

EXPLORING THE IMPACTS OF BALLOT BOX LAND USE MEASURES ON AFFORDABLE HOUSING

Lucy Acquaye, Joseli Macedo, Rhonda Phillips, and Douglas White

Abstract

Throughout the U.S., increasing land use regulation via ballot box measures is being addressed. It appears that ballot box land use measures to pass land use regulation change can lead to delays in the land development process. These delays have been found to increase transaction costs, cause uncertainty in the development process, and lead to a reduction in the number of new single-unit homes being constructed. One of the major concerns is that this restriction in supply will lead to increased housing prices in communities, negatively impacting affordable housing by placing it beyond obtainable levels of affordability. In this study, the context of ballot box measures as land use regulation was reviewed, and projections of economic impact of potential land use regulation change were presented. Using Florida as the case in point, projected impacts included home buyers having to earn \$3,000 to \$12,000 more per year to qualify for higher housing prices due to increased regulation. In areas of the U.S. experiencing severe affordable housing shortages such as Florida, a concerted effort may be needed to maintain land development balance and thus allow affordable housing to be adequately supplied.

Introduction

Land use-related referenda and initiatives continue to be of interest as evidenced by on-going state and local measures on ballots across the U.S. This movement of land use planning decision making changing to a more politicized process focusing on elections was termed the *ballot box movement* over a decade ago (Kaiser, Godschalk, & Chapin, 1995). Ballot box planning is generally defined as the use of referenda and initiatives to decide land use planning issues. Because of the role of voters, it is

Lucy Acquaye is a Postdoctoral Associate, M. E. Rinker School of Building Construction, University of Florida, Gainesville, FL; Joseli Macedo is Assistant Professor, Department of Urban and Regional Planning, University of Florida, Gainesville, FL; Rhonda Phillips is Professor and Director, School of Community Resources and Development, Arizona State University, Phoenix, AZ; and Douglas White is an economist and a contracted consultant for the Shimberg Center for Affordable Housing, University of Florida, Gainesville, FL.

sometimes referred to as direct legislation (Seltzer, 2002). A study of growth-related measures in the 2000 general election found 553 state and local measures on the ballots in 38 states (Myers, 2001). While many of the measures focused on preserving open space and other smart growth initiatives as opposed to absolute growth limits such as housing caps, there were more slow growth initiatives emerging. In California for example, there were urban growth boundaries and urban limits measures with 65% approval by the voters (Shelley, 2003).

The pressures of growth are often the impetus behind the ballot box movement, notably the frustration with sprawling patterns of development that generate traffic congestion and other undesirable outcomes. It is not hard to understand why citizens begin to view growth as the culprit behind the negative outcomes and push for public referenda and initiatives as a way to exercise control over land use planning.

While the public may often view the apparent answer as limiting growth or at least guiding it for better outcomes, there are consequences of such measures. One of the most pressing consequences is the impact on housing affordability. Research indicates that there is a direct relationship between the level or intensity of land use regulation and delays in the development process, resulting in increased costs (Mayer & Somerville, 2000). A 2004 report prepared for a U.S. Department of Housing and Urban Development (HUD) regulatory barrier workshop indicated that developers questioned in a national survey reported waiting an average of 17 months for permits due to land use regulations (May, 2004). In other research, it was estimated that the direct cost of delays imposed by regulations added \$10,000 to \$20,000 per new housing unit (Luger, 2000). A 1998 survey by the National Association of Home Builders found that a 10% increase in the cost of building a new home was attributable to regulatory delays and fees, including ballot box land use measures (U.S. House of Representatives, 2000).

Since ballot box land use measures lengthen the development process (Staley & Gilroy, 2002), they can represent a regulatory barrier to affordable housing. As defined by HUD:

(regulatory barriers are)... typically public regulatory requirements, payments or processes that significantly impede the development and availability of affordable housing without providing a commensurate health and/or safety benefit. While often motivated by good intentions, regulatory barriers may be unnecessary, duplicative or excessive. These barriers can impede housing rehabilitation, limit supply and raise the cost of new development by up to 35 percent. The result: millions of Americans are priced out from buying or renting the kind of housing they otherwise could afford. (U.S. Department of Housing and Urban Development, 2006)

HUD lists multiple and/or duplicative layers of the approval process as a specific example of a common regulatory barrier to affordable housing.

By mid-century, the population in the U.S. will reach 420 million, about 120 million more people added to the current population level. According to a recent analysis, the majority of this growth will be concentrated in eight sprawling supercity regions (Schneider, 2004). Two of these regions are in Florida (Miami and northward, and St. Petersburg/Tampa to Orlando and beyond). It should be noted that those areas with high growth tend to have more attention placed on restricting growth, as reflected in ballot box land use measures. Further complicating the discussion is the fact that comprehensive planning has not yielded the desired results in many cases, with continued rapid growth pushing the limits of regulations and policies to respond appropriately. This phenomenon may be attributed in part to ballot box regulations that dilute the intended outcomes of comprehensive planning, providing for a challenging environment—one in which economic needs and socio-political desires need to be balanced with natural systems.

There are many aspects of arguments pro and con regarding ballot box land use measures, including social benefits and costs. However, the purpose of this study was to review the context and explore potential economic impacts of ballot box land use regulations on affordable housing. Using the high growth state of Florida as the case in point, potential impacts on affordable housing were projected using economic impact analysis.

Context of Land Use Regulations

It is important to place ballot box land use measures in the broader context of regulations. There are both positive and negative aspects of land use regulations. Growth management tools such as urban growth boundaries, impact fees, and zoning restrictions can help ensure wise and measured growth. Urban growth boundaries prevent suburban sprawl, resulting in higher densities closer to the center of cities. Impact fees raise money to pay for the needed infrastructure (e.g., roads, schools, parks, and emergency services) in areas with new growth. Zoning restrictions help maintain livable communities and protect property values by separating potentially incompatible land uses such as heavy industry and residences. The positive relationship between property values and zoning has been extensively explored.

Resources ranging from clean air and water to important environmental and cultural resources such as open space, agricultural lands, wildlife habitat, and historic sites are protected by laws. Building codes protect the health and safety of people by requiring structurally sound buildings. The complete absence of land use controls would result in increased economic costs to communities and taxpayers, while negatively impacting quality of life (Schneider, 2004). The best regulatory systems attempt to achieve sound regulatory goals and also maintain a healthy economy (Denslow, 1993), which includes a diverse, affordable housing stock. The underlying premise of the positive aspects of planning has been explained in this way: “The hallmark of growth management is its balance among competitive objectives. This is not only a goal of government.

Few homebuyers would be interested in cheap houses without roads, water, sewers, parks and other urban amenities” (Godschalk, 1992, p. 423).

At the same time that positive benefits accrue from land use regulation, there are costs and negative aspects involved as well. In a review of methodologically sound studies, it was found that land use regulations contributed anywhere from 7% to 20% of the cost of an average new home (Downs, 1992; Payne, 2001). The regulation contribution also factors in a large number of highly fluctuating variables, “including the strength of the local real estate market, whether the jurisdiction has enacted growth controls and the community’s impact and permitting fee system for new development” (Downs, 1992, p. 422).

Ballot box land use measures can include a variety of regulations and initiatives, addressing general and specific annexation restrictions, growth management including caps (limits on the rate of growth), zoning and land use code decisions, and even specific land use project decisions. All of these measures either directly *allow growth* or *disallow growth* to occur in a jurisdiction (Colorado Municipal League, 2004). Because of the potential for major impacts, ballot box land use measures are viewed as powerful mechanisms to address growth issues.

From an economic perspective, ballot box land use measures are often characterized as increasing uncertainty and raising transaction costs because of associated delays in the development process (Staley, 1998) due not only to the regulations in question, but the process of the measure itself including the time to place it on the ballot and voting. It is the increase in explicit or transaction costs due to delays and subsequent impact on housing prices that represents the negative aspects of ballot box land use measures, in terms of addressing issues of housing affordability. Generally, regulations that lengthen the development process or otherwise constrain new development have larger and more significant effects in an economy (Mayer & Somerville, 2000). Empirical economic research has found that increased land use regulation, including regulation through ballot box measures, leads to higher housing prices. A study of 44 U.S. metropolitan areas found that land use measures and regulations that lengthened the development process had the largest negative impacts on housing prices (Mayer & Somerville, 2000).

Learning from Others

Ballot box initiatives were found in 38 states in the 2000 general election (Myers, 2001). The following is a brief summary of experiences in California and Ohio regarding the relationships between ballot box land use measures and housing affordability.

California is often described as the epicenter of the ballot box movement toward *democratizing* the process of land use regulation. The California Constitution reserves to the people the authority for initiative, referendum, and recall. During the past 30 years more than 1,000 different development, growth, and land use measures have appeared on local ballots (Myers, 2001). California has

experience with many slow growth measures: limits on population, development caps or moratoria, urban growth boundaries and urban limit lines, regulations on the intensity of land use, and requirement of voter approval for certain land uses. They appear more often than measures considered more pro-growth such as lifting population caps, expanding urban limit lines, increasing density, or approving a specific development project (Fulton, 2005).

These ballot box measures, with an overall approval rate of approximately 50%, have had an impact on housing affordability, both on housing price changes (either perceived or factual) and on housing supply. Jack Kemp, former HUD secretary, claimed that in 1989 various regulations added \$40,000 to the price of an average new home in Orange County, California (U.S. Department of Housing and Urban Development, 2006). An empirical study using Ventura County, California as a test case analyzed a series of growth control measures passed in the county between 1995 and 2000, the SOAR (Save Open-space and Agricultural Resources) initiatives. Based on the county's comprehensive plan at the time, stated capacity existed to accommodate more than 60,000 new housing units. However, after reviewing more than 120 projects, comprising over two thirds of approved permits and almost 12,000 housing units, serious shortages were predicted to occur. By 2020, when SOAR expires, it has been estimated that Ventura County will need 312,000 housing units. Because cities in Ventura County approved development projects at densities much lower than planned capacities, there will be a shortfall of 55% below housing targets by 2020 (U.S. Department of Housing and Urban Development, 2006).

Ventura County has considerable growth management experience and as such serves as a learning laboratory for other communities in the U.S. The finding that most cities in the county did not approve projects at the densities planned for in the comprehensive plans is profound. The study found that planning commissions and city councils reduced proposed densities by 4% on average. The significance of this reduction is that the project proposals submitted rarely sought the number of housing units allowed. In other words, developers were submitting proposals at densities lower than those prescribed by comprehensive plans and then city and county officials were further reducing the proposed densities. Thus, the final outcome resulting from the planning process may not be what citizens envisioned when the comprehensive plans were developed. The example of California is relevant to those states that are considering using ballot initiatives to impose land use regulations in order to control growth and also to states with low-density urban development patterns.

In Ohio, a study modeled the impact public referenda for land use rezoning issues would have on new housing growth annually in 63 cities from 1980 to 1994. A transaction-cost paradigm to assess how holding public referenda influences uncertainty in land development, increases costs of land development, and reduces the incentive to invest and build in urban areas was used (Staley, 1998). Transaction costs can be defined as the "costs of negotiating, monitoring and

enforcing contracts” (Staley, 1998, p. 26) and generally increase when referenda are held because they delay the start of a project. These increased transaction costs are not recovered at any stage of the development process and are passed along to the consumer in the form of higher housing prices or higher rents, which reduces the level of affordable housing available in a community.

This study further implied that by determining land use decisions by public referenda, developers assume their projects will be subject to higher levels of uncertainty and delay and this encourages them to look elsewhere (beyond the urban fringe, thereby encouraging urban sprawl). The model indicates that ballot box zoning, for example, would limit new residential housing growth and become a growth penalty, rather than successful growth management, with those Ohio cities which held public referenda for rezoning decisions more likely to experience lower levels of building. A 9.4 and 28.7 reduction in permit issuance for housing units per every 1,000 people occurred in those cities (Staley, 1998). The Ohio experience holds particular relevance for states that are not struggling with high growth pressures.

Case of Florida

Florida is faced with a tremendous need for affordable housing. This article explores the impacts of ballot box land use measures on affordability by constructing four impact analysis projections. The data were obtained from the Shimberg Center for Affordable Housing at the University of Florida (Shimberg Center for Affordable Housing, 2006). The study was conducted in 2005, with revisions in 2006. The significance of the case study approach is illustrating how a high growth state can be impacted by additional regulations that seem to address the critical issues but can negatively impact housing affordability. Florida is an excellent case in point as housing affordability is of major concern due to population increases and rising property values.

The population increase in Florida during the decade of 1990-2000 was concentrated in the three counties of Broward, Miami-Dade, and Palm Beach. These three counties accounted for more than 30% of the population increase in the state. All of these counties are considered to be at *build out* status, or approaching that status within a short time frame of 10 years or less. Build out implies that developable land as approved in the comprehensive plan of each county will be fully developed in the near future. The large population concentration in the three fastest growing counties is projected to continue through 2025. As land supply becomes more constricted in the urbanized areas, housing prices will continue to rise. Coupling this with a decreased supply of housing and an increasing demand for affordable housing, the situation for affordable housing in Florida’s urbanized areas is likely to become severe (Keenan, 2005, pp. 110-121). If additional ballot box regulation serves to restrict land supply in the sense that development delays are expected, the affordable housing crisis might be accelerated. As urban land supply is further constricted, there will be pushes toward surrounding rural areas

to meet housing demands. This could further exacerbate sprawling patterns of development in Florida, a condition that more citizens are protesting against.

Housing affordability is shown for three of the fastest growing counties in Table 1. Over 40% of renters spend more than 30% of household income to meet their housing needs. Thirty percent is the accepted amount that a household should use for housing expenses. Most mortgage finance and government housing programs use this “rule of thumb.” Households spending more than 30% of their household income on housing are considered cost burdened.

Table 1. Housing Affordability in Florida’s Fastest Growing Counties

County	Tenure	Cost burden on housing spending	Year and number of households		
			2000	2010	2025
Broward	Owner	< 30% of income	328,407	407,281	574,931
		> 30% of income	126,229 (28%)	154,839 (28%)	216,342 (27%)
		> 50% of income on housing @80% AMI	39,343 (9%)	49,009 (9%)	71,667 (9%)
	Renter	< 30% of income	111,022	126,228	150,397
		> 30% of income	88,490 (44%)	102,906 (45%)	130,712 (47%)
		> 50% of income on housing @80% AMI	38,413 (19%)	45,039 (20%)	58,582 (21%)
Palm Beach	Owner	< 30% of income	265,485	328,738	450,656
		> 30% of income	88,136 (25%)	108,834 (25%)	144,960 (24%)
		> 50% of income on housing @80% AMI	29,111 (8%)	36,309 (8%)	50,300 (8%)
	Renter	< 30% of income	69,253	81,632	96,599
		> 30% of income	50,488 (42%)	60,151 (42%)	74,463 (44%)
		> 50% of income on housing @80% AMI	22,532 (19%)	27,035 (19%)	34,151 (20%)
Miami-Dade	Owner	< 30% of income	326,764 (9%)	381,792 (9%)	473,401 (10%)
		> 30% of income	122,001 (27%)	141,046 (27%)	173,766 (27%)
		> 50% of income on housing @80% AMI	41,866 (23%)	48,763 (24%)	61,833 (24%)
	Renter	< 30% of income	169,603	189,086	217,170
		> 30% of income	157,424 (48%)	177,019 (48%)	207,140 (49%)
		> 50% of income on housing @80% AMI	76,781	86,608	103,090

The number of persons spending a disproportionate amount of their income on housing is projected to persist to the year 2025 for both renters and owners in this category of housing expenditure. Almost half of the renters and owners spending more than 30% of their incomes on housing are low-income and severely cost-burdened. These households have incomes below 80% of area median income (AMI) and pay 50% or more for mortgage costs or rent. With their low incomes, the large portion of income taken up by housing costs is likely to limit these households' ability to afford other necessities. The 80% of AMI figure is a traditional measure of eligibility for programmatic housing assistance. All beneficiaries of the federal public housing program and federal HOME program must have incomes below this amount (Shimberg Center for Affordable Housing, 2006). Increases in housing prices brought about by increased ballot box regulation would most likely aggravate the housing situation for such households.

Projecting Potential Impacts on Florida

Impact analysis projections for gauging the economic impact of increased ballot box type land use regulation on Florida will now be presented. From reviewing previous studies and our current research on impacts on housing affordability, we submit that the passage of additional regulation and the subsequent referenda held to pass land use regulation changes will lead to delays in the land development process. These delays have been found to increase transaction costs, cause uncertainty in the development process, and lead to a reduction in the number of new single-unit homes being constructed. This restriction in supply is likely to lead to increased housing prices in several communities (Mayer & Somerville, 2000).

For the projections, varying levels of impact are proposed because the full impact of the increased regulation will depend on a multiplicity of factors, including the actual time delays in the development process (e.g., will votes be cast on proposed increased ballot box type regulations every six months or less?), and the degree that regulations will be needed versus new developments that fit within the purview of existing comprehensive plans. The proposed range of impact is from 5% to 20%, presenting (a) impacts for housing price increases, (b) decreases in single-family home construction, (c) subsequent impacts on metropolitan tax revenues, and (d) impacts on total output. This range has been selected based on the ranges used in previous research (e.g., Staley, 1998).

Housing Price Increases

Many of the metropolitan areas of Florida are experiencing constrained land supply. For example, Palm Beach County and Miami-Dade County are already at much higher levels for housing prices than the state averages. This is due to their constrained land supply, which is approaching build out status. The ratio of median price to the state average was found to be 1.32 for Palm Beach County and 1.19

for Miami-Dade. We propose a range of cost impacts of 5% (least impact scenario in less urbanized areas) to a high of 20% (worst case scenario and realistically applied to the most urbanized areas where land supply is highly constricted).

Table 2 shows the historic mean and median sales price for single-family housing in the state of Florida for the 1998-2003 time period. It also shows the yearly real appreciation and historic five year real appreciation for single-family housing. As can be seen, the real return to single-family housing has averaged 6.53% at the mean and 5.68% at the median. The appreciation value is a year to year change measurement.

Table 2. Historic Mean and Median Single-family Sales Prices

Year	Nominal mean sales price	Real mean sales price (2004 dollars)	Yearly real mean sales price appreciation	Nominal median sales price	Real median sales price (2004 dollars)	Yearly real median sales price appreciation
2003	\$206,815	\$212,322	7.40%	\$156,000	\$160,154	6.73%
2002	\$188,279	\$197,699	6.38%	\$142,900	\$150,049	6.43%
2001	\$174,128	\$185,835	5.87%	\$132,100	\$140,981	7.19%
2000	\$160,012	\$175,529	5.28%	\$119,900	\$131,528	0.96%
1999	\$147,039	\$166,721	7.74%	\$114,900	\$130,280	7.06%
1998	\$133,530	\$154,747	-	\$105,000	\$121,684	-
Average real 5-year return			6.53%			5.68%

Table 3 shows what the expected 2004 sales price would be if single-family housing appreciated at this historic appreciation rate. Since it is estimated that increased regulation will cause housing prices to increase between 5% and 20%, Table 3 also shows how mean and median sales prices would be affected. In order to better quantify these changes, Table 4 shows what these increases in prices mean in terms of a qualifying income needed for a mortgage. The assumptions made in this calculation are that the household is placing a 5% downpayment, spending 25% of its income towards housing, and that the interest rate is 5.84% (the average 30-year conventional mortgage rate for 2004). Assuming the conservative 5% above the historical return increase in prices will require households to have approximately \$3,000 more in income to qualify for a mortgage, and using the high estimate of 20% above the historical return will require households to have an income \$12,000 greater than previously to buy the mean priced home and \$9,000 more in income for the median priced home. In other words, the impact is dramatic and felt at an intense level of income impact, particularly when considering the issue of affordability and the proportion of income spent on housing.

Table 3. Estimated 2004 Sales Price with Passage of Increased Ballot Box Type Land Use Regulation

Estimated 2004 sales price	Historic appreciation	Historic appreciation plus 5%	Historic appreciation plus 10%	Historic appreciation plus 20%
Real mean sales price	\$226,196	\$237,506	\$248,816	\$271,436
Real median sales price	\$169,243	\$177,705	\$186,168	\$203,092

Table 4. Qualifying Income Needed for Estimated 2004 Sales Price

Estimated 2004 sales price	Historic appreciation	Historic appreciation plus 5%	Historic appreciation plus 10%	Historic appreciation plus 20%
Qualifying income for real mean sales price	\$60,794	\$63,834	\$66,873	\$72,953
Qualifying income for real median sales price	\$45,487	\$47,761	\$50,036	\$54,584

Decreases in Single-family Home Construction

The following impact analysis is carried out at the metropolitan statistical area (MSA) level. A MSA is an area with a high degree of social and economic integration, a population of 100,000 or more, and which contains at least one city of 50,000 people or more. Each MSA is named after its central city or cities. Florida has 21 MSAs that contain 35 of its 67 counties. The state’s six largest MSAs are Ft. Lauderdale, Jacksonville, Miami, Orlando, Tampa-St. Petersburg-Clearwater, and West Palm Beach-Boca Raton. The remaining 15 MSAs are Daytona Beach, Ft. Meyers-Cape Coral, Ft. Pierce-Port St. Lucie, Ft. Walton Beach, Gainesville, Lakeland-Winterhaven, Melbourne-Titusville Palm Bay, Naples, Ocala, Panama City, Pensacola, Punta Gorda, Sarasota-Bradenton, Tallahassee, and Vero Beach. The 32 counties that are not part of the 21 MSAs are categorized into four regional groups: Northwest, Northeast, Central, and South, according to categories used by the University of Florida’s Bureau of Economic and Business Research (Bureau of Economic and Business Research, 2003).

In the projection for this research we analyze a 5%, 10%, and 20% decrease in new single-family home construction to represent a potential supply restriction. Table 5 shows the amount of new single-family residential construction by MSA for

Florida in 2004 and gives the corresponding estimated decrease due to increased regulation (Shimberg Center for Affordable Housing, 2006). Assuming only a 5% decrease in single-family construction will decrease the amount of construction by \$1.48 billion. Assuming the worst case scenario of a 20% decrease across the state, new single-family construction will decrease by \$5.9 billion with almost 50% of the decrease located in just five MSAs: Orlando, Tampa-St. Petersburg-Clearwater, Jacksonville, Fort Myers-Cape Coral, and West Palm Beach-Boca Raton. These values of forgone single-family construction will be used for the rest of the analysis.

Table 5. Value (\$1000s) of Residential Single-family New Construction 2004

MSA	Forgone single-family construction		
	5% decrease in single-family construction	10% decrease in single-family construction	20% decrease in single-family construction
Daytona Beach	\$72,365	\$144,731	\$289,462
Ft. Lauderdale	\$36,222	\$72,444	\$144,888
Ft. Myers-Cape Coral	\$113,282	\$226,563	\$453,127
Ft. Pierce-Port St. Lucie	\$59,678	\$119,356	\$238,711
Ft. Walton Beach	\$15,153	\$30,306	\$60,612
Gainesville	\$8,688	\$17,375	\$34,750
Jacksonville	\$121,303	\$242,605	\$485,210
Lakeland-Winter Haven	\$39,846	\$79,692	\$159,384
Melbourne-Titusville-Palm Bay	\$58,131	\$116,262	\$232,524
Miami	\$64,288	\$128,576	\$257,152
Naples	\$51,957	\$103,915	\$207,829
Ocala	\$30,455	\$60,910	\$121,820
Orlando	\$215,530	\$431,060	\$862,120
Panama City	\$10,342	\$20,684	\$41,368
Pensacola	\$23,517	\$47,033	\$94,067
Punta Gorda	\$19,271	\$38,543	\$77,086
Sarasota-Bradenton	\$94,916	\$189,832	\$379,664
Tallahassee	\$13,715	\$27,431	\$54,862
Tampa-St. Petersburg-Clrwtr	\$174,949	\$349,899	\$699,798
Vero Beach	\$34,341	\$68,682	\$137,363
West Palm Beach-Boca Raton	\$109,081	\$218,161	\$436,323
Central Nonmetropolitan	\$33,495	\$66,989	\$133,978
Northeast Nonmetropolitan	\$7,329	\$14,659	\$29,317
Northwest Nonmetropolitan	\$57,545	\$115,090	\$230,181
South Nonmetropolitan	\$13,680	\$27,361	\$54,721
Florida Total	\$1,479,079	\$2,958,158	\$5,916,316

Impacts on Metropolitan Tax Revenue

One of the costs associated with decreasing the amount of single-family construction is the forgone property tax that would be generated by the units. Table 6 shows the average MSA millage rate (Florida Property Valuation, 2005), the amount of forgone property tax due to the decrease in single-family construction, and the amount of forgone tax revenue that would normally go towards schools, county government, and municipality government in the MSA. Using the upper estimate of a decrease of \$5.9 billion in single-family home construction leads to an overall decrease of \$110.9 million in property tax revenue, of which \$46.9 million would have gone towards Florida's schools, \$40.7 million towards county government, and \$11.2 million towards Florida's municipalities. The more conservative estimate still generates a loss of \$27.7 million in property tax revenue of which almost \$11.7 million would have gone to the state's schools.

Table 6. Forgone Tax Revenue (\$1000s) by Metropolitan Area

MSA	Average MSA millage	Forgone single-family construction	Forgone tax revenue	Forgone tax revenue that goes towards		
				Schools	County government	Municipality government
Daytona Beach	20.60	\$72,365	\$1,491	\$586	\$467	\$210
Ft. Lauderdale	22.00	\$36,222	\$797	\$276	\$273	\$172
Ft. Myers-Cape Coral	16.85	\$113,282	\$1,909	\$800	\$591	\$192
Ft. Pierce-Port St. Lucie	17.24	\$59,678	\$1,029	\$388	\$439	\$83
Ft. Walton Beach	21.73	\$15,153	\$329	\$181	\$92	\$36
Gainesville	20.92	\$8,688	\$182	\$67	\$79	\$20
Jacksonville	20.86	\$121,303	\$2,530	\$1,175	\$1,187	\$66
Lakeland-Winter Haven	20.99	\$39,846	\$836	\$369	\$346	\$84
Melbourne-Titusville-Palm Bay	17.10	\$58,131	\$994	\$376	\$394	\$131
Miami	16.09	\$64,288	\$1,034	\$388	\$330	\$190
Naples	20.37	\$51,957	\$1,058	\$522	\$373	\$43
Ocala	25.81	\$30,455	\$786	\$304	\$195	\$59
Orlando	14.23	\$215,530	\$3,067	\$1,362	\$906	\$324
Panama City	15.30	\$10,342	\$158	\$83	\$56	\$12
Pensacola	16.69	\$23,517	\$393	\$212	\$155	\$17
Punta Gorda	15.47	\$19,271	\$298	\$156	\$89	\$8
Sarasota-Bradenton	16.59	\$94,916	\$1,575	\$778	\$624	\$101
Tallahassee	18.14	\$13,715	\$249	\$108	\$104	\$28
Tampa-St. Petersburg-Clrwr	19.93	\$174,949	\$3,487	\$1,292	\$1,313	\$418

Vero Beach	16.21	\$34,341	\$557	\$276	\$124	\$23
West Palm Beach-Boca Raton	26.48	\$109,081	\$2,888	\$1,154	\$996	\$490
Central Nonmetropolitan	16.97	\$33,495	\$569	\$247	\$280	\$17
Northeast Nonmetropolitan	19.11	\$7,329	\$140	\$59	\$72	\$6
Northwest Nonmetropolitan	19.42	\$57,545	\$1,117	\$482	\$548	\$40
South Nonmetropolitan	18.55	\$13,680	\$254	\$86	\$134	\$19
Florida Total		\$1,479,079	\$27,726	\$11,727	\$10,170	\$2,790

10% Decrease in Single-family Construction

MSA	Average MSA millage	Forgone single-family construction	Forgone tax revenue	Forgone tax revenue that goes towards		
				Schools	County government	Municipality government
Daytona Beach	20.60	\$144,731	\$2,982	\$1,171	\$934	\$419
Ft. Lauderdale	22.00	\$72,444	\$1,594	\$551	\$545	\$344
Ft. Myers-Cape Coral	16.85	\$226,563	\$3,818	\$1,601	\$1,181	\$384
Ft. Pierce-Port St. Lucie	17.24	\$119,356	\$2,057	\$776	\$878	\$166
Ft. Walton Beach	21.73	\$30,306	\$658	\$362	\$185	\$73
Gainesville	20.92	\$17,375	\$363	\$135	\$159	\$40
Jacksonville	20.86	\$242,605	\$5,061	\$2,350	\$2,375	\$131
Lakeland-Winter Haven	20.99	\$79,692	\$1,673	\$739	\$693	\$168
Melbourne-Titusville-Palm Bay	17.10	\$116,262	\$1,988	\$751	\$788	\$261
Miami	16.09	\$128,576	\$2,068	\$775	\$660	\$380
Naples	20.37	\$103,915	\$2,117	\$1,045	\$747	\$86
Ocala	25.81	\$60,910	\$1,572	\$608	\$390	\$118
Orlando	14.23	\$431,060	\$6,133	\$2,724	\$1,813	\$649
Panama City	15.30	\$20,684	\$317	\$166	\$113	\$24
Pensacola	16.69	\$47,033	\$785	\$425	\$310	\$34
Punta Gorda	15.47	\$38,543	\$596	\$312	\$177	\$17
Sarasota-Bradenton	16.59	\$189,832	\$3,149	\$1,556	\$1,248	\$202
Tallahassee	18.14	\$27,431	\$498	\$216	\$209	\$57
Tampa-St. Petersburg-Clwrtr	19.93	\$349,899	\$6,973	\$2,583	\$2,627	\$836
Vero Beach	16.21	\$68,682	\$1,113	\$552	\$248	\$46
West Palm Beach-Boca Raton	26.48	\$218,161	\$5,777	\$2,309	\$1,992	\$980
Central Nonmetropolitan	16.97	\$66,989	\$1,137	\$494	\$560	\$33

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Northeast Nonmetropolitan	19.11	\$14,659	\$280	\$118	\$143	\$13
Northwest Nonmetropolitan	19.42	\$115,090	\$2,235	\$964	\$1,097	\$80
South Nonmetropolitan	18.55	\$27,361	\$507	\$173	\$268	\$39
Florida Total		\$2,958,158	\$55,452	\$23,454	\$20,339	\$5,580

20% Decrease in Single-family Construction

MSA	Average MSA millage	Forgone single-family construction	Forgone tax revenue	Forgone tax revenue that goes towards		
				Schools	County government	Municipality government
Daytona Beach	20.60	\$289,462	\$5,964	\$2,342	\$1,869	\$838
Ft. Lauderdale	22.00	\$144,888	\$3,188	\$1,102	\$1,090	\$687
Ft. Myers-Cape Coral	16.85	\$453,127	\$7,636	\$3,202	\$2,363	\$768
Ft. Pierce-Port St. Lucie	17.24	\$238,711	\$4,114	\$1,553	\$1,756	\$332
Ft. Walton Beach	21.73	\$60,612	\$1,317	\$724	\$370	\$146
Gainesville	20.92	\$34,750	\$727	\$269	\$317	\$80
Jacksonville	20.86	\$485,210	\$10,122	\$4,700	\$4,750	\$263
Lakeland-Winter Haven	20.99	\$159,384	\$3,346	\$1,478	\$1,386	\$337
Melbourne-Titusville-Palm Bay	17.10	\$232,524	\$3,976	\$1,503	\$1,576	\$522
Miami	16.09	\$257,152	\$4,137	\$1,550	\$1,320	\$760
Naples	20.37	\$207,829	\$4,234	\$2,090	\$1,493	\$171
Ocala	25.81	\$121,820	\$3,144	\$1,215	\$780	\$236
Orlando	14.23	\$862,120	\$12,266	\$5,448	\$3,625	\$1,298
Panama City	15.30	\$41,368	\$633	\$332	\$226	\$49
Pensacola	16.69	\$94,067	\$1,570	\$849	\$619	\$68
Punta Gorda	15.47	\$77,086	\$1,192	\$624	\$355	\$34
Sarasota-Bradenton	16.59	\$379,664	\$6,298	\$3,112	\$2,497	\$403
Tallahassee	18.14	\$54,862	\$995	\$433	\$418	\$113
Tampa-St. Petersburg-Clrwtr	19.93	\$699,798	\$13,947	\$5,167	\$5,253	\$1,673
Vero Beach	16.21	\$137,363	\$2,226	\$1,104	\$496	\$91
West Palm Beach-Boca Raton	26.48	\$436,323	\$11,553	\$4,617	\$3,985	\$1,961
Central Nonmetropolitan	16.97	\$133,978	\$2,274	\$988	\$1,121	\$66
Northeast Nonmetropolitan	19.11	\$29,317	\$560	\$235	\$286	\$26
Northwest Nonmetropolitan	19.42	\$230,181	\$4,469	\$1,927	\$2,194	\$161
South Nonmetropolitan	18.55	\$54,721	\$1,015	\$345	\$536	\$77
Florida Total		\$5,916,316	\$110,904	\$46,908	\$40,679	\$11,161

Table 7. Impact on Output (\$1000s) by Metropolitan Area

Metropolitan Area	5% decrease in single-family construction				10% decrease in single-family construction				20% decrease in single-family construction			
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total
Daytona Beach	\$72,365	\$25,881	\$19,981	\$118,227	\$144,731	\$51,762	\$39,961	\$236,454	\$289,462	\$103,524	\$79,922	\$472,907
Ft. Lauderdale	\$36,222	\$14,817	\$12,926	\$63,965	\$72,444	\$29,634	\$25,853	\$127,931	\$144,888	\$59,270	\$51,704	\$255,863
Ft. Myers-Cape Coral	\$113,282	\$42,179	\$29,286	\$184,744	\$226,563	\$84,357	\$58,570	\$369,492	\$453,127	\$168,713	\$117,142	\$738,982
Ft. Pierce-Port St. Lucie	\$59,678	\$21,542	\$15,609	\$96,829	\$119,356	\$43,084	\$31,219	\$193,658	\$238,711	\$86,166	\$62,437	\$387,315
Ft. Walton Beach	\$15,153	\$5,383	\$3,003	\$23,540	\$30,306	\$10,766	\$6,007	\$47,080	\$60,612	\$21,534	\$12,013	\$94,159
Gainesville	\$8,688	\$3,240	\$2,238	\$14,165	\$17,375	\$6,479	\$4,477	\$28,331	\$34,750	\$12,960	\$8,953	\$56,663
Jacksonville	\$121,303	\$52,709	\$47,133	\$221,144	\$242,605	\$105,417	\$94,265	\$442,289	\$485,210	\$210,835	\$188,531	\$884,575
Wakeland-Winter Haven	\$39,846	\$16,431	\$13,215	\$69,492	\$79,692	\$32,860	\$26,431	\$138,982	\$159,384	\$65,722	\$52,862	\$277,967
Melbourne-Titusville-Palm Bay	\$58,131	\$20,796	\$15,477	\$94,405	\$116,262	\$41,593	\$30,956	\$188,811	\$232,524	\$83,186	\$61,910	\$377,619
Miami MSA & Monroe County	\$67,171	\$29,843	\$24,319	\$121,333	\$134,341	\$59,686	\$48,638	\$242,665	\$268,683	\$119,372	\$97,276	\$485,331
Naples	\$51,957	\$15,737	\$14,412	\$82,107	\$103,915	\$31,473	\$28,824	\$164,212	\$207,829	\$62,946	\$57,649	\$328,425
Ocala	\$30,455	\$11,474	\$7,732	\$49,661	\$60,910	\$22,949	\$15,465	\$99,322	\$121,820	\$45,897	\$30,929	\$198,646
Orlando	\$215,530	\$95,395	\$79,956	\$390,881	\$431,060	\$190,789	\$159,911	\$781,760	\$862,120	\$381,579	\$319,821	\$1,563,520
Panama City	\$10,342	\$3,851	\$2,987	\$17,178	\$20,684	\$7,701	\$5,974	\$34,360	\$41,368	\$15,403	\$11,948	\$68,719
Pensacola	\$23,517	\$8,990	\$7,387	\$39,893	\$47,033	\$17,980	\$14,774	\$79,788	\$94,067	\$35,961	\$29,549	\$159,577
Punta Gorda	\$19,271	\$5,789	\$4,468	\$29,528	\$38,543	\$11,577	\$8,936	\$59,065	\$77,086	\$23,154	\$17,872	\$118,112
Sarasota-Bradenton	\$94,916	\$36,615	\$31,521	\$163,052	\$189,832	\$73,233	\$63,043	\$326,108	\$379,664	\$146,464	\$126,087	\$652,217
Tallahassee	\$13,715	\$5,128	\$3,673	\$22,518	\$27,431	\$10,257	\$7,346	\$45,034	\$54,862	\$20,515	\$14,693	\$90,069
Tampa-St. Petersburg-Clearwater	\$174,949	\$81,268	\$71,259	\$327,477	\$349,899	\$162,538	\$142,517	\$654,954	\$699,798	\$325,076	\$285,036	\$1,309,911
Vero Beach	\$34,341	\$11,196	\$8,049	\$53,585	\$68,682	\$22,391	\$16,097	\$107,170	\$137,363	\$44,783	\$32,195	\$214,341
West Palm Beach-Boca Raton	\$109,081	\$38,975	\$38,231	\$186,287	\$218,161	\$77,949	\$76,463	\$372,572	\$436,323	\$155,898	\$152,926	\$745,148
Central Nonmetropolitan	\$33,495	\$9,785	\$6,083	\$49,362	\$66,989	\$19,572	\$12,168	\$98,729	\$133,978	\$39,144	\$24,334	\$197,457
Northeast Nonmetropolitan	\$7,329	\$2,278	\$1,183	\$10,791	\$14,659	\$4,557	\$2,367	\$21,581	\$29,317	\$9,113	\$4,735	\$43,166
Northwest Nonmetropolitan	\$57,545	\$16,645	\$9,195	\$83,385	\$115,090	\$33,288	\$18,387	\$166,765	\$230,181	\$66,577	\$36,773	\$333,531
South Nonmetropolitan minus Monroe County	\$10,797	\$3,000	\$1,860	\$15,656	\$21,595	\$5,999	\$3,719	\$31,313	\$43,190	\$12,000	\$7,438	\$62,627
Florida Total	\$1,479,079	\$578,948	\$471,183	\$2,529,208	\$2,958,158	\$1,157,891	\$942,369	\$5,058,419	\$5,916,316	\$2,315,790	\$1,884,734	\$10,116,845

Impact on Total Output

A common method for measuring the economic impact of an economic event (new construction, a convention, a concert, etc.) is the use of input/output models. These models consider the inter-industry relationships and calculate how the inputs of one industry affect the outputs of other industries. One of the most commonly used economic impact modeling software is IMPLAN, licensed by Mig, Inc., of Minnesota. It measures three types of impacts: direct effects, indirect effects, and induced effects. Direct effects are the changes in the industries to which a final demand change is made. Indirect effects are the changes made in inter-industry purchases as they respond to the new demands of the directly affected industries. Induced effects typically reflect changes in spending from households as income increases or decreases due to the changes in production. All these effects are calculated for the total impact on output.

Using the IMPLAN software, we construct a projection of the direct effects and generate indirect and induced effects to come up with a total impact on MSA economies. Table 7 shows the impact that a 5%, 10%, and 20% decrease in single-family residential construction has on total impact in each of the MSAs and sums the effect for the state. Assuming the worst case scenario, the \$5.9 billion decrease in single-family construction leads to an indirect decrease of \$2.3 billion, and an induced decrease of \$1.88 billion, for a total decrease of \$10.1 billion across the state. A more conservative estimate of a 5% decrease in single-family residential construction leads to a \$1.48 billion direct loss, a \$578.9 million indirect loss, and a \$471.2 million induced loss for a total impact of losing \$2.53 billion.

Conclusion

Throughout the U.S., increasing land use regulation via ballot box measures is being addressed. It appears that ballot box land use measures to pass land use regulation change can lead to delays in the land development process. These delays have been found to increase transaction costs, cause uncertainty in the development process, and lead to a reduction in the number of new single-unit homes being constructed. One of the major concerns is that this restriction in supply will lead to increased housing prices in communities, negatively impacting affordable housing by placing it beyond obtainable levels of affordability.

In this study, projections were constructed of potential impact of land use regulation change. Using Florida as the case in point, home buyers will have to earn \$3,000 to \$12,000 more per year to qualify for higher housing prices due to increased regulation. These results are consistent with the case studies reviewed for California and Ohio, which found that in areas where growth pressures exist, average land costs incurred by increased development delays and additional regulation ranges from \$10,000 to \$40,000 per unit.

Additionally, for the specific case of Florida, it is estimated that a 20% decrease in single-family construction, based on 2004 construction data, would result in a \$5.9 billion decrease in single-family home construction. This decrease in single-family construction would lead to a decrease of \$110.9 million in property taxes, of which \$46.9 million would have gone to schools, \$40.7 million to county governments, and \$11.2 million to municipalities. The decrease in single-family construction would also lead to a decrease of \$10.12 billion dollars in economic output, \$3.57 billion in lost labor earnings, and a loss of 110,700 jobs.

The conclusion based on these data is that Florida will continue to experience high levels of growth pressures and ballot box measures would further negatively impact the economy of the state, besides making housing unaffordable, particularly in larger metropolitan areas. The challenge will be to provide balanced planning to overcome these difficulties without negatively impacting affordable housing. If the trend observed around the country involving ballot box measures as direct legislation to decide land use planning issues continues, it will be necessary to counter-balance these initiatives with non-ballot box land use measures and other types of land use regulations. In areas of the country experiencing severe affordable housing shortages such as Florida, a concerted effort on the part of legislators and local governments may be needed to maintain land development balance and thus allow affordable housing to be supplied as needed.

This research indicates that land use regulations via ballot box measures have a significant effect on land development and affordability of housing. We have examined data for the state of Florida, one of the states with the highest growth rate in the nation, in addition to California and Ohio. Further research would increase our understanding of how much ballot box land use measures to pass land use regulation change affect the land development process and how much they increase housing costs. In addition, the negative impact of rising housing costs on the economy of the state needs to be evaluated. A better understanding of the causal relationship between ballot box measures and potential effects on the economy can help planners devise initiatives to balance housing supply and demand, particularly in large metropolitan areas.

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