

ECONOMIC DRIVERS MANUFACTURING MEDICAL CENTER LOGISTICS			EMPLOYMENT GROWTH RANK 2014-2016: 205 (3rd quintile) 2014-2019: 269 (4th quintile) <i>Best=1, Worst=408</i>		RELATIVE COSTS LIVING: 86% BUSINESS: 96% <i>U.S.=100%</i>		VITALITY RELATIVE: 61% RANK: 399 <i>U.S.=100% Best=1, Worst=401</i>	
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BUSINESS CYCLE STATUS

Expansion

RECOVERY

At Risk

Moderating Recession

In Recession

STRENGTHS & WEAKNESSES

STRENGTHS

- » Concentration of auto industry headquarters, production, and research and development.
- » High housing affordability.
- » Well-positioned for growth in green and advanced manufacturing.

WEAKNESSES

- » Below-average quality of life, high crime rate, and eroding infrastructure.
- » Challenging fiscal situation in the city.
- » Persistent out-migration.

FORECAST RISKS

SHORT TERM

LONG TERM

RISK EXPOSURE 2015-2020 **334** 5th quintile *Highest=1 Lowest=401*

UPSIDE

- » Midtown investments attract more educated residents and spur corporate expansions.
- » Growing healthcare center helps retain more college graduates.

DOWNSIDE

- » Public safety and services decline further, amplifying out-migration.
- » The strong dollar and tepid global demand for capital goods and motor vehicles create downside risk.

MOODY'S RATING

Ba3 COUNTY AS OF FEB 19, 2016

ANALYSIS

Recent Performance. Detroit-Dearborn-Livonia's recovery lags well behind those of the state and the nation. The auto industry no longer packs the punch it did in the early stages of the recovery when sales were climbing from a very low base. Consumer industries are also struggling with high unemployment and an eroding population base. Local government, particularly in the city, is exerting a substantial drag on the economy. The housing market is also not faring much better, as homebuilding remains stuck near a post-recession low. The breadth of hiring remains narrow, with healthcare a key bright spot. At 7.2% in December, unemployment is the highest in the state, but the good news is that the labor force is no longer contracting.

Auto. Auto-related industries will benefit from improving domestic demand, but they will generate few net new jobs. Last year was the best year for the industry since 2006, and U.S. vehicle sales held above 17 million units at an annual rate in January and February despite financial turmoil. Low gasoline prices, greater construction, an improving labor market, and the availability of attractive financing are spurring vehicle sales. Prospects for domestic demand are favorable, and optimism shows up in the Southeast Michigan Purchasing Managers' Index. Although production, new orders and employment indexes fell in February, they all are in expansionary territory.

That said, now that much of the pent-up demand due to delays in replacing older vehicles has been satisfied, sales are unlikely to rise much further. Moreover, even after global growth picks up, the strong dollar will limit gains for export-oriented manufacturers. Efficiency improvements will also limit the extent of new job creation in the factory sector.

Budget. Better state fiscal conditions will help stabilize public sector payrolls, which have been shrinking for more than a decade. An improving

job market and a budget surplus underpin Governor Rick Snyder's proposal for a 0.8% increase in the fiscal 2016-2017 budget to \$54.9 billion. Snyder's budget devotes more to K-12 education and infrastructure and includes funds to help ameliorate Detroit public schools' debt crisis. Higher education's prospects are also bright. The proposed budget includes a 3.5% increase in funding for Wayne State University. Although the share of jobs in state and local government is the lowest in decades, the shift from outright cuts to stable employment will deliver a much needed boost to the economy. Public sector workers in DET earn one-third more, on average, than those in other nonfarm industries.

Long road back. DET is on the right path thanks to a revitalized motor vehicle industry, but its employment and population base will never recover fully. Its core auto industry is much smaller, and the metro division will struggle to diversify into life sciences and other high-value-added services. Weak demographics and high unemployment will remain long-term constraints to growth as the metro division's labor market recovery leaves many workers behind. Labor force participation in DET has fallen alongside unemployment, ending last year at just 54%, far below the U.S. figure of 63%.

The auto industry is a source of strength and will preserve Detroit-Dearborn-Livonia's recovery. However, manufacturers will add few jobs, and the strong dollar and tepid global demand for capital goods and motor vehicles create downside risk. Outside of autos, hospitals, the university and green technologies hold the most promise. Nonetheless, population decline limits the potential for services and DET will lag the nation in job growth over the extended forecast horizon.

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February 2016 help@economy.com

2009	2010	2011	2012	2013	2014	INDICATORS	2015	2016	2017	2018	2019	2020
64.1	67.9	69.5	70.6	71.8	73.0	Gross metro product (C09\$ bil)	74.6	76.2	77.3	78.2	78.7	78.8
-10.6	5.8	2.4	1.7	1.6	1.7	% change	2.2	2.1	1.5	1.2	0.5	0.2
697.9	692.6	704.0	715.2	717.5	724.6	Total employment (ths)	738.7	748.0	759.8	770.0	775.4	775.8
-7.8	-0.8	1.6	1.6	0.3	1.0	% change	1.9	1.3	1.6	1.4	0.7	0.0
16.2	15.4	13.0	11.6	11.6	10.0	Unemployment rate (%)	7.2	7.0	6.9	6.9	7.1	7.4
-4.3	1.3	5.6	1.0	0.3	3.6	Personal income growth (%)	4.3	7.3	7.2	6.3	4.3	3.3
40.7	39.2	39.5	39.6	40.4	41.4	Median household income (\$ ths)	43.6	46.0	48.8	51.5	53.7	55.6
1,837.5	1,815.7	1,801.8	1,793.2	1,776.1	1,765.9	Population (ths)	1,762.8	1,754.8	1,745.6	1,735.9	1,726.2	1,716.6
-1.5	-1.2	-0.8	-0.5	-0.9	-0.6	% change	-0.2	-0.5	-0.5	-0.6	-0.6	-0.6
-34.7	-27.8	-20.5	-14.4	-21.1	-16.5	Net migration (ths)	-8.5	-13.2	-14.2	-14.7	-14.6	-14.3
264	470	476	672	819	704	Single-family permits (#)	1,001	1,146	1,457	1,560	1,444	1,393
24	265	229	185	206	297	Multifamily permits (#)	1,659	2,578	1,820	1,056	609	489
127.5	117.3	113.7	114.8	125.6	137.1	FHFA house price (1995Q1=100)	146.3	150.5	155.7	160.9	166.9	174.7

ECONOMIC HEALTH CHECK

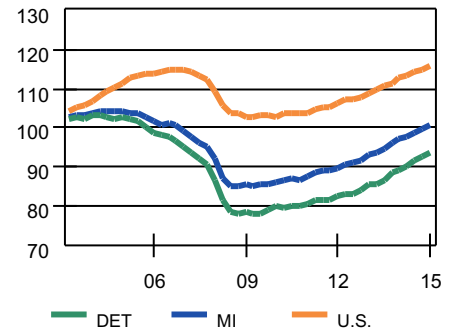
3-MO MA

	Jul 15	Aug 15	Sep 15	Oct 15	Nov 15	Dec 15
Employment, change, ths	1.4	0.9	0.8	-1.2	-1.2	-0.7
Unemployment rate, %	7.1	6.8	6.6	6.6	6.7	7.0
Labor force participation rate, %	54.2	54.2	54.2	54.1	54.2	54.3
Employment-to-population ratio, %	50.4	50.5	50.6	50.6	50.6	50.5
Average weekly hours, #	35.3	35.4	35.3	35.3	35.3	35.4
Industrial production, 2007=100	118.2	118.3	119.4	118.0	117.3	116.0
Residential permits, single-family, #	995	995	936	969	1,020	1,001
Residential permits, multifamily, #	1,250	1,561	1,483	1,565	3,089	2,834
	Better than prior 3-mo MA	Unchanged from prior 3-mo MA	Unchanged from prior 3-mo MA	Worse than prior 3-mo MA	Worse than prior 3-mo MA	Worse than prior 3-mo MA

Sources: BLS, Census Bureau, Moody's Analytics

BUSINESS CYCLE INDEX

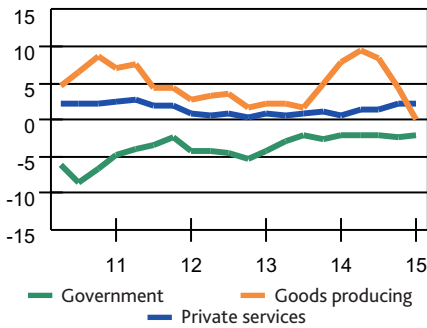
JAN 2002=100



Source: Moody's Analytics

CURRENT EMPLOYMENT TRENDS

% CHANGE YR AGO



Sources: BLS, Moody's Analytics

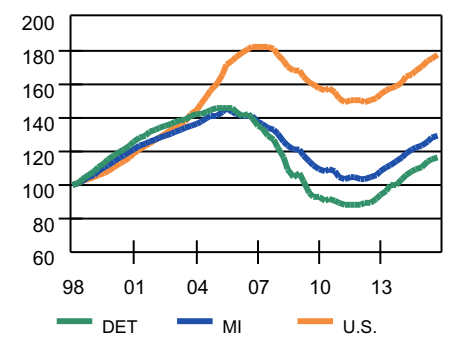
% CHANGE YR AGO, 3-MO MA

	Apr 15	Aug 15	Dec 15
Total	2.2	1.8	1.5
Construction	18.4	6.5	-3.2
Manufacturing	7.9	3.2	0.8
Trade	1.4	-0.3	1.4
Trans/Utilities	1.6	5.7	4.1
Information	-3.5	-6.5	-2.8
Financial Activities	4.5	3.2	5.7
Prof & Business Svcs.	1.8	2.1	2.7
Edu & Health Svcs.	1.6	4.5	4.3
Leisure & Hospitality	-1.5	0.1	-1.9
Other Services	3.1	1.9	0.2
Government	-1.9	-2.5	-2.2

Sources: BLS, Moody's Analytics

HOUSE PRICE

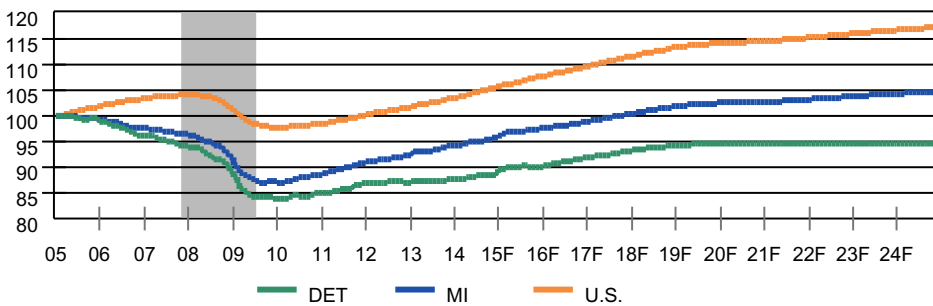
1998Q1=100, NSA



Sources: FHFA, Moody's Analytics

RELATIVE EMPLOYMENT PERFORMANCE

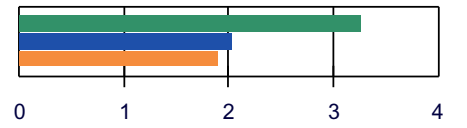
JAN 2005=100



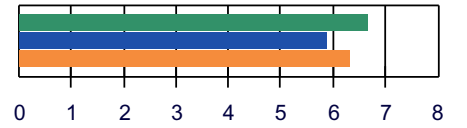
Sources: BLS, Moody's Analytics

VACANCY RATES

HOMEOWNER, % HOUSES FOR SALE



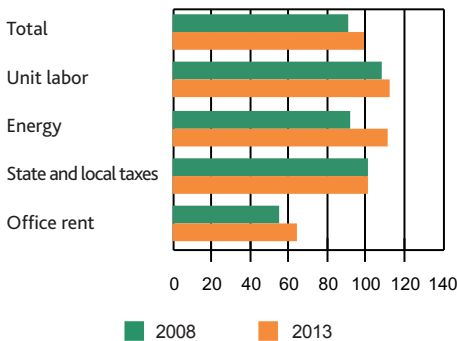
RENTAL, % INVENTORY FOR RENT



Sources: Census Bureau, ACS, Moody's Analytics, 2014

BUSINESS COSTS

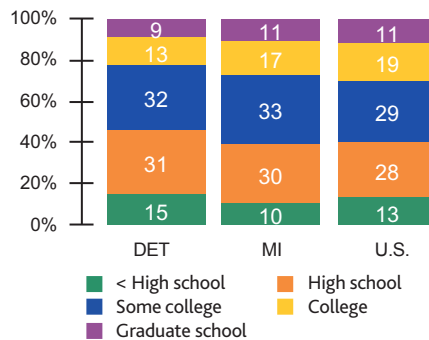
U.S.=100



Source: Moody's Analytics

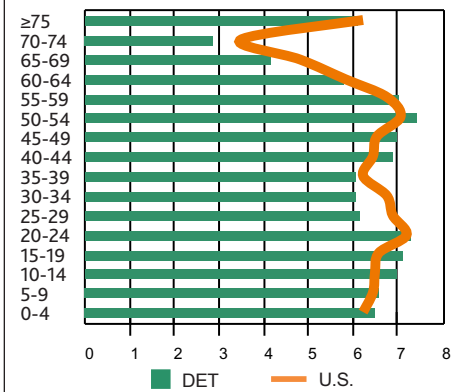
EDUCATIONAL ATTAINMENT

% OF ADULTS 25 AND OLDER



Sources: Census Bureau, Moody's Analytics, 2014

POPULATION BY AGE, %



Sources: Census Bureau, Moody's Analytics, 2014

EMPLOYMENT & INDUSTRY

TOP EMPLOYERS

Ford Motor Co.	43,977
Chrysler Group LLC	32,106
General Motors Corp.	30,570
Henry Ford Health System	17,492
CHE Trinity Health	14,341
Detroit Medical Center	13,458
Beaumont Health System	13,223
Rock Ventures	11,563
St. John Providence Health System	11,337
Quicken Loans	9,423
Blue Cross Blue Shield of Michigan	6,664
DTE Energy Co.	6,329
Oakwood Healthcare Inc.	6,260
Wayne State University	6,010
Comerica Bank	4,808
Johnson Controls Inc.	2,825
MGM Grand Detroit LLC	2,494
U.S. Steel	2,132
MotorCity Casino-Hotel	1,929
Compuware Corp.	1,912

Source: Crain's Detroit Book of Lists, 2015

INDUSTRIAL DIVERSITY

Most Diverse (U.S.)

Least Diverse

EMPLOYMENT VOLATILITY

Due to U.S. fluctuations

83

Relative to U.S.

142

100

■ Not due to U.S. ■ Due to U.S. ■ DET ■ U.S.

MIGRATION FLOWS

INTO DETROIT MI

	Number of Migrants
Warren MI	20,788
Ann Arbor MI	3,813
Monroe MI	1,424
Atlanta GA	846
Chicago IL	665
New York NY	540
Flint MI	513
Lansing MI	503
Phoenix AZ	464
Grand Rapids MI	417
Total in-migration	46,277

FROM DETROIT MI

Warren MI	33,607
Ann Arbor MI	4,052
Monroe MI	1,510
Atlanta GA	1,023
Chicago IL	888
Phoenix AZ	655
New York NY	581
Lansing MI	578
Flint MI	487
Grand Rapids MI	486
Total out-migration	64,469

Net migration -18,192

COMPARATIVE EMPLOYMENT AND INCOME

Sector	% of Total Employment			Average Annual Earnings		
	DET	MI	U.S.	DET	MI	U.S.
Mining	0.1%	0.2%	0.6%	\$85,962	\$46,433	\$108,705
Construction	2.6%	3.4%	4.4%	\$71,229	\$55,851	\$61,655
Manufacturing	11.7%	13.8%	8.8%	\$91,509	\$79,353	\$78,447
Durable	84.0%	75.9%	63.0%	nd	\$81,429	\$80,476
Nondurable	16.0%	24.1%	37.0%	nd	\$72,997	\$75,052
Transportation/Utilities	5.6%	3.1%	3.7%	\$74,394	\$67,103	\$65,427
Wholesale Trade	4.1%	4.0%	4.2%	\$88,759	\$82,582	\$83,751
Retail Trade	9.4%	11.0%	11.1%	\$30,348	\$30,428	\$33,494
Information	1.0%	1.4%	2.0%	\$83,640	\$69,181	\$108,937
Financial Activities	4.6%	4.9%	5.7%	\$51,061	\$42,258	\$54,020
Prof. and Bus. Services	16.7%	14.8%	13.7%	nd	\$58,965	\$65,204
Educ. and Health Services	17.9%	15.4%	15.4%	\$51,144	\$49,358	\$52,501
Leisure and Hosp. Services	10.4%	9.7%	10.6%	\$30,660	\$20,872	\$26,128
Other Services	4.2%	4.1%	4.0%	\$29,191	\$31,286	\$35,611
Government	11.8%	14.3%	15.7%	\$76,888	\$69,023	\$73,862

Sources: Percent of total employment — BLS, Moody's Analytics, 2014, Average annual earnings — BEA, Moody's Analytics, 2014

NET MIGRATION,

	2011	2012	2013	2014
Domestic	-24,149	-18,326	-25,403	-21,357
Foreign	3,653	3,929	4,277	4,808
Total	-20,496	-14,397	-21,126	-16,549

Sources: IRS (top), 2011, Census Bureau, Moody's Analytics

PER CAPITA INCOME

\$ THS

2014
■
DET \$36,844
■
MI \$40,740
■
U.S. \$46,049

Sources: BEA, Moody's Analytics

HIGH-TECH EMPLOYMENT

	Ths	% of total
DET	30.8	4.2
U.S.	6,746.8	4.8

HOUSING-RELATED EMPLOYMENT

	Ths	% of total
DET	64.7	8.8
U.S.	13,140.6	9.3

Source: Moody's Analytics, 2015

LEADING INDUSTRIES BY WAGE TIER

	NAICS Industry	Location Quotient	Employees (ths)
HIGH	3363 Motor vehicle parts manufacturing	9.4	26.2
	3361 Motor vehicle manufacturing	21.4	21.4
	5511 Management of companies & enterprises	1.9	20.9
	GVF Federal Government	1.0	14.4
MID	GVL Local Government	0.8	54.2
	6221 General medical and surgical hospitals	2.1	48.0
	GVS State Government	0.6	16.0
	7211 Traveler accommodation	1.2	11.6
LOW	7225 Restaurants and other eating places	0.9	46.3
	5613 Employment services	1.1	19.1
	4451 Grocery stores	0.7	10.0
	4529 Other general merchandise stores	1.1	9.7

Source: Moody's Analytics, 2014

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