



General Information: (312) 353-1880

Media Contact: Paul LaPorte

(312) 353-1138

Internet: www.bls.gov/ro5

www.bls.gov/oes

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OCCUPATIONAL EMPLOYMENT AND WAGES IN DETROIT AND GRAND RAPIDS, MAY 2007

Employment was more highly concentrated in 10 of the 22 occupational groups including architecture and engineering and business and financial operations in the Detroit-Livonia-Dearborn Mich. Metropolitan Division¹ than in the nation. Seven groups had significantly less of a presence in the Detroit area, two of which were construction and extraction and office and administrative support, according to the U.S. Department of Labor's Bureau of Labor Statistics.

The Grand Rapids-Wyoming, Mich. Metropolitan Statistical Area (MSA)² had higher employment shares than the United States as a whole for 4 of the 22 occupational groups, including production and transportation and material moving. Regional Commissioner Jay A. Mousa noted that 12 other occupational groups had measurably lower employment shares in the Grand Rapids area than they did nationally, and, as in the Detroit area, two such groups were construction and extraction and office and administrative support. (See table A.)

Workers in the Detroit area had an average (mean) hourly wage rate of \$22.88 and those in the Grand Rapids area averaged \$18.87 in May 2007. In Detroit, wages were significantly higher than the nationwide average of \$19.56, but in Grand Rapids, wages were significantly below that for the nation. In the Detroit area, wage rates for 18 major occupational categories were significantly higher than their respective averages nationwide. In Grand Rapids, wage rates were significantly above their respective national averages in 5 of the 22 occupational groups. Conversely, no occupational group in Detroit had a significantly lower-than-average wage rate, but in Grand Rapids, wages for five groups fell measurably below the corresponding national averages. (See table A.)

These statistics are from the Occupational Employment Statistics (OES) survey, a federal-state cooperative program between BLS and State Workforce Agencies, in this

¹ The Detroit-Livonia-Dearborn Metropolitan Division consists of Wayne County in Michigan. For convenience, this area will be referred to as the Detroit area, Detroit, or by similarly abbreviated titles throughout this release.

² The Grand Rapids-Wyoming Metropolitan Statistical Area consists of Barry, Ionia, Kent, and Newaygo Counties in Michigan. For convenience, this area will be referred to as the Grand Rapids area, Grand Rapids, or by similarly abbreviated titles throughout this release.

case the Michigan Department of Labor and Economic Growth. The OES survey provides estimates of employment and hourly and annual wages for wage and salary workers in up to 22 major occupational groups and up to 801 non-military detailed occupations for the nation, states, metropolitan statistical areas, metropolitan divisions, and nonmetropolitan areas.

Table A. Occupational employment and wages by major occupational group, United States, Detroit-Livonia-Dearborn, and Grand Rapids-Wyoming metropolitan areas, and measures of statistical significance, May 2007

Major occupational group	Employment share (in percent)			Mean hourly wage (in dollars)		
	United States	Detroit	Grand Rapids	United States	Detroit	Grand Rapids
Management	4.5	4.3	4.0*	\$46.22	\$51.56*	\$42.42*
Business and financial operations	4.5	5.9*	4.2*	30.01	34.61*	27.08*
Computer and mathematical science	2.4	2.8*	1.6*	34.71	36.43*	28.25*
Architecture and engineering	1.9	4.6*	2.0	33.11	38.43*	29.20*
Life, physical, and social science	0.9	0.7*	0.5*	29.82	31.10	29.00
Community and social services	1.3	1.5*	1.4	19.49	20.88*	21.96*
Legal	0.7	0.7*	0.5*	42.53	48.45*	38.88
Education, training, and library	6.2	5.5*	5.4*	22.41	22.88	21.74
Arts, design, entertainment, sports, and media	1.3	1.2	1.5	23.27	25.61*	22.54
Healthcare practitioner and technical	5.1	5.8*	5.4*	31.26	34.11*	30.00
Healthcare support	2.7	3.0*	3.2*	12.31	12.29	12.36
Protective service	2.3	2.5*	1.5*	18.63	20.55*	18.90
Food preparation and serving related	8.4	8.3	7.9*	9.35	9.63*	9.27
Building and grounds cleaning and maintenance	3.3	2.9*	2.9*	11.33	12.44*	12.09*
Personal care and service	2.5	3.0*	1.8*	11.53	14.18*	11.18
Sales and related	10.7	8.7*	10.2	16.94	17.15	18.01*
Office and administrative support	17.3	14.9*	15.0*	15.00	16.43*	15.14
Farming, fishing, and forestry	0.3	NA	0.3	10.89	14.47*	10.10*
Construction and extraction	5.0	2.6*	4.0*	19.53	24.96*	19.87
Installation, maintenance, and repair	4.0	4.1	4.2	19.20	23.36*	19.99*
Production	7.6	8.5*	13.7*	15.05	20.93*	15.81*
Transportation and material moving	7.2	8.4*	8.7*	14.75	19.48*	14.90

* = The employment share or mean hourly wage for this area is significantly different from the national average of all areas at the 90-percent confidence level.

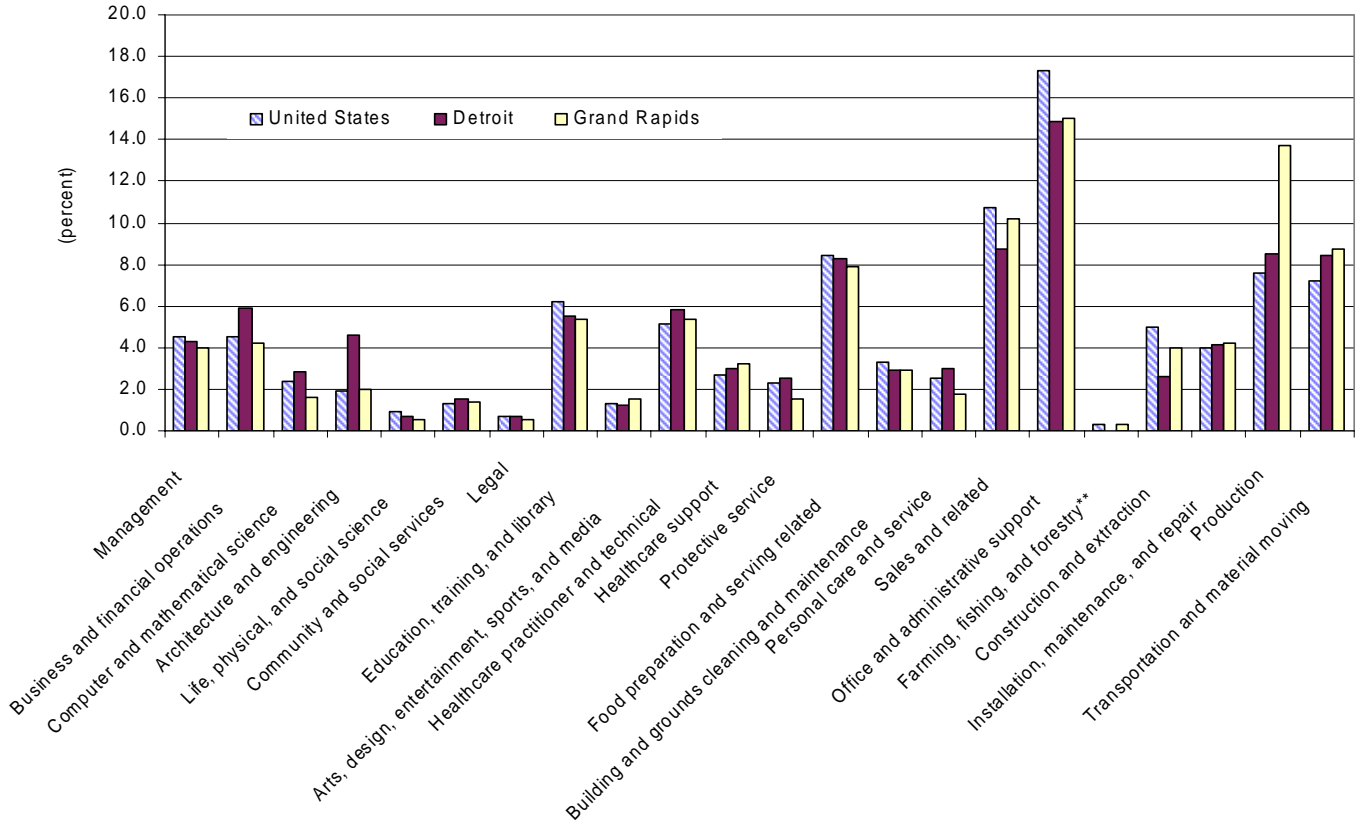
NA = Not available.

Occupational employment and wages in the Detroit area

The largest occupational group in the Detroit-Livonia-Dearborn area was office and administrative support with 117,370 workers representing 14.9 percent of area employment. This group's share of local employment was significantly below the U.S. average of 17.3 percent; nationally, this was also the largest occupational group. Employment shares in four other local groups—sales and related, production, transportation and material moving, and food preparation and serving related—were all above 8.0 percent. In two of these groups, production, and transportation and material

moving employment distributions were significantly higher than their respective shares at the national level. (See chart A.)

Chart A. Occupational employment as a share of total employment, United States, Detroit, and Grand Rapids, May 2007



** Not available for Detroit

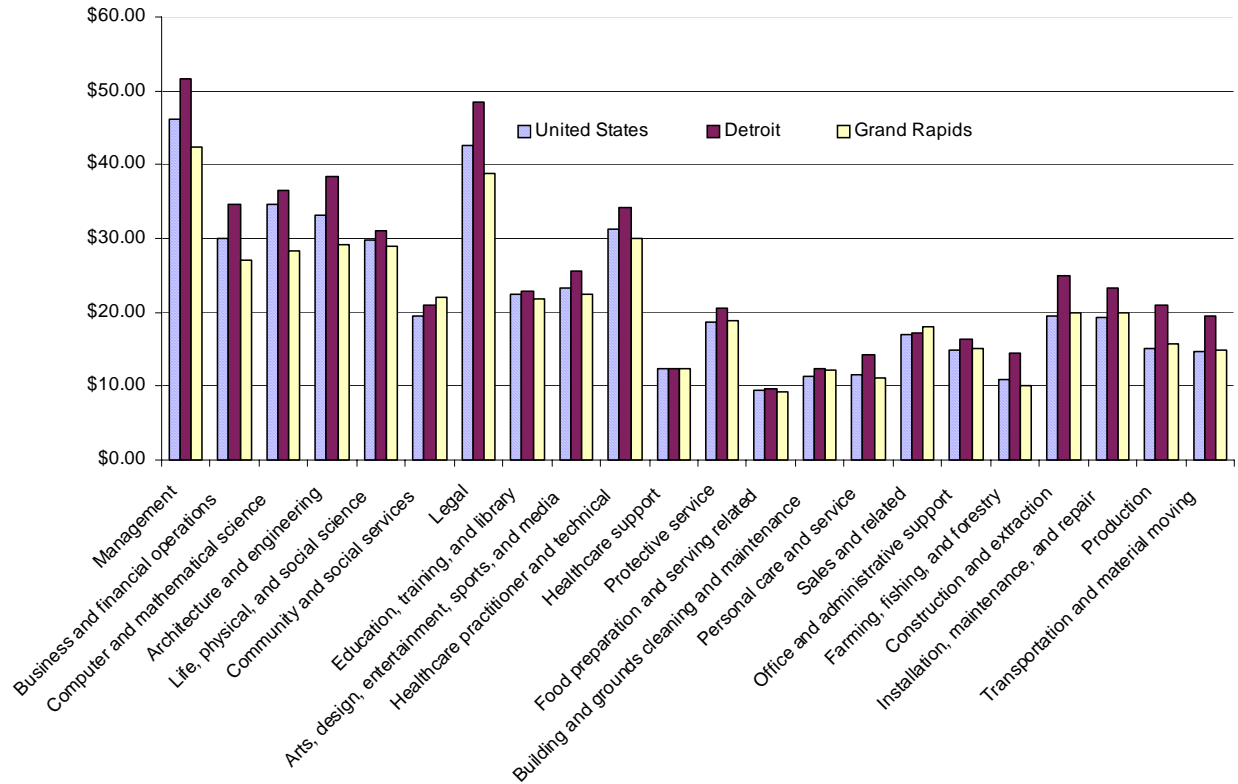
Two other occupational groups had significantly lower employment shares in the area than they did nationally. Only 2.6 percent of workers in the Detroit-Livonia-Dearborn area held construction and extraction jobs, significantly below the U.S. average of 5.0 percent. Education, training, and library occupations also had a lower concentration in the local area (5.5 percent) than they did at the national level (6.2 percent).

Management and legal occupations were the two highest-paying occupational groups in the Detroit-Livonia-Dearborn area, with management positions averaging \$51.56 an hour and legal, \$48.45. (See chart B.) Nationwide, these were also the highest-paying occupational groups, with average earnings of \$46.22 in management and \$42.53 in legal. The average wages for both groups were significantly higher in the Detroit-Livonia-Dearborn area than for the nation.

Architecture and engineering (\$38.43), computer and mathematical science (\$36.43), business and financial operations (\$34.61), and healthcare practitioner and technical (\$34.11) were among the better-paid occupational groups in the Detroit area.

Wages for all four groups were measurably higher than they were for their national counterparts. At the other end of the wage spectrum, food preparation and serving related occupations were the lowest-paid group in the Detroit-Livonia-Dearborn area at \$9.63 an hour; this wage was also higher than the national average of \$9.35.

Chart B. Average hourly wages in the United States, Detroit, and Grand Rapids by major occupational group, May 2007



Occupational employment and wages in the Grand Rapids area

As in the Detroit area, as well as the nation, the largest occupational group in the Grand Rapids-Wyoming area was office and administrative support with a total of 58,040 jobs representing 15.0 percent of area employment. Still, this group's share of local employment was significantly below the U.S. average.

Unlike Detroit, Grand Rapids had two more occupational groups with double-digit employment concentrations—production, and sales and related. With 53,070 jobs, production occupations accounted for 13.7 percent of the local workforce, measurably higher than their representation nationally at 7.6 percent. Sales and related occupations had a 10.2-percent employment share locally, which was not significantly different from that for the nation. (See chart A.)

Three other occupational groups in the Grand Rapids area had employment shares that were measurably higher than those for the nation—transportation and material moving (8.7 percent), healthcare practitioner and technical (5.4), and healthcare support (3.2 percent).

Two of the occupational groups that had significantly less of a presence in the local area compared to the nation were construction and extraction (4.0 percent versus

5.0 percent nationally) and education, training, and library (5.4 percent versus 6.2 percent).

As in Detroit, management and legal occupations were the two highest-paying occupational groups in the Grand Rapids-Wyoming area, with management positions averaging \$42.42 an hour and legal, \$38.88. (See chart B.) As noted previously, these were also the highest-paying occupational groups nationwide.

Also among the better-paid occupational groups in the area were healthcare practitioner and technical (\$30.00); architecture and engineering (\$29.20); life, physical, and social science (\$29.00); and computer and mathematical science (\$28.25). However, local wage rates for these groups did not exceed those of their national counterparts.

In the Grand Rapids-Wyoming area, food preparation and serving occupations were among the lowest paid in the area at \$9.27 an hour. This wage was not measurably different from the national average of \$9.35.

OES wage and employment data for the 22 major occupational groups in the Detroit and Grand Rapids areas were compared to their respective national averages based on statistical significance testing. Only those occupations with wages or employment shares above or below the national wage or share after testing for significance at the 90-percent confidence level meet the criteria.

NOTE: A value that is statistically different from another does not necessarily mean that the difference has economic or practical significance. Statistical significance is concerned with the ability to make confident statements about a universe based on a sample. It is entirely possible that a large difference between two values is not significantly different statistically, while a small difference is, since both the size and heterogeneity of the sample affect the relative error of the data being tested.

Technical Note

The Occupational Employment Statistics (OES) survey is a semiannual mail survey measuring occupational employment and wage rates for wage and salary workers in nonfarm establishments in the United States. Guam, Puerto Rico, and the Virgin Islands also are surveyed, but their data are not included in this release. OES estimates are constructed from a sample of about 1.2 million establishments. Forms are mailed to approximately 200,000 establishments in May and November of each year for a 3-year period. The nationwide response rate for the May 2007 survey was 77.9 percent based on establishments and 73.5 percent based on employment. The survey included establishments sampled in the May 2007, November 2006, May 2006, November 2005, May 2005, and November 2004 semiannual panels. The sample in the Detroit area included 3,787 establishments with a response rate of 66 percent. The sample in the Grand Rapids area included 2,617 establishments with a response rate of 69 percent.

The occupational coding system

The OES survey uses the Office of Management and Budget's (OMB) occupational classification system, the Standard Occupational Classification (SOC) system. The SOC system is the first OMB-required occupational classification system for federal agencies.

The OES survey categorizes workers in 1 of 801 detailed occupations. Together, these detailed occupations make up 23 major occupational groups, 22 of which are covered in this release. The one exception is military specific occupations which are not included in the OES survey.

For more information about the SOC system, please see the Bureau of Labor Statistics (BLS) Web site at www.bls.gov/soc/home.htm.

The industry coding system

The OES survey uses the North American Industry Classification System (NAICS). For more information about NAICS, see the BLS Web site at www.bls.gov/bls/naics.htm.

Survey sample

BLS funds the survey and provides the procedures and technical support, while the State Workforce Agencies (SWAs) collect most of the data. BLS produces cross-industry and industry-specific estimates for the nation, states, metropolitan statistical areas (MSAs), metropolitan divisions, and nonmetropolitan areas. Industry-specific estimates are produced at the NAICS sector, 3-digit, 4-digit, and selected 5-digit industry levels. BLS releases all cross-industry and national estimates; the SWAs release industry-specific estimates at the state and MSA levels.

State Unemployment Insurance (UI) files provide the universe from which the OES survey draws its sample. Employment benchmarks are obtained from reports submitted by employers to the UI program. The OES survey sample is stratified by metropolitan and nonmetropolitan areas and industry. Samples selected in panels prior to May 2005 were stratified using MSA definitions based on the 1990 Metropolitan Statistical Area standards. Beginning with the May 2005 panel, the sample was stratified using new MSA definitions based on the 2000 Metropolitan Statistical Area standards.

Concepts

Occupational employment is the estimate of total wage and salary employment in an occupation across the industries surveyed. The OES survey defines employment as the number of workers who can be classified as full- or part-time employees, including workers on paid vacations or other types of paid leave; workers on unpaid short-term absences; salaried officers, executives, and staff members of incorporated firms; employees temporarily assigned to other units; and employees for whom the reporting unit is their permanent duty station regardless of whether that unit prepares their paycheck.

Wages for the OES survey are straight-time, gross pay, exclusive of premium pay. Base rate, cost-of-living allowances, guaranteed pay, hazardous-duty pay, incentive pay including commissions and production bonuses, tips, and on-call pay are included. Excluded are: back pay, jury duty pay, overtime pay, severance pay, shift differentials, non-production bonuses, employer cost for supplementary benefits, and tuition reimbursements.

Mean hourly wage. The mean hourly wage rate for an occupation is the total wages that all workers in the occupation earn in an hour divided by the total employment of the occupation. To calculate the mean hourly wage of each occupation, total weighted hourly wages are summed across all intervals and divided by the

occupation's weighted survey employment. The mean wage for each interval is based on occupational wage data collected by the BLS Office of Compensation and Working Conditions for the National Compensation Survey (NCS).

Annual wage. Many employees are paid at an hourly rate by their employers and may work more than or less than 40 hours per week. Annual wage estimates for most occupations in this release are calculated by multiplying the mean hourly wage by a "year-round, full-time" figure of 2,080 hours (52 weeks by 40 hours). Thus, annual wage estimates may not represent the actual annual pay received by the employee if they work more or less than 2,080 hours per year. Workers in some occupations typically work less than full time, year round. For these occupations, the OES survey collects and reports either the annual salary or the hourly wage rate, depending on how the occupation is typically paid, but not both. For example, teachers, flight attendants, and pilots may be paid an annual salary, but do not work the usual 2,080 hours per year. In this case, an annual salary is reported. Other workers, such as entertainment workers, are paid hourly rates, but generally do not work full time, year round. For these workers, only an hourly wage is reported.

Hourly versus annual wage reporting. For each occupation, respondents are asked to report the number of employees paid within specific wage intervals. The intervals are defined both as hourly rates and the corresponding annual rates, where the annual rate for an occupation is calculated by multiplying the hourly wage rate by a typical work year of 2,080 hours. The responding establishment can reference either the hourly or the annual rate for full-time workers, but they are instructed to report the hourly rate for part-time workers.

Estimation methodology

Each OES panel includes approximately 200,000 establishments. The OES survey is designed to produce estimates using six panels (3 years) of data. The full six-panel sample of 1.2 million establishments allows the production of estimates at detailed levels of geography, industry, and occupation.

Wage updating. Significant reductions in sampling errors are obtained by combining six panels of data, particularly for small geographic areas and occupations. Wages for the current panel need no adjustment. However, wages in the five previous panels need to be updated to the current panel's reference period.

The OES program uses the BLS Employment Cost Index (ECI) to adjust survey data from prior panels before combining them with the current panel's data. The wage updating procedure adjusts each detailed occupation's wage rate, as measured in the earlier panel, according to the average movement of its broader occupational division. The procedure assumes that there are no major differences by geography, industry, or detailed occupation within the occupational division.

May 2007 OES survey estimates. The May 2007 OES survey estimates are based on all data collected from establishments in the May 2007, November 2006, May 2006, November 2005, May 2005, and November 2004 semiannual samples.

Reliability of the estimates. Estimates calculated from a sample survey are subject

to two types of error: sampling and nonsampling. Sampling error occurs when estimates are calculated from a subset (that is, a sample) of the population instead of the full population. When a sample of the population is surveyed, there is a chance that the sample estimate of the characteristic of interest may differ from the population value of that characteristic. Differences between the sample estimate and the population value will vary depending on the sample selected. This variability can be estimated by calculating the standard error (SE) of the sample estimate. If we were to repeat the sampling and estimation process countless times using the same survey design, approximately 90 percent of the intervals created by adding and subtracting 1.645 SEs from the sample estimate would include the population value. These intervals are called 90-percent confidence intervals. The OES survey, however, usually uses the relative standard error (RSE) of a sample estimate instead of its SE to measure sampling error. RSE is defined as the SE of a sample estimate divided by the sample estimate itself. This statistic provides the user with a measure of the relative precision of the sample estimate. RSEs are calculated for both occupational employment and mean wage rate estimates. Occupational employment RSEs are calculated using a subsample, random group replication technique called the jackknife. Mean wage rate RSEs are calculated using a variance components model that accounts for both the observed and unobserved components of the wage data. The variances of the unobserved components are estimated using wage data from the BLS National Compensation Survey. In general, estimates based on many establishments have lower RSEs than estimates based on few establishments. If the distributional assumptions of the models are violated, the resulting confidence intervals may not reflect the prescribed level of confidence.

Nonsampling error occurs for a variety of reasons, none of which are directly connected to sampling. Examples of nonsampling error include: nonresponse, data incorrectly reported by the respondent, mistakes made in entering collected data into the database, and mistakes made in editing and processing the collected data.

Additional information

The May 2007 OES national data by occupation are available on the BLS Web site at www.bls.gov/oes. Users also may access each occupation's definition and percentile wages. The May 2007 cross-industry data for states and metropolitan areas are available on the BLS Web site. Industry staffing patterns at the sector, 3-, 4-, and selected 5-digit NAICS levels also are available from the Internet. These data include industry-specific occupational employment and wage data. A more detailed technical note for OES is available at www.bls.gov/news.release/ocwage.tn.htm.

OES information is also available through our regional web page at www.bls.gov/ro5/home.htm. If you have additional questions, you can contact an economist in the Chicago information office at (312) 353-1880, menu option 0, from 9 a.m. to 5 p.m. (ET). Information in this release will be made available to sensory impaired individuals upon request. Voice phone: 202-691-5200; TDD message referral phone number: 1-800-877-8339.

More detailed Standard Occupational Classification (SOC) Major Groups for 375 metropolitan areas are available on the Web site at www.bls.gov/oes/current/oessrcma.htm.

Upcoming Reduction in Sample Size of Occupational Employment Statistics Survey

Due to budget constraints, Occupational Employment Statistics has reduced the sample size of the May 2008 panel by 20 percent. Because OES estimates are produced from 3 years of pooled data, this one-time sample reduction will affect estimates for May 2008, May 2009, and May 2010. This reduction is expected to decrease the number of published employment estimates by at least 5 percent, or about 25,000 estimates, and will decrease the accuracy of the remaining estimates. The number and quality of wage estimates also are expected to decline. These cutbacks are being implemented in response to a reduction in funding to the BLS that resulted from The 2008 Consolidated Appropriations Act enacted on December 26, 2007.