

## 6 To tear down or not to tear down?

### An empirical study of boundary encroachment cases in Taiwan

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#### Introduction

In civil law countries, unlike in common law jurisdictions, boundary encroachment and adverse possession are different issues,<sup>2</sup> as many civil codes contain separate doctrines for them. In 2009, the Taiwan Civil Code, including its stipulations for boundary encroachment (Articles 796, 796–1 and 796–2), was amended. Specifically, the current doctrines are as follows: the entitlement of the neighbor (whose land is trespassed) is generally protected by “the property rule”<sup>3</sup> when the encroachment is intentional or grossly negligent. The entitlement, however, is only protected by “the liability rule”<sup>4</sup> if the neighbor fails to promptly notify the negligent trespasser of her disapproval upon being aware of the trespass. And under the liability rule, the neighbor can either request that the encroacher purchase “the part of the trespassed land” and “the odd lot caused by the trespass” at a “reasonable price,” or request payment for her losses. Pursuant to the newly enacted Article 796–1, if the trespass is unintentional, the court, after taking into account the public interests and the interests of the two parties, may switch from the property rule (removal) to the liability rule (preservation). The boundary encroachment doctrines apply to residential buildings and apply *mutatis mutandis* to other types of construction that are “similarly valuable” (Article 796–2).

This chapter empirically investigates how district courts in Taiwan employ the discretion provided by Article 796–1—specifically, whether courts tend to make efficiency-enhancing decisions. The property rule is generally preferred in property law.<sup>5</sup> From an *ex ante* viewpoint,<sup>6</sup> this makes economic sense<sup>7</sup> as security of property rights encourages owners to make investments, and voluntary transactions backed by the property rule generally ensure Pareto efficiency. Nonetheless, if the property rule is enforced to its logical limit, *ex post* inefficiency may occur. For instance, suppose a homeowner’s house encroaches over the boundary by an inch due to an error made by a surveyor; in that case, the encroaching part of her house (often where the pillars are located) will be torn down by court officers upon request of her neighbor after a judgment that strictly enforces the property rule. As the value of the house is often much higher than that of one square inch of land, from an *ex post* viewpoint<sup>8</sup> the removal decision is inefficient. Courts in various jurisdictions are likely to draw on good faith or equity doctrines to preserve

the encroaching building, perhaps ordering the no-fault trespasser to compensate her neighbor instead.<sup>9</sup> Henry Smith calls it the “safety valve” of private law.<sup>10</sup> Taiwan’s law is unique in that the legislators have tailor-made a safety valve in the boundary encroachment context. This chapter examines whether courts have used the safety valve power to make welfare-improving decisions.

My study can be put into the broader context of exploring whether career judges in a civil law jurisdiction tend to make efficient decisions. Whether common law courts tend to make efficient laws is famously considered in Judge Posner’s first edition of *Economic Analysis of Law*,<sup>11</sup> and discussed in many works in the past several decades.<sup>12</sup> Civil law courts have less rule-making discretion than their common law counterparts do,<sup>13</sup> but judges in civil law countries still have room to interpret the civil code, and oftentimes have discretion in determining the outcomes of the cases at hand, for example, in a boundary encroachment dispute. In my other works, I have found mixed evidence of the efficiency-mindedness of judges in Taiwan. On the one hand, in co-ownership partition cases, judges in Taiwan tend to take post-partition land value into account and wisely choose between partition by sale and partition in kind.<sup>14</sup> On the other hand, in unjust enrichment cases, judges in Taiwan do not use market value as a benchmark, and they suffer from the anchoring effect.<sup>15</sup> This study provides further evidence of judicial behaviors in Taiwan.

Using the population of boundary encroachment cases in Taiwan during over three years in logistic regression models, I find that the size of the encroached land and the culpability of the trespasser are the major determinants of judicial decisions to remove or preserve the encroaching buildings. Specifically, when the size of encroached land is small, judges tend to preserve the buildings and order compensation. In the eight cases in which the trespassers were found to be grossly negligent, courts ordered removal. In the only case in which the trespasser was found not to be at fault, the house was preserved. The statistical significance of the first factor (land size) suggests that courts in Taiwan emphasize efficiency-relevant factors when using their discretion.

This chapter is structured as follows. The next section, Research questions and methodologies, elaborates the research questions and sets out the specifications of the logistic regression models. The following section, Data, summarizes the pertinent data. The section thereafter, Findings and discussions, reports the findings and discusses their implications. The final section concludes.

## Research questions and methodologies

### *Judicial behaviors in boundary encroachment cases*

A boundary encroachment dispute by definition involves at least two parcels of land. In this chapter, I shall call the trespasser’s land “encroacher’s land,” and “neighbor’s land” refers to the adjacent land that has been encroached on. They are designated as A and B, respectively, in Figure 6.1. The encroacher’s building generally does not cover the whole plot (A). The part of the land upon which the building is erected is called “building site” and marked as C. The specific part of land B where the building has encroached is called the “encroached land” and marked as D.

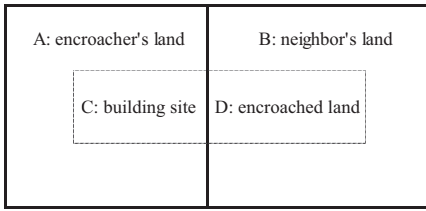


Figure 6.1 Illustration of terms used in boundary encroachment disputes

Pursuant to the stipulations in the Taiwan Civil Code, when Article 796–1 of the Taiwan Civil Code applies, the default is removal. In other words, judges must consider public interests and both parties' interests when determining whether to switch track from removal to preservation. There could be public interests for removal or preservation,<sup>16</sup> but courts do not always discuss both the pros and cons of removal. As a result, a dummy variable on “removal (or preservation) for the public interest” would suffer from a serious endogeneity problem. A similar problem would arise regarding the private interests of the two parties. Consequently, in the regression models I use to tease out the determinants of the judicial decisions, I cannot rely on the reasoning offered in the judgments. Rather, more objective factors like the value and size of the encroached land will be used. That being said, in the penultimate section I will analyze and discuss briefly how judges reason regarding the public and private interests.

My first conjecture regarding the determinants of the removal–preservation decision is that the (relative) sizes of  $A$ ,  $B$ ,  $C$ , and  $D$  (in Figure 6.1) matter. Specifically, the size of the encroached land ( $D$ ) should be critical. The ratio of  $C/(C + D)$  should also concern the judges, as a low ratio may suggest negligence, or even gross negligence. In addition, the ratio of  $B/D$  should also matter. To paraphrase regulatory takings parlance, a high ratio suggests that the trespasser is going too far, or, the trespass may have deprived all the “economically viable use” of the neighbor’s land. As it turns out, courts in Taiwan have focused predominantly on the size of the encroached land ( $D$ ), as information regarding the land size of  $A$ ,  $B$ , and  $C$  is available in only three, twenty-seven, and eight observations, respectively. As a result, the ratios of  $B/D$  are known in only 24 observations, and the ratios of  $C/(C + D)$  are available in only a handful of observations. I will thus only be able to use the size of  $D$  (available in all but one observations) in the regression models.<sup>17</sup> In Figure 6.4, however, I will plot the judicial decisions by the ratio of  $B/D$  to see whether my conjecture might hold.

Article 796–1 of Taiwan Civil Code prescribes that interests of both parties have to be considered. From the law-and-economics standpoint, this rule could be interpreted as asking judges to compare the changes in value of the encroaching building and the encroached land under removal and preservation. Put differently, assuming that the expense of tearing down the encroaching part of the building is negligible, preservation is warranted only if the decrease in building value (resulting from removal) is larger than the alternative use value of the encroached land.<sup>18</sup>

If judges in Taiwan aim to increase ex post social welfare, they will take into account the values of the encroaching buildings and the encroached land. Nonetheless, while every registered building in Taiwan is assigned a tax value, courts appear to never consider the tax value or the market value of the encroaching buildings. Information regarding land value is available in the judgments, and presumably courts are consciously and subconsciously affected by the land value. My second hypothesis is thus that the higher the land value, the more judges are inclined to order removal. I will not be able to test the effect of building value on judicial behaviors, but I suspect that building value influences judges' decisions only in marginal cases (e.g. extremely shabby or luxurious buildings). That being said, as a rough proxy of building value my regression models include four dummy variables that control for the type of construction (more on this below).

The third hypothesis is that the level of culpability on the trespasser's side (no fault, negligence, and gross negligence) influences the courts' decisions. Civil law judges generally prioritize the pursuit of fairness and justice in cases. It is thus reasonable to posit that a grossly negligent trespasser is unlikely to persuade the judge to preserve her house, while it is easier for a no-fault trespasser to do so. As it turns out, in 71 percent of the observations, the courts do not specify in the judgments whether the trespasser is (grossly) negligent or without fault. Hence, this hypothesis cannot receive the examination that I have hoped for.

### *Logistic regression models*

To test the above hypotheses, I run several logistic regression models. The dependent variable is whether courts order removal ( $=0$ ) or preservation ( $=1$ ).<sup>19</sup> The independent variables include: size of the encroached land (in natural log); the official land value of the encroached land (in natural log),<sup>20</sup> the numbers of plaintiff and defendant lawyers (both in square root); four dummy variables controlling for construction types: residential buildings, residential buildings and fixtures, non-residential buildings, and non-residential buildings and fixtures, with "fixtures only" as the baseline variable; three dummy variables controlling the culpability of the trespassers:<sup>21</sup> grossly negligent, negligent, and no fault, with "courts not taking into account the culpability" as the baseline variable.<sup>22</sup> My models try to control for the variances in economic development. Instead of using town fixed effects that would deplete the degree of freedom or county fixed effects that would mix rich towns with poor towns, I deal with this issue in two ways. First, I include a continuous variable that captures the population density (persons per square kilometer in natural log) of the town where the land is located. Alternatively, following Hou *et al.*<sup>23</sup> I categorize towns and boroughs (under counties and cities, respectively) in Taiwan into seven tiers based on sociodemographic variables (including age, education, industrial structure, occupation, and personal income). Stratum 1 is the most developed, while stratum 7 is the least. My data have few observations in strata 6 and 7, so I combine them and use this as the baseline. Five other dummy variables capture strata 1, 2, 3, 4, and 5, which represent central business district, industrial and business districts, growing towns, towns with traditional industries, and less-developed towns, respectively. Year fixed effects are also included. The models take the following form:

$$D = \alpha + \beta PT + \delta LD + \theta CL + \eta TY + \rho YR + \gamma ST + \varepsilon$$

where  $D$  is the judicial decisions;  $PT$  is two variables controlling the number of lawyers on the two sides;  $LD$  is size and value of the encroached land;  $CL$  are three variables capturing the culpability of the trespassers;  $TY$  is a group of dummy variables controlling for the type of construction;  $YR$  are dummy variables indicating the year of the case.  $ST$  is the strata of the towns/cities where the land in question is located (or, alternatively, the population density variable). The coefficients to be estimated are  $\alpha, \beta, \delta, \theta, \eta, \rho,$  and  $\gamma$ ;  $\varepsilon$  is an error term.

## Data

I collected and coded all district court cases between July 22, 2009 (when Article 796–1 of Taiwan Civil Code came into effect), and November 4, 2012. After irrelevant cases are discarded, my data set contains 157 observations. I focus on decisions by the court of first instance, because, as emphasized by Guthrie, Rachlinski, and Wistrich (2007: 4), most cases are handled by district/trial courts and many of these decisions are final.<sup>24</sup>

As Figure 6.2 and Table 6.1 show, the area of most encroached land parcels is between 1 square meter and 100 m<sup>2</sup>. The mean is 17 m<sup>2</sup>.

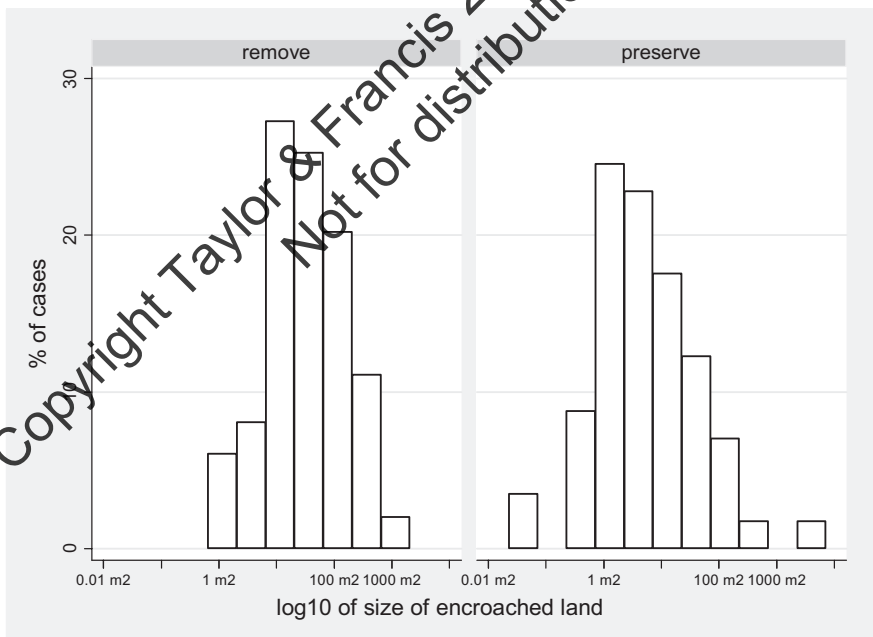


Figure 6.2 Court decision and size of encroached land

Note:  $N = 156$ . The left figure contains 99 observations, whereas the right figure contains 57 observations.

Table 6.1 Summary statistics of variables used in logistic regression models  
 Panel A Area of encroached land, by court decision

	<i>Median</i>	<i>25 percentile</i>	<i>75 percentile</i>	<i>Mean</i>	<i>St. dev.</i>	<i>Minimal 3 obs.</i>	<i>Maximal 3 obs.</i>	<i>N</i>
Remove	33	11	97	93	157	0.65; 1.01; 1.2	857; 848; 532	99
Preserve	4	2	16	98	536	0.02; 0.06; 0.32	4,035; 526; 158	57
All cases	17	4	63	95	345	0.02; 0.06; 0.32	4,035; 857; 848	156

Panel B Other continuous variables

<i>Variable names</i>	<i>Mean</i>	<i>St. dev.</i>	<i>Max.</i>	<i>Min.</i>
Population density ( persons/km <sup>2</sup> )	4,051	6,064	40,671	17
Number of plaintiffs' lawyers	0.95	0.82	4	0
Number of defendants' lawyers	0.89	1.1	7	0

Note *N* = 157.

Panel C Categorical variables

<i>Variable types and names</i>	<i>Percentage</i>
<b>Culpability</b>	
N/A	71.3
No fault	0.6
Negligent	23.0
Grossly negligent	5.1
<b>Construction types</b>	
residential buildings	32.5
residential buildings and fixtures	11.5
non-residential buildings	39.5
non-residential buildings and fixtures	10.8
other fixtures	5.7
<b>Strata</b>	
1	8.6
2	13.8
3	27.6
4	19.8
5	21.6
6	4.3
7	4.3
<b>Year</b>	
2009	7.0
2010	25.5
2011	42.0
2012	25.5

Note *N* = 157.

## Findings and discussion

Table 6.2 reports results of four regression models. Models (1) and (3) include the official value of the encroached land as an independent variable, while Models (2) and (3) do not because information on official land value is missing in one-third of the observations. In addition, Models (1) and (2) use population density to control for variance in economic development, while Models (3) and (4) use strata dummies. Strata dummy variables are not used in all models because information on the exact location of the land (and thus the stratum of the town where the land parcel is located) is not available in 26 percent of the observations.

The regression results clearly indicate that the major determinant of the judicial decision to remove or preserve is the size of the encroached land. The size variable is statistically significant at the 0.05, 0.01, and 0.001 levels, and the sign of its coefficient is negative, suggesting that courts tend to preserve the encroaching buildings when the encroached land is small. This finding is foreshadowed in Figure 6.2: in the removal cases, the size of most parcels range from 10 to 100 m<sup>2</sup> or larger, while in the preservation cases, the size of most parcels range from 1 to 10 m<sup>2</sup> or smaller.

Moreover, the culpability of trespassers appears to matter a lot. All (eight) grossly negligent trespassers see their encroaching house removed, whereas the trespasser who encroaches through no fault of his own is rewarded by a preservation verdict. The variable negligence is statistically significant at the 0.05, 0.01, and 0.001 levels. The message it conveys, however, is ambiguous. The baseline variable is “culpability unknown from judgments.” Thus, the interpretation of this result is that courts tend to preserve the encroaching building when the trespassers are negligent, as compared to when their culpability is unclear in the judgments. This is not a very informative finding.

The variable that captures the official value of land is not statistically significant, and the signs of the coefficient of this variable in Models (2) and (4) are different. As suggested above, official land value matters when compared to building value. Considering land value alone would not produce sound cost–benefit analysis. Given that my models (and the judicial decisions themselves) do not take into account building value, it is not surprising that official land value does not have a clear and strong impact on judicial decisions.

Figure 6.3 plots the relationships among size of encroached land, culpability, and judicial decisions. It shows that, first, the minimum size of encroached land in gross negligence cases is 14 m<sup>2</sup>, while in the only no-fault case the encroached land size is 0.02 m<sup>2</sup>. In addition, in a majority of cases where the size of encroached land is around 1 m<sup>2</sup>, the courts order preservation.

Above I have conjectured that the ratio of  $D/B$  should have concerned judges. It is unclear whether most judges have the ratio in mind when determining whether to preserve the building. In only 24 observations do the judgments provide enough information about the ratio. Figure 6.4 plots the ratio with the judicial decision and culpability. It demonstrates that in the majority of cases the ratios are below 20 percent. Two out of three observations with greater than 75 percent ratio are

Table 6.2 Results of logistic regression models

*Dependent variable: court's decisions regarding the encroaching construction*  
*0 = remove; 1 = preserve*

<i>Variable names</i>	<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>
Size of encroached land (in natural log)	0.550*** (0.138)	-0.564*** (0.202)	-0.658*** (0.183)	-0.635* (0.320)
Official value of the encroached land (in natural log)	-0.0875 (0.166)	-0.145 (0.266)	-0.182 (0.285)	0.498 (0.581)
Population density (in natural log)	0.168 (0.423)	0.226 (0.594)	0.189 (0.540)	0.341 (1.013)
No. of plaintiff lawyers (in square root)	-0.326 (0.365)	-0.121 (0.504)	-1.088+ (0.558)	-1.201 (0.908)
No. of defendant lawyers (in square root)				
Culpability of the trespasser				
Grossly negligent		Predict removal perfectly		
Negligent	2.100*** (0.532)	4.759*** (0.859)	2.460** (0.753)	5.437* (2.154)
No fault		Predict preservation perfectly		
Type of construction				
Residential buildings	1.029 (1.188)	0.183 (1.571)	0.974 (2.349)	-0.509 (2.349)
Residential buildings and fixtures	0.881 (1.321)	-1.134 (1.932)	0.915 (1.733)	-3.831 (3.154)
Non-residential buildings	1.440 (1.167)	0.0974 (1.528)	1.370 (1.527)	-1.079 (2.238)

*Continued*



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Table 6.2 (Continued)

Variable names	(1)	(2)	(3)	(4)
Non-residential buildings and fixtures	0.227 (1.404)	Predict removal perfectly	-1.214 (2.011)	Predict removal perfectly
Year fixed effects	Yes	Yes	Yes	Yes
Strata fixed effects	No	No	Yes	Yes
Constant	0.165 (1.683)	-1.944 (2.549)	-3.610 (2.204)	-4.385 (5.356)
N	147	80	108	58
Pseudo R <sup>2</sup>	0.274	0.319	0.397	0.507
Rate of correct prediction	76%	76%	83%	83%

Note: Coefficients in cells; standard errors in parentheses.  
 \*\*\* $p < 0.001$ , \*\* $p < 0.01$ , \* $p < 0.05$ , + $p < 0.1$

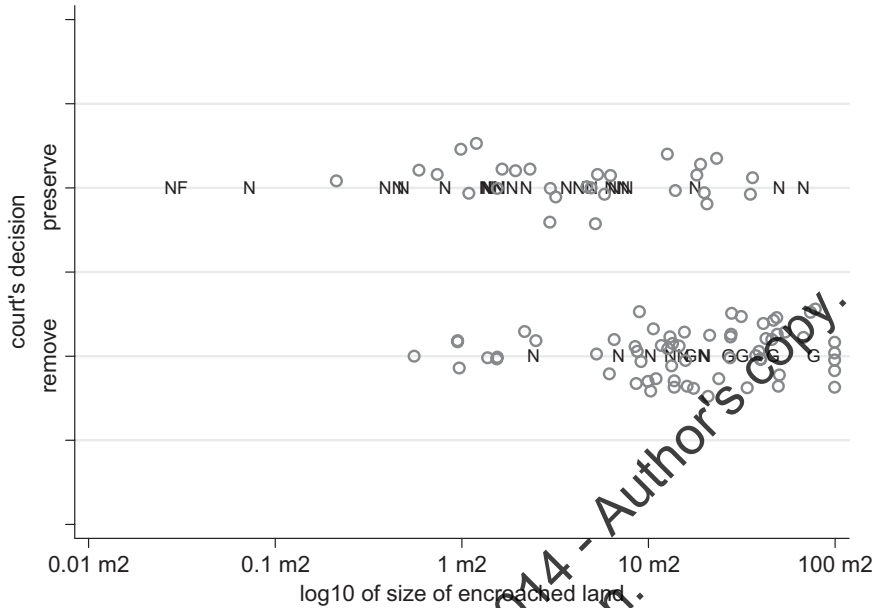


Figure 6.3 Size of encroached land, culpability, and court decisions

Note:  $N = 126$ . NF means the trespasser has no fault; N means the trespasser is negligent; G means the trespasser is grossly negligent. The open circles represent cases where the culpability of the trespasser is not revealed in the judgments. Observations in which the area of the encroaching land parcel is more than 100 m<sup>2</sup> are omitted from this figure. In 51 of the 57 preservation cases, the encroaching land areas are less than 100 m<sup>2</sup>.

explicitly identified as gross negligence by the court. The top-right case leads to preservation because the area of encroached land is only 2 m<sup>2</sup>.

Finally, as mentioned above, Article 796–1 of the Taiwan Civil Code requires that courts take into account public interests and interests of both parties when determining whether to remove or preserve the encroaching buildings. (Read: courts please conduct cost–benefit analysis.) While the two types of interests cannot be put in the regression models, it is still worth analyzing the pattern of judicial discourse in preservation cases. These cases are more interesting because removal is the default; thus, courts would need to find strong pro-preservation evidence to change the default option. As Table 6.3 shows, preservation is seldom ( $3/57 = 5$  percent) due to concerns over public interest. Rather, in 75 percent ( $43/57$ ) of the cases (Cell B), the preservation decision is at least partially based on the fact that preservation will cause the encroached party little harm. A typical case in Cell B concerns a small encroached land parcel. In the 11 observations in Cell A, there is no pro-preservation public interest, and harm to the plaintiff caused by the preservation may not be small. The court orders preservation because removal would cause great harm to the trespassers.

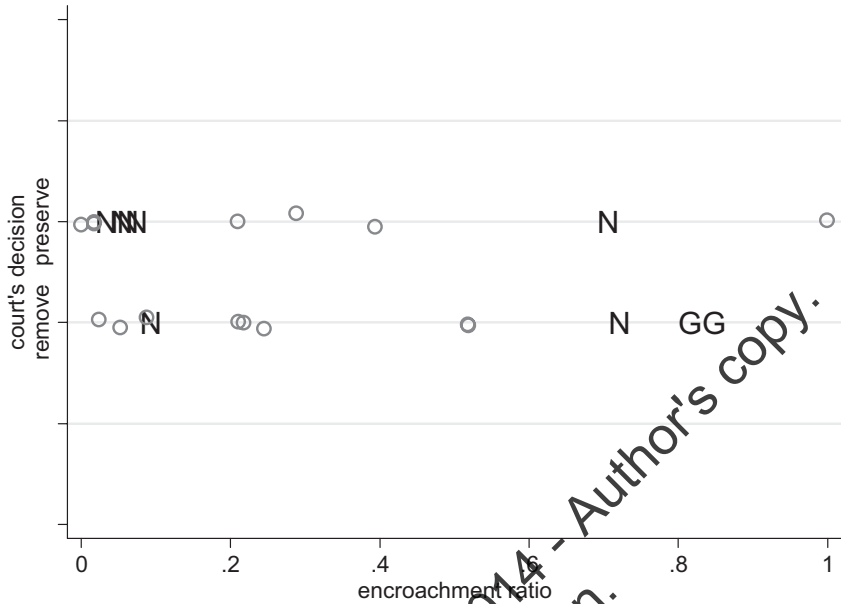


Figure 6.4 Encroachment ratio, culpability, and court decisions

Note: *N* = 24. *N* means the trespasser is negligent, *G* means the trespasser is grossly negligent. The open circles represent cases where the culpability of the trespasser is not revealed in the judgments. Encroachment ratio =  $B/D$  (see Figure 6.1)

Table 6.3 Private and public interests in preservation cases

<i>Preservation is pro-public interest</i>	<i>Preservation does little harm to the plaintiff</i>		<i>Total</i>
	<i>No</i>	<i>Yes</i>	
<i>No</i>	(A) 11	(B) 43	54
<i>Yes</i>	(C) 1	(D) 2	3
<b>Total</b>	12	45	57

### Conclusion

This chapter finds that in determining whether to remove or preserve an encroaching building, the size of the encroached land is the key determinant. That is, limited infringement is likely to lead to preservation and compensation (from the trespasser to the landowner), rather than an injunction to tear down the building. While I do not have data on the value of the encroaching buildings and how much their value will decline due to removal, given that the areas of encroached land

in preservation cases are mostly below 10 m<sup>2</sup>, it is highly likely that the value of alternative use of the land is less than the lost value of the building following removal. Hence, at least from an ex post viewpoint, courts in Taiwan appear to make social-welfare-enhancing decisions. This is another piece of evidence that career judges in civil law countries, while rarely open advocates of economic analysis and efficiency, make efficiency-compatible adjudications.

## Notes

- 1 This book chapter draws on two previous articles of mine in Chinese: Yun-chien Chang, *An Economic Analysis of Boundary Encroachment Law in Taiwan*, 12 ACADEMIA SINICA LAW JOURNAL 153–201 (2013); Yun-chien Chang, *An Empirical Study of Boundary Encroachment Litigation*, 14 ACADEMIA SINICA LAW JOURNAL, forthcoming (2014).
- 2 American scholars generally discuss boundary encroachment in the context of adverse possession. See, e.g., Lee Anne Fennell, *Efficient Trespass: The Case for “Bad Faith” Adverse Possession*, 100 NW. U. L. REV. 1037, 1077 (2006); Thomas J. Miceli & C.F. Sirmans, *An Economic Theory of Adverse Possession*, 15 INT’L REV. L. & ECON. 161 (1995). For a comparative and economic analysis of the boundary encroachment doctrines in Europe and the US, see Matteo Rizzolli, *Building Encroachments*, 5 REV. L. & ECON. 661, 679–91 (2009).
- 3 The definition of the property rule is that “the state guarantees property right assignments against infringement through the threatened use of its police powers.” Louis Kaplow & Steven Shavell, *Property Rules Versus Liability Rules: An Economic Analysis*, 109 HARV. L. REV. 713, 715 (1996).
- 4 “A liability rule gives at least one party an option to take an entitlement non-consensually and pay the entitlement owner some exercise price.” Ian Ayres & J. M. Balkin, *Legal Entitlements as Auctions: Property Rules, Liability Rules, and Beyond*, 106 YALE L.J. 703, 704 (1996).
- 5 See, e.g., Henry E. Smith, *Property and Property Rules*, 79 N.Y.U. L. REV. 1719, 1722 (2004); Richard A. Epstein, *A Clerk’s View of the Cathedral: The Dominance of Property Rules*, 106 YALE L.J. 2091, 2092 (1997); Richard R.W. Brooks, *The Relative Burden of Determining Property Rules and Liability Rules: Broken Elevators in the Cathedral*, 97 NW. U. L. REV. 267 (2002); Robert C. Ellickson, *Adverse Possession and Perpetuities Law: Two Demons in the Libertarian Model of Property Rights*, 64 WASH. U. L. Q. 723 (1986); and M. Rose, *The Shadow of the Cathedral*, 106 YALE L.J. 2175 (1997).
- 6 Economic analysis of law mainly uses the ex ante viewpoint. See Richard R.W. Brooks & Warren F. Schwartz, *Legal Uncertainty, Economic Efficiency, and the Preliminary Injunction Doctrine*, 58 STAN. L. REV. 381 (2005); Henry E. Smith, *Law and Economics: Realism or Democracy?* 32 HARV. J.L. & PUB. POL’Y 127 (2009).
- 7 See Yun-chien Chang, *Optional Law in Property: A Theoretical Critique*, working paper; Smith, *supra* note 6; Rose, *supra* note 6.
- 8 For comparison of the ex ante and ex post viewpoints, see Lucian Arye Bebchuk, *Property Rights and Liability Rules: The Ex Ante View of the Cathedral*, 100 MICH. L. REV. 601, 603 (2001).
- 9 In the US, for example, a judicial doctrine called the relative hardship doctrine resembles the stipulation in Article 796–1. See Stewart Sterk, *Strict Liability and Negligence in Property Theory*, 160 U. PA. L. REV. 2129, 2146 (2012).

- 10 See Henry E. Smith, *Institutions and Indirectness in Intellectual Property*, 157 U. PA. L. REV. 2083, 2128–29 (2009); Henry E. Smith, *An Economic Analysis of Law versus Equity* (working paper, available at <http://extranet.isnie.org/uploads/isnie2010/smith.pdf>).
- 11 See generally Richard A. Posner, *ECONOMIC ANALYSIS OF LAW* (1973).
- 12 See, e.g., Paul H. Rubin, *Why Is the Common Law Efficient?* 6 J. LEGAL STUD. 51 (1977); George L. Priest, *Common Law Process and the Selection of Efficient Rules*, 6 J. LEGAL STUD. 65 (1977).
- 13 See Benito Arruñada & Veneta Andonova, *Common Law and Civil Laws as Pro-Market Adaptations*, 26 WASH. U. J.L. & POL'Y 81, 86 (2008).
- 14 See Yun-Chien Chang, *Tenancy in "Anticommons"?: A Theoretical and Empirical Analysis of Co-Ownership*, 4 J. LEGAL ANALYSIS 515 (2012).
- 15 See Yun-Chien Chang *et al.*, *Mimicking the Market or Seduced by Anchors? An Empirical Study of Judicial Behaviors in Real Litigation*, working paper.
- 16 For example, there are cases where the encroaching buildings are also blocking public roads; thus, removal is consistent with the public interest. Conversely, there is a case where the encroaching construction is a facility installed by a power company, the removal of which might expose people in the community to radiation. In that case, the court reasons that preservation of the encroaching features enhances the public interest.
- 17 The null hypothesis is that the size of D does not matter, while the alternative hypothesis is that a larger D pushes courts to maintain the position of removal.
- 18 There might be external costs and benefits—they fall in the domain of public interests. They can be easily added to the equation.
- 19 Among the fifty-seven preservation cases, seven of them are “partial preservation and partial removal.” I have run regression models with only the 50 “100 percent preservation” cases, and the results are essentially the same.
- 20 To be more exact, the official land value used here is the Publicly Announced Land Value (PALV). In most cases, the court uses 80 percent of the PALV as the land value, as it is the landowners’ declared Land Value (DLV). In some cases, courts use PALV or Assessed Current Land Value (ACLV), another official land value. To compare property values across cases, I compute the PALV of the land parcels in all cases, and use the PALV in the regression models. For an introduction of how this official land value is assessed and how it differs from ACLV and DLV, see Yun-Chien Chang, *PRIVATE PROPERTY AND TAKINGS COMPENSATION: THEORETICAL FRAMEWORK AND EMPIRICAL ANALYSIS* 61–62, 96–98 (2013).
- It is also reasonable to use the land value as perceived by courts. I have run all the regression models with an alternative independent variable that reflects the land value used by courts in each case. The results are essentially the same.
- 21 There might be an endogeneity problem with the culpability variables. The judgments do not always contain enough facts for me to independently determine whether the trespassers are grossly negligent. There are certainly gray areas between the two types of negligence, as well as between negligence and no fault. Courts may first decide whether to preserve the construction and then declare in passing whether the trespassers are to blame. Perhaps this is why in most cases the courts do no bother to rule on the culpability of the trespassers—recall that Article 796–1 of Taiwan Civil Code does not specifically require courts to take into account the culpability. I have tried running all the regression models after discarding the culpability dummy variables. Again, the

results are essentially the same, as the variable on land size remains highly statistically significant and other variables insignificant.

- 22 Recall that Article 796–1 of the Taiwan Civil Code is not applicable in intentional boundary encroachment cases.
- 23 See Pei-Chun Hou *et al.*, *The Typology of Townships in Taiwan: The Analysis of Sampling Stratification of the 2005–2006 “Taiwan Social Change Survey”*, 23 SURVEY RESEARCH—METHOD AND APPLICATION 7 (2008).
- 24 See Guthrie, Chris, Jeffrey J. Rachlinski, and Andrew J. Wistrich. 2007. Blinking on the Bench: How Judges Decide Cases. *Cornell Law Review* 93: 1–43.

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