

9-1-2002

The wage and productivity impacts of new jobs on the Hillsborough County economy : job-creation initiatives in 1999 / : an analysis performed by Center for Economic Development Research, College of Business Administration, University of South Florida

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**The Wage and Productivity Impacts of New Jobs on the  
Hillsborough County Economy**  
Job-creation Initiatives in 1999

An Analysis Performed by

CENTER FOR ECONOMIC DEVELOPMENT RESEARCH  
College of Business Administration



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September, 2002

## *Preface*

This study, *The Wage Impact of New Jobs on the Hillsborough County Economy, Job-creation Initiatives in 1999*, was prepared by the Center for Economic Development Research (CEDR), College of Business Administration, University of South Florida. CEDR provides information and conducts research on issues related to economic growth and development in the Nation, in the state of Florida, and particularly in the central Florida region. The Center serves the faculty, staff, and students of the College of Business Administration, the University, and individuals and organizations in the University's service area. CEDR's activities are designed to further the objectives of the University and specifically the objectives of the College of Business Administration.

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September 27, 2002 (Revised)

## EXECUTIVE SUMMARY

This is a report of the findings of analysis of economic development related job-creation initiatives in Hillsborough County, Florida during 1999. That year there were ten job-creation initiatives implemented in Hillsborough County. The provisions of Florida's Qualified Target Industry (QTI) Tax Refund Program guided seven initiatives. The Employers Impact Fee Mitigation Program (EIFMP, approved by the Board of County Commissioners in 1996) and the Employers Water and Wastewater Capacity Fee Mitigation Program (EWWCFMP, approved by the Board of County Commissioners in 1997) governed three initiatives.

Based on Covered Employment and Wages (ES-202) data, the weighted-average wage for workers in Hillsborough County in 1999 was \$29,744. Additionally, using a regional economic model, we estimate countywide output per worker at \$76,437 for 1999.

The findings are:

### QTI Program Initiatives.

- The seven initiatives reported an average direct wage ranging from \$29,000 to \$75,000 per annum.
- The initiatives created 2,803 direct jobs and generated 2,121 more indirect and induced jobs.
- The average wage for the total of 4,924 jobs was \$37,176.
- The average effect of the 4,924 jobs is typically 70% of countywide output per worker. Two of the seven initiatives would be expected to increase overall output per worker.
- Combined, the seven initiatives tend to increase weighted-average wages and lower output per worker. Individually, one tends to decrease weighted-average wages and overall worker productivity, two tend to boost weighted-average wages as well as overall worker productivity, and the other four tend to boost weighted-average wages and decrease overall worker productivity.

The total effects of the 1999 QTI initiatives are somewhat mixed. The initiatives tend to increase weighted-average wages for workers in Hillsborough County, while typically lowering output per worker overall.

### EIFMP/EWWCFMP Initiatives.

- All three initiatives reported the required qualifying average direct wage of \$31,156 per annum.
- The initiatives created 181 direct jobs and generated 387 more indirect and induced jobs.
- The average wage for the total of 568 jobs was \$30,806.

- The average effect of the 568 jobs is typically 144% of countywide output per worker. Two of the three initiatives would be expected to increase average output per worker.
- The three initiatives as a whole tend to increase weighted-average wages as well as typically raising output per worker overall.

The 1999 EIFMP/EWWCFMP incentives tend to slightly increase weighted-average wages for workers in Hillsborough County, while typically raising output per worker overall.

Based on a trend line, QTI incentives in 1999 would need to create direct jobs paying at least 82.5% of the countywide weighted-average wage, in order that the average wage for all jobs would at least be as much as the countywide weighted-average before the initiative was undertaken. All seven QTI initiatives had average direct wages above the 82.5% threshold. The high level of indirect wages - averaging almost 110% of the countywide wage - mathematically drives this finding. The direct wages for the seven QTI initiatives ranges from 97.499% of the countywide weighted-average to 252.152% of the countywide weighted-average wage. Using the trend line to make an estimate when the direct wage is outside this range is problematic, especially if indirect wages were not expected to be at least 110% of the countywide weighted-average wage.

Since the direct wage reported for all three 1999 EIFMP/EWWCFMP initiative projects was the same, we cannot develop a trend line similar to that developed for QTI initiatives.

# The Wage and Productivity Impacts of New Jobs on the Hillsborough County Economy

## Job-creation Initiatives in 1999

### Introduction.

The purpose of this paper is to report findings of analysis of economic development related job-creation initiatives in Hillsborough County, Florida.

Hillsborough County is located in west central Florida and is one of seven counties often referred to as Tampa Bay. The Hillsborough County Economic Development Department administers programs that sustain and encourage the economic growth of the local economy, including programs that stimulate the creation of quality jobs for the skilled and semi-skilled work force. The Department's Corporate Business Development (CBD) section is committed to increasing quality job opportunities for the community's residents by helping to establish, maintain and project Hillsborough County's business friendly climate to corporations that create and sustain those desirable quality jobs.<sup>1</sup>

This study is commissioned by the CBD section of the Hillsborough County Economic Development Department. It encompasses ten job-creation economic development initiatives in Hillsborough County during the year 1999. The input data for analysis were provided by the CBD and are shown in **Table 1** (page 3). The input data provided by the CBD included Firm Name, Type of Business, Program Type (QTI or EIFMP/EWWCFMP – both of which are explained later), Number of New Direct Jobs Created, Average Direct Wages, and Standard Industry Codes (SICs) for the EIFMP/EWWCFMP program projects. The CBD does not maintain records of confidential data submitted by QTI program applicants, therefore we used the State of Florida's Enhanced Quarterly Unemployment Insurance (EQU) database (a micro-level version of the ES-202 data, explained below) to look up the SIC submitted by the firms for state unemployment insurance records. Table 1 also includes a column for "IMPLAN Sector," which is the designation used to bridge from the 4-digit SIC to the sector of the economy used in the IMPLAN<sup>TM</sup> model for analysis.

The Qualified Target Industry (QTI) Tax Refund Program is available to Florida communities to encourage the expansion of existing businesses or the location of new-to-Florida businesses. The program provides tax refunds to pre-approved applicants of \$3,000 per new job created (\$6,000 in an Enterprise Zone or rural county). A company that pays an average of at least 150 percent of area wages receives an additional \$1,000 per job. And a company that pays an average of at least 200 percent of area wages receives an additional \$2,000 per job. The QTI program is authorized by s. 288.106 *F.S.*

The Employers Impact Fee Mitigation Program (EIFMP) was approved by the Board of County Commissioners on February 14, 1996 "to encourage employers to add

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<sup>1</sup> Source is [www.hillsboroughcounty.org/home.html](http://www.hillsboroughcounty.org/home.html) on 9/04/02.

higher paying, quality jobs to the employment base of Hillsborough County.”<sup>2</sup> The program pays \$1,000 per job created toward development impact fees assessed in unincorporated Hillsborough County. An employer must maintain the new jobs for at least four years. To qualify a job must be full-time, non-seasonal and pay 115% of the local annual average wage or better, excluding benefits. The annual average wage is defined by Covered Employment and Wages (ES-202) data reported for Hillsborough County by the Florida Agency for Workforce Innovation, Bureau of Labor Market Information.

Similarly, the Employer’s Water and Wastewater Capacity Fee Mitigation Program (EWWCFMP), approved by the Board of County Commissioners in 1997, provides that a \$150 or \$300 grant (depending on the wage level) for each newly created job can be awarded toward water & wastewater capacity and accrued guaranteed revenue fees. Jobs with wages from 115% to less than 150% of the county’s average wage (\$34,206 to \$44,616 in 1999) or located within an officially designated economically distressed area are eligible for a \$150 mitigation per job. Jobs with wages meeting or exceeding 150% of the county’s average wage (equivalent to \$44,616) are eligible for a \$300 mitigation per job. To qualify, these jobs must be new to Hillsborough and created within the unincorporated area of the county. Applications must be submitted in advance of any permit application, changing land usage or building occupancy related to the proposed jobs. Exceptions to the above program requirements include waiving the minimum of 25 new jobs and wage requirements for projects located within officially designated areas targeting increased employment opportunities. The level of new jobs and wages comprising the mitigation grant must be maintained for four years from initial compliance. In addition, the applicant must agree to provide evidence the new job and wage levels were created. Also, the applicant must provide a secured financial instrument indemnifying the county for the full value of the water and wastewater capacity and accrued guaranteed revenue fee mitigation in case the promised jobs and/or wages are not attained.

The foundation of this analysis is the understanding that job creation in one industry begets additional jobs in related industries. In addition, further jobs are created to support an increased level of aggregate household income and spending resulting from the inter-industry job creation. In this analysis, the job creation process, as it ripples through an economy, is estimated using the *IMPLAN Professional*<sup>TM</sup> regional economic impact model.

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<sup>2</sup> Reference “A Revised and Simplified Proposal to Mitigate Impact Fees for Employers Who Create New Quality Jobs in Hillsborough County Including a Distressed Area Option,” Hillsborough County Commerce Department, Office of Financial Services, revised 2/1/96.

Table 1

<u>Designation</u>	<u>Type of Business</u>	<u>SIC Code</u>	<u>IMPLAN Sector</u>	<u>Program</u>	<u># of Jobs</u>	<u>Avg. Direct Wages</u>
QTI Project 1	Vehicle Financing Customer Service Center	6141	457	QTI	409	\$34,163
QTI Project 2	Sea Transportation Company	4424	436	QTI	20	\$75,000
QTI Project 3	Call Center	6162	457	QTI	660	\$30,500
QTI Project 4	Global Client Services Operations	6162	457	QTI	981	\$44,359
QTI Project 5	Electronic Treasury	6162	457	QTI	499	\$57,310
QTI Project 6	Communications Equipment Facility	4800	441	QTI	134	\$64,000
QTI Project 7	Customer Service Call Center	8011	490	QTI	100	\$29,000
EIFMP/EWWCFMP Project 1	Recreational Vehicle Sales	5561	451	EIFMP & WWCFMP	50	\$31,156
EIFMP/EWWCFMP Project 2	Surgical Supplies	3842	408	WWCFMP	50	\$31,156
EIFMP/EWWCFMP Project 3	Gypsum Board Manufacturers	3270	246	EIFMP & WWCFMP	81	\$31,156

### CONDITION

#### **\*QTI**

Application for program eligibility must be made before the company decides to locate or expand in Florida.  
Jobs must have wage of at least 115% of the State, County, or Metropolitan average wage.  
Must create a minimum of 100 new jobs or a 10% increase in employment if expanding in Florida.  
Must be maintained for a minimum of 4 years.

#### **\*EIFMP & EWWCFMP**

Jobs must be new to Hillsborough County.  
Jobs must be created within unincorporated Hillsborough County.  
Wages of the new jobs must be \$31,156 per year or higher.  
Requires the creation of at least 25 new jobs in order to qualify.  
New jobs must be maintained for at least 4 years.  
Company agrees to provide evidence of the jobs and their wages.  
Company agrees to provide the County with a secure financial instrument.

### Economic Foundation of the Analysis.

When jobs are created in an industry, these jobs motivate the creation of additional jobs in related industries. The Frenchman Francois Quesnay, founder of the physiocratic or “natural order” philosophy of economic thought, first described inter-industry relationships in 1758. The physiocrats depicted the flow of goods and money in a nation, and thus made the first attempt to describe the circular flow of wealth on a macroeconomic basis. Wassily Leontief was born in Russia in 1906 and first studied economic geography at the University of St. Petersburg before moving to Berlin and China. He came to the United States in 1931 and, after a brief 3-month stint at the National Bureau of Economic Research in New York, Harvard University hired him. At Harvard, Professor Leontief undertook a research project that encompassed a 42-industry input-output table showing how changes in one sector of the economy lead to changes in other sectors. From this research, he developed the concept of multipliers from input-output tables, and was subsequently awarded the Nobel prize in economics in 1973 for his development of input-output (I-O) economics.



For example, an increase in purchases (first round) of output from a manufacturing industry in a region may require that the manufacturing industry, in order to expand output, purchase (second round) factor inputs from other industries of the regional economy. In turn, these other industries may have to purchase (third round) inputs to deliver the supporting production of factors to the manufacturing industry. The rounds of spending will continue with each round becoming increasingly weaker in its impact because of leakage from the region attributable to imports, savings, and taxes.

The first round is called the *direct effect* of the change in demand in an industry of the economy. The second and subsequent rounds are collectively referred to as the *indirect effects* of inter-industry purchases in response to direct effect. Changes in spending by households as income increases due to changes in the level of production, i.e. the direct and indirect effects, are called *induced effects*. The *total effect* is the sum of the direct, indirect and induced effects.

### Motivation of the Analysis.

The purpose of job-creation programs, like the QTI, EIFMP, and EWWCFMP, is often stated as the improvement of the economic situation of the residents of the region. More specifically, the conditions of a program may require that the new jobs pay an average annual wage that is greater than the current average wage in the region. In 1999, the EIFMP required a wage of \$31,156<sup>3</sup> or higher and the QTI program required a wage of at least 115% of the statewide, county, or metropolitan area average wage. Because potential program participants are not expected to consider indirect or induced jobs, these wage-rate conditions only apply to the direct jobs. However, policy objectives for such job-creation initiatives include the goal of creating jobs that positively impact the overall economy. Thus, we consider the indirect and induced jobs as critical to a program's ability to achieve this goal.

Failure to plan for and anticipate the impact of indirect and induced jobs could make an initiative seem to improve a region's economic situation, while the true consequence is a lowering of average wages. A project can lower average wages if the indirect and induced jobs pay below the average wage, and offset the gains made by direct jobs at above average wages. This analysis examines whether the *total effect* of Hillsborough County's 1999 job-creation initiatives increases or decreases average wages for people working in the county.

While an increasing average annual wage in a region may be interpreted as an improvement in the economic situation of the region's residents, increasing productivity is the key to raising living standards and regional competitiveness. That is so, because if workers produce more in a specified time period, firms can sell more, boost profits, and raise incomes at the same time without necessarily raising prices. Thus, this analysis also examines the impact of Hillsborough County's job-creation initiatives on annual

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<sup>3</sup> To qualify for the EIFMP/EWWCFMP program, employers must certify that the minimum required wage objective has been met. Hillsborough County does not maintain records of actual average wages paid by qualifying firms.

countywide worker productivity. In order to discern the *total impact* of an initiative on countywide worker productivity, the indirect and induced jobs are considered as well as the direct jobs.

Output can be thought of as sales.<sup>4</sup> Output can also be expressed as the sum of the cost of the intermediate goods, which go into the production process, and the value added to those goods during production. When the product is sold, part of its price covers the cost of the intermediate goods. The residual after paying for the intermediate goods is divided between a return to the owners of capital and the wages of labor. A job-creation initiative that raises average wages, but is expected to lower average output per worker, may reduce the standard of living and regional competitiveness. Hence, a preferred job-creation initiative is one that raises both average wages and average productivity.

The QTI Program and the EIFMP/EWWCFMP mandate conditions for award of a tax refund. These conditions are outlined in Table 1. The link between the conditions for award of a tax refund and the expected improvement in a region's economy is construed by implication. We select weighted-average wages and productivity as measurements for this economic analysis. However, our selection does not imply that these are the only possible measures of expected economic improvement, and consequently the sole measures of the efficacy of either program.

#### Method of Analysis.

We calculated a weighted-average annual wage for Hillsborough County during 1999. To make this calculation, we determined the distribution of employment across the divisions of Hillsborough County's economy.<sup>5</sup> This distribution is determined from Covered Employment and Wages (ES-202) data for 1999. The ES-202 data are based on information provided to the State of Florida with unemployment insurance premiums paid by employers. Next, again using ES-202 data, we calculated the 1999 average wage in each division of the economy. Then, using the percentages of employment distribution and the average annual divisional wages, we find a weighted-average annual wage in Hillsborough County during 1999. The weighted-average annual wage is the sum of each divisional average wage multiplied by the percent of total jobs in the division. **See Table 2.** The county's weighted-average annual wage in 1999 was \$29,744.

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<sup>4</sup> Sales equal output + or – an inventory adjustment. Goods that are produced, but not sold, during the period are placed into inventory. Conversely, goods produced in a prior period may be sold out of inventory during the current period.

<sup>5</sup> Divisions of the economy are defined at the one-digit Standard Industrial Classification (SIC) level. The SIC is a system developed by the US government to classify industries.

Table 2

1999 Hillsborough County Weighted Average Wage

DIVISION	NAME	EMPLOYMENT	% OF TOTAL JOBS	AVG ANN WAGE	AVG ANN WAGE AS A % OF WEIGHIED AVG ANN WAGE
0	AGRICULTURE	12,043	2.15%	\$15,664	52.63%
1	MINING	30	0.01%	\$30,995	104.21%
1	CONSTRUCTION	27,966	4.98%	\$33,209	111.65%
2 & 3	MANUFACTURING	37,430	6.67%	\$33,094	111.25%
4	TRANS&PUBUTIL	37,219	6.63%	\$39,937	134.27%
5	TRADE	126,038	22.45%	\$25,433	85.51%
6	FIRE	47,269	8.42%	\$40,823	137.25%
7 & 8	SERVICES	248,011	44.17%	\$27,629	92.89%
9	PUBADMIN	25,433	4.53%	\$34,147	114.80%
	TOTAL	561,439	100.00%		
			<b>Weighted Avg Annual Wage</b>	<b>\$29,744</b>	

Source: State of Florida Covered Employment and Wages (ES202) annual data for 1999

The direct effect of a job-creation initiative is an increase in jobs in a specified industry. We use the IMPLAN model to estimate the indirect and induced effects of the newly created jobs on Hillsborough County. For each initiative, we examine how the new jobs are distributed across the divisions of the county’s economy. Then, based on this distribution, we calculate an average wage for the indirect jobs and an average wage for the induced jobs. The total wage effect of an initiative is summarized as the weighted-average of wages for the direct, indirect and induced jobs.

We organize the findings into tables that facilitate comparison of the indirect, induced and total effects with the county’s weighted-average wage in the year an initiative is approved. We realize that this may be construed as being a “Monday morning quarterback.” Officials responsible for approval / disapproval of these job-creation initiatives would not yet know the average wage for the year in which they are making a decision. However, our intent is to produce reliable estimates of the actual effect on the average wage for approved initiatives. It is not intended to criticize decision-makers, who must call the plays during the game, not on Monday morning.

We form predictive models for the QTI and EIFMP/EWWCFMP programs. The predictive models are trend lines for the percentages of indirect, induced, and total average wages as a percentage of the 1999 countywide weighted-average wage. The trend lines report percentages of average indirect, induced, and total wages with respect to an initiative’s average direct wages.

We also estimate workers’ productivity in Hillsborough County. Productivity is calculated as annual output per worker. Output includes all intermediate goods purchased (inputs for the production process) plus the value added to the inputs.

Employing a regional economic model, we estimate countywide output per worker at \$76,437 for 1999.<sup>6</sup>

Using the IMPLAN model, we estimate the productivity per worker for the direct, indirect and induced jobs of each initiative. IMPLAN model productivity measurements are based on an industry's productivity before the creation of the new jobs, which are being studied. Therefore, the productivity measurements do not necessarily reflect the productivity of workers in the new jobs, but are typical of the productivity of that industry in Hillsborough County.

The (typical) productivity estimates of the newly created jobs are compared to Hillsborough County's overall annual output of \$76,437 per worker.

### Findings.

During 1999 there were seven initiatives under the QTI program. The projects included in this group are 1) a vehicle financing customer service center, 2) a sea transportation company, projects 3), 4), and 5) are financial services related firms, project 6) is a communications equipment facility, and 7) a healthcare customer service call center.

**Table 3** (next page) reports the effects of the 409 jobs created at a vehicle financing customer service center (QTI Project 1) with an average wage of \$34,163. (All dollar amounts in these findings are 1999 dollars.) We estimate that these 409 direct jobs spur 86 full-time equivalent jobs at related industries within Hillsborough County. The 86 indirect jobs pay an average wage of \$33,934, which is above the countywide weighted-average. Additionally, an increase in household consumption spending induces more jobs estimated to be 187 full-time equivalent jobs with an average wage of \$28,502. The induced jobs have an average wage that is slightly below the countywide weighted-average.

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<sup>6</sup> To estimate output per worker, we used the REMI Policy Insight™ model. REMI includes a county baseline that reports the actual levels of economic variables before a simulation is introduced into the model.

Table 3

1999  
 QTI PROJECT 1  
 VEHICLE FINANCING CUSTOMER SERVICE CENTER, SIC 6141 = IMPLAN SECTOR 457  
 INCENTIVE TYPE: QTI  
 409 JOBS  
 AVG. DIRECT WAGE **\$34,163**

Indirect Employment Effects

<u>DIVISION NAME</u>	<u>JOBS</u>	<u>% OF EMP. IMPACT</u>	Divisional Wage		<u>% OF EMP. IMPACT</u>
			as % of County	Divisional	
			<u>WEIGHED AVG. WAGE</u>	<u>AVG. WAGE</u>	
0 Agriculture	0.2	0.23%	52.63%	\$15,654	\$36
1 Mining	0.0	0.00%	104.21%	\$30,995	\$0
1 Construction	0.7	0.81%	111.65%	\$33,209	\$270
2 & 3 Manufacturing	1.9	2.20%	111.26%	\$33,094	\$729
4 Trans&Pub Util	2.2	2.55%	134.27%	\$39,937	\$1,019
5 Trade	1.4	1.62%	85.51%	\$25,433	\$413
6 FIRE	37.7	43.74%	137.25%	\$40,823	\$17,854
7 & 8 Services	39.2	45.48%	92.89%	\$27,629	\$12,564
9 Public Admin	2.9	3.36%	114.80%	\$31,147	\$1,048
<b>Total</b>	<b>86.2</b>	<b>100.00%</b>			<b>\$33,934</b>
County Wt. Avg. =				\$29,744	

Induced Employment Effects

<u>DIVISION NAME</u>	<u>JOBS</u>	<u>% OF EMP. IMPACT</u>	Divisional Wage		<u>% OF EMP. IMPACT</u>
			as % of County	Divisional	
			<u>WEIGHED AVG. WAGE</u>	<u>AVG. WAGE</u>	
0 Agriculture	2.2	1.18%	52.63%	\$15,654	\$184
1 Mining	0.0	0.00%	104.21%	\$30,995	\$0
1 Construction	3.5	1.87%	111.65%	\$33,209	\$622
2 & 3 Manufacturing	4.6	2.46%	111.26%	\$33,094	\$815
4 Trans&Pub Util	5.7	3.05%	134.27%	\$39,937	\$1,218
5 Trade	65.7	35.15%	85.51%	\$25,433	\$8,940
6 FIRE	15.4	8.24%	137.25%	\$40,823	\$3,364
7 & 8 Services	85.3	45.64%	92.89%	\$27,629	\$12,610
9 Public Admin	4.5	2.41%	114.80%	\$31,147	\$750
<b>Total</b>	<b>186.9</b>	<b>100.00%</b>			<b>\$28,502</b>
County Wt. Avg. =				\$29,744	

Total Effect for this Initiative

<u>EFFECT</u>	<u>JOBS</u>	<u>AVERAGE WAGE</u>	<u>CONTRIBUTION TO TOTAL EFFECT</u>
Direct	409.0	\$34,163	\$20,485
Indirect	86.2	\$33,934	\$4,288
Induced	186.9	\$28,502	\$7,810
<b>Total</b>	<b>682.1</b>	<b>Initiative Wt. Avg. =</b>	<b>\$32,583</b>

The largest portion (45.48%) of indirect jobs is in the Services division, while a similarly large portion (43.74%) of the indirect jobs is in the Finance, Insurance, and Real

Estate (FIRE) division of the Hillsborough County economy. (The distribution of jobs is shown in the column labeled “% of Emp. Impact” and the wage level relative to the county’s weighted-average wage is shown in the column labeled “Divisional Wage as % of County Weighted-average Wage.”) FIRE is also the division of the economy in which the direct jobs are classified. In Hillsborough County, wages in the FIRE division were 137.25% of the countywide weighted-average in 1999, while wages in the Services division were 92.89% of the countywide weighted-average. Thus, the indirect jobs paid, on average, wages above the countywide weighted-average wage for 1999. Most of the induced jobs were created in the relatively low-wage Services (45.64%) and Trade (35.15%) divisions of the Hillsborough County economy. Thus, the induced jobs paid, on average, wages lower than the countywide weighted-average wage for 1999.

However, the average wage for the direct jobs was more than \$4,000 above the 1999 countywide weighted-average wage of \$29,744. Thus, the total effect of the QTI Project 1 initiative is 682 full-time equivalent jobs in Hillsborough County at an average wage of \$32,583. Hence, this estimate of the wage impact of the new jobs indicates that the QTI Project 1 initiative would tend to increase weighted-average wages for people who work in Hillsborough County.

**Table 3.1** (next page) reports the estimated increases in output caused by the 409 jobs created at the QTI Project 1 firm. Four hundred-nine jobs in the “vehicle financing customer service” industry typically adds \$19.48 million per year to Hillsborough County’s private-sector output. That equates to \$47,633 per worker – only 62% of the countywide output per worker. The 86 indirect jobs produce additional output at almost 104% of the average output per worker, while the induced jobs produce at about 84% of average output. The total impact on productivity of this initiative is almost \$38.3 million of increased output. This increased output comes at a rate that is 73.48% of the countywide output per worker; hence, the project negatively influences a change in output per worker in the county.

Table 3.1 also shows the value-added per worker portion of output per worker. Typically, a worker in the “vehicle financing customer service” industry adds \$26,964 to the value of the firm’s products during a year. The typical value-added in the industry is less than the average direct wage of \$34,163 (excludes benefits, if any) paid by the QTI Project 1 firm for the 409 newly created jobs.

Table 3.1

1999  
 QTI PROJECT 1  
 VEHICLE FINANCING CUSTOMER SERVICE CENTER, SIC 6141  
 = IMPLAN SECTOR 457  
 INCENTIVE TYPE: QTI  
 Overall County Output per Worker = \$76,437

Productivity Comparisons

Effect	Jobs	Output	Output per Worker	% of County Output per Worker	Value-added per Worker
Direct	409.0	\$19,482,012	\$47,633	62.32%	\$26,964
Indirect	86.2	\$6,862,168	\$79,608	104.15%	\$51,951
Induced	186.9	\$11,965,137	\$64,019	83.75%	\$40,163
Total	682.1	\$38,309,317	\$56,164	73.48%	\$33,738

We find that the QTI Project 1 initiative would tend to increase the average wage but have a negative impact on overall productivity in Hillsborough County.

**Table 4** (next page) reports the effects of the 20 jobs created at a sea transportation firm (QTI Project 2) with an average wage of \$75,000. We estimate that these 20 direct jobs generate 32.4 full-time equivalent jobs at related industries within Hillsborough County. The 32.4 indirect jobs pay an average wage of \$31,987, which is above the countywide weighted-average. Additionally, an increase in household consumption spending induces more jobs estimated to be 21.7 full-time equivalent jobs with an average wage of \$28,459. The induced jobs have an average wage that is slightly below the countywide weighted-average.

A majority of the indirect and induced jobs are created in the relatively low-wage Services and Trade divisions of the Hillsborough County economy. Even though the average wage for the induced jobs was below the 1999 countywide weighted-average of \$29,744, the average wage for the direct jobs and the average wage for the indirect jobs were both above the countywide weighted-average. Thus, the total effect of the QTI Project 2 initiative is 74.1 full-time equivalent jobs in Hillsborough County at an average wage of \$42,563. Hence, this estimate of the wage impact of the new jobs indicates that the QTI Project 2 initiative would tend to increase weighted-average wages for people working in Hillsborough County.

Table 4

1999  
 QTI PROJECT 2  
 SEA TRANSPORTATION, SIC 4424 = IMPLAN SECTOR 436  
 INCENTIVE TYPE: QTI  
 20 JOBS  
 AVG. DIRECT WAGE **\$75,000**

Indirect Employment Effects

<u>Division Name</u>	<u>Jobs</u>	<u>% of Emp. Impact</u>	<u>Divisional Wage as % of County Weighted Avg. Wage</u>	<u>Divisional Avg. Wage</u>	<u>Div. Avg. Wage times</u>
0 Agriculture	0.0	0.00%	52.63%	\$15,654	\$0
1 Mining	0.0	0.00%	104.21%	\$30,995	\$0
1 Construction	0.3	0.93%	111.65%	\$33,209	\$307
2 & 3 Manufacturing	1.2	3.70%	111.26%	\$33,094	\$1,226
4 Trans&Pub Util	7.1	21.91%	134.27%	\$39,937	\$8,752
5 Trade	1.2	3.70%	85.51%	\$25,433	\$942
6 FIRE	3.6	11.11%	137.25%	\$40,823	\$4,536
7 & 8 Services	18.8	58.02%	92.89%	\$27,629	\$16,032
9 Public Admin	0.2	0.62%	114.80%	\$31,147	\$192
<b>Total</b>	<b>32.4</b>	<b>100.00%</b>			<b>\$31,987</b>
County Wt. Avg. =				\$29,744	

Induced Employment Effects

<u>Division Name</u>	<u>Jobs</u>	<u>% of Emp. Impact</u>	<u>Divisional Wage as % of County Weighted Avg. Wage</u>	<u>Divisional Avg. Wage</u>	<u>Div. Avg. Wage times</u>
0 Agriculture	0.2	0.92%	52.63%	\$15,654	\$144
1 Mining	0.0	0.00%	104.21%	\$30,995	\$0
1 Construction	0.4	1.84%	111.65%	\$33,209	\$612
2 & 3 Manufacturing	0.4	1.84%	111.26%	\$33,094	\$610
4 Trans&Pub Util	0.6	2.76%	134.27%	\$39,937	\$1,104
5 Trade	7.7	35.48%	85.51%	\$25,433	\$9,025
6 FIRE	1.8	8.29%	137.25%	\$40,823	\$3,386
7 & 8 Services	10.1	46.54%	92.89%	\$27,629	\$12,860
9 Public Admin	0.5	2.30%	114.80%	\$31,147	\$718
<b>Total</b>	<b>21.7</b>	<b>100.00%</b>			<b>\$28,459</b>
County Wt. Avg. =				\$29,744	

Total Effect for this Initiative

<u>Effect</u>	<u>Jobs</u>	<u>Average Wage</u>	<u>Contribution to Total Effect</u>
Direct	20.0	\$75,000	\$20,243
Indirect	32.4	\$31,987	\$13,986
Induced	21.7	\$28,459	\$8,334
<b>Total</b>	<b>74.1</b>	<b>Initiative Wt. Avg. =</b>	<b>\$42,563</b>

**Table 4.1** reports the estimated increases in output caused by the 20 jobs created by QTI Project 2. Twenty jobs in the “sea transportation” industry typically add \$4.33



million per year to Hillsborough County’s private-sector output. That equates to \$216,616 per worker – over 283% of the countywide output per worker. The indirect jobs produce additional output at about 95% of the average output per worker, while the induced jobs produce at almost 85% of average output. The total impact on productivity of this initiative is almost \$8.1 million of increased output. This increased output comes at a rate that is 142.93% of the countywide output per worker. Hence, this job-creation initiative can be expected to promote rising productivity in Hillsborough County.

Table 4.1

1999  
QTI PROJECT 2  
SEA TRANSPORTATION COMPANY, SIC 4424  
= IMPLAN SECTOR 436  
INCENTIVE TYPE: QTI  
Overall County Output per Worker = \$76,437

Productivity Comparisons

Effect	Jobs	Output	Output per Worker	% of County Output per Worker	Value-added per Worker
Direct	20.0	\$4,332,315	\$216,616	283.39%	\$76,457
Indirect	32.4	\$2,359,346	\$72,819	95.27%	\$37,987
Induced	21.7	\$1,403,665	\$64,685	84.63%	\$40,581
Total	74.1	\$8,095,326	\$109,249	142.93%	\$49,130

Table 4.1 also shows the value-added per worker portion of output per worker. Typically, a worker in the “sea transportation” industry adds \$76,457 to the value of the firm’s products during a year. An average direct wage of \$75,000 (excludes benefits, if any) paid by the QTI Project 2 firm for the 20 newly created jobs seems fair in relation to the typical value-added per worker in the industry.

We find that the QTI Project 2 initiative would tend to increase the average wage and raise overall productivity in Hillsborough County.

**Table 5** (page 14) reports the effects of the 660 jobs created at a financial services call center (QTI Project 3) with an average wage of \$30,500. We estimate that these 660 direct jobs lead to 138.8 full-time equivalent jobs at related industries within Hillsborough County. The 138.8 indirect jobs pay an average wage of \$33,945, which is over \$4,000 more than the countywide weighted-average. Additionally, an increase in household consumption spending induces 301.4 more full-time equivalent jobs at an average wage of \$28,504. The induced jobs have an average wage that is more than \$1,000 below the countywide weighted-average.

A large portion of the indirect jobs was in the relatively low-wage Services (45.61%) division of the Hillsborough County economy. However, an almost equal amount of the indirect jobs was in the relatively high-wage FIRE (43.73%) division, resulting in an above-average overall wage for the indirect jobs. In contrast, most of the

induced jobs are in the Services division (45.62%) and the Trade division (35.17%) of the county's economy. In Hillsborough County, wages in the Services and Trade divisions were 92.89% and 85.51%, respectively, of the countywide weighted-average in 1999.

The total effect of the QTI Project 3 initiative is 1100.2 full-time equivalent jobs in Hillsborough County at an average wage of \$30,388. This estimate of the wage impact of the new jobs indicates that the QTI Project 3 initiative would tend to raise weighted-average wages for people who work in Hillsborough County.

Table 5

1999  
 QTI PROJECT 3  
 CALL CENTER, SIC 6162 = IMPLAN SECTOR 457  
 INCENTIVE TYPE: QTI  
 660 JOBS  
 AVG. DIRECT WAGE **\$30,500**

Indirect Employment Effects

<u>Division Name</u>	<u>Jobs</u>	<u>% of Emp. Impact</u>	<u>Divisional Wage as % of County Weighted Avg. Wage</u>	<u>Divisional Avg. Wage</u>	<u>Div. Avg. Wage times</u>
0 Agriculture	0.2	0.14%	52.63%	\$15,654	\$23
1 Mining	0.0	0.00%	104.21%	\$30,995	\$0
1 Construction	1.2	0.86%	111.65%	\$33,209	\$287
2 & 3 Manufacturing	3.0	2.16%	111.26%	\$33,094	\$715
4 Trans&Pub Util	3.6	2.59%	134.27%	\$39,937	\$1,036
5 Trade	2.3	1.66%	85.51%	\$25,433	\$421
6 FIRE	60.7	43.73%	137.25%	\$40,823	\$17,853
7 & 8 Services	63.3	45.61%	92.89%	\$27,629	\$12,600
9 Public Admin	4.5	3.24%	114.80%	\$31,147	\$1,010
<b>Total</b>	<b>138.8</b>	<b>100.00%</b>			<b>\$33,945</b>
County Wt. Avg. =				\$29,744	

Induced Employment Effects

<u>Division Name</u>	<u>Jobs</u>	<u>% of Emp. Impact</u>	<u>Divisional Wage as % of County Weighted Avg. Wage</u>	<u>Divisional Avg. Wage</u>	<u>Div. Avg. Wage times</u>
0 Agriculture	3.5	1.16%	52.63%	\$15,654	\$182
1 Mining	0.0	0.00%	104.21%	\$30,995	\$0
1 Construction	5.7	1.89%	111.65%	\$33,209	\$628
2 & 3 Manufacturing	7.4	2.46%	111.26%	\$33,094	\$813
4 Trans&Pub Util	9.3	3.09%	134.27%	\$39,937	\$1,232
5 Trade	106.0	35.17%	85.51%	\$25,433	\$8,945
6 FIRE	24.7	8.20%	137.25%	\$40,823	\$3,345
7 & 8 Services	137.5	45.62%	92.89%	\$27,629	\$12,604
9 Public Admin	7.3	2.42%	114.80%	\$31,147	\$754
<b>Total</b>	<b>301.4</b>	<b>100.00%</b>			<b>\$28,504</b>
County Wt. Avg. =				\$29,744	

Total Effect for this Initiative

<u>Effect</u>	<u>Jobs</u>	<u>Average Wage</u>	<u>Contribution to Total Effect</u>
Direct	660.0	\$30,500	\$18,297
Indirect	138.8	\$33,945	\$4,282
Induced	301.4	\$28,504	\$7,809
<b>Total</b>	<b>1100.2</b>	<b>Initiative Wt. Avg. =</b>	<b>\$30,388</b>

**Table 5.1** reports the estimated increases in output caused by the 660 jobs created by QTI Project 3. Six hundred-sixty jobs in the “financial services call center” industry

typically add \$31.44 million per year to Hillsborough County’s private-sector output. That equates to \$47,633 per worker – only 62% of the countywide output per worker. The indirect jobs produce additional output at more than 104% of the average output per worker, while the induced jobs produce at about 84% of average output. The total impact on productivity of this initiative is almost \$61.82 million of increased output. The increased output comes at a rate that is less than 74% of countywide output per worker and would be expected to lower productivity in Hillsborough County.

Table 5.1

1999  
 QTI PROJECT 3  
 CALL CENTER, SIC 6162  
 = IMPLAN SECTOR 457  
 INCENTIVE TYPE: QTI  
 Overall County Output per Worker = \$76,437

Productivity Comparisons

Effect	Jobs	Output	Output per Worker	% of County Output per Worker	Value-added per Worker
Direct	660.0	\$31,437,966	\$47,633	62.32%	\$26,964
Indirect	138.8	\$11,073,431	\$79,780	104.37%	\$52,064
Induced	301.4	\$19,308,049	\$64,061	83.81%	\$40,189
Total	1100.2	\$61,819,446	\$56,189	73.51%	\$33,754

Table 5.1 also shows the value-added per worker portion of output per worker. Typically, a worker in the “financial services call center” industry adds \$26,964 to the value of the firm’s products during a year. The typical value-added in the industry is almost \$4,000 less than the average direct wage of \$30,500 (excludes benefits, if any) paid by the QTI Project 3 firm for the 660 newly created jobs.

We find that the QTI Project 3 initiative would tend to increase the average wage but lower overall productivity in Hillsborough County.

**Table 6** (page 17) shows the effects of the 981 jobs created at another financial services related firm (QTI Project 4). The direct jobs have an average wage of \$44,359, which is above the countywide 1998 weighted-average of \$29,744. We estimate that these 981 direct jobs generate 206.6 full-time equivalent jobs at related industries within Hillsborough County. The 206.6 indirect jobs pay an average wage of \$33,939, which is over \$4,000 more than the countywide weighted-average. Additionally, an increase in household consumption spending induces 447.9 more full-time equivalent jobs at an average wage of \$28,511. The induced jobs have an average wage that is a little more than \$1,000 below the countywide weighted-average.

QTI Project 4 is essentially similar to QTI Project 3 in the quality of indirect and induced jobs created. A large portion of the indirect jobs was in the Services division (45.50% and FIRE division (43.76%), while most of the induced jobs are in the Trade division (35.19%) and the Services division (45.55%) of the county's economy.

The total effect of the QTI Project 4 initiative is 1,635.5 full-time equivalent jobs in Hillsborough County at an average wage of \$38,702. This estimate of the wage impact of the new jobs indicates that the QTI Project 4 initiative would tend to increase weighted-average wages for people who work in Hillsborough County.

Table 6

1999  
 QTI PROJECT 4  
 GLOBAL CLIENT SERVICES OPERATIONS, SIC 6162 = IMPLAN SECTOR 457  
 INCENTIVE TYPE: QTI  
 981 JOBS  
 AVG. DIRECT WAGE **\$44,359**

Indirect Employment Effects

<u>Division Name</u>	<u>Jobs</u>	<u>% of Emp. Impact</u>	<u>Divisional Wage as % of County Weighted Avg. Wage</u>	<u>Divisional Avg. Wage</u>	<u>Div. Avg. Wage times</u>
0 Agriculture	0.4	0.19%	52.63%	\$15,654	\$30
1 Mining	0.0	0.00%	104.21%	\$30,995	\$0
1 Construction	1.8	0.87%	111.65%	\$33,209	\$289
2 & 3 Manufacturing	4.6	2.23%	111.26%	\$33,094	\$737
4 Trans&Pub Util	5.2	2.52%	134.27%	\$39,937	\$1,005
5 Trade	3.4	1.65%	85.51%	\$25,433	\$419
6 FIRE	90.4	43.76%	137.25%	\$40,823	\$17,863
7 & 8 Services	94.0	45.50%	92.89%	\$27,629	\$12,571
9 Public Admin	6.8	3.29%	114.80%	\$31,147	\$1,025
<b>Total</b>	<b>206.6</b>	<b>100.00%</b>			<b>\$33,939</b>
County Wt. Avg. =				\$29,744	

Induced Employment Effects

<u>Division Name</u>	<u>Jobs</u>	<u>% of Emp. Impact</u>	<u>Divisional Wage as % of County Weighted Avg. Wage</u>	<u>Divisional Avg. Wage</u>	<u>Div. Avg. Wage times</u>
0 Agriculture	5.2	1.16%	52.63%	\$15,654	\$182
1 Mining	0.0	0.00%	104.21%	\$30,995	\$0
1 Construction	8.4	1.88%	111.65%	\$33,209	\$623
2 & 3 Manufacturing	11.0	2.46%	111.26%	\$33,094	\$813
4 Trans&Pub Util	13.9	3.10%	134.27%	\$39,937	\$1,239
5 Trade	157.6	35.19%	85.51%	\$25,433	\$8,949
6 FIRE	36.9	8.24%	137.25%	\$40,823	\$3,363
7 & 8 Services	204.0	45.55%	92.89%	\$27,629	\$12,584
9 Public Admin	10.9	2.43%	114.80%	\$31,147	\$758
<b>Total</b>	<b>447.9</b>	<b>100.00%</b>			<b>\$28,511</b>
County Wt. Avg. =				\$29,744	

Total Effect for this Initiative

<u>Effect</u>	<u>Jobs</u>	<u>Average Wage</u>	<u>Contribution to Total Effect</u>
Direct	981.0	\$44,359	\$26,607
Indirect	206.6	\$33,939	\$4,287
Induced	447.9	\$28,511	\$7,808
<b>Total</b>	<b>1635.5</b>	<b>Initiative Wt. Avg. =</b>	<b>\$38,702</b>

**Table 6.1** reports the productivity effects caused by the 981 jobs created by QTI Project 4. Nine hundred eighty-one jobs in the “financial services, global client services operations” industry typically adds almost \$46.73 million per year to Hillsborough County’s private-sector output. That equates to \$47,633 per worker – significantly less than the countywide output per worker of \$76,437. The indirect jobs produce additional output at 104% of the average output per worker, while the induced jobs produce at about 84% of average output. The total impact on productivity of this initiative is almost \$91.89 million of increased output. The increased output comes at a rate that is substantially lower than the countywide output per worker and would be expected to decrease productivity in Hillsborough County.

Table 6.1

1999  
 QTI PROJECT 4  
 GLOBAL CLIENT SERVICES OPERATIONS, SIC 6162  
 = IMPLAN SECTOR 457  
 INCENTIVE TYPE: QTI  
 Overall County Output per Worker = \$76,437

Productivity Comparisons

Effect	Jobs	Output	Output per Worker	% of County Output per Worker	Value-added per Worker
Direct	981.0	\$46,728,248	\$47,633	62.32%	\$26,964
Indirect	206.6	\$16,459,142	\$79,667	104.23%	\$51,990
Induced	447.9	\$28,698,779	\$64,074	83.83%	\$40,197
Total	1635.5	\$91,886,169	\$56,182	73.50%	\$33,749

Table 6.1 also shows the value-added per worker portion of output per worker. Typically, a worker in the “financial services, global client services operations” industry adds \$26,964 to the value of the firm’s products during a year. An average direct wage of \$44,359 (excludes benefits, if any) paid by the QTI Project 4 firm appears to be quite high in relation to the typical value-added per worker in the industry.

We find that the QTI Project 4 initiative would tend to increase the average wage and decrease overall productivity in Hillsborough County.

**Table 7** (page 20) displays the effects of the 499 jobs created by another financial services firm (QTI Project 5). The direct jobs have an average wage of \$57,310, which is substantially above the countywide 1999 weighted-average of \$29,744. We estimate that these 499 direct jobs generate 105.1 full-time equivalent jobs at related industries within Hillsborough County. The 105.1 indirect jobs pay an average wage of \$33,935, which is also above the countywide weighted-average. Additionally, an increase in household consumption spending induces 227.7 more full-time equivalent jobs at an

average wage of \$28,510. The induced jobs have an average wage that is over \$1,000 below the countywide weighted-average.

Similar to QTI Projects 3 and 4, a majority of the indirect jobs is created in the Services (45.58%) and FIRE (43.86%) divisions of the economy. Most of the induced jobs are in the Trade division (35.22%) and the Services division (45.54%) of the county's economy.

The total effect of the QTI Project 5 initiative is 831.8 full-time equivalent jobs in Hillsborough County at an average wage of \$46,473. This estimate of the wage impact of the new jobs indicates that the QTI Project 5 initiative would tend to increase weighted-average wages for people who work in Hillsborough County.



Table 7

1999  
 QTI PROJECT 5  
 ELECTRONIC TREASURY, SIC 6162 = IMPLAN SECTOR 457  
 INCENTIVE TYPE: QTI  
 499 JOBS  
 AVG. DIRECT WAGE **\$57,310**

Indirect Employment Effects

<u>Division Name</u>	<u>Jobs</u>	<u>% of Emp. Impact</u>	<u>Divisional Wage as % of County Weighted Avg. Wage</u>	<u>Divisional Avg. Wage</u>	<u>Div. Avg. Wage times</u>
0 Agriculture	0.2	0.19%	52.63%	\$15,654	\$30
1 Mining	0.0	0.00%	104.21%	\$30,995	\$0
1 Construction	0.9	0.86%	111.65%	\$33,209	\$284
2 & 3 Manufacturing	2.3	2.19%	111.26%	\$33,094	\$724
4 Trans&Pub Util	2.5	2.38%	134.27%	\$39,937	\$950
5 Trade	1.7	1.62%	85.51%	\$25,433	\$411
6 FIRE	46.1	43.86%	137.25%	\$40,823	\$17,906
7 & 8 Services	47.9	45.58%	92.89%	\$27,629	\$12,592
9 Public Admin	3.5	3.33%	114.80%	\$31,147	\$1,037
<b>Total</b>	<b>105.1</b>	<b>100.00%</b>			<b>\$33,935</b>
County Wt. Avg. =				\$29,744	

Induced Employment Effects

<u>Division Name</u>	<u>Jobs</u>	<u>% of Emp. Impact</u>	<u>Divisional Wage as % of County Weighted Avg. Wage</u>	<u>Divisional Avg. Wage</u>	<u>Div. Avg. Wage times</u>
0 Agriculture	2.7	1.19%	52.63%	\$15,654	\$186
1 Mining	0.0	0.00%	104.21%	\$30,995	\$0
1 Construction	4.3	1.89%	111.65%	\$33,209	\$627
2 & 3 Manufacturing	5.3	2.33%	111.26%	\$33,094	\$770
4 Trans&Pub Util	7.2	3.16%	134.27%	\$39,937	\$1,263
5 Trade	80.2	35.22%	85.51%	\$25,433	\$8,958
6 FIRE	18.8	8.26%	137.25%	\$40,823	\$3,371
7 & 8 Services	103.7	45.54%	92.89%	\$27,629	\$12,583
9 Public Admin	5.5	2.42%	114.80%	\$31,147	\$752
<b>Total</b>	<b>227.7</b>	<b>100.00%</b>			<b>\$28,510</b>
County Wt. Avg. =				\$29,744	

Total Effect for this Initiative

<u>Effect</u>	<u>Jobs</u>	<u>Average Wage</u>	<u>Contribution to Total Effect</u>
Direct	499.0	\$57,310	\$34,380
Indirect	105.1	\$33,935	\$4,288
Induced	227.7	\$28,510	\$7,804
<b>Total</b>	<b>831.8</b>	<b>Initiative Wt. Avg. =</b>	<b>\$46,473</b>

**Table 7.1** reports the estimated productivity increases caused by the 499 jobs created by QTI Project 5. Four hundred ninety-nine jobs in the “financial services,

electronic treasury” industry typically adds \$23.77 million per year to Hillsborough County’s private-sector output. That equates to \$47,633 per worker – about 62% of the countywide output per worker. The indirect jobs produce additional output at 104% of the average output per worker, while the induced jobs produce at about 84% of average output. The total impact on productivity of this initiative is almost \$46.74 million of increased output. The increased output comes at a rate that is 73.51% of the countywide output per worker and would be expected to lower productivity in Hillsborough County.

Table 7.1

1999  
QTI PROJECT 5  
ELECTRONIC TREASURY, SIC 6162  
= IMPLAN SECTOR 457  
INCENTIVE TYPE: QTI  
Overall County Output per Worker = \$76,437

Productivity Comparisons

Effect	Jobs	Output	Output per Worker	% of County Output per Worker	Value-added per Worker
Direct	499.0	\$23,769,008	\$47,633	62.32%	\$26,964
Indirect	105.1	\$8,372,181	\$79,659	104.22%	\$51,985
Induced	227.7	\$14,598,058	\$64,111	83.87%	\$40,220
Total	831.8	\$46,739,247	\$56,190	73.51%	\$33,754

Table 7.1 also shows the value-added per worker portion of output per worker. Typically, a worker in the “financial services, electronic treasury” industry adds \$26,964 to the value of the firm’s products during a year. The average direct wage of \$57,510 (excludes benefits, if any) paid by the QTI Project 5 firm for the 499 newly created jobs appears to be substantially high in relation to the typical value-added per worker in the industry.

We find that the QTI Project 5 initiative would tend to increase the average wage but lower overall productivity in Hillsborough County.

**Table 8** (page 23) displays the effects of the 134 jobs created by a communications equipment facility (QTI Project 6). The direct jobs have an average wage of \$64,000, which is significantly above the countywide 1999 weighted-average of \$29,744. We estimate that these 134 direct jobs generate 133.7 full-time equivalent jobs at related industries within Hillsborough County. The 133.7 indirect jobs pay an average wage of \$30,924, which is more than the countywide weighted-average. Additionally, an increase in household consumption spending induces 128.2 more full-time equivalent jobs at an average wage of \$28,523. The induced jobs have an average wage that is more than \$1,000 below the countywide weighted-average.

The majority of the indirect jobs are in the relatively low-wage Services (56.92%) division of the county's economy. However, most of the remaining indirect jobs are in the relatively high-wage Construction and Transportation/Public Utilities divisions, hence the average wage of the indirect jobs exceeds the countywide weighted-average wage for all jobs. As is usually the case, most induced jobs are in the Trade and Services divisions of the economy resulting in a below countywide weighted-average wage for these jobs.

The total effect of the QTI Project 6 initiative is 395.9 full-time equivalent jobs in Hillsborough County at an average wage of \$41,341. This estimate of the wage impact of the new jobs indicates that the QTI Project 6 initiative would tend to increase weighted-average wages for people who work in Hillsborough County.

Table 8

1999  
 QTI PROJECT 6  
 COMMUNICATIONS EQUIPMENT, SIC 4800 = IMPLAN SECTOR 441  
 INCENTIVE TYPE: QTI  
 134 JOBS  
 AVG. DIRECT WAGE **\$64,000**

Indirect Employment Effects

<u>Division</u>	<u>Name</u>	<u>Jobs</u>	<u>% of Emp. Impact</u>	<u>Divisional Wage as % of County</u>	<u>Weighted Avg. Wage</u>	<u>Divisional Avg. Wage</u>	<u>Div. Avg. Wage times</u>	<u>% of Emp. Impact</u>
0	Agriculture	0.4	0.30%	52.63%		\$15,654		\$47
1	Mining	0.0	0.00%	104.21%		\$30,995		\$0
1	Construction	17.5	13.09%	111.65%		\$33,209		\$4,347
2 & 3	Manufacturing	6.2	4.64%	111.26%		\$33,094		\$1,535
4	Trans&Pub Util	18.3	13.69%	134.27%		\$39,937		\$5,466
5	Trade	6.4	4.79%	85.51%		\$25,433		\$1,217
6	FIRE	7.4	5.53%	137.25%		\$40,823		\$2,259
7 & 8	Services	76.1	56.92%	92.89%		\$27,629		\$15,726
9	Public Admin	1.4	1.05%	114.80%		\$31,147		\$326
	<b>Total</b>	<b>133.7</b>	<b>100.00%</b>					<b>\$30,924</b>
County Wt. Avg. =						\$29,744		

Induced Employment Effects

<u>Division</u>	<u>Name</u>	<u>Jobs</u>	<u>% of Emp. Impact</u>	<u>Divisional Wage as % of County</u>	<u>Weighted Avg. Wage</u>	<u>Divisional Avg. Wage</u>	<u>Div. Avg. Wage times</u>	<u>% of Emp. Impact</u>
0	Agriculture	1.5	1.17%	52.63%		\$15,654		\$183
1	Mining	0.0	0.00%	104.21%		\$30,995		\$0
1	Construction	2.4	1.87%	111.65%		\$33,209		\$622
2 & 3	Manufacturing	3.1	2.42%	111.26%		\$33,094		\$800
4	Trans&Pub Util	4.1	3.20%	134.27%		\$39,937		\$1,277
5	Trade	45.1	35.18%	85.51%		\$25,433		\$8,947
6	FIRE	10.6	8.27%	137.25%		\$40,823		\$3,375
7 & 8	Services	58.3	45.48%	92.89%		\$27,629		\$12,565
9	Public Admin	3.1	2.42%	114.80%		\$31,147		\$753
	<b>Total</b>	<b>128.2</b>	<b>100.00%</b>					<b>\$28,523</b>
County Wt. Avg. =						\$29,744		

Total Effect for this Initiative

<u>Effect</u>	<u>Jobs</u>	<u>Average Wage</u>	<u>Contribution to Total Effect</u>
Direct	134.0	\$64,000	\$21,662
Indirect	133.7	\$30,924	\$10,443
Induced	128.2	\$28,523	\$9,236
<b>Total</b>	<b>395.9</b>	<b>Initiative Wt. Avg. =</b>	<b>\$41,341</b>

**Table 8.1** reports the estimated productivity increases caused by the 134 jobs created by the QTI Project 6. One hundred thirty-four jobs in the “communications

equipment” industry typically add almost \$29.91 million per year to Hillsborough County’s private-sector output. That equates to \$223,204 per worker – over 292% of the countywide output per worker. The indirect jobs produce additional output at almost 107% of the average output per worker, while the induced jobs produce at about 84% of average output. The total impact on productivity of this initiative is almost \$49.04 million of increased output. The increased output comes at a rate that is 162.04% of the countywide output per worker and would be expected to increase productivity in Hillsborough County.

Table 8.1

1999  
QTI PROJECT 6  
COMMUNICATIONS EQUIPMENT FACILITY, SIC 4800  
= IMPLAN SECTOR 441  
INCENTIVE TYPE: QTI  
Overall County Output per Worker = \$76,437

Productivity Comparisons

Effect	Jobs	Output	Output per Worker	% of County Output per Worker	Value-added per Worker
Direct	134.0	\$29,909,390	\$223,204	292.01%	\$123,652
Indirect	133.7	\$10,916,787	\$81,651	106.82%	\$45,039
Induced	128.2	\$8,209,427	\$64,036	83.78%	\$40,174
Total	395.9	\$49,035,604	\$123,859	162.04%	\$70,072

Table 8.1 also shows the value-added per worker portion of output per worker. Typically, a worker in the “communications equipment” industry adds \$123,652 to the value of the firm’s products during a year. The average direct wage of \$64,000 (excludes benefits, if any) paid by the QTI Project 6 firm for the 134 newly created jobs appears to be significantly low in relation to the typical value-added per worker in the industry.

We find that the QTI Project 6 initiative would tend to increase the average wage and raise overall productivity in Hillsborough County.

**Table 9** (page 26) displays the effects of the 100 jobs created by a healthcare services call center (QTI Project 7). The direct jobs have an average wage of \$29,000, which is slightly below the countywide 1999 weighted-average of \$29,744. We estimate that these 100 direct jobs generate 39.6 full-time equivalent jobs at related industries within Hillsborough County. The 39.6 indirect jobs pay an average wage of \$29,706, which is slightly below the countywide weighted-average. Additionally, an increase in household consumption spending induces 64.5 more full-time equivalent jobs at an average wage of \$28,460. The induced jobs have an average wage that is slightly more than \$1,000 below the countywide weighted-average.

Similar to QTI Project 6, a majority of the indirect jobs associated with QTI Project 7 are in the relatively low-wage Services (70.96%) division, hence the average wage of the indirect jobs falls below the countywide weighted-average wage for all jobs. As is usually the case, most induced jobs are in the Trade and Services divisions of the economy resulting in a below countywide weighted-average wage for these jobs.

The total effect of the QTI Project 7 initiative is 204.1 full-time equivalent jobs in Hillsborough County at an average wage of \$28,966. This estimate of the wage impact of the new jobs indicates that the QTI Project 7 initiative would tend to decrease weighted-average wages for people who work in Hillsborough County.

Table 9

1999  
 QTI PROJECT 7  
 CUSTOMER SERVICE CALL CENTER, SIC 8011 = IMPLAN SECTOR 490  
 INCENTIVE TYPE: QTI  
 100 JOBS  
 AVG. DIRECT WAGE **\$29,000**

Indirect Employment Effects

<u>Division</u>	<u>Name</u>	<u>Jobs</u>	<u>% of Emp. Impact</u>	<u>Divisional Wage as % of County</u>	<u>Weighted Avg. Wage</u>	<u>Divisional Avg. Wage</u>	<u>Div. Avg. Wage times</u>
0	Agriculture	0.2	0.51%	52.63%	\$15,654	\$79	
1	Mining	0.0	0.00%	104.21%	\$30,995	\$0	
1	Construction	1.1	2.78%	111.65%	\$33,209	\$922	
2 & 3	Manufacturing	1.0	2.53%	111.26%	\$33,094	\$836	
4	Trans&Pub Util	1.7	4.29%	134.27%	\$39,937	\$1,714	
5	Trade	2.1	5.30%	85.51%	\$25,433	\$1,349	
6	FIRE	3.9	9.85%	137.25%	\$40,823	\$4,020	
7 & 8	Services	28.1	70.96%	92.89%	\$27,629	\$19,605	
9	Public Admin	1.5	3.79%	114.80%	\$31,147	\$1,180	
	<b>Total</b>	<b>39.6</b>	<b>100.00%</b>			<b>\$29,706</b>	
County Wt. Avg. =						\$29,744	

Induced Employment Effects

<u>Division</u>	<u>Name</u>	<u>Jobs</u>	<u>% of Emp. Impact</u>	<u>Divisional Wage as % of County</u>	<u>Weighted Avg. Wage</u>	<u>Divisional Avg. Wage</u>	<u>Div. Avg. Wage times</u>
0	Agriculture	0.7	1.09%	52.63%	\$15,654	\$170	
1	Mining	0.0	0.00%	104.21%	\$30,995	\$0	
1	Construction	1.2	1.86%	111.65%	\$33,209	\$618	
2 & 3	Manufacturing	1.5	2.33%	111.26%	\$33,094	\$770	
4	Trans&Pub Util	1.8	2.79%	134.27%	\$39,937	\$1,115	
5	Trade	22.9	35.50%	85.51%	\$25,433	\$9,030	
6	FIRE	5.3	8.22%	137.25%	\$40,823	\$3,354	
7 & 8	Services	29.6	45.89%	92.89%	\$27,629	\$12,679	
9	Public Admin	1.5	2.33%	114.80%	\$31,147	\$724	
	<b>Total</b>	<b>64.5</b>	<b>100.00%</b>			<b>\$28,460</b>	
County Wt. Avg. =						\$29,744	

Total Effect for this Initiative

<u>Effect</u>	<u>Jobs</u>	<u>Average Wage</u>	<u>Contribution to Total Effect</u>
Direct	100.0	\$29,000	\$14,209
Indirect	39.6	\$29,706	\$5,764
Induced	64.5	\$28,460	\$8,994
<b>Total</b>	<b>204.1</b>	<b>Initiative Wt. Avg. =</b>	<b>\$28,966</b>

**Table 9.1** reports the estimated productivity increases caused by the 100 jobs created by the QTI Project 7. One hundred jobs in the “healthcare customer service”

industry typically add \$7.98 million per year to Hillsborough County’s private-sector output. That equates to \$79,808 per worker – about 104% of the countywide output per worker. The indirect jobs produce additional output at 84% of the average output per worker, while the induced jobs also produce at about 84% of average output. The total impact on productivity of this initiative is over \$14.68 million of increased output. The increased output comes at a rate that is 94.12% of the countywide output per worker and would be expected to lower productivity in Hillsborough County.

Table 9.1

1999  
QTI PROJECT 7  
CUSTOMER SERVICE CALL CENTER, SIC 8011  
= IMPLAN SECTOR 490  
INCENTIVE TYPE: QTI  
Overall County Output per Worker = \$76,437

Productivity Comparisons

Effect	Jobs	Output	Output per Worker	% of County Output per Worker	Value-added per Worker
Direct	100.0	\$7,980,808	\$79,808	104.41%	\$51,171
Indirect	39.6	\$2,539,433	\$64,127	83.90%	\$39,190
Induced	64.5	\$4,163,530	\$64,551	84.45%	\$40,496
Total	204.1	\$14,683,771	\$71,944	94.12%	\$45,473

Table 9.1 also shows the value-added per worker portion of output per worker. Typically, a worker in the “healthcare customer service” industry adds \$51,171 to the value of the firm’s products during a year. The average direct wage of \$29,000 (excludes benefits, if any) paid by the QTI Project 7 firm for the 100 newly created jobs appears to be low in relation to the typical value-added per worker in the industry.

We find that the QTI Project 7 initiative would tend to decrease the average wage and decrease overall productivity in Hillsborough County.

During 1999 there were three initiatives under the EIFMP/EWWCFMP program: 1) a recreational vehicle sales firm, 2) a surgical supply manufacturing firm, and 3) a gypsum board manufacturing firm.

**Table 10** (page 29) displays the effects of the 50 jobs created by a recreational vehicle sales center (EIFMP/EWWCFMP Project 1). The direct jobs have an average wage of \$31,156<sup>7</sup>, which is above the countywide 1999 weighted-average of \$29,744. We estimate that these 50 direct jobs generate 9.1 full-time equivalent jobs at related industries within Hillsborough County. The 9.1 indirect jobs pay an average wage of

<sup>7</sup> The CBD section of the Hillsborough County Economic Development Department reported to CEDR that the EIFMP and EWWCFMP initiatives were approved sometime in 1999. The \$31,156 average annual wage required for this initiative was based on 1996 data, which was the most current available at the time the application was processed in 1998.



\$30,392, which is slightly above the countywide weighted-average. Additionally, an increase in household consumption spending induces 19.9 more full-time equivalent jobs at an average wage of \$28,584. The induced jobs have an average wage that is below the countywide weighted-average.

The majority the indirect jobs are in the relatively low-wage Services (61.54%) division of the county's economy. However, the remaining indirect jobs are in the relatively high-wage divisions of the county's economy, hence the average wage of the indirect jobs is more than the countywide weighted-average wage for all jobs. However, most induced jobs are in the Trade and Services divisions of the economy resulting in a below countywide weighted-average wage for these jobs.

The total effect of the EIFMP/EWWCFMP Project 1 initiative is 79.0 full-time equivalent jobs in Hillsborough County at an average wage of \$30,420. This estimate of the wage impact of the new jobs indicates that the EIFMP/EWWCFMP Project 1 initiative would tend to increase weighted-average wages for people who work in Hillsborough County.

Table 10

1999  
 EIFMP/EWWCFMP PROJECT 1  
 RECREATIONAL VEHICLE SALES, SIC 5561 = IMPLAN SECTOR 451  
 INCENTIVE TYPE: EIFMP/EWWCFMP  
 50 JOBS  
 AVG. DIRECT WAGE **\$31,156**

Indirect Employment Effects

<u>Division Name</u>	<u>Jobs</u>	<u>% of Emp. Impact</u>	<u>Divisional Wage as % of County Weighted Avg. Wage</u>	<u>Divisional Avg. Wage</u>	<u>Div. Avg. Wage times % of Emp. Impact</u>
0 Agriculture	0.1	1.10%	52.63%	\$15,654	\$172
1 Mining	0.0	0.00%	104.21%	\$30,995	\$0
1 Construction	0.5	5.49%	111.65%	\$33,209	\$1,825
2 & 3 Manufacturing	0.6	6.59%	111.26%	\$33,094	\$2,182
4 Trans&Pub Util	0.5	5.49%	134.27%	\$39,937	\$2,194
5 Trade	0.5	5.49%	85.51%	\$25,433	\$1,397
6 FIRE	1.1	12.09%	137.25%	\$40,823	\$4,935
7 & 8 Services	5.6	61.54%	92.89%	\$27,629	\$17,002
9 Public Admin	0.2	2.20%	114.80%	\$31,147	\$685
<b>Total</b>	<b>9.1</b>	<b>100.00%</b>			<b>\$30,392</b>
County Wt. Avg. =				\$29,744	

Induced Employment Effects

<u>Division Name</u>	<u>Jobs</u>	<u>% of Emp. Impact</u>	<u>Divisional Wage as % of County Weighted Avg. Wage</u>	<u>Divisional Avg. Wage</u>	<u>Div. Avg. Wage times % of Emp. Impact</u>
0 Agriculture	0.2	1.01%	52.63%	\$15,654	\$157
1 Mining	0.0	0.00%	104.21%	\$30,995	\$0
1 Construction	0.4	2.01%	111.65%	\$33,209	\$668
2 & 3 Manufacturing	0.3	1.51%	111.26%	\$33,094	\$499
4 Trans&Pub Util	0.6	3.02%	134.27%	\$39,937	\$1,204
5 Trade	7.0	35.18%	85.51%	\$25,433	\$8,946
6 FIRE	1.8	9.05%	137.25%	\$40,823	\$3,693
7 & 8 Services	9.1	45.73%	92.89%	\$27,629	\$12,634
9 Public Admin	0.5	2.51%	114.80%	\$31,147	\$783
<b>Total</b>	<b>19.9</b>	<b>100.00%</b>			<b>\$28,584</b>
County Wt. Avg. =				\$29,744	

Total Effect for this Initiative

<u>Effect</u>	<u>Jobs</u>	<u>Average Wage</u>	<u>Contribution to Total Effect</u>
Direct	50.0	\$31,156	\$19,719
Indirect	9.1	\$30,392	\$3,501
Induced	19.9	\$28,584	\$7,200
<b>Total</b>	<b>79.0</b>	<b>Initiative Wt. Avg. =</b>	<b>\$30,420</b>

**Table 10.1** reports the estimated productivity increases caused by the 50 jobs created by the EIFMP/EWWCFMP Project 1. Fifty jobs in the “recreational vehicle sales” industry typically add \$3.25 million per year to Hillsborough County’s private-

sector output. That equates to \$65,004 per worker – about 85% of the countywide output per worker. The indirect jobs produce additional output at almost 93% of the average output per worker, while the induced jobs produce at about 84% of average output. The total impact on productivity of this initiative is almost \$5.18 million of increased output. The increased output comes at a rate that is 85.78% of the countywide output per worker and would be expected to lower productivity in Hillsborough County.

Table 10.1

1999  
EIFMP/EWWCFMP PROJECT 1  
RECREATIONAL VEHICLE SALES, SIC 5561  
= IMPLAN SECTOR 451  
INCENTIVE TYPE: EIFMP & EWWCFMP  
Overall County Output per Worker = \$76,437

Productivity Comparisons

Effect	Jobs	Output	Output per Worker	% of County Output per Worker	Value-added per Worker
Direct	50.0	\$3,250,209	\$65,004	85.04%	\$51,448
Indirect	9.1	\$647,434	\$71,147	93.08%	\$40,490
Induced	19.9	\$1,282,072	\$64,426	84.29%	\$40,418
Total	79.0	\$5,179,715	\$65,566	85.78%	\$47,408

Table 10.1 also shows the value-added per worker portion of output per worker. Typically, a worker in the “recreational vehicle sales” industry adds \$51,448 to the value of the firm’s products during a year. The average direct wage of \$31,156 (excludes benefits, if any) paid by the EIFMP/EWWCFMP Project 1 firm for the 50 newly created jobs appears to be significantly low in relation to the typical value-added per worker in the industry.

We find that the EIFMP/EWWCFMP Project 1 initiative would tend to increase the average wage and decrease overall productivity in Hillsborough County.

**Table 11** (page 32) displays the effects of the 50 jobs created by a surgical supply manufacturing firm (EIFMP/EWWCFMP Project 2). The direct jobs have an average wage of \$31,156, which is above the countywide 1999 weighted-average of \$29,744. We estimate that these 50 direct jobs generate 55.4 full-time equivalent jobs at related industries within Hillsborough County. The 55.4 indirect jobs pay an average wage of \$29,993, which is slightly higher than the countywide weighted-average. Additionally, an increase in household consumption spending induces 17.1 more full-time equivalent jobs at an average wage of \$28,337. The induced jobs have an average wage that is over \$1,000 below the countywide weighted-average.

Although a majority of the indirect jobs are in the Services (54.15%) division, most of the remaining indirect jobs are distributed among the relatively high-wage divisions of the Hillsborough County economy. The distribution of jobs is sufficient to keep the average wage for all indirect jobs approximately equal to the countywide weighted-average wage. As is usually the case, most induced jobs are in the Trade and Services divisions of the economy resulting in a below countywide weighted-average wage for these jobs.

The total effect of the EIFMP/EWWCFMP Project 2 initiative is 122.5 full-time equivalent jobs in Hillsborough County at an average wage of \$30,237. This estimate of the wage impact of the new jobs indicates that the EIFMP/EWWCFMP Project 2 initiative would tend to increase weighted-average wages for people who work in Hillsborough County.

Table 11

1999  
 EIFMP/EWWCFMP PROJECT 2  
 SURGICAL SUPPLIES, SIC 3842 = IMPLAN SECTOR 408  
 INCENTIVE TYPE: EIFMP/EWWCFMP  
 50 JOBS  
 AVG. DIRECT WAGE **\$31,156**

Indirect Employment Effects

<u>Division</u>	<u>Name</u>	<u>Jobs</u>	<u>% of Emp. Impact</u>	<u>Divisional Wage as % of County</u>	<u>Weighted Avg. Wage</u>	<u>Divisional Avg. Wage</u>	<u>Div. Avg. Wage times</u>	<u>% of Emp. Impact</u>
0	Agriculture	0.3	0.54%	52.63%		\$15,654		\$85
1	Mining	0.0	0.00%	104.21%		\$30,995		\$0
1	Construction	2.3	4.15%	111.65%		\$33,209		\$1,379
2 & 3	Manufacturing	7.7	13.90%	111.26%		\$33,094		\$4,600
4	Trans&Pub Util	3.8	6.86%	134.27%		\$39,937		\$2,739
5	Trade	7.3	13.18%	85.51%		\$25,433		\$3,351
6	FIRE	3.6	6.50%	137.25%		\$40,823		\$2,653
7 & 8	Services	30.0	54.15%	92.89%		\$27,629		\$14,962
9	Public Admin	0.4	0.72%	114.80%		\$31,147		\$225
	<b>Total</b>	<b>55.4</b>	<b>100.00%</b>					<b>\$29,993</b>
County Wt. Avg. =						\$29,744		

Induced Employment Effects

<u>Division</u>	<u>Name</u>	<u>Jobs</u>	<u>% of Emp. Impact</u>	<u>Divisional Wage as % of County</u>	<u>Weighted Avg. Wage</u>	<u>Divisional Avg. Wage</u>	<u>Div. Avg. Wage times</u>	<u>% of Emp. Impact</u>
0	Agriculture	0.2	1.17%	52.63%		\$15,654		\$183
1	Mining	0.0	0.00%	104.21%		\$30,995		\$0
1	Construction	0.3	1.75%	111.65%		\$33,209		\$583
2 & 3	Manufacturing	0.3	1.75%	111.26%		\$33,094		\$581
4	Trans&Pub Util	0.4	2.34%	134.27%		\$39,937		\$934
5	Trade	6.2	36.26%	85.51%		\$25,433		\$9,221
6	FIRE	1.4	8.19%	137.25%		\$40,823		\$3,342
7 & 8	Services	7.9	46.20%	92.89%		\$27,629		\$12,764
9	Public Admin	0.4	2.34%	114.80%		\$31,147		\$729
	<b>Total</b>	<b>17.1</b>	<b>100.00%</b>					<b>\$28,337</b>
County Wt. Avg. =						\$29,744		

Total Effect for this Initiative

<u>Effect</u>	<u>Jobs</u>	<u>Average Wage</u>	<u>Contribution to Total Effect</u>
Direct	50.0	\$31,156	\$12,717
Indirect	55.4	\$29,993	\$13,564
Induced	17.1	\$28,337	\$3,956
<b>Total</b>	<b>122.5</b>	<b>Initiative Wt. Avg. =</b>	<b>\$30,237</b>

**Table 11.1** reports the estimated productivity increases caused by the 50 jobs created by EIFMP/EWWCFMP Project 2. Fifty jobs in the “surgical supply manufacturing” industry typically add \$6.51 million per year to Hillsborough County’s private-sector output. That equates to \$130,291 per worker – about 170% of the countywide output per worker. The indirect jobs produce additional output at almost 97% of the average output per worker, while the induced jobs produce at about 86% of average output. The total impact on productivity of this initiative is over \$11.74 million of increased output. The increased output comes at a rate that is 125.39% of the countywide output per worker and would be expected to raise productivity in Hillsborough County.

Table 11.1

1999  
EIFMP/EWWCFMP PROJECT 2  
SURGICAL SUPPLIES, SIC 3842  
= IMPLAN SECTOR 408  
INCENTIVE TYPE: EIFMP & EWWCFMP  
Overall County Output per Worker = \$76,437

Productivity Comparisons

Effect	Jobs	Output	Output per Worker	% of County Output per Worker	Value-added per Worker <sup>8</sup>
Direct	50.0	\$6,514,568	\$130,291	170.46%	\$20,574 <sup>8</sup>
Indirect	55.4	\$4,103,481	\$74,070	96.90%	\$38,575
Induced	17.1	\$1,122,510	\$65,644	85.88%	\$41,182
Total	122.5	\$11,740,559	\$95,841	125.39%	\$23,278

Table 11.1 also shows the value-added per worker portion of output per worker. Typically, a worker in the “surgical supply manufacturing” industry adds \$20,574<sup>8</sup> to the value of the firm’s products during a year. The average direct wage of \$31,156 (excludes benefits, if any) paid by the EIFMP/EWWCFMP Project 2 firm for the 50 newly created jobs appears to be high in relation to the typical value-added per worker in the industry.

We find that the EIFMP/EWWCFMP Project 2 initiative would tend to increase the average wage and increase overall productivity in Hillsborough County.

**Table 12** (page 35) displays the effects of the 81 jobs created by a gypsum board manufacturing firm (EIFMP/EWWCFMP Project 3). The direct jobs have an average wage of \$31,156, which is above the countywide 1999 weighted-average of \$29,744. We estimate that these 81 direct jobs generate 161.6 full-time equivalent jobs at related industries within Hillsborough County. The 161.6 indirect jobs pay an average wage of \$32,998, which is higher than the countywide weighted-average. Additionally, an increase in household consumption spending induces 124.1 more full-time equivalent

<sup>8</sup> CEDR approximation based on corrected value-added data for IMPLAN Sector 408.

jobs at an average wage of \$28,532. The induced jobs have an average wage that is over \$1,000 below the countywide weighted-average.

The largest portion of the indirect jobs are in the relatively high-wage Transportation/Public Utilities division of the county's economy, hence the average wage of the indirect jobs exceeds the countywide weighted-average wage for all jobs. As is usually the case, most induced jobs are in the Trade and Services divisions of the economy resulting in a below countywide weighted-average wage for these jobs.

The total effect of the EIFMP/EWWCFMP Project 3 initiative is 366.7 full-time equivalent jobs in Hillsborough County at an average wage of \$31,080. This estimate of the wage impact of the new jobs indicates that the EIFMP/EWWCFMP Project 3 initiative would tend to increase weighted-average wages for people who work in Hillsborough County.

Table 12

1999  
 EIFMP/EWWCFMP PROJECT 3  
 GYPSUM BOARD MANUFACTURER, SIC 3270 = IMPLAN SECTOR 246  
 INCENTIVE TYPE: EIFMP/EWWCFMP  
 81 JOBS  
 AVG. DIRECT WAGE **\$31,156**

Indirect Employment Effects

<u>Division</u>	<u>Name</u>	<u>Jobs</u>	<u>% of Emp. Impact</u>	<u>Divisional Wage as % of County</u>	<u>Weighted Avg. Wage</u>	<u>Divisional Avg. Wage</u>	<u>Div. Avg. Wage times</u>	<u>% of Emp. Impact</u>
0	Agriculture	0.8	0.50%	52.63%		\$15,654		\$77
1	Mining	0.0	0.00%	104.21%		\$30,995		\$0
1	Construction	7.9	4.89%	111.65%		\$33,209		\$1,623
2 & 3	Manufacturing	1.7	1.05%	111.26%		\$33,094		\$348
4	Trans&Pub Util	60.0	37.13%	134.27%		\$39,937		\$14,828
5	Trade	22.0	13.61%	85.51%		\$25,433		\$3,462
6	FIRE	9.6	5.94%	137.25%		\$40,823		\$2,425
7 & 8	Services	57.6	35.64%	92.89%		\$27,629		\$9,848
9	Public Admin	2.0	1.24%	114.80%		\$31,147		\$385
	<b>Total</b>	<b>161.6</b>	<b>100.00%</b>					<b>\$32,998</b>
County Wt. Avg. =						\$29,744		

Induced Employment Effects

<u>Division</u>	<u>Name</u>	<u>Jobs</u>	<u>% of Emp. Impact</u>	<u>Divisional Wage as % of County</u>	<u>Weighted Avg. Wage</u>	<u>Divisional Avg. Wage</u>	<u>Div. Avg. Wage times</u>	<u>% of Emp. Impact</u>
0	Agriculture	1.4	1.13%	52.63%		\$15,654		\$177
1	Mining	0.0	0.00%	104.21%		\$30,995		\$0
1	Construction	2.3	1.85%	111.65%		\$33,209		\$615
2 & 3	Manufacturing	3.0	2.42%	111.26%		\$33,094		\$800
4	Trans&Pub Util	4.0	3.22%	134.27%		\$39,937		\$1,287
5	Trade	43.6	35.13%	85.51%		\$25,433		\$8,935
6	FIRE	10.3	8.30%	137.25%		\$40,823		\$3,388
7 & 8	Services	56.6	45.61%	92.89%		\$27,629		\$12,601
9	Public Admin	2.9	2.34%	114.80%		\$31,147		\$728
	<b>Total</b>	<b>124.1</b>	<b>100.00%</b>					<b>\$28,532</b>
County Wt. Avg. =						\$29,744		

Total Effect for this Initiative

<u>Effect</u>	<u>Jobs</u>	<u>Average Wage</u>	<u>Contribution to Total Effect</u>
Direct	81.0	\$31,156	\$6,882
Indirect	161.6	\$32,998	\$14,542
Induced	124.1	\$28,532	\$9,656
<b>Total</b>	<b>366.7</b>	<b>Initiative Wt. Avg. =</b>	<b>\$31,080</b>



**Table 12.1** reports the estimated productivity increases caused by the 81 jobs created by EIFMP/EWWCFMP Project 3. Eighty-one jobs in the “gypsum board manufacturing” industry typically add \$32.25 million per year to Hillsborough County’s private-sector output. That equates to \$398,188 per worker – over 520% of the countywide output per worker. The indirect jobs produce additional output at 110% of the average output per worker, while the induced jobs produce at about 84% of average output. The total impact on productivity of this initiative is over \$53.77 million of increased output. The increased output comes at a rate that is 191.84% of the countywide output per worker and would be expected to significantly increase productivity in Hillsborough County.

Table 12.1

1999  
EIFMP/EWWCFMP PROJECT 3  
GYPSUM BOARD MANUFACTURER, SIC 3270  
= IMPLAN SECTOR 346  
INCENTIVE TYPE: EIFMP & EWWCFMP  
Overall County Output per Worker = \$76,437

Productivity Comparisons

Effect	Jobs	Output	Output per Worker	% of County Output per Worker	Value-added per Worker
Direct	81.0	\$32,253,214	\$398,188	520.94%	\$112,011
Indirect	161.6	\$13,572,560	\$83,989	109.88%	\$43,685
Induced	124.1	\$7,945,969	\$64,029	83.77%	\$40,169
Total	366.7	\$53,771,743	\$146,637	191.84%	\$57,587

Table 12.1 also shows the value-added per worker portion of output per worker. Typically, a worker in the “gypsum board manufacturing” industry adds \$112,011 to the value of the firm’s products during a year. The typical value-added in the industry appears somewhat high in relation to the average direct wage of \$31,156 (excludes benefits, if any) paid by EIFMP/EWWCFMP Project 3 for the 81 newly created jobs.

We find that the EIFMP/EWWCFMP Project 3 initiative would tend to increase the average wage and increase overall productivity in Hillsborough County.

Predictive Models.

The predictive models are based on a wage of \$29,744, which is the weighted-average wage in Hillsborough County for 1999. All observations are stated as a percentage of this weighted-average wage. We form predictive models for the State QTI program. Since direct wages for all three Hillsborough County 1999 EIFMP/EWWCFMP initiatives were the same, no predictive models can be formed for this program. The models for the QTI program describe the trend line for 1) indirect wages as a function of direct wages, 2) induced wages as a function of direct wages, and 3) total wages as a

function of direct wages. That is, given the average direct wages as a percentage of the county's weighted-average wage, the trend lines predict indirect, induced, and total wage percentages.

The QTI predictive models are derived from seven observations. Therefore, we acknowledge that the models do not have general applicability across a wide range of wage levels. The predictive models are shown in **Table 13** (page 38).

The slope of the trend line shows the percentage increase in the dependent variable with respect to a 100% increase in an initiative's average direct wage relative to the countywide weighted-average wage. For example, from Table 13, note that the slope of the function that relates indirect wages to direct wages for the QTI programs is:  $-(0.01173)$ , while the y-intercept is 1.11568. Hence, the trend line is:

$$\text{indirect wages} = 1.11568 + -(0.01173) * (\text{direct wages})$$

Suppose an QTI initiative's average direct wage were equal to (100% of) the countywide weighted-average wage. Then the prediction equation is  $1.10395 = 1.11568 + -(0.01173) * (1.0)$ .

A consistent finding is that an initiative's average wage of induced jobs is about 95% of the countywide weighted-average wage. From Table 13, see this finding by casually observing the percentage of each initiative's induced wage as a percentage of the countywide weighted-average wage. The predictive equations for induced wages as a function of direct wages bears out the finding. For the QTI program, the y-intercept is close to 0.95 and the slope is relatively small. The predictive model indicates that the induced wages will usually be 95.805% of the countywide weighted-average wage and decrease slightly, by 0.002%, for each 100% increase in an initiative's average direct wages with respect to the countywide weighted-average wage.

Thus, the creation of jobs, which are induced by an increase in household spending due to job-creation initiative, tends to lower the countywide weighted-average wage. Therefore, for a job-creation initiative to raise the countywide weighted-average wage, the average wages of the direct and indirect jobs must offset the negative impact of the average wage for induced jobs.

Among the QTI initiatives six out of seven report average indirect wages above the countywide weighted-average wage. The same six out of seven QTI initiatives have an average direct wage above the countywide weighted-average wage. And, in the case of Projects 3 and 7 the average indirect wage is higher than the average direct wage. On average, an initiative's indirect wages were about 9.7% above the weighted-average countywide wage in 1999. The combined effect of these initiatives is reflected by the predictive model. If the initiative's average direct wage were equal to (100% of) the

countywide weighted-average wage, then indirect wages average 10.395% above the countywide weighted-average wage.<sup>9</sup>

Additionally, we can use a predictive model to estimate the direct wage of QTI projects necessary to generate total wages that are equal to the countywide weighted-average wage. The prediction equation for the QTI initiatives is  $1.0 = 0.73172 + 0.3250 * (\text{direct wages})$ . Solving this prediction equation, we estimate that direct wages equal to 82.54% of the countywide weighted-average are necessary to insure total wages are equal to the countywide weighted-average wage. All of the QTI initiatives exceeded the necessary average direct wage. The high level of indirect wages - averaging almost 110% of the countywide wage - mathematically drives this finding. However, the direct wages for the seven QTI initiatives range from 97.499% of the countywide weighted-average to 252.152% of the countywide weighted-average. Using the predictive model to make an estimate when the direct wage is outside this range is problematic.

Table 13

1999

Predictive Models

QTI Program

<u>PROJECT</u>	<u>DIRECT</u>	<u>INDIRECT</u>	<u>INDUCED</u>	<u>TOTAL</u>
PROJECT 1	1.14857	1.14088	0.95825	1.09545
PROJECT 2	2.52152	1.07540	0.95679	1.43098
PROJECT 3	1.02542	1.14124	0.95830	1.02164
PROJECT 4	1.49136	1.14103	0.95854	1.30119
PROJECT 5	1.92678	1.14091	0.95850	1.56242
PROJECT 6	2.15169	1.03966	0.95894	1.38991
PROJECT 7	0.97499	0.99873	0.95682	0.97385

  

<u>FUNCTION(f)</u>	<u>SCOPE</u>	<u>Y-INTERCEPT</u>
Indirect = f(Direct)	<b>-0.01173</b>	<b>1.11568</b>
Induced = f(Direct)	<b>-0.00002</b>	<b>0.95805</b>
Total = f(Direct)	<b>0.32503</b>	<b>0.73172</b>

<sup>9</sup> The slope of the function of indirect wages to direct wages is -0.01173, which indicates that indirect wages tend to decrease as direct wages increase. But, the slope coefficient is not statistically different from zero. The r-square for the function is negligible. Thus, we conclude there is no discernible relationship between indirect and direct wages in this sample.

## Conclusion.

The purpose of job-creation programs, like the QTI, EIFMP, and EWWCFMP, is often stated as the improvement of the economic situation of the residents of the region. In 1999, the EIFMP and EWWCFMP required a wage of \$31,156 or higher and the QTI program required a wage of at least 115% of the statewide, county, or metropolitan area average wage. These wage-rate conditions only applied to the direct jobs. Thus, program conditions do not consider the indirect and induced effects of jobs created by the program.

While an increasing average annual wage in a region may be interpreted as an improvement in the economic situation of the region's residents, increasing productivity is the key to raising living standards and regional competitiveness. That is so, because if workers produce more in a specified time period, firms can sell more, boost profits, and raise incomes at the same time without necessarily raising prices. Hence, a preferred job-creation initiative is one that raises both average wages and average productivity.

In 1999 there were ten job-creation initiatives approved in Hillsborough County. The provisions of Florida's Qualified Target Industry (QTI) Tax Refund Program guided seven initiatives and the Employers Impact Fee Mitigation Program (EIFMP) together with the Employers Water and Wastewater Capacity Fee Mitigation Program (EWWCFMP) governed three initiatives.

The seven QTI initiatives reported average wages ranging from \$29,000 to \$75,000 per new job and included the creation of 2,803 jobs. These 2,803 jobs generated 2,121 more jobs. The average wage for these 4,924 jobs was \$37,176 or \$7,432 above the weighted-average for all jobs in Hillsborough County in 1999. We estimate that the combined impact of the QTI initiatives was to raise weighted-average wages in Hillsborough County by \$65.18 per annum per person working in the county.

Only two of the seven QTI initiatives typically would be expected to have a positive effect on output per worker in Hillsborough County. These two initiatives would be expected to have a total effect on productivity estimated at 142.93% and 162.04% of the overall level of output per worker countywide. The negative effect of the other five initiatives ranges from 73.48% to 94.12% of the overall level of output per worker countywide. For all of the jobs generated by the seven QTI initiatives, the weighted-average effect is typically output per worker at 82% of overall worker productivity.

The total effects of the 1999 QTI initiatives are ambiguous. The initiatives tend to increase weighted-average wages for workers in Hillsborough County, while typically lowering output per worker overall.

The three EIFMP/EWWCFMP initiatives reported average wages of \$31,156. These three initiatives included the creation of 181 jobs. These 181 jobs generated 387 more jobs. The weighted-average wage for these 568 jobs was \$30,806 or \$1,062 above

the countywide weighted-average for all jobs in Hillsborough County at that time. Thus, these incentives would mathematically raise the overall weighted-average wage, but because the 568 jobs represented such a small percentage of total jobs in the county (0.11%), the wage impact was minimal.<sup>10</sup> We estimate that the combined impact of the EIFMP/EWWCFMP initiatives was to raise weighted-average wages in Hillsborough County by \$1.18 per annum per person working in the county.

One of the EIFMP/EWWCFMP initiatives would be expected to have a negative effect on worker productivity in Hillsborough County with a total effect on productivity estimated at 85.78% of the overall level of output per worker countywide. The other two EIFMP/EWWCFMP initiatives would be expected to increase worker productivity with the total effect estimated to be 125.39% and 191.84% of the overall level of output per worker countywide. For all of the jobs generated by the three EIFMP/EWWCFMP initiatives, the weighted-average effect is typically output per worker at 144.18% of overall worker productivity. However, as with the effect on average wages, the 568 jobs associated with these initiatives are so few that the productivity impact was virtually zero.

The total effects of the 1999 EIFMP/EWWCFMP initiatives are positive. The initiatives tend to slightly increase weighted-average wages for workers in Hillsborough County and raise overall output per worker.

We have selected weighted-average wages and productivity as measurements for this economic analysis. However, our selection does not imply that these are the only possible measures of expected economic improvement, and consequently the sole measures of the efficacy of either the QTI or the EIFMP/EWWCFMP initiative.

From the predictive models, we can conclude that setting the minimum requirement for QTI program initiatives in 1999 above 82.54% of Hillsborough County's weighted-average wage would provide assurance that the ripple effect of economic activity would not result in decrease in the countywide weighted-average wage. However, this result is ambiguous in that the QTI program requires that qualifying firms pay wages of at least 115% of the state or local wage.

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<sup>10</sup> According to ES202 data, in January 1999 there were 512,656 people employed in Hillsborough County.