the system commits type I and type II errors, respectively. Then the judicial system can be assumed to minimize the objective function $tp_{\mathrm{I}} + (1-t)p_{\mathrm{II}}$; where $t \in [0,1]$ is the weight the system places on type I error. The greater its value, the more the system is concerned about type I error (and is more inclined to avoid it).

The establishment of the indigent defense system in general, and Taiwan's Legal Aid Foundation in particular, can be interpreted as an attempt to increase the value of t, i.e., to reduce the probability of committing type I error. This reflects the society's increasing intolerance that an innocent defendant is wrongly convicted simply because of lack of adequate representation, and should be reduced, even at the possible cost of type II error.

Under this framework, even the lawyers can be seen as minimizing the same objective function, albeit with different weights. The legal aid attorneys, having stronger incentives to win cases for the sake of building a reputation as good defense lawyers, will place more weight on type I error than the public defenders (that is, they have higher value of t). On the other hand, the public defenders, who place more weight on type II error as employees of the judicial system, are more ready to persuade the defendants who they believe to be guilty to be cooperative in exchange for more lenient punishment. The difference in trial results as recorded in our paper simply reflects this difference in the two types of counsel's objection functions.

In this sense, Taiwan's reform is successful in that an indigent defendant is indeed convicted with lower probability when represented by a legal aid attorney. But this goal is achieved at the expense of the defendants serving longer sentence upon conviction for the same type of crime, and possibly at the cost of increase in type II error. Moreover, in light of the fact that an assigned counsel system is more costly than a public defender system from the perspective of governmental expenditure,[41] Taiwan's reform actually means the government spends more resources to avoid type I error because the society as a whole is less tolerant of it.

While the changed distribution of type I and type II errors may be desirable from the system's perspective, the implication of the different litigation strategies adopted by two types of counsel on

[40] We thank a referee for making this suggestion.

[41] In the United States, a great majority of studies indicated that the cost of a public defender system is lower than the cost of an assigned counsel system. See, for example, Silverstein (1965) and Houlden and Balkin (1985). In a more recent study, Iyengar (2006) found not only that public defenders systematically performed better than Criminal Justice Act panel attorneys in the federal courts but also that public defenders cost significantly less than the government-paid private lawyers. While we do not have the information about the exact expenditures for the legal aid system and the public defender's system, it is generally believed that the former is more costly than the latter, as reflected by the compensation received. A public defender receives a monthly salary in the range of NT$100,000–180,000, according to his/her seniority, with the workload of 20–30 cases per month. The same number of cases will cost the government about NT$ 600,000–900,000 if they are handled by the legal aid attorneys, who receive a fee of NT$ 30,000 per case.

an individual case basis is more complicated. Specifically, for a truly innocent defendant, the chance of fighting for acquittal is more valuable and his/her interest is better served if he/she is represented by a legal aid counsel. However, if this defendant is assigned to a public defender, the public defender may try to persuade the defendant to confess. On the other hand, for a truly guilty defendant, his/her best interest may be to confess in exchange for a more lenient penalty rather than to fight for a slim chance of acquittal. However, if this defendant is assigned to a legal aid attorney, the counsel may advise this defendant to fight for acquittal. This "mismatch" problem is particular troublesome when an indigent defendant has no control over which type of counsel will be assigned.

While it is relatively easy to understand the above problem, it is much more difficult to propose sensible solutions. One possibility is to grant indigent defendants a right to choose the type of counsel. We acknowledge that this solution may not be a viable one because it may result in inequitable distribution of cases between public defendants and legal aid attorneys. However, for the purpose of providing indigent defendants with better procedural safeguards, we nevertheless believe that this solution deserves serious consideration. If this proposal cannot be adopted eventually, the only resort may be for an indigent defendant to be aware of the pecuniary incentives and institutional characters hidden behind the preference of each type of counsel and to take them into consideration when discussing litigation strategy with his/her counsel.

It should also be noted that our conclusion that public defenders and legal aid attorneys are essentially equally effective is made with two caveats. First, the criterion of expected sentence may unduly underestimate the value of reducing the likelihood of getting convicted. If most defendants greatly prefer the reduction in conviction probability to the chance of getting a more lenient sentence, assigned counsel may well be more effective than public defenders.[42] Second, it is still possible that the Taiwanese judges, even after the 2003 reform, remain relatively active during the litigation process and their active role mitigates the impact of counsel on case outcome to a certain extent. Prior research suggests that a civil-law judge's activeness in the adjudication process reduces the impact of legal representation on case outcomes, and, therefore, the influence of lawyers on how a case is disposed of in Taiwan may not be as strong as their colleagues' influence in the United States (Huang, 2008). While Taiwan's 2003 reform aims to reduce the judge's activeness in the criminal procedure, we do not measure to what extent the prior-reform activeness has actually been reduced. It is a topic worthy of future research.

6. Conclusion

Taiwan's large-scale legal reform in 2003 has provided an excellent natural experiment-like setting for empirical investigation into many issues related to legal procedures and practices. This paper used trial data from 2004 to 2007 to investigate one of the important issues, namely, whether representation of indigent defendants by different types of legal counsel results in different trial outcomes in a systematic way. Our study indicates that while public defenders and legal aid attorneys are about equally effective, their different strategies will result in different fates of the defendants they represent.

Our study shows that the assigned counsel program is not necessarily superior to the public defender system. In particular, legal aid attorneys decrease the probability of conviction at the expense of longer sentences upon conviction for the same type of crime, and possibly at the expenses of increasing type II error as well. Moreover, the assigned counsel program is more costly than the original public defender system. Our results indicate that the premise of Taiwan's legal reform, that public defenders are inferior, is not correct. Rather, the establishment of the Legal Aid Foundation, and its consequence, simply reflects the willingness of the society as a whole to spend more resources in avoiding the wrongful conviction of indigent defendants simply due to lack of proper representation.

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Appendix A. Regression results under different measures

Dependent Variable: Expected Sentence (in month)

	All cases				Murder and robbery cases only			
	Life = 300/death = 600 3709[a] 0.521[b]		Life & death excluded 3619[a] 0.504[b]		Life = 300/death = 600 1825[a] 0.47[b]		Life & death excluded 1736[a] 0.376[b]	
	Coef.	Std. error	Coef.	Std. error	Coef.	Std. error	Coef.	Std. error
Assigned counsel	0.965	−1.886	1.565	−1.18	0.268	−3.471	2.097	−1.945
Attempt	−55.423	−2.022***	−36.606	−1.285***	−76.606	−3.375***	−46.185	−1.934***
Elapsed time	0.001	−0.013	−0.03	−0.008***	0.076	−0.029***	−0.039	−0.017**
(Elapsed time/100)^2	−0.174	−0.173	0.278	−0.109**	−1.749	−0.474***	0.095	−0.284
Public interest	−4.834	−3.734	−16.016	−2.358***				
Robbery	5.619	−3.31**	0.336	−2.132	4.752	−4.668	−0.97	−2.687
Sexual offense	2.753	−3.731	−7.126	−2.356***				
Class-Four offense	19.148	−3.467***	11.813	−2.148***	12.86	−10.236	11.885	−5.639**
Class-Three offense	46.687	−2.446***	39.024	−1.519***	40.118	−10.111***	38.964	−5.573***
Class-Two offense	120.257	−4.233***	67.612	−2.767***	122.76	−9.525***	72.574	−5.296***
Class-One offense	324.11	−9.025***	−30.709	−12.14**	319.22	−14.658***	−24.175	−14.98*
Constant	33.908	−4.898***	46.565	−3.079***	37.529	−11.304***	51.444	−6.222***

Notes: Standard errors are in parentheses. *, ** and *** represent the significance at the 10%, 5% and 1% nominal levels, respectively. The structure of the sequential steps is depicted in Fig. 1. In addition to the above variables, we also take the cross products of year and locality dummy variables as explanatory variables in the regressions above. Due to the limitation of space, we drop the estimates of these variables from the table.

[a] No. of observations.

[b] Adj. *R*-square.

[42] We thank a referee for suggesting this.

Appendix B. Sequential logit model estimation for comparison between public defenders and assigned counsel (all cases)

	Guilt vs innocence (=0)			Above median penalty vs below median penalty (=0)		
	3709[a] 0.0859[b]			3354[a] 0.2328[b]		
	Odds ratio	Coefficient	Std. error	Odds ratio	Coefficient	Std. error
Assigned counsel	0.696	−0.362	(0.146)**	1.501	0.406	(0.112)***
Attempt	0.993	−0.007	(0.168)	0.013	−4.369	(0.238)***
Elapsed time	0.993	−0.007	(0.001)***	1.003	0.003	(0.001)***
(Elapsed time/100)^2	1.064	0.062	(0.018)***	0.998	−0.002	(0.015)
Public interest	0.500	−0.693	(0.334)**	0.328	−1.114	(0.231)***
Robbery	1.505	0.409	(0.301)	0.703	−0.352	(0.199)*
Sexual offense	0.341	−1.076	(0.328)***	0.973	−0.027	(0.221)
Class-Four offense	0.306	−1.186	(0.294)***	1.045	0.044	(0.216)
Class-Three offense	0.712	−0.339	(0.172)**	1.301	0.263	(0.170)
Class-Two offense	0.589	−0.530	(0.381)	5.306	1.669	(0.290)***
Class-One offense	0.132	−2.022	(0.574)***	0.719	−0.329	(0.499)
Constant		3.718	(0.426)***		0.105	(0.293)

Notes: Standard errors are in parentheses. *, ** and *** represent the significance at the 10%, 5% and 1% nominal levels, respectively. The structure of the sequential steps is depicted in Fig. 1. In addition to the above variables, we also take the cross products of year and locality dummy variables as explanatory variables in the regressions above. Due to the limitation of space, we drop the estimates of these variables from the table.

[a] No. of observations.

[b] Pseudo R^2.

B.1. Sequential logit model estimation for comparison between public defenders and assigned counsel (murder & robbery cases)

	Guilt vs innocence (=0)			above median penalty vs below median penalty (=0)		
No. of observations	1731			1712		
Pseudo R^2	0.0755			0.2679		
	Odds ratio	Coefficient	Std. error	Odds ratio	Coefficient	Std. error
Assigned counsel	0.500	−0.693	(0.248)***	1.581	0.458	(0.165)***
Attempt	0.781	−0.248	(0.255)	0.009	−4.695	(0.301)***
Elapsed time	0.993	−0.007	(0.002)***	1.000	0.000	(0.002)
(Elapsed time/100)^2	1.040	0.040	(0.024)*	1.029	0.029	(0.037)
Robbery	1.877	0.630	(0.324)*	0.714	−0.337	(0.226)
Class-Four offense	0.000	−17.358	(0.633)***	0.691	−0.369	(0.447)
Class-Three offense	0.000	−16.533	(0.640)***	0.833	−0.183	(0.435)
Class-Two offense	0.000	−16.314	(0.607)***	4.468	1.497	(0.445)***
Class-One offense	0.000	−18.227	(0.789)***	0.500	−0.693	(0.627)
Constant	–	–			0.542	(0.494)

Note: Standard errors are in parentheses. *, ** and *** represent the significance at the 10%, 5% and 1% nominal levels, respectively. In addition to the above variables, we also take year and locality dummy variables as explanatory variables in the regressions above. Due to the limitation of space, we drop the estimates of these variables from the table. Due to collinearity in this subsample, we remove the constant term in the "Guilt vs Innocence" regression.

Appendix C. Multinomial logit model estimation for comparison between public defenders and assigned counsel (all cases)

No. of observations	3709			
Pseudo R^2	0.1841			
	Innocence vs conviction—lighter penalty		Innocence vs conviction—severer penalty	
	Coefficient	Std. error	Coefficient	Std. error
Assigned counsel	−0.562	(0.158)***	−0.203	(0.156)
Attempt	1.184	(0.188)***	−3.122	(0.274)***
Elapsed time	−0.008	(0.001)***	−0.005	(0.001)***
(Elapsed time/100)^2	0.059	(0.020)***	0.052	(0.019)***
Public interest	−0.351	(0.368)	−1.419	(0.370)***
Robbery	0.554	(0.336)*	0.228	(0.330)
Sexual offense	−1.181	(0.363)***	−1.237	(0.355)***
Class-Four offense	−1.317	(0.314)***	−1.329	(0.313)***
Class-Three offense	−0.641	(0.193)***	−0.393	(0.192)**
Class-Two offense	−1.211	(0.434)***	0.432	(0.436)
Class-One offense	−2.050	(0.633)***	−2.286	(0.623)***
Constant	3.053	(0.462)***	3.158	(0.460)***
Hypothesis	The coefficients of Assigned Counsel in "Innocence vs Lighter Penalty" and "Innocence vs Severer Penalty" are the same			
	Wald Test Statistic = 10.89		p-value = 0.0010	

Notes: Standard errors are in parentheses. *, ** and *** represent the significance at the 10%, 5% and 1% nominal levels, respectively. Three different choices are depicted in Fig. 1. In addition to the above variables, we also take the cross products of year and locality dummy variables as explanatory variables in the regressions above. Due to the limitation of space, we drop the estimates of these variables from the table.

C.1. Multinomial logit model estimation for comparison between public defenders and assigned counsel (murder & robbery cases)

No. of observations	1825			
Pseudo R^2	0.2072			
	Innocence vs conviction—lighter penalty		Innocence vs conviction—severer penalty	
	Coefficient	Std. error	Coefficient	Std. error
Assigned counsel	−0.963	(0.262)***	−0.526	(0.262)**
Attempt	1.225	(0.308)***	−3.451	(0.378)***
Elapsed time	−0.007	(0.002)***	−0.006	(0.002)***
(Elapsed time/100)^2	0.038	(0.030)	0.032	(0.026)
Robbery	0.800	(0.357)**	0.508	(0.351)
Class-Four offense	−21.165	(0.766)***	−21.638	(0.644)***
Class-Three offense	−20.497	(0.764)***	−20.740	(0.636)***
Class-Two offense	−20.852	(0.801)***	−19.372	(0.708)***
Class-One offense	−21.931	(0.628)***	–	–
Constant	23.426	(0.908)	23.947	(0.819)***
Hypothesis	The coefficients of Assigned Counsel in "Innocence vs Lighter Penalty" and "Innocence vs Severer Penalty" are the same			
	Wald Test Statistic = 7.36		p-value = 0.0067	

Note: Standard errors are in parentheses. *, ** and *** represent the significance at the 10%, 5% and 1% nominal levels, respectively. In addition to the above variables, we also take year and locality dummy variables as explanatory variables in the regressions above. Due to the limitation of space, we drop the estimates of these variables from the table. Due to collinearity in this subsample, we remove the Class-One Offense in the "Innocence vs Conviction—Severer Penalty" regression.

Appendix D. Logit model estimation for comparison of the influence on appeal between public defenders and assigned counsel (all cases)

No. of observations	338			3345		
Pseudo R^2	0.1167			0.0768		
	If conviction = 0			If conviction = 1		
	Odds ratio	Coefficient	Std. error	Odds ratio	Coefficient	Std. error
Assigned counsel	0.982	−0.012	(0.344)	1.619	0.482	(0.102)***
Attempt	0.374	−0.983	(0.411)**	0.677	−0.390	(0.107)***
Elapsed time	0.996	−0.004	(0.003)	1.004	0.004	(0.001)***
(Elapsed time/100)^2	1.065	0.063	(0.048)	0.985	−0.015	(0.010)
Public interest	0.818	−0.201	(0.965)	0.475	−0.744	(0.200)***
Robbery	0.671	−0.398	(0.863)	0.641	−0.444	(0.183)**
Sexual offense	0.530	−0.635	(0.949)	0.538	−0.619	(0.202)***
Class-Four offense	0.698	−0.360	(0.690)	1.782	0.578	(0.182)***
Class-Three offense	1.070	0.068	(0.375)	1.686	0.522	(0.130)***
Class-Two offense	0.783	−0.245	(1.111)	2.954	1.083	(0.233)***
Class-One offense	0.931	−0.071	(1.634)	1.619	0.536	(0.265)**
Constant		4.022	(1.461)***		0.482	(0.102)***

Notes: The dependant variable is a dummy (appeal = 1; no appeal = 0). Standard errors are in parentheses. *, ** and *** represent the significance at the 10%, 5% and 1% nominal levels, respectively. In addition to the above variables, we also take year and locality dummy variables as explanatory variables in the regressions above. Due to the limitation of space, we drop the estimates of these variables from the table.

D.1. Logit model estimation for comparison of the influence on appeal between public defenders and assigned counsel (murder & robbery cases)

No. of observations	97			1692		
Pseudo R^2	0.2567			0.0675		
	If conviction = 0			If conviction = 1		
	Odds ratio	Coefficient	Std. error	Odds ratio	Coefficient	Std. error
Assigned counsel	0.443	−0.815	(0.695)	2.103	0.743	(0.159)***
Attempt	0.223	−1.502	(0.996)	0.639	−0.448	(0.142)***
Elapsed time	0.994	−0.006	(0.005)	1.004	0.004	(0.002)**
(Elapsed time/100)^2	1.069	0.067	(0.059)	0.971	−0.029	(0.034)
Robbery	0.931	−0.071	(1.156)	0.676	−0.391	(0.207)*
Class-Four offense	0.686	−0.377	(2.229)	1.232	0.209	(0.432)
Class-Three offense	1.067	0.065	(2.197)	1.175	0.162	(0.427)
Class-Two offense	1.006	0.006	(1.882)	2.304	0.835	(0.401)**
Constant	–	–		2.103	0.852	(0.482)**

Note: The dependant variable is a dummy (appeal = 1; no appeal = 0). Standard errors are in parentheses. *, ** and *** represent the significance at the 10%, 5% and 1% nominal levels, respectively. In addition to the above variables, we also take year and locality dummy variables as explanatory variables in the regressions above. Due to the limitation of space, we drop the estimates of these variables from the table. Due to collinearity in this subsample, we remove the constant term in the "Innocence (If conviction = 0)" regression.

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