Litigation over Compensation Under Eminent Domain

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Eminent Domain Law

- Empowers the state to acquire private property for public purpose.
- Entitles the owner to compensation equal to the 'market value' of the property
- The market value is determined by using 'similar' properties that have been transacted through voluntary exchanges.
- Acquiring department assesses market value and offers to the owner.
- The owner can accept or reject the offer.
- The owner has right to litigate the compensation amount, if not satisfied with the compensation offered by the condemnor.

Compensation Vs Market Value I

- Compensation is required to be equal to the 'Market' price.
- The differences between the compensation received, on one hand, and the market price, on the other hand, is significantly large, especially for very low and very high value properties, Munch (1976) and Chang (2008);
- Compensation for high-value properties is much greater than their market value;
- Compensation for the low-value properties is significantly less than the market value as determined by researchers.

Compensation Vs Market Value II

- The regressive nature of compensation persists, regardless of whether the compensation is received by accepting the official offer or through the litigation process.
- A study of 798 properties in Chicago by Munch (1976) concludes:

> *"low-valued properties receive less than market value and high-valued properties receive more than market value," and " [a]s a rough approximation, a* $7,000$ *parcel receive about* $5,000$*, a* $13,000$ *property breaks even and a* $40,000$ *property may get two or three times its market value."*

Compensation Vs Market Value III

- For New York City, Chang (2008) concludes:

> *“47 out of 89 condemnees (or 53 percent) were compensated with less than fair market value; 36 condemnees (40 percent) received more than fair market value; 6 condemnees (7 percent) got roughly fair market value. Furthermore, “compensation percentage” (actual compensation divided by the estimated fair market value) is not bell-shaped; 36 condemnees (40 percent) received extreme compensation payments - compensations that are higher than 150 percent or lower than 50 percent of fair market value."*

Issues/Questions addressed

- What is the basis used by the government and courts, for determination of compensation/market price
- Why there is rampant litigation over compensation amount?
- Are gains from litigation different for the high and the low value properties?
- Is the compensation structure under eminent domain laws is regressive?

Empirical Findings I

The Existing Literature

- The ignorance of low-valued property owners (Chang, 2008)
- Poor quality of government lawyers (Munch 1976; and Bell and Parchomovsky, 2007); Owners of high value properties expect to win against poor quality govt. lawyers
- Different precedent values of court awards (Posner, 2003); courts are more careful while adjudicating low value property disputes
- The literature on litigation attributes the existence of, in equilibrium, litigation to different beliefs about litigation outcome or asymmetric information between the parties parties involved. Bebchuk (1984), Schweizer (1989), Spier (1992) and literature see Shavell (2004).

This Paper Argues

There are three main factors accounting for the above-mentioned empirical findings.

- The official incentive structures for
  - the award makers - commonly known as the Land Acquisition Collectors
  - the government lawyers during litigation
- The incentive structure for the owners
- Court technology

Initial Compensation

Consider a property: Let

- S the size, per-square meter
- r^m is the per-unit market rate of the reference property, say per-square-meter.
- V^m the market value. Clearly,

$$V^m = r^m \times S$$

Let,

- $\hat{r}$ be the compensation rate offered by the government. So, the total compensation offered to the owner is

$$\hat{r} \times S.$$

Court Technology I

Let,

r denote the compensation rate awarded by the court/jury.

So, if there is litigation, the final compensation received by the owner is

$$r \times S.$$

However,

- there is uncertainty as to whether r will be greater than $\hat{r}$ or not.
- At $t = 1$, r is a random variable whose distribution depends on
- x, the litigation effort put in by the plaintiff, i.e., the litigant owner
- y, the litigation effort put in by the defendant, i.e., government official lawyers

Court Technology II

- $F(r \mid x, y)$ is the conditional distribution function for r; $r \in [\underline{r}, \bar{r}]$, where $\underline{r} \leq 0 < \bar{r}$.
- $f(r \mid x, y)$ is the associated conditional density function, where

Let

$$E(r \mid x, y) = \int_{\underline{r}}^{\bar{r}} rf(r \mid x, y)dr.$$

That is, $E(r \mid x, y)$ is the expected compensation rate, per-square meter, awarded by the court.

Assumption

For given r^m, $\frac{\partial E(r|x,y)}{\partial x} > 0$, $\frac{\partial^2 E(r|x,y)}{\partial x^2} < 0$, $\frac{\partial E(r|x,y)}{\partial y} < 0$ and $\frac{\partial^2 E(r|x,y)}{\partial y^2} > 0$.

Let

Court Technology III

- $\frac{x^2}{2}$ be the cost of effort function for the plaintiff owner.
- $\frac{y^2}{2}$ be the cost of effort function for the government official.

At litigation, when it comes to choice of efforts,

- Parties play Nash Equilibrium
- For any given y opted by the defendant, the plaintiff's problem is to choose x to solve:

$$\max_{x} \left\{ S \int_{\underline{r}}^{\bar{r}} r f(r \mid r^m, x, y) dr - \frac{x^2}{2} - x_0 \right\}, i.e.,$$

$$\max_{x} \left\{ SE(r \mid r^m, x, y) - \frac{x^2}{2} - x_0 \right\} \tag{2.1}$$

Court Technology IV

- for given x opted by the plaintiff, the defendant department/lawyers solves:

$$\min_{y} \left\{ \lambda \left[SE(r \mid r^m, x, y) + y_0 \right] + \frac{y^2}{2} \right\}, \tag{2.2}$$

  where

  λ is the weight put by the officials on the costs of litigation to the exchequer.

The solution $(x^*(y), y^*(x))$ is identified by the following first order conditions:

Court Technology V

$$S\frac{\partial E(r \mid r^m, x, y)}{\partial x} = x. \tag{2.3}$$

$$-\lambda S\frac{\partial E(r \mid r^m, x, y)}{\partial y} = y, \text{ if } y^*(x) > \underline{x}; \tag{2.4}$$

otherwise, $y^*(x) = \underline{y}$.

$$x^* = x^*(S, r^m, y).$$

$$y^* = x^*(S, r^m, \lambda, x)$$

$\lambda < 1$? I

- Smt. Poonam v. State of Haryana and another (R.F.A. No. 3008 of 2008), the HC of P and H observed

> *"This court is constrained to comment upon the conduct of the State as well as HUDA ...*
>
> *even though they had notice of the fact that the land owners had produced on record various sale deeds showing the consideration paid therein ranging from Rs. 12,00,000/- to Rs. 80,00,000/- per acre, no documentary evidence was led by the State or HUDA to rebut this evidence. ...*
>
> *What is generally seen is that practically no evidence is led by HUDA in any of the cases before the Reference Court and similar is the position with regard to addressing arguments before the higher courts..."*

$\lambda < 1$? II

- State of Haryana and another Vs. Gram Panchayat of village Jharsa and another (R.F.A. No. 2125 of 2010), the HC of P and H observed

> *" What has been experienced in number of cases, which came before this court is that in none of the case(s), wherever HUDA was represented by a counsel, anything was done by him except getting his presence marked.*
>
> *The position is not different even in the proceedings before the court below."*

Market Rate Vs Litigation Payoff I

Suppose

- $\frac{\partial E(r|r^m,x,y)}{\partial r^m} > 0$.
- Let $E(r \mid r^m, x, y) = \phi(r^m)E(r \mid x, y)$, where $\phi'(r^m) > 0$.

Now, the optimization problems are:

$$\max_x \left\{ S\phi(r^m)E(r \mid r^m, x, y)) - \frac{x^2}{2} - x_0 \right\} \quad (3.1)$$

$$\min_y \left\{ \lambda \left[S\phi(r^m)E(r \mid r^m, x, y)) + y_0 \right] + \frac{y^2}{2} \right\}, \quad (3.2)$$

As before $\lambda = 0$ means

$$y^*(r^m, 0, x^*) = \underline{y}, \quad (3.3)$$

But $x^*(r^m, y^*)$ will satisfy

$$S\phi(r^m)\frac{\partial E(r \mid \underline{y}, x^*)}{\partial x} = x^*, \quad (3.4)$$

Market Rate Vs Litigation Payoff II

From (3.4), it can be seen that

$$\frac{dx^*}{dr^m} = \frac{S\phi'(r^m)E_x}{1 - S\phi(r^m)E_{xx}} > 0$$

Lemma

(i) $\frac{dy^*(S,0,x^*)}{dr^m} = 0$, (ii) $\frac{dx^*(S,y^*)}{dr^m} > 0$ *and* (iii) $\frac{dE(r|x^*,y^*)}{dr^m} > 0$.

The result holds even when $1 > \lambda \geq 0$. Moreover,

$$\begin{aligned} \frac{dE(r \mid r^m, x^*(r^m), y^*(r^m))}{dr^m} &= \frac{\partial E(r \mid r^m, x^*, y^*)}{\partial r^m} + \frac{\partial E(r \mid r^m, x^*, y^*)}{\partial x^*}\frac{dx^*(r^m)}{dr^m} \\ &> \frac{\partial E(r \mid r^m, x^*, y^*)}{\partial r^m}. \end{aligned}$$

Market Rate Vs Litigation Payoff III

The net gains for the owner:

$$V^* = S\phi(r^m)E(r \mid x^*(r^m), x^*(r^m)) - \frac{{x^*}^2(r^m, y^*)}{2} - x_0. \tag{3.5}$$

When $1 > \lambda \geq 0$:

Proposition

$\frac{dV^*}{dr^m} = \phi'(r^m)E(r \mid y^*(r^m, 0, x^*), x^*(r^m, y^*)) > 0.$

Market Rate Vs Litigation Payoff IV

An Example

$E(r|r^m, x, y) = \phi(r^m)(ax^{\frac{1}{k}} - by^{\frac{1}{j}})$
$E_x = (\frac{a\phi(r^m)}{k})x^{\frac{1-k}{k}} \quad > 0$
$E_y = (\frac{-b\phi(r^m)}{j})y^{\frac{1-j}{j}} \quad < 0$
$E_{xx} = (\frac{a\phi(r^m)}{k})\left(\frac{1-k}{k}\right)x^{\frac{1-2k}{k}} \quad < 0$
$E_{yy} = (\frac{-b\phi(r^m)}{j})\left(\frac{1-j}{j}\right)y^{\frac{1-2j}{j}} \quad > 0$
$E_{xy} = E_{yx} = 0$
The FOCs for calculating x^*, y^*

$$SE_x = x \tag{3.6}$$

$$-S\lambda E_y = y \tag{3.7}$$

Solving (24) and (25) simultaneously , we get

$y^* = \left(\frac{b\lambda\phi(r^m)S}{j}\right)^{\frac{j}{2j-1}}$

Market Rate Vs Litigation Payoff V

$$x^* = \left(\frac{aS\phi(r^m)}{k}\right)^{\frac{k}{2k-1}}$$

$$\frac{dy^*}{dr^m} = \left(\frac{b\lambda S}{j}\right)^{\frac{j}{2j-1}} \left(\frac{j}{2j-1}\right) (\phi(r^m))^{\frac{1-j}{2j-1}} \phi^{'}(r^m)$$

$$\frac{dx^*}{dr^m} = \left(\frac{aS}{k}\right)^{\frac{k}{2k-1}} \left(\frac{k}{2k-1}\right) (\phi(r^m))^{\frac{1-k}{2k-1}} \phi^{'}(r^m)$$

Market Rate Vs Litigation Payoff I

RESULT 1: For the class of asymmetric functions defined above, ratio $\frac{y^*}{x^*}$ is decreasing in r^m

$$R = \frac{x^*}{y^*} = \frac{\left(\frac{a}{k}\right)^{\frac{k}{2k-1}} (S)^{\left[\frac{k}{2k-1} - \frac{j}{2j-1}\right]} (\phi(r^m))^{\left[\frac{k}{2k-1} - \frac{j}{2j-1}\right]}}{\left(\frac{b\lambda}{j}\right)^{\frac{j}{2j-1}}}$$

This ratio

- Increases with $\phi(r^m)$ if $j > k > 1$ (because then $\frac{k}{2k-1} > \frac{j}{2j-1}$).
- Decreases with λ (increased incentives for the government lawyer)
- Decreases with b (increased competence for the government lawyer)
- Increases with a (increased competence for the litigant lawyer)

Market Rate Vs Litigation Payoff II

RESULT 2: Effect of r^m on E^* :

$$\frac{dE^*}{dr^m} = (\phi(r^m))^{\frac{1}{2k-1}}\phi^{'}(r^m)(S)^{\frac{1}{2k-1}}\left(\frac{a}{k}\right)^{\frac{2k}{2k-1}}\left(\frac{k}{2k-1}\right) - (\phi(r^m))^{\frac{1}{2j-1}}\phi^{'}(r^m)(\lambda S)^{\frac{1}{2j-1}}\left(\frac{b}{j}\right)^{\frac{2j}{2j-1}}\left(\frac{j}{2j-1}\right)$$

RESULT 3: Effect of r^m on V^* :

Note

$$V^* = S\phi(r)\left[\left(\frac{aS\phi(r)}{k}\right)^{\frac{1}{2k-1}} - \left(\frac{b\lambda S\phi(r)}{j}\right)^{1/(2j-1)}\right] - \frac{1}{2}\left(\frac{aS\phi(r)}{k}\right)^{\frac{2k}{2k-1}} - y_0$$

Market Rate Vs Litigation Payoff III

$\frac{dE^*}{dr^m} = ?$

Special Cases

$j = k$:

$$\frac{dE^*}{dr^m} = \frac{k}{2k-1}(\phi(r^m))^{\frac{1}{2k-1}}\phi^{'}(r^m)(\frac{S}{k})^{\frac{1}{2k-1}}(a^{\frac{2k}{2k-1}} - (\lambda)^{\frac{1}{2k-1}}b^{\frac{2k}{2k-1}})$$

$\frac{dE^*}{dr^m} > 0$ if $\lambda < (\frac{a}{b})^{2k}$

$$\frac{dV^*}{dr^m} = \frac{2k}{2k-1}\phi^{'}(r^m)(\phi(r^m))^{\frac{1}{2k-1}}(\frac{2k-1}{2k}(aS)^{\frac{2k}{2k-1}} - (bS)^{\frac{2k}{2k-1}}(\lambda)^{\frac{1}{2k-1}})$$

Therefore,

$\frac{dV^*}{dr^m} > 0$ if $\lambda < (\frac{2k-1}{2k})^{2k-1}(\frac{a}{b})^{2k}$

$$\frac{d\left(\frac{E^*}{r^m}\right)}{dr^m} = \left[\frac{\frac{2k}{2k-1}r^m\phi^{'}(r^m)(\phi(r^m))^{\frac{1}{2k-1}} - (\phi(r^m))^{\frac{2k}{2k-1}}}{(r^m)^2}\right]\left(a(\frac{aS}{k})^{\frac{1}{2k-1}} - b(\frac{b\lambda S}{k})^{\frac{1}{2k-1}}\right)$$

Market Rate Vs Litigation Payoff IV

So, $\frac{d(\frac{E^*}{r^m})}{dr^m} > 0$ if,

- $\phi(r^m) < \frac{2k}{2k-1} r^m \phi'(r^m)$, and $\lambda < (\frac{a}{b})^{2k}$.
- $\phi(r^m) = r^m$, $a = b$ and $\lambda < 1$.

Bargaining Over Compensation I

Given S, let r^a solve:

$$r^a \times S = V^*.$$

That is, the owner is indifferent between accepting the offer of r^a, on one hand, and going for litigation, on the other hand.
The owner will accept the offer only if

$$\hat{r} \geq r^a,$$

where r^a solves (**??**) and is function of S.
For given S, suppose $r^a(r^m)$ satisfies

$$r^a(r^m) \times S = SE(r \mid r^m, x^*(r^m), y^*(r^m, \lambda)) - \frac{x^{*2}(r^m, y^*)}{2} - x_0. \tag{4.1}$$

From (4.2) it can be seen that

$$\frac{dr^a}{dr^m} > 0. \tag{4.2}$$

Why Litigation? I

If the LAC offers $r^a(r^m) \times S$, there will be no litigation.
Why Litigation? Optimum bias; Informational Asymmetry

$$r_{CR} \times S < r^a \times S < E(r^m) \times S$$

The official offer

$$\hat{r} \times S = \begin{cases} r_{CR} \times S \Rightarrow & \text{Litigation ;} \\ r^a \times S \Rightarrow & \text{No litigation;} \\ E(r^m) \times S \Rightarrow & \text{No litigation.} \end{cases}$$

1. Incentive for LACs
   - Use of Circle-rate/stamp duty rates is costless - easily available, officially approved
   - Use of Sale-deeds costly - have to be searched, verified
   - Therefore, LACs use low value circle/stamp duty rates
2. Incentive for the acquiring departments/politicians

Why Litigation? II

- There is tendency to minimize the ‘current costs’ of land acquisition
  - Long judicial delays can be used - cost of court awards will be borne by next government, another set of policymakers

3. Litigation costs can be passed on the third party beneficiary entity. Therefore, the perceived litigation costs are:

$$\beta[SE(r \mid r^m, x^*(r^m), y^*(r^m, \lambda))] + \frac{{y^*}^2}{2} + y_0. \tag{4.3}$$

$$\hat{r} \times S = \min \begin{cases} r_{CR} \times S, & ; \\ \alpha r^a \times S & . \end{cases},$$

if $\alpha r^a \geq r_{CR}$.

Why Litigation? III

4. Section 25: Court awards cannot be less than r_{CR}.
   So, for any given official offer $\hat{r}$, the court can be written as

$$E(r \mid \hat{r}, x, y) = \int_{\hat{r}}^{\bar{r}} r f(r \mid r^m, x, y) dr.$$

It is obvious that when $\hat{r} > r_{CR}$, for any given x and y

$$E(r \mid \hat{r}, x, y) > \hat{r}.$$