# Abstract

Researchers have re omenon has been attributed to t d policies that reduce risks to assis after decades of such policies, there cle argues that bounded rationality is an insufficient explanation for satisficing by small developers. Lessons from behavioral economics suggest additional reasons for satisficing by developers. Satisficing is common because developers bracket projects one at a time, bracket each investment decision in isolation of others, create nonfungible investment accounts, establish self-imposed liquidity constraints, and temporally space projects. Policies that group risks to developers are likely to be the most effective. However, additional land-market-specific research is required to design policies that address these psychological traits. Academicians also need to design better survey instruments to investigate developer decision making.



1. From here on, the word *developers* refers to residential developers.

2. A reviewer of this article pointed out that households and political decision makers also satisfice, which can lead to additional land use inefficiencies.

3. This article uses the definition of sprawl provided by Nelson and Duncan (1995, 1): “unplanned, uncontrolled, and uncoordinated single-use development... which variously appears as low density,

ribbon or strip, scattered, leapfrog, or isolated development."

4. As an indication of the maturity of behavioral economics, the 2003 Nobel Prize in economics was awarded to a psychologist, Daniel Kahneman (who in turn recognized his deceased collaborator, Amos Tversky). In addition, between 1987 and 2001, Richard Thaler edited a section called "Anomalies" in the *Journal of Economic Perspectives* that questioned many of the assumptions and predictions of neoclassical economics.

5. To be sure, there are other models of land use planning, but as Sager (1999) notes, the rational land use model is by far the most prominent. Furthermore, the rational land use model incorporates other models of planning such as consensual planning (Susskind and Cruikshank 1987), critical theory (Forester 1988), and strategic planning (Bryson and Einsweiler 1988).

6. See, for instance, Nelson and Duncan (1995) for additional tools available to policy makers to reduce sprawl.

7. Reducing risks to developers continues to be a major consideration in contemporary discussions of smart growth (Mohamed 2006). For example, Gyourko and Rybczynski (2000) argue that the risks of new urbanist projects need to be understood before such projects can attract developers. Similarly, Starkie and Yosick (1996) believe that more needs to be done to educate lenders and developers about the risks inherent in new urbanism.

8. There are other explanations for the discrepancy in prices between willingness to pay and willingness to accept. According to Cropper and Oates (1992), it may represent strategic behavior on the part of citizens; whereas according to Coursey, Hovis, and Schulze (1987), it could be that people are not as familiar with the value of an item when they are selling it as when they are buying it.

9. Contrary to the predictions of Thaler (1985), Thaler and Johnson (1990) found that people also preferred to temporally space losses. Thaler (1999) suggests that people may prefer to feel losses one by one because prior losses may make them more sensitive to subsequent losses.

10. Mathematically: $v(x_{n+1}\&x_{n+2}\ldots x_{n+m}) - v(x_1\&x_2\&\ldots x_n) < v(-$ *additional investments*$)$ where: v is the value to the developer; $x_1 \ldots x_n$ are marginal profits from discrete primary investments; $x_{n+1} \ldots x_{n+m}$ are marginal profits from discrete secondary investments; and "&" represents the cognitive combination of profits (Thaler 1999).

11. Profit opportunities can also vary on a given site. For instance, developers could choose the more capital intensive and more profitable option of building roads around a scenic area (the increase in value of the lots would be sufficient to cover the additional costs), or in the absence of environmental ordinances, they could choose the less capital intensive and less profitable option of building roads through the scenic area. However, spatial variation in investment requirements has a much larger impact on developer decision-making than choices on a given parcel.

12. Limited liability corporations with other developers have become more popular since the enactment of the Financial Institutions Reform, Recovery, and Enforcement Act of 1989 (FIRREA) that requires developers to show more collateral when obtaining loans.

13. Over time, some secondary investments shift to primary investments. For example, in many land markets public water would be considered part of the primary investment account.

14. The vast majority of residential developers in the U.S. are small developers. According to the 2002 Economic Census, 75 percent of the firms involved in land subdivision employ one to four employees and 88 percent of the firms involved in land sub-division employ one to nine employees (U.S. Census Bureau 2002). On average, each of the 88 percent of these firms performed approximately $850,000 worth of construction during 2002, well below the six million threshold used by the Small Business Administration to define a small firm involved in land subdivision (U.S. Small Business Administration 2004). Whether the arguments made in this article are applicable to large institutional developers or Real Estate Investment Trusts (REITs) is worth investigating.

15. Regional land markets is a more appropriate scale over which to apply spatially focused risk reduction strategies, but this, of course, raises issues related to regional land use coordination.

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