

Reinvestment BRIEF



Capital at the point of impact.

The Reinvestment Fund

The Reinvestment Fund is a leading innovator in the financing of neighborhood and economic revitalization. Central to its mission is a commitment to put capital and private initiative to work for the public good. TRF is a development finance corporation with a wealth-building agenda for low- and moderate-income people and places through the strategic use of capital, knowledge and innovation. TRF manages \$397 million in assets from over 850 investors. It uses these assets to finance housing, community facilities, businesses, renewable energy projects and public policy research.

Econsult Corporation

Econsult Corporation is an economic consulting firm whose practice includes economics and policy advisory services. Founded in 1979 for the purpose of providing high quality economic research and statistical analysis in support of litigation, Econsult has grown to offer a wide range of management consulting services and products. Econsult brings together distinguished experts from consulting, academia, and government providing a unique depth of talent in multiple areas of economic and policy consulting. Known for its high-level economic and statistical analysis, the firm advises public agencies and private firms on various policy and management concerns. Econsult services include management and organizational advisory services; market studies; project investment evaluation, benefit cost analysis and feasibility studies; and economic impact and hedonic price studies.

The Economic Impacts of Supermarkets on their Surrounding Communities

Introduction

In the fall of 2004, TRF established the Pennsylvania Fresh Food Financing Initiative (FFFI), a statewide program to increase the number of supermarkets in underserved communities. The program was established as a partnership with The Food Trust and the Greater Philadelphia Urban Affairs Coalition. With legislative guidance from State Representative Dwight Evans and considerable support from the PA Department of Community and Economic Development, FFFI seeks to increase access to affordable, quality foods in these neighborhoods. It responds to the mounting evidence that supermarket accessibility reduces the risk of developing diet-related diseases such as obesity, heart disease, and diabetes. Additionally, supermarkets ought to spur economic benefits such as bringing more jobs and encouraging additional development in these communities.

As of December 31, 2006, the FFFI had committed \$21.8 million in grants and loans to 26 stores across the state. These stores will create and retain approximately 2,442 jobs and more than 782,450 square feet of retail space. Thus far, we have disbursed funds for 17 of these projects, including the expansion of the only grocery store in Gettysburg which broke ground in early January 2007.

To assess some of the impact of this program, TRF contracted with Econsult Corporation to study the impact of new supermarket development on consumers and on their communities. The study would then provide the basic template for the future assessment of the impacts of new supermarkets being developed in other underserved communities. Many of the findings that hold for the markets analyzed are likely to be transferable to other communities with new supermarket investment. The Food Trust is also partnering in a study funded by the National Institute Environmental Health Sciences, to evaluate the program's impact on diet. Working with the Pennsylvania State University and the University of London, The Food Trust study will compare fruit and vegetable consumption patterns and evaluate whether these patterns change after the opening of a new supermarket.

The Study

To assess impact, Econsult looked at three commonly suggested community benefits that supermarket development can bring to areas currently served by only small grocers, convenience stores or pharmacies with food departments:

1. Improved Real Estate:

Supermarket development could improve the overall attractiveness of a community, thus helping to attract (or retain) more residents in the area. In turn, those residents will attract other retail businesses into the community, so that economic activity increases in all sectors;

2. New Investment: Supermarket investment could increase

economic activity in the community and surrounding region, increase the number and quality of jobs and generate additional tax revenues for state and local governments;

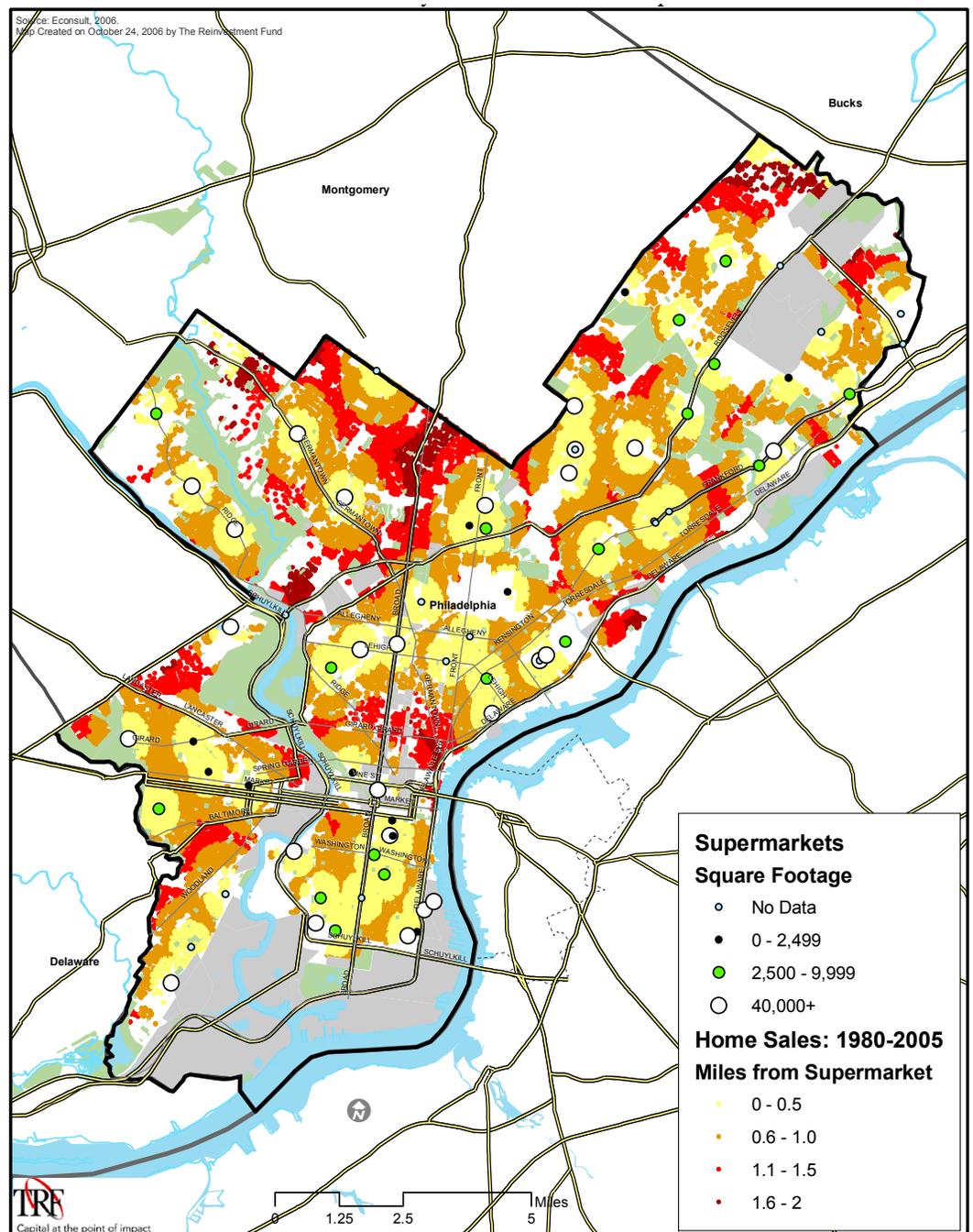
3. Lower Prices: Supermarkets could potentially improve access to higher-quality food products at lower costs to the consumer.

Real Estate Impact

The analysis of residential real estate prices in Philadelphia finds that the introduction of a new supermarket increases both the levels and rates of appreciation of home prices near the new store. The real estate price increase reflects the increase in a neighborhood's desirability and points to the fact that it was likely missing something important previously. The real estate market impact of new

Home Sales from 1980-2005 Color Coded by Distance to the Nearest Supermarket

This map shows home sales, color-coded by distance. The color ramp is scaled from yellow to red, with darker shades denoting homes that are located at relatively greater distances from supermarkets.



supermarkets provides the strongest evidence that:

- Prior to the opening of the new supermarket, the community was underserved.
- Supermarkets are a key feature of a community for which residents are willing to pay higher real estate prices for access.
- The magnitude of the community benefit of a new supermarket is substantial; economic theory would suggest that the increase in real estate value is a measure of the value of the benefits of a new supermarket.

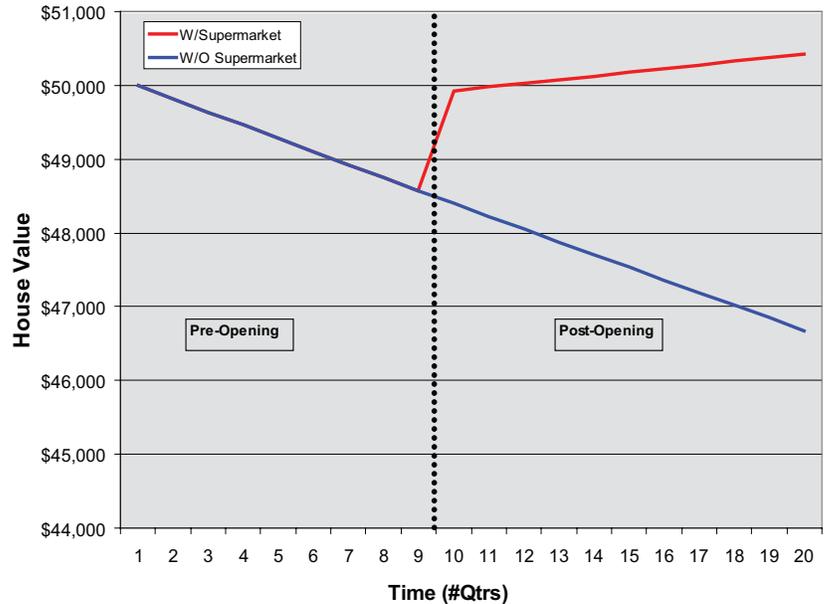
Methods

Two methods were used to gauge the impact of a new supermarket on real estate values:

Cross-Section Analysis – With this method, the effect of supermarket proximity is negative at distances of less than 1-1.2 miles, but positive thereafter. The finding is consistent with the idea that congestion costs may dominate at short distances, but amenity benefits dominate at longer ones. However, a significant problem with this method is that it assumes the supermarkets existed at all points in time contained in the data sample, which is not the case. We therefore discount these results.

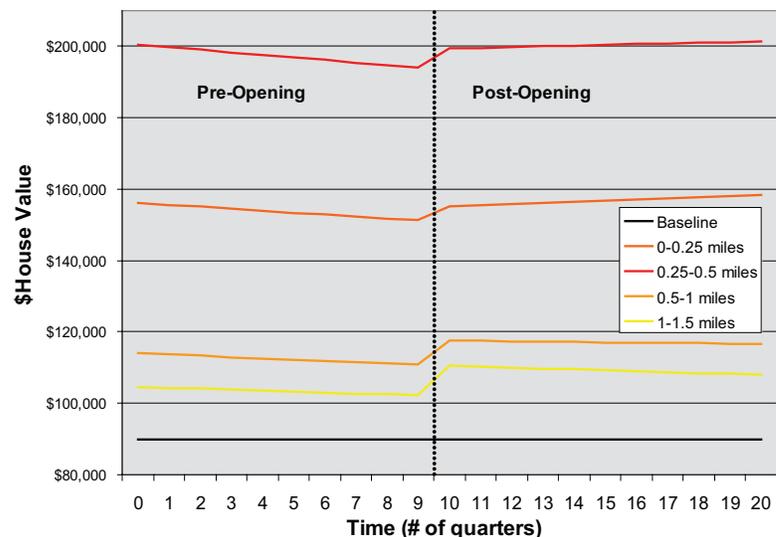
Time-Series Analysis – This method tests for the impact of an opening of a supermarket on neighboring property values, looking at trends both before and after opening. In general, the results suggest a much more positive impact of supermarkets on local property values. Subsequent to a supermarket opening, housing values appear to receive an immediate boost in value of approximately 4-7%, depending upon which model is selected. Where the trend in the

Figure 1: Housing Price Appreciation Paths



This chart plots trends in house values to a sample Philadelphia house in a low-income neighborhood, which had an average price of \$50,000 in 2005 Q1. As the results indicate, the immediate boost to value of a store opening appears to be worth approximately \$1,500 to the typical low-income Philadelphia homeowner who lives within 0.25-0.5 miles of a supermarket. Perhaps even more importantly, the event of a supermarket opening appears to largely mitigate the (real) downward trend in local property values that was occurring prior to the opening.

Figure 2: The Estimated Effects of Supermarket Openings on House Value



neighborhood prices was negative prior to the opening of the new supermarket, that trend remained negative, but the downward trend becomes less steep.

Combining the two results also appears to support what the individual results indicate separately as shown in Figure 1. The event of a store opening is associated with an increase in nearby house values, and this in effect generally is larger for properties that are not immediately adjacent to the new market. These slightly more distant houses also tend to have lower average prices. In percentage terms, the positive effect is greater where the average house price is smaller. Note, however that the trend improvement is greater at closer distances, where average prices are somewhat higher.

One possible interpretation for this unusual pattern may be the self-selection bias of supermarkets into neighborhoods with higher property values, where their effect is likely to be smaller than in lower valued neighborhoods. However, another interpretation (which does not necessarily exclude the first explanation) is that the effect of supermarkets may also reflect the negative opportunity cost of urban land. That is, although nearby households may dislike the pedestrian and traffic congestion that supermarkets may generate, it is still better than the alternative. If supermarkets replace existing disamenities, such as deteriorated housing or vacant land, the net effect will be positive. Such a hypothesis could explain the negative cross-section effect but positive temporal effect discovered in the regression analysis.

By way of example, consider a city “greening” program (like that which

was funded by the Neighborhood Transformation Initiative (NTI), for example) which demolished abandoned homes and replaced them with clean, fenced vacant lots. A cross-section regression would likely show that proximity to a vacant lot would be associated with relatively lower house values, since vacant lots collect refuse and vagrants. A time-series regression would likely show the opposite: that the replacement of abandoned homes with green lots has a positive impact on surrounding property values.

A new supermarket
**increases
economic
activity** in the
neighborhood and
region.

Investment Impact

The opening of a new supermarket does more than increase food choices available to consumers. A new supermarket can have an economic impact by increasing the number and quality of jobs in the community, increasing overall economic activity in the neighborhood and region, and generating additional tax revenues at both the state and local level. While there are a number of well-tested analytic tools available to measure the investment impact of a new supermarket, this study provides a detailed analysis of two specific supermarket investment projects, using regional Input-Output (I-O) models. These models provide accurate estimates of the indirect and induced economic impacts associated with

new, direct investment in supermarket construction and operation. The output of these models must be interpreted carefully, however, because the retail operations of new supermarkets may entail a shift in activity away from existing retailers, and hence overstate the total impact of operations. To the extent that there is significant “leakage” of expenditures for food outside of the community of interest, the retail operations could reflect net new increases in local economic activity.

The two supermarkets examined in this study are located in Philadelphia and a nearby Philadelphia suburb. The impacts are quantified in terms of increases in regional economic activity, employment and wages. Using models developed by Econsult, the fiscal impacts on local governments were also computed.

Direct expenditure data was gathered for two supermarkets: Supermarket A in Philadelphia County and Supermarket B in Delaware County. This information was categorized and run through the I-O model to generate total economic impact, which is composed of three parts: 1) Direct Expenditures; 2) Indirect Expenditures; and 3) Induced Expenditures.

For the two supermarkets analyzed, Econsult examined the impacts of construction expenditures and the impacts of operating expenditures, the economic multiplier, the total economic output as well as the impacts on employment and earnings. The estimated indirect and induced expenditures are the basis for computing the economic impact multiplier, which expresses the total economic impact, in dollars, on the region for each dollar of direct expenditures. At the county level, the economic impact multiplier for construction and operations are both

Direct Expenditures

Spending by the supermarkets' owners and managers to equip and operate the store.

Indirect Expenditures

When supplies are purchased from other businesses in the region, these firms may increase production to fill the supermarkets' order and in turn increase purchases from their suppliers. The sum of all of this interindustry spending is the indirect expenditure effect associated with the new supermarket.

Induced Expenditures

All of the economic activity that results from the new supermarket, whether direct or indirect, will require workers who must be paid for their labor. Some of their earnings will be spent at businesses within the region on various goods and services, creating another round of economic activity like that described above. Those expenditures make up the "induced" expenditure effects.

Total Expenditures

Sum of direct, indirect and induced expenditures.

Leakage

Amount of dollars flowing outside the community for certain goods, which is the amount to which estimated expenditures exceeds estimated sales.

Economic Impacts of Supermarket A: Philadelphia County, PA				
	County Model		Metro Model	
	Construction	Operation	Construction	Operation
Direct Expenditures	\$175,000	\$29,763,000	\$175,000	\$29,763,000
Indirect & Induced Expenditures	\$90,615	\$13,478,389	\$207,078	\$26,444,722
Total Economic Output	\$265,615	\$43,241,389	\$382,078	\$56,207,722
Multiplier	1.5	1.5	2.2	1.9
Direct Earnings	0	\$4,950,000	0	\$4,950,000
Indirect Earnings	\$41,125	\$7,516,051	\$109,078	\$15,636,492
Total Earnings	\$41,125	\$12,466,051	\$109,078	\$20,586,492
Direct Employment	0	370	0	372
Indirect Employment	1	290	3	551
Total Employment	1	660	3	923
Total Local Tax Revenue	\$2,469	\$540,910	\$60,549	\$8,192,868

Table 1.1: Supermarket A has significant impacts on employment and earnings. At the county level, employment is estimated to increase by 660 jobs. Correspondingly, earnings increase \$12,466,000.

Economic Impacts of Supermarket B: Delaware County, PA				
	County Model		Metro Model	
	Construction	Operation	Construction	Operation
Direct Expenditures	\$1,750,000	\$11,558,313	\$1,750,000	\$11,558,313
Indirect & Induced Expenditures	\$1,201,025	\$4,002,490	\$2,070,775	\$8,483,414
Total Economic Output	\$2,951,025	\$15,560,803	\$3,820,775	\$20,041,727
Multiplier	1.7	1.3	2.2	1.7
Direct Earnings	0	\$3,573,570	0	\$3,573,570
Indirect Earnings	\$604,800	\$2,782,275	\$1,098,825	\$5,354,539
Total Earnings	\$604,800	\$6,355,845	\$1,098,825	\$8,928,109
Direct Employment	0	250	0	250
Indirect Employment	15	93	27	170
Total Employment	15	343	27	420
Total Local Tax Revenue	\$121,291	\$557,244	\$605,493	\$2,731,867

Table 1.2: Supermarket B entails a significantly smaller investment than the Supermarket A. The total economic, employment, and earnings impacts of the Supermarket B project are smaller, proportionate to their smaller direct expenditures. The major difference from Supermarket B is the large construction expenditures, which gives rise to a larger one-time construction impact.

estimated to equal 1.5, meaning that \$1 of direct expenditures will generate \$1.50 of total expenditures. The charts on the previous page display the estimated local impacts for county areas and for the region.

Note that not all benefits arising from the new supermarket investments can be quantified by the I-O models, such as worker training. Supermarkets customarily provide training to their workers, something most small stores do not do. That training increases worker productivity, which the newly trained workers will carry with them throughout their business careers. In addition to helping the supermarket and the individual, the training increases the pool of trained workers within the community which, over time, may benefit other stores in the area as workers move on to other jobs.

Price Impact

The price effects of a new supermarket on its surrounding community are more difficult to measure. The necessary data to directly quantify the extent to which the opening of a new supermarket will lower food prices in a particular market area are simply unavailable. However, in its analysis of the prices paid for food in Philadelphia, the Brookings Institution found that food prices were likely to be substantially higher in urban areas than in suburban areas, because of the prevalence of small food stores in the former areas rather than larger, more efficient supermarkets.¹

There is substantial research that indicates that supermarkets provide both lower prices and broader selections of goods than do smaller grocers, convenience stores or other types of food stores. Research conducted by the US Department of Agriculture concluded that low-income

households may benefit most from having access to large retail food stores, like supermarkets.² The benefit stems from two sources. Supermarkets experience greater scale economies than do smaller food stores often leading to lower prices. And supermarkets can offer their customers a broader array of products, both in terms of brands and package sizes than smaller convenience stores. With lower prices and more choices available to them, consumers can better control their household food costs.

Econsult analyzed the number, types and sizes of food stores available to consumers in an analysis of the market areas served by Supermarket A and Supermarket B to gauge their ability to minimize their food costs.

Types of Food Stores

In 2003, there were 56 food stores in Supermarket A's market area, and 48

Percentage of Small Food Stores by Region in 2003 ³							
	Bucks	Chester	Delaware	Montgomery	Philadelphia	Supermarket A	Supermarket B
Population	597,635	433,501	550,864	750,097	1,517,550	72,218	62,702
All Food Stores	372	222	413	474	1,156	56	48
% of Food Stores with 1-4 Employees	33%	29%	33%	30%	56%	61%	38%
2003 Supermarket/grocery Employment	8,719	4,826	5,236	9,897	10,627	296	427
Persons per Supermarket Employee	69	90	105	76	143	244	147

Table 1.3: The table makes clear that very small food stores dominate Supermarket A's market area, with 61% of the total, indicating that many of the food stores in Supermarket A's market area are not large enough to offer consumers the benefits commonly associated with supermarkets. Supermarket A's result is 5% higher than Philadelphia County as a whole, and almost doubles the 31% average share for the three suburban counties. The same pattern is observed for the Supermarket B market area, but to a much lesser degree.

stores in Supermarket B's market area. The three largest store categories in Supermarket A's area were: 1) *Supermarkets and Other Grocery Stores*; 2) *Pharmacies* and; 3) *Convenience Stores*. This pattern prevails in all five Greater Philadelphia counties, although convenience stores appear to be significantly more numerous outside Supermarket A's area and Philadelphia County as a whole.

Supermarkets are a key feature of a community for which residents are willing to pay higher real estate prices for access.

In contrast, Supermarket B's market area contains almost as many convenience stores as supermarkets and other grocery stores (14 versus 15).

Overall, the data on store type appear to indicate that consumers in Supermarket A and Supermarket B market areas have access to the same kinds of food stores and, relative to population, the same numbers of food stores as do suburban consumers. However, the data on store size paint a much different picture.

Food Store Size

In 2003, all but five stores in the five-county Philadelphia region had 249 employees or fewer. Indeed, 42% of all food stores in the region had fewer than five employees. The five stores with more than 249 employees, located in Bucks, Montgomery and Philadelphia Counties, were all supermarkets.

The ratio of the number of consumers to the number of people serving them can serve as a measure of how well consumers' demand is being met. Based on estimates of supermarket employment in each region, the three suburban counties – Bucks, Chester and Montgomery – have consumer to employee ratios that are less than 100; that is, each supermarket employee serves fewer than 100 potential consumers. For the two urban counties, the ratio climbs over 100, and rises

to 143 for Philadelphia County. The result for the Supermarket B market area climbs to 147. Given that much of Delaware County is similar to Philadelphia, that result is not surprising. In contrast, each supermarket employee in the Supermarket A market area serves 244 potential consumers, essentially 100 more than the average for Philadelphia County as a whole. Taken together, this data clearly indicates that consumers in the Supermarket A and Supermarket B market areas have been missing out on the benefits arising from the presence of large supermarkets. (See Table 1.3)

Leakage

The comparison of purchases to sales in the Supermarket A market area also demonstrates that there is considerable leakage out of the area, as consumers travel outside that market area to find better selections of goods and / or lower prices than can be found in their neighborhoods. The market area is defined as the area within a two mile radius of the store. The estimated leakage is smaller for the Supermarket B market area. (See Table 1.4)

Total Consumer Spending in Food Stores and Total Store Sales			
Household Income	Expenditures per Household	Supermarket A Market Area	Supermarket B Market Area
Less than \$15,000	\$2,773	\$17,228,725	\$12,616,725
\$15,000 - \$49,999	\$3,740	\$47,293,176	\$40,782,078
\$50,000 +	\$6,359	\$55,008,178	\$80,755,618
Estimated Total Expenditures		\$119,530,079	\$134,154,225
InfoUSA Sales		\$90,942,000	\$131,429,000
Expenditures as a % of Sales		131.4%	102.1%

Table 1.4

Conclusion

Analysis of the investment impact shows that there were significant impacts on employment and earnings for Supermarket A at the county level. Employment is estimated to increase by 660 jobs. Correspondingly, earnings increase \$12,466,000. Impacts for Supermarket B were smaller given the smaller direct expenditures. The major difference for Supermarket B comes from its large construction expenditures, which gave rise to a larger one-time construction impact.

While the price impact was much more difficult to measure, the analysis revealed that smaller food stores were more likely to dominate the market areas surrounding both supermarkets. As a result, consumers in these market areas were less likely than suburban consumers to receive the benefits commonly associated with supermarkets, such as lower food prices and a better selection of fresh foods. As a result many consumers, especially in Supermarket A's market area, were also likely to travel outside

their neighborhood in search of the aforementioned benefits.

Perhaps the strongest impact of a supermarket development was on real estate prices. The study found that the introduction of a new supermarket gives an immediate boost to the value of a home. In low-income communities, the opening of a supermarket also appears to largely mitigate any previously downward trend in local property values.

1) "The Price Is Wrong: Getting the Market Right for Working Families in Philadelphia", The Brookings Institution, Metropolitan Policy Program, 2005. 2) Kaufman, Phillip R., James M. MacDonald, Steve M. Lutz and David M. Smallwood, Do the Poor Pay More for Food? Item Selection and Price Differences Affect Low-Income Household Food Costs. U.S. Department of Agriculture, Agricultural Economics Report No. 759; November, 1997. 3) The analysis of small food stores by region excludes pharmacies.

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