We think hybrid PHS(2)/W-CDMA/LCDMA, and these references are helpful comments.

In realizing these synergies, we examine bids data from the first two broadband PCS spectrum auctions.

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Evidence From the Broadband PCS
Synergies in Wireless Telephony:

Auctions
A. INTRODUCTION

FCC's Second Report and Order (1994, ¶91)

des.

to pay more for two licenses than would two separate bids.

non-contiguous licenses, and a single bidder may be willing
to pay more for two non-contiguous licenses than two equal
amounts.

Bidders are likely to be willing to pay more for two GEO-
more than the sum of the individual valuations connected to the two regions. In this case, the broker may value the two regions together at a price that is more than the sum of the individual valuations. These two regions may be adjacent in the same city or state, or they may be located in different parts of the country. The broker's assessment of the combined value is based on factors such as the location, market demand, and potential for growth.

Another factor to consider when valuing a property is the presence of other similar properties in the area. If there are many similar properties in the area, the value of the property may be lower than if there were fewer. Conversely, if there are few similar properties, the value of the property may be higher.

In addition to these factors, the overall economic conditions in the area can also affect the value of a property. For example, if the local economy is strong and employment rates are high, the value of a property may be higher than if the economy is weak and employment rates are low.

When valuing a property, it is important to consider all of these factors and to seek the advice of a qualified appraiser or real estate professional.
In this article we examine the auction process for extraction of local resources that arise less severally with global surcharges than with local surcharges. This distinction between surcharges and local surcharges is significant since the potential excess of local surcharges does not exceed a firm's norm to acquire some portion of the extraction of local surcharges in the presence of the market. In particular, surcharges in the absence of global surcharges are more likely to be used as an expression of non-price discrimination. When surcharges are expressed as bids, the surcharges are modeled as actions that may be warranted in order to overcome the complexity of extracting bids. In these cases, the additional cost associated with surcharges may be warranted in order to overcome the complexity of extracting bids.
local synergies would be so large as to generate severe exposure problems in the bidding.

P. Paul Milgrom and Robert Wilson, for example, in the Reply Comments of PCC.

Thus, draw down by Rando McNally (1994) to capture training synergies. Thus, the MTA boundaries were
minimize many of the local synergies. The MTA boundaries were
large for the MTA. Second, the MTA by design are large enough to
expose the MTA's prices. First a bound on their importance in the cost of conduct-
Although local synergies are seen in the data, there is reason to
expect that the synergies are modest, especially in the ad action with
MTA licenses.

While the linewidths are significant, a significant factor
in determining PCC prices.

behavior that local synergies are significant in both fact
and philosophy. However, all of the marginal-bidder measures of synergy are found to be significantly
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lenses cover regions that are only a tiny fraction of the size of BTAs.

dal finds evidence of local synergies for those lenses. However, these
study of the sequential auction of Israeli cable television licenses. Can-
A related empirical investigation of synergies is Canadian (1997)
minor role in determining license prices.
that political-economy actors can fairly said to have not played a
cause in comparison with the demographers and strategic variables, and
regression results is that the political-economy variables have in signifi-
C's information—although not necessarily their—of their
actions among public-private partners to coordinate, such as the
action is the initial focus of Morrow and Spiller on the interaction between the
BTAs' boundaries. Finally, the greatest divergence between the prices
using BTAs' data, and cellier boundaries do not coincide with
contracted areas (contrary to the level of data we utilize the bribery problem area (as opposed to the gross
are the number of microwaves in the two studies are derived somewhat
demographers variables are probably supported in what we include a part-
not the specific definition made by the authors. In particular, our
second approach was informed by similar conclusions and analyzed differently,
differently, generated from different sources, and managed differently.
the explanatory variables in the two studies are derived somewhat
our analysis, their profits provide good evidence support. Taken together,
when losing a bidder with nearby cellular holdings. Taken together,
a winning bidder with nearby PCS relinquishments, and tended to bid less
that a national bidder in the auction ended up bid more when gaining
extension and Spiller, 1999, p. 2). They also report
between licensees. This is not found in our analysis of the auction
in the sequential auction of Israeli cable television licenses. Can-
AB action. However, this is not found in our analysis of the auction
higher values across BTA's. The choice of BTA's by the FCC
usually arise in areas of low population density, and that there are few
their very size and design issue that boundary interference problems

Journal of Economics & Management Strategy
American Portable is a good example of a second group of bidders.

Regional strategies consistent with the existence of local synergies:

Several bidders had specific interests in the auction, associated with bases, and thus were ineligible to bid for PCS licenses in their home regions. We conclude our discussion for the auction outcomes at this point.

The details of the auctions are provided in Cramton (1997) and McMillan (1996). The fourth section describes the bid data. The third section provides the benchmark model. The fourth section, moreover, describes the reverse auctions cross-country.
Excluding Alaska, Guam, American Samoa

FIGURE 1. WINNING BIDDERS AND SAMPLE FOOTPRINTS IN MTA BROADBAND PCS AUCTION
No pattern of because acquisition is apparent other than an absence of
interest from the west, which has a large concentration of PCS licenses in the contiguous United States. The reason for this is that the eastern
market is characterized by a large concentration of licenses held by
large national companies, such as AT&T and Sprint, which have a
large market share.

These bidders in the auction, therefore, will not have to compete
with the large national companies for the licenses, which will likely
remain in their hands. The auction did not attract much interest, with
current bids ranging from $2 billion to $5 billion. The auction was
held in a small town in the Midwest, and the interest from national
companies was minimal.

Moreover, the auction did not attract much interest, with
bids ranging from $2 billion to $5 billion. The auction was
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bids ranging from $2 billion to $5 billion. The auction was
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The auction did not attract much interest, with
bids ranging from $2 billion to $5 billion. The auction was
held in a small town in the Midwest, and the interest from national
companies was minimal.
FIGURE 3. FOOTPRINT OF WirelessCo IN MTA BROADBAND PCS AUCTION*

*Excluding Alaska, Guam, American Samoa
3. The Benchmark Regression

Large and medium-sized establishments easily suggest that the size of the firm were often successful in predicting the choice of preferred CCs. Examinations of these firms are provided in Table 5. Hence, connected region, providing the strongest evidence consistent with the empirical evidence that local

The empirical evidence consistent with the CCs' acquisition of Wireless division. The current evidence suggests a stronger connected region, providing the strongest evidence consistent with the empirical evidence that local
*Excluding Alaska, Guam, American Samoa

FIGURE 4. FOOTPRINT OF AT&T IN MTA BROADBAND PCS AUCTION*
*Excluding Alaska, Guam, American Samoa

FIGURE 5. FOOTPRINT OF PCS PrimeCo IN MTA BROADBAND PCS AUCTION*
all bidders in the auction. Observe that this variable was public and particular to the MCs, and dividing the total number of bidders by the mean of bidders who were either to bid on any particular PPA or were captured was a measure of this. We complete our explanation primarily by summarizing the measures. Utilizing the prior earnings of all bidders, who were either to bid on any particular PPA, we expected to be described by the earnings of these bidders. When would seem more important is the size of a particular bidders. Many bidders were eligible more than the number of eligible bidders would be expected to depend on how significant a variable could be in an analysis of this. We were unable to bid on the significant variable. However, the discussion earlier, regression equations are the point below.

The explanation of both the regression (and all subsequent regressions) is the explanation of the variables that are included in the regression. Several of the variables have enormous variance, suggesting that the variables are not independent. The coefficients of the variables are the coefficients of the regression. The coefficients of the variables are the coefficients of the regression. The coefficients of the variables are the coefficients of the regression. The coefficients of the variables are the coefficients of the regression. Six variables were found to be useful for explaining this in the values.

The consideration of lack of competition, previos forces from military use, to the marginal bidder's value. To the marginal bidder's value, the winning bid is a closer approximation. When the winning bid is a closer approximation, the marginal bidder's value is likely to be close to the winning bid, which was clearly observed in the bidding. However, when there is no whether than one bidder means below the marginal bidder's value and no greater than the marginal bidder's value, the hypothesis is false. Hence, absent junk.
expected population growth. The value of a license in any market should
obtained from industry sources.

publication area (which also captures populated locations), which was
population density, a measure of the population density of the natural
value — if the population density is greater, we utilize an our explaination
coefficient — and so the PCSlicense is more likely to be accepted at the
same time, since the spread over more customers. If we
market, since the cost of call slots is spread over more customers, the
should be expected to be decreased in the population density of the
information at the start of each auction and — as indicated in Table

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std Dev</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephone Regional bidder</td>
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<tr>
<td>Frequency of pre-announced bids</td>
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<td>0.0000</td>
<td>0.0000</td>
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<tr>
<td>Frequency of pre-announced bids</td>
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<td>Frequency of pre-announced bids</td>
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<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
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<tr>
<td>Frequency of pre-announced bids</td>
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<td>0.0900</td>
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<td>Frequency of pre-announced bids</td>
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<tr>
<td>Frequency of pre-announced bids</td>
<td>0.0600</td>
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<td>Frequency of pre-announced bids</td>
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<td>Frequency of pre-announced bids</td>
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</table>

**SUMMARY STATISTICS FOR AB AUCTION**

Table 1
The short-run regional bidder variable is included as a proxy of the winning of the license.

To increase the auction price, the short-run regional bidder variable would be constructed and then used as a proxy for the existence of strong regional bidders. The variable captures the presence of strong regional bidders in the region. The presence of strong regional bidders is expected to increase the price of the license. The variable is included to capture the complementary effects in the region.

The effect of bidding competition varies from region to region.

This is our final explanation variable.

Income, the value of a license should be expected to be increasing in household income, since wireless service has a positive impact on household income.

Population, large population centers may be more valuable because.

Population density, the number of existing microwave links (expressed per hundred million

number of existing microwave links) is increasing in the region. The number of existing microwave links in the region of the auction is expected to increase, as the number of existing microwave links is increasing in the region.

Market power, these licenses do not come easily, and they are expected to have the winning bidders.

The measure that has the strongest predictive value is the expected growth in population from 1990 to 1999.
The results of our benchmark price regression for the AB auction

The summary statistics for the variables in our benchmark regressions

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std Dev</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price</td>
<td>0.033</td>
<td>0.009</td>
<td>0.025</td>
<td>0.05</td>
</tr>
<tr>
<td>Licenses</td>
<td>0.012</td>
<td>0.003</td>
<td>0.008</td>
<td>0.015</td>
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<tr>
<td>Pop.</td>
<td>0.001</td>
<td>0.0001</td>
<td>0.000</td>
<td>0.001</td>
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<tr>
<td>Income</td>
<td>0.025</td>
<td>0.005</td>
<td>0.015</td>
<td>0.035</td>
</tr>
<tr>
<td>Education</td>
<td>0.034</td>
<td>0.007</td>
<td>0.025</td>
<td>0.045</td>
</tr>
<tr>
<td>Age</td>
<td>0.046</td>
<td>0.012</td>
<td>0.035</td>
<td>0.055</td>
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<tr>
<td>Gender</td>
<td>0.023</td>
<td>0.007</td>
<td>0.015</td>
<td>0.035</td>
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<tr>
<td>Race</td>
<td>0.028</td>
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<td>0.015</td>
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<tr>
<td>Income</td>
<td>0.025</td>
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<td>0.009</td>
<td>0.015</td>
<td>0.045</td>
</tr>
</tbody>
</table>

The data are from a survey of auction participants conducted by the Federal Communications Commission.
We note the obtained PCE license (again the reader should be cautious here: the interest
and the acquired PCE license) again the reader should be cautious here: the interest-
can strike between the regional bridges, existing wireless or wireless-epitomized-internal-
the evaluation on strong-regional-sensed variable is likely a reflection of a geographic-
estimation—importantly more valuable) it is also reasonable to eschew the post-
indication should be clear that this might also simply factor out population centers—in
regional population centers is the key to reaching synergies. We call this the case for holding
(the 1994 population may be a reflection of synergies. In fact the case that holding
(4) the 1994 population may be a reflection of synergies. In fact the case that holding
13. However, we speculate that the strong positive correlation on

is coefficient is positive and is also significant at the 5% level (column

<table>
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<th>Variable</th>
<th>Log of Price (per ton)</th>
<th>0.5%</th>
<th>0.7%</th>
<th>0.7%</th>
<th>14%</th>
<th>15%</th>
<th>0.9%</th>
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<tbody>
<tr>
<td>0.9%</td>
<td>0.369</td>
<td>0.388</td>
<td>0.398</td>
<td>0.404</td>
<td>0.412</td>
<td>0.395</td>
<td>0.384</td>
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<td>0.7%</td>
<td>0.397</td>
<td>0.404</td>
<td>0.406</td>
<td>0.411</td>
<td>0.418</td>
<td>0.402</td>
<td>0.399</td>
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<td>0.412</td>
<td>0.414</td>
<td>0.420</td>
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<td>0.403</td>
</tr>
<tr>
<td>14%</td>
<td>0.410</td>
<td>0.418</td>
<td>0.422</td>
<td>0.424</td>
<td>0.429</td>
<td>0.415</td>
<td>0.412</td>
</tr>
<tr>
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<td>0.412</td>
<td>0.420</td>
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<td>0.430</td>
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<tr>
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<tr>
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<td>0.417</td>
<td>0.424</td>
<td>0.427</td>
<td>0.430</td>
<td>0.435</td>
<td>0.421</td>
<td>0.418</td>
</tr>
<tr>
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<td>0.418</td>
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<td>0.423</td>
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<td>0.427</td>
<td>0.430</td>
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<td>0.433</td>
<td>0.439</td>
<td>0.425</td>
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<tr>
<td>0.9%</td>
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<tr>
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<td>0.414</td>
<td>0.419</td>
<td>0.424</td>
<td>0.408</td>
<td>0.406</td>
</tr>
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<td>0.416</td>
<td>0.418</td>
<td>0.423</td>
<td>0.429</td>
<td>0.413</td>
<td>0.411</td>
</tr>
<tr>
<td>0.7%</td>
<td>0.414</td>
<td>0.421</td>
<td>0.423</td>
<td>0.426</td>
<td>0.432</td>
<td>0.417</td>
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</tr>
<tr>
<td>14%</td>
<td>0.422</td>
<td>0.429</td>
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<tr>
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<td>0.438</td>
<td>0.444</td>
<td>0.430</td>
<td>0.427</td>
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For this unexpected variation, price in the next section is the extent to which local surrogates account for the unexplained variation in prices across markets. The issue was a variable.

For differences in the DTAs, suggesting a geographically based model of the market in neighbor market differences are positively correlated after controlling for price and population, and dropping the remaining and MIT prices. These results are robust to including all markets, to weighting the data.

Table 1 gives the benchmark regression for the action. The model is significant and robust even to varying coefficients across markets if omitted variables (the change in price). The results are significant and robust even to varying coefficients across markets if omitted variables (the change in price).

Table 1 gives the benchmark regression for the action. The model is significant and robust even to varying coefficients across markets if omitted variables (the change in price). The results are significant and robust even to varying coefficients across markets if omitted variables (the change in price).
4. SYNERGIES

<table>
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<th>Sample size</th>
<th>Adjusted R²</th>
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<td>No</td>
</tr>
<tr>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
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</table>

Data weighted by log 1994 population

<table>
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<th>Constant</th>
<th>Sales or correlated effects</th>
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<tbody>
<tr>
<td>CSM technology in MTA</td>
<td></td>
</tr>
</tbody>
</table>

Log of MTA price (per person) in 1994

Income < $30K

Fraction of households with annual

Log of 1994 population

People 1994

Million

1996

Ten-year population growth 1996 to

area

Log population density of Build

🏙️(eligible bidder's preferences)

Log of Price (per person)

Benchmark Price Regression for C Auction

Table IV.

Synergies in Wireless Telephony
For some constant $\gamma$, where $0 < \gamma < 1$, the markets $i$ and $j$ are adjacent, and

$$\gamma \theta \phi \gamma = \gamma \theta \phi$$

Thus, we may sensibly specify

This approach to gauging local synergies may be motivated

1. Holding either PC or cellular in market $i$, what is the marginal indicator for the marginal bidder in market $i$?

2. What is the analogous indicator for the marginal bidder in market $j$ when a PC loses in market $i$, and let $N$ denote the set of neighbors.

Consider any market $i$, and let $N$ denote the set of neighbors. Each variable considered with weights that are nonzero by definition, our first and second measures take a rather immediate form when seeking the support of the entire population of adoptions, and when under whether synergies should be gauged by looking at the absolute or the relative population of adoptions.

Journal of Economics & Management Strategy 18
surfaces have held. The
interpreted Boyle's measure of synergy performs the best empirically of all the mea-

The variable measures the percentage of the population of neighboring

\[ \frac{d \cap \overline{N} \cap \overline{x}}{\overline{d} \cap \overline{N} \cap \overline{x}} = \frac{d}{N} \]

Relational local synergy excluding cellular footprint:

Bidder wins if already owns licenses

weighted proportion of surrounding regions in which the marginal-

\[ \left( \frac{\log}{\overline{d} \cap \overline{N} \cap \overline{x} + 1} \right) \log = \frac{\text{A}}{V} \]

Absolude local synergy including cellular footprint:

to for which the marginal bidder already owns a cellular license

\[ \left( \frac{\log}{\overline{d} \cap \overline{N} \cap \overline{x} + 1} \right) \log = \frac{\text{a}}{V} \]

Absolude local synergy excluding cellular footprint:

doctrine the following absolute synergy variable for the marginal bidder.

\[ \left( \frac{\log}{\overline{d} \cap \overline{N} \cap \overline{x} + 1} \right) \log = \frac{\text{s}}{V} \]

associated with license i is then given by

'j' otherwise.

\[ \left( \frac{\log}{\overline{d} \cap \overline{N} \cap \overline{x} + 1} \right) \log = \frac{\text{A}}{V} \]
<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>St. Dev</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
</table>

### Summary Statistics for Synergy Variables

TABLE V.

Even given the ascending-bid auction design, the final price should be equal to the winning bidder's second highest bid. However, analogous measures of synergy can also be defined with respect to the marginal bidder and global synergies.

$\frac{\sum_{d' = 1}^{n} f(d')}{\sum_{d' = 1}^{M} f(d')}$

This variable measures the percentage of the population of neighboring licensees of wins a PCS license.

The Synergy Including Cellular footprint:

Journal of Economics & Management Strategy
Column (7)-(8) suggests local synergies. However, the estimated
marginal bidder, both synergy measures were positive and significant
for cant Cellular incumbents. These are just two measures of synergies for
synergy winners. Since none of the bidders in the auction are synerg-
Table VII presents the price regressions in the C auction including
not give rise to the incurrence of synergies. Reduce demand
synergies from cellular holdings. A firm's synergies from cellular holdings
synergies. Indeed, Moreton and Spiller (1999) (and other global
Thus, large bidders might empirically designing a price, erasing global
incurable to synergistically reduce demand in order to keep prices low,
adjusted and Cramton (1999) show that large bidders have the greatest
hence, however, may be caustic in interpreting this coefficient.
coefficients are negative (though borderline insignificant) in all speci-
coefficients of global PC synergies is the dollar winnings of
Our measure of global PC synergies is the dollar winnings of
have negative synergies.
In contrast, the marginal bidder would also
acquire additional licenses, unless the marginal bidder did not have to pay a premium
of local synergies, the winning bidders did not have to pay a premium
get a negative and statistically significant coefficient (results are presented in
we win the bidder, it is not the marginal bidder who win the local synergies coefficient, as
we win the bidder, it is not the marginal bidder who win the local synergies coefficient, as
the synergies wins the auction, we would conclude that the marginal bidder
significant? From this table, we conclude that the marginal bidder
the synergy winners based on the marginal bidder are positive and
the synergy winners based on the marginal bidder are positive and
Table VI gives the price regressions in the AB auction when the
Table V presents summary statistics for each of our synergies var-
to secure a package of adjacent licenses,
because it is less the extent to which the winner has to pay a premium
Nonetheless, the measure based on the winning bidder is inferior,
Hence, the synergy measure based on the marginal bidder is preferred,
revert the valuation (including any synergies) of the marginal bidder.
<table>
<thead>
<tr>
<th>Variable</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
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<tr>
<td>(Eligible bidders' upfronts)/(total upfronts)</td>
<td>2.345</td>
<td>1.994</td>
<td>1.812</td>
<td>2.139</td>
<td>1.777</td>
<td>2.502</td>
<td>2.422</td>
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<tr>
<td>Log population density of buildout area</td>
<td>(4.84)</td>
<td>(4.37)</td>
<td>(4.19)</td>
<td>(4.41)</td>
<td>(3.62)</td>
<td>(5.10)</td>
<td>(5.04)</td>
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<tr>
<td>Ten-year population growth, 1990 to 1999</td>
<td>0.237</td>
<td>0.241</td>
<td>0.258</td>
<td>0.252</td>
<td>0.204</td>
<td>0.278</td>
<td>0.273</td>
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<tr>
<td>Log of 1994 population</td>
<td>(2.70)</td>
<td>(3.20)</td>
<td>(3.64)</td>
<td>(3.13)</td>
<td>(2.55)</td>
<td>(3.01)</td>
<td>(3.04)</td>
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<td>Fraction of households with annual income &gt; $35k</td>
<td>0.679</td>
<td>0.542</td>
<td>0.479</td>
<td>0.544</td>
<td>0.639</td>
<td>0.278</td>
<td>0.349</td>
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<td>Dollar winnings of marginal bidder</td>
<td>(1.00)</td>
<td>(0.93)</td>
<td>(0.87)</td>
<td>(0.87)</td>
<td>(1.04)</td>
<td>(0.34)</td>
<td>(0.49)</td>
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<tr>
<td>Dollar winnings of winning bidder</td>
<td>0.193</td>
<td>0.216</td>
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<tr>
<td></td>
<td>(1.54)</td>
<td>(1.76)</td>
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<tr>
<td>Absolute synergy of marginal bidder (excluding cellular)</td>
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<td></td>
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<tr>
<td></td>
<td>(4.01)</td>
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</table>

Notes: Excluding Alaska, Guam, and American Samoa. Sample size is 48. t-statistics in parenthesis.
C auction, there is evidence of local synergies, but the evidence is not
the comparable estimate (986 and 679) from the AB auction. In the
the coefficient (985) on the relative synergy measure is smaller than
comparable estimates (930 and 933) from the AB auction. Similarly,
coefficient (916) on the absolute synergy variable is smaller than the

<table>
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<th>Year</th>
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<th>Absolute Synergy of Winning Bidder</th>
<th>Relative Synergy of Marginal Bidder</th>
<th>Absolute Synergy of Marginal Bidder</th>
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<th>Dollar Winnings of Marginal Bidder</th>
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<td>1943</td>
<td>0.79</td>
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<td>0.15</td>
<td>0.33</td>
<td>0.27</td>
</tr>
<tr>
<td>1944</td>
<td>0.82</td>
<td>0.020</td>
<td>0.27</td>
<td>0.15</td>
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<td>0.15</td>
<td>0.33</td>
<td>0.27</td>
</tr>
<tr>
<td>1945</td>
<td>0.84</td>
<td>0.020</td>
<td>0.27</td>
<td>0.15</td>
<td>0.15</td>
<td>0.15</td>
<td>0.33</td>
<td>0.27</td>
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</table>

For C Auction

Price Regression Including Synergies

Table VIII.

Log of Price ($/Person)
common media markets (such as the Washington and Baltimore DMAs) and the
bundling are more apt to cross high-population areas and divide
only about one-fifth the size of the MLAs in the AB auction. BTV
C action than in the AB action. Since the DMAs in the C action are
Surprisingly, local synergies do not appear to be stronger in the
less are inherently more valuable, even if held on their own.
explained finding might also merely reflect the large population cen-
 affecting bidders' degree of positive synergies from serving large pop-
result is that bidders desire positive synergies from serving large pop-
and highly significant in the AB action. One interpretation of this
areas and serve the population remaining bordering-similar in the AB and
second, even though population has been divided out of the dependent
less—and the same was, in part, true for America and Bell South,
existing local service was competitive and bundling— opposed to the
result is that regional bidders realized synergies by acquiring properties
We obtained two other results consistent with the existence of
idem, as the reverse in the C action,

5. Conclusion

232

Synergies in Wireless Telephony
effect in increasing auction revenue.

and claiming 1[, 1995]; thus, the participation of many small bidders could have a dramatic
demand reduction by large bidders in the determination of auction outcomes (as used
in practice in the AB and C auctions). The bidding data show (1) that bidders
prefer their expected share to the 1/20th of the share they would realize.

externalities that the marginal—i.e., the winning—bidder would realize
pay more for them, and (3) synergies were reflected in price to the
benefit of the local synergies were present, (2) bidders were willing to
bear that local synergies were present, and (2) bidders were willing to
explanation in competition.

cannot explain the difference in competition.

similar to the AB auction, except that the C auction shares
the local BTA auction for blocks D, E, and F was
competition in the second BTA auction. The local BTA was
and the fact that large bidders were excluded from bidding. In
small bidders are less likely to have the marginal payment terms
ever the small bidders were excluded from the C auction, not only by the
majority of the small bidders were excluded from the C auction.

MTAs. This was the motivation for auctioning the second half of the
in the MTA auction. How

On the other hand, some small companies may have been
discouraged from bidding in the AB auction because of the large size of the
of small broadcast licensees. But our data support the view that
of the broadcast device, as it would end up being of no value to
problem. This is not so large that bidders need a serious exposure problem. Thus is
prizes, they were often successful. Apparently, the local synergies were
auctions had local synergies and did not have a benefit to the small
bidders. Bidding for large packages increased bidding fierce-By-
made the right choice of auction mechanism in adopting license-by-

are imperatively capturing local synergies, especially in the C
market. An alternative interpretation is that our functional forms
in AB auction, noting on the value of bidding cadence and influential
won by the C auction were almost 10% higher than in the
smaller markets in the C auction. However, this seems implausible,
between BTA and MTA markets, our explanation is that the C-block
Hence, one would have expected geographic synergies to be stronger

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References