



# The capitalization effects of school, residential, and commercial impact fees on undeveloped land values

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## ABSTRACT

Development impact fees are a controversial and relatively novel method of financing local public infrastructure. While their effects on home values have been examined extensively, very few studies have considered an important potential relationship with the price of undeveloped land. This study uses a 16 year panel of Florida property sales and impact fee rates to investigate the effects of various types of impact fee programs on the value of undeveloped residentially and commercially zoned parcels. Three main findings are obtained. First, school impact fee programs decrease the value of residentially zoned land but increase the value of commercially zoned parcels. Second, fees for water and sewer reduce the price of residentially zoned parcels but have no significant effect on commercially zoned land values. Finally, fees for other traditional categories like roads, police, and fire, seem to have stronger negative effects on commercially zoned land than on residentially zoned parcels.

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## 1. Introduction

Dating to contributions by Simon (1943) and Oates (1969), the effects of local government policies on the value of real property have often captured the attention of scholars. This study investigates the capitalization effects of development impact fee programs, an innovative fiscal tool now used by over by over 1000 local governments in the US (Nelson et al., 2008). First introduced in the 1970s, impact fees are one time levies a developer pays to a local government, as a condition for obtaining a building permit.<sup>1</sup> Revenues are pooled over time and earmarked for public infrastructure systems including schools, roads, utilities, and police/fire services.

However, even as impact fee programs have established a strong footing in matters of local land use regulation, they remain controversial. Opponents claim they deter economic development and disproportionately burden low-income families.<sup>2</sup> Advocates argue they represent an efficient price-based Coasian bargaining tool, facilitating interactions between communities and developers by reducing

uncertainty in the development approval process (Nelson et al., 1992a). Others have focused on the idea that impact fee programs increase allocative efficiency since they move communities away from an average cost approach to financing infrastructure toward a marginal cost based approach (Brueckner, 1997). Both sides of the ongoing debate are armed with evidence to support their claims. Like other local regulations – impact fees lead to tangible costs and benefits, create distinct groups of losers and winners, and can lead to new unintended problems while helping to solve others.<sup>3</sup>

School impact fee programs are perhaps the best example. Unlike most categories of impact fees which are paid by all developers, school fees are levied on residential construction but not commercial developments. As such, they represent a clear shift in the distributional burden of local education finance relative to exclusive property tax reliance that may harm owners of residentially zoned land. At the same time, research demonstrates a systematic bias toward under-providing local educational facilities, suggesting marginally approved projects may carry more benefits than costs (Cellini et al., 2010). Since school impact fees expand educational facilities in areas needing them most, they may carry desirable efficiency properties.

While several existing studies illustrate the effects of impact fee programs on home values, the supply of residential construction, and

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<sup>1</sup> Although impact fee and development fee are the most common labels for this policy, terms such as capacity fee, facility fee, system development fee, excise fee, and capital expansion fee are also used.

<sup>2</sup> For example, the official positions on impact fees of the National Association of Home Builders (<http://www.nahb.org>) and the National Association of Realtors (<http://www.realtor.org>) discuss these effects.

<sup>3</sup> Since a detailed review of the broad debate over the merits of development impact fee programs lies beyond the scope of this paper, we point interested readers to Been (2005).

local employment levels, the underlying relationship between this policy and the price of undeveloped land remains poorly understood. Since impact fees are paid as land moves from vacant to improved, many have argued they would unambiguously cause the price of undeveloped land to fall. However, Yinger (1998) establishes that if the value of infrastructure is high, impact fee programs may not compromise undeveloped land prices, and may be positively capitalized in extreme cases. Others have claimed impact fees may reduce the prevalence and/or stringency of other regulatory barriers to development (Gyourko, 1991; Ladd, 1998), or that the likelihood of obtaining permit approval from development review boards may increase (Burge and Ihlanfeldt, 2006a, 2006b). Altshuler and Gomez-Ibáñez (1993) argue the influence of impact fee programs on land values (or other outcomes) critically depends upon *what they replace and/or stave off*. As such, the relationship between development impact fees and land values is potentially nuanced.

This study builds on three early investigations (Nelson et al., 1992a, 1992b; Skaburskis and Qadeer, 1992) and two recent pieces (Ihlanfeldt and Shaughnessy, 2004; Evans-Cowley et al., 2005). Besides being thin, this literature is conflicting. Early studies found positive capitalization effects, while the more recent papers found the opposite. Also, previous work does not account for the possibility that different categories of impact fees may influence commercially and residentially zoned parcels in different ways – an omission the current study illustrates is important for school and water/sewer impact fees.

We use 1,547,711 sales of residentially zoned undeveloped parcels and 134,610 sales of commercially zoned undeveloped parcels in 61 Florida Counties between 1994 and 2009 to obtain constant quality price indexes for residentially zoned and commercially zoned land. These prices are then examined in panel regressions using different categories of impact fee variables and other covariates. The results suggest that school impact fees lower the value of residentially zoned undeveloped land but increase the value of commercially zoned parcels. Water and sewer impact fees are found to lower selling prices for residentially zoned land but do not significantly affect commercially zoned parcels. Finally, some suggestive evidence indicates impact fees may lower land values in rural environments more significantly than in urban/suburban communities, where previous research has suggested they may be more effective at offsetting other non-pecuniary regulatory barriers to development.

## 2. Theoretical framework

Discussions of impact fees are often organized into the “traditional” and “new” views. While restrictive if pushed too far, the distinction provides a framework for this study. The traditional view characterizes impact fees as an excise tax on new construction. Examples include Snyder et al. (1986), Huffman et al. (1988), and Delaney and Smith (1989) among others. Under this view, impact fees shift the short-run supply of new development upward by the amount of the fee. This leads to higher prices for improved properties (both new and existing since they are close substitutes), lower values for undeveloped land, smaller profits for developers, and slower rates of new development. The magnitudes of these effects are determined by the corresponding short and long-run elasticities of demand and supply prevailing in the implementing community. Regardless of the short run effects, supply in any given locality is commonly assumed to be highly elastic in the long run, so developer profits must return to normal levels. This means the monetary costs of impact fees must either be passed forward to consumers or shifted backwards to the owners of undeveloped land.

Although the new view has been developed through many contributions, Yinger (1998) is due credit for accelerating this progression. Rather than framing impact fees as a tax on new development, he argues that what happens after impact fees are enacted plays a critical role in determining their causal effects. Instead of ignoring

what is done with impact fee revenues, he argues that they create two immediate benefits that stimulate the demand for new facilities. First, they are used to provide valuable infrastructure specifically targeting developing areas within the community. Second, both existing and potential future residents will rationally expect impact fee programs to lower future millage rates.<sup>4</sup> While Yinger acknowledges particularly valuable infrastructure projects may approach (or even exceed) the value needed to eliminate the burden of impact fees on landowners, he concludes that regarding a marginally acceptable construction project (i.e., a project just meeting a standard cost-benefit test), approximately one quarter of the burden of the fee would fall on the owners of undeveloped land.

Brueckner (1997) compares an optimally determined impact fee rate to several alternative mechanisms of funding public infrastructure growth and finds impact fees to be preferred. Although he does not address potential differences between residentially and commercially zoned parcels, the value of undeveloped land plays a critical role in his model. Importantly, he predicts that when switching from traditional approaches to an impact fee regime, the price of undeveloped land could increase, decrease, or remain the same, depending upon whether or not the community has already fully exhausted the economies of scale inherent in the production of local public services. More recently, Turnbull (2004) investigates how alternative development policies – impact fees and growth boundaries – influence the dynamic pace of urban development. Impact fees that fully internalize the external cost associated with new development are found to be efficient in both steady state equilibrium and along the transitional growth path. On the other hand, urban growth boundaries that are efficient in the steady-state generate inefficiently rapid development along the transition path. Burge and Ihlanfeldt (2006b) argue impact fees could lower land prices if they increase the supply of readily developable parcels. This would occur if community planning officials were influenced by the direct monetary payoff from fee revenues, and subsequently zoned more areas ready for right-of-way development.

The effect of any given impact fee on the price of undeveloped land should be largely driven by whether the community is using the impact fee as a policy to control or manage growth. In addressing this question, previous discussions have highlighted the importance of identifying the counterfactual. Altshuler and Gomez-Ibáñez (1993) point out that “exactions look better or worse – in terms of equity, efficiency, or political acceptability – depending on the specific alternatives one considers most relevant analytically or most probable in reality.” While variation in the counterfactual surely exists across communities, several scholars have advanced the position that rapidly growing communities tend to adopt impact fee programs as a growth management strategy, potentially as a substitute for other growth controls that have been routinely shown to lower the market price of undeveloped land.<sup>5</sup> Fischel asks what would happen if a community adopted an impact fee, but the fee was quickly struck down in the state court. He notes that “the question is, would the community go back to its old ways of cheaply accommodating developers, or would it adopt more strict land use regulations that forestalled nearly all development? If prohibition of fees makes the community opt for more stringent regulations, then it seems to me that the impact fee is progrowth (Fischel, 1990).”

Gyourko (1991) formalizes the idea that impact fees may represent a price based contract for entry into a community. He argues once

<sup>4</sup> Yinger’s prediction that impact fee programs would lower future millage rates was empirically verified by Ihlanfeldt and Shaughnessy (2004). In addition, early analysis in this study verified the same point. [results available upon request] With the exception of water/sewer impact fees, which would not be expected to reduce property taxes, increases in the impact fee variables are negatively correlated with millage rates during the three year period following adoption/increase.

<sup>5</sup> Examples of studies on growth controls and land prices include Brueckner (1990), McMillen and McDonald (2002), and Cunningham (2007). Interested readers should see Cunningham (2007) for a detailed literature review.

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