

MOODY'S
ANALYTICS

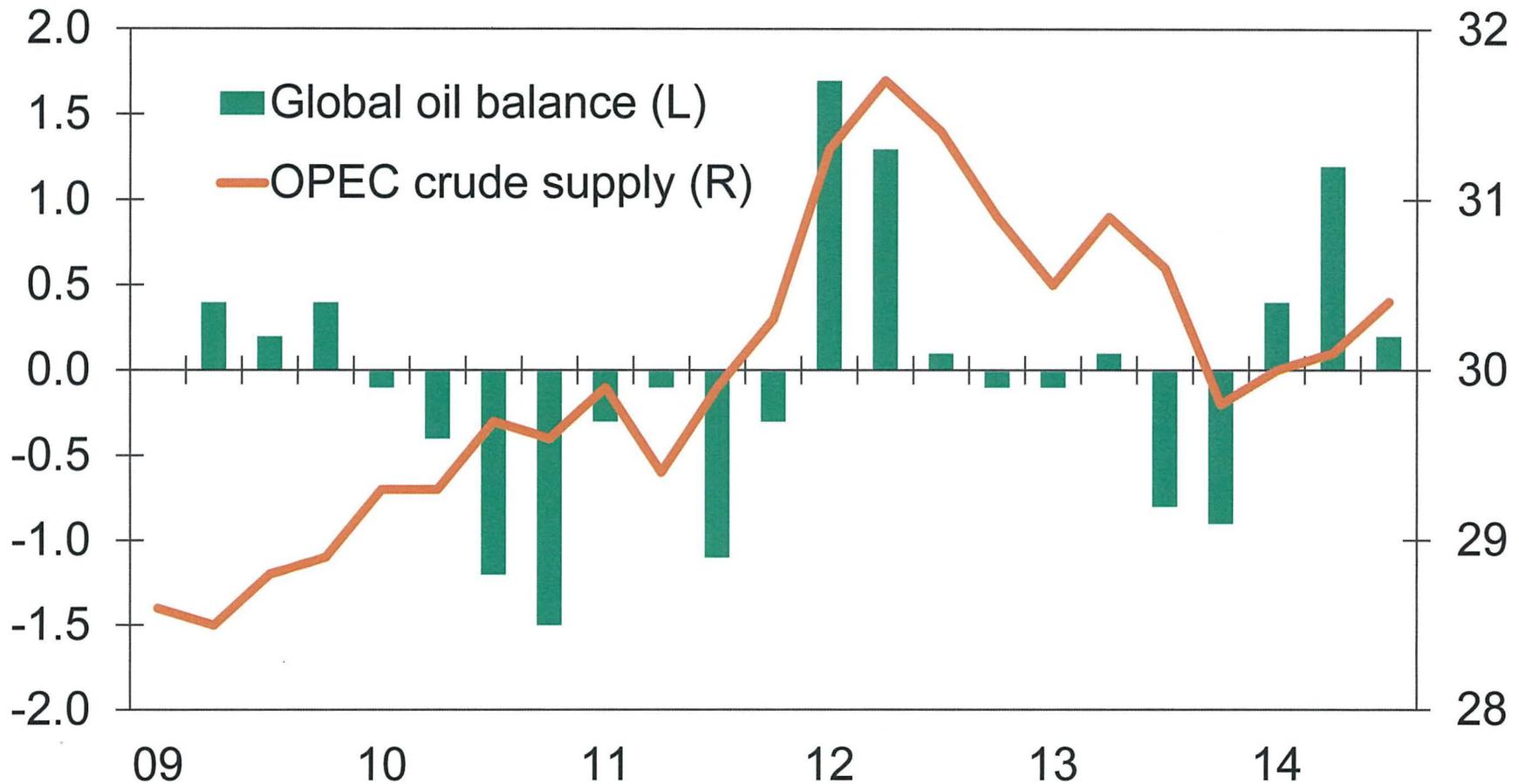
North Dakota Economic Outlook

DAN WHITE, SENIOR ECONOMIST

NORTH DAKOTA LEGISLATIVE BUDGET SECTION – DECEMBER 3, 2014

Global Oil Market in Surplus

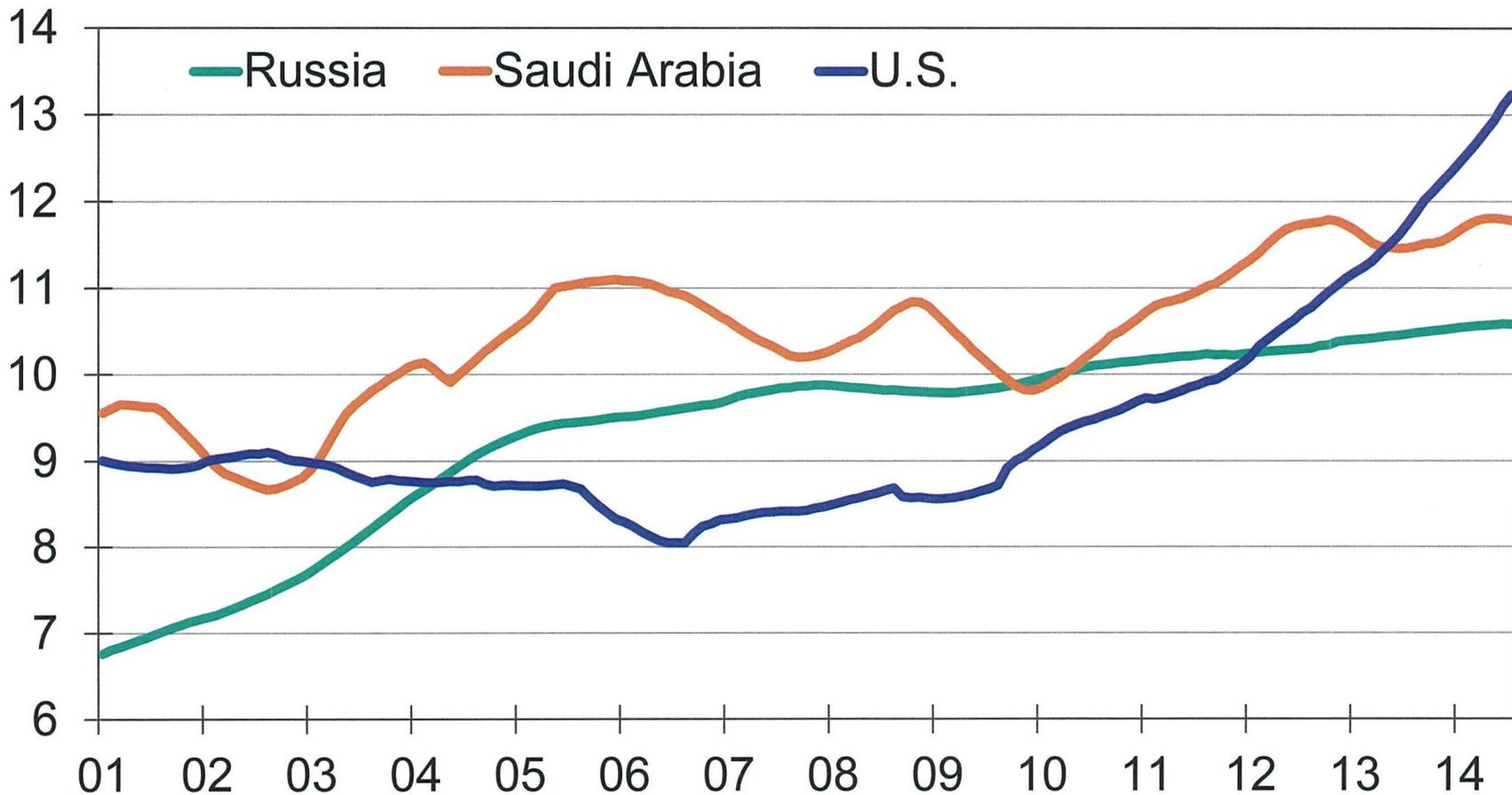
Barrels per day, mil



Sources: IEA, Moody's Analytics

Saudi Arabia Trying to Retain Market Share

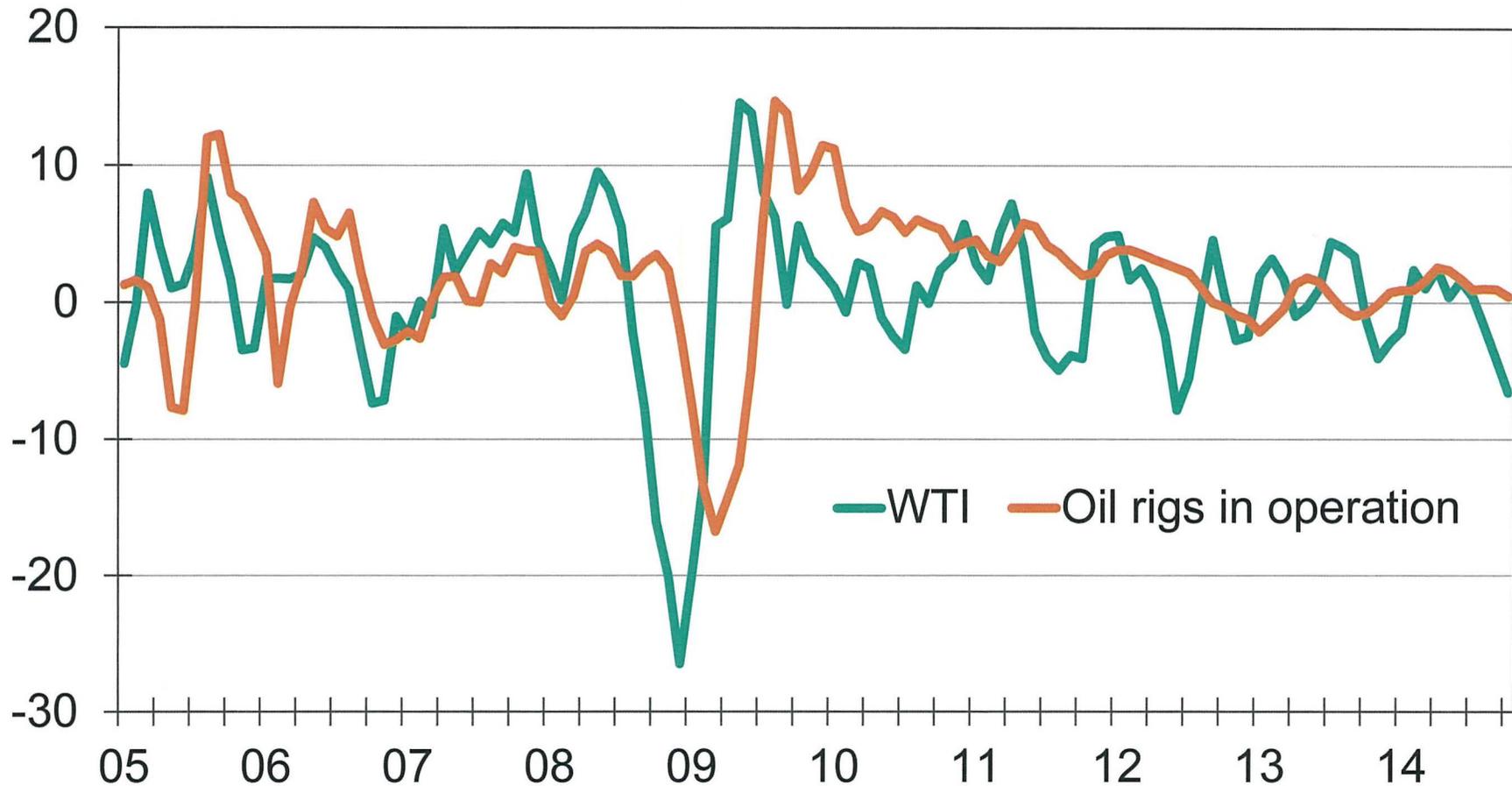
Oil output, 12-mo MA, mil bpd



Sources: EIA, Moody's Analytics

Drilling Activity Will Slow Amid Lower Prices

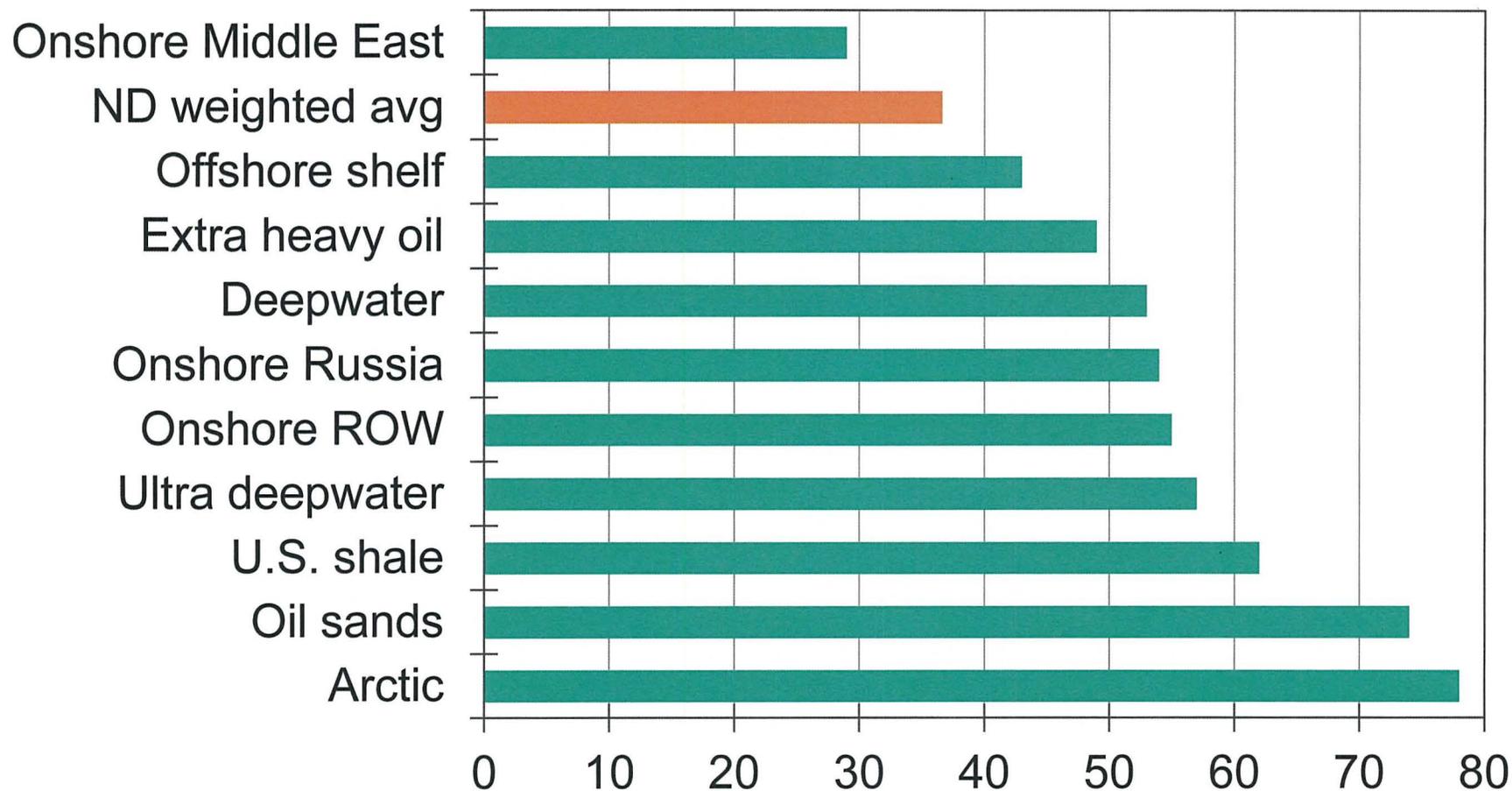
3-mo MA, % change



Sources: EIA, Moody's Analytics

ND Producers Can Endure Lower Price Points

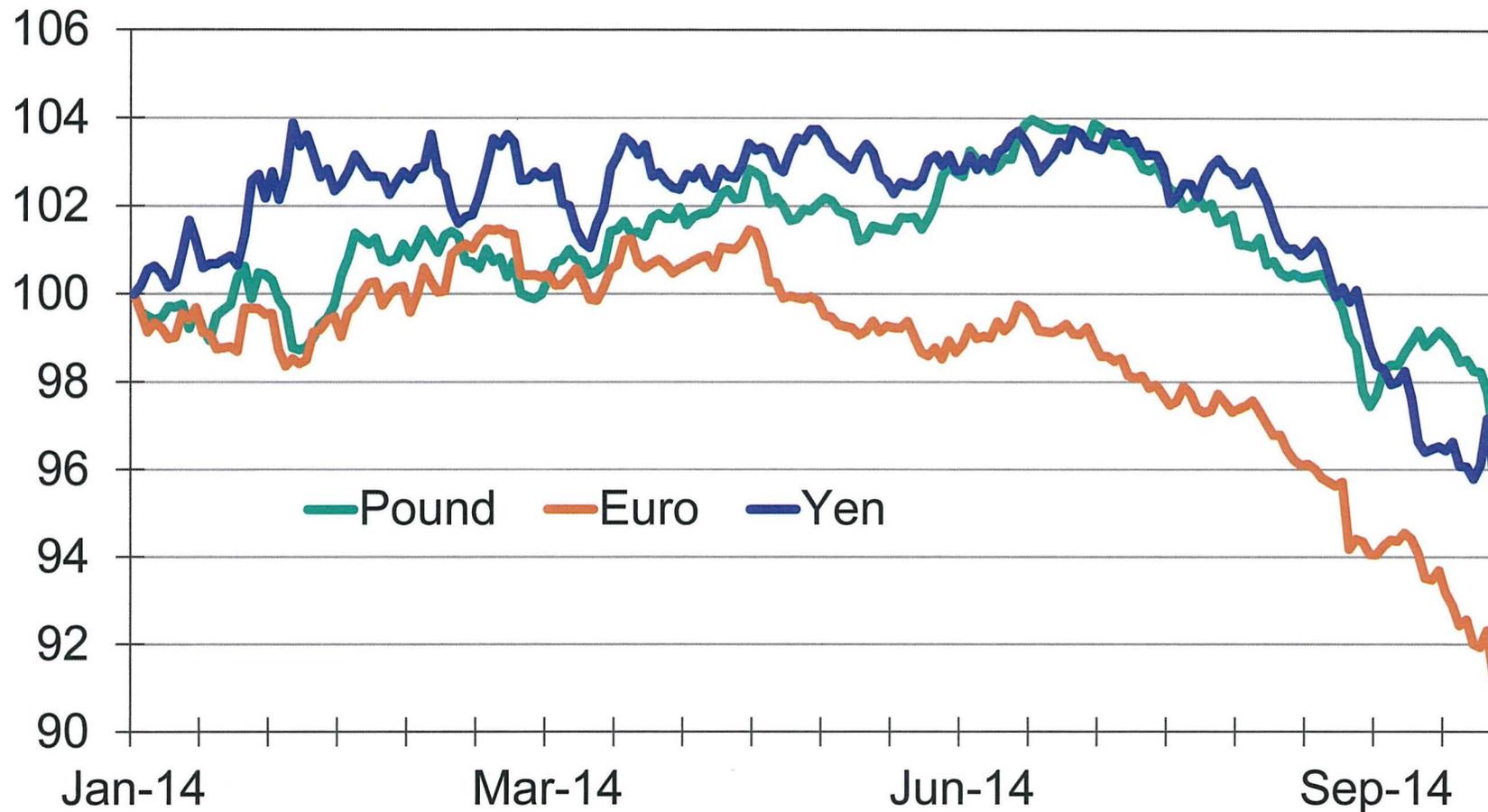
\$ per barrel



Sources: Rystad Energy AS, ND Oil & Gas Division, Moody's Analytics

U.S. Dollar Advancing Against the Majors

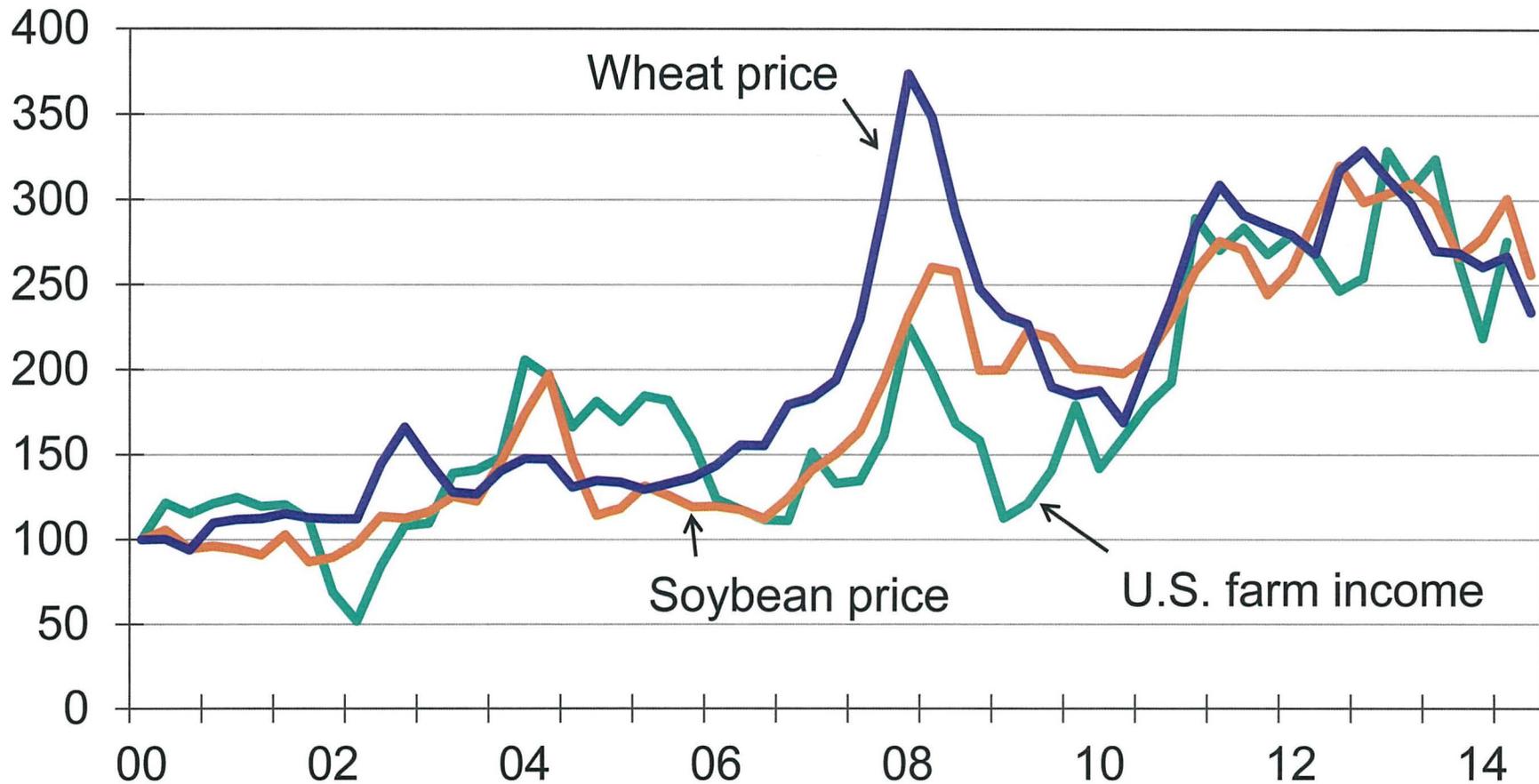
U.S. dollar per foreign currency, Jan 1, 2014=100



Sources: Federal Reserve, Moody's Analytics

Core Crop Prices Falling Back to Earth

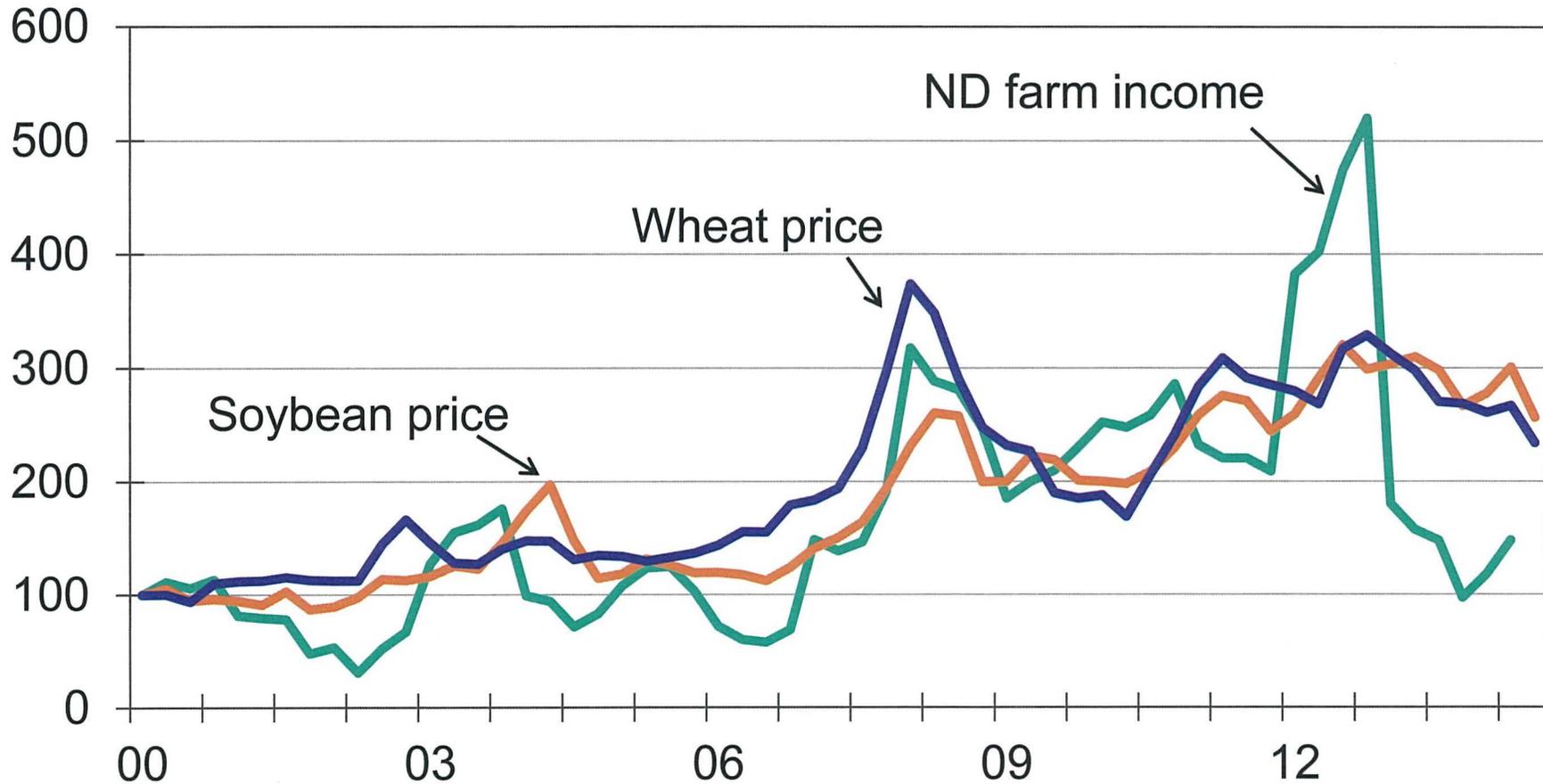
2000Q1=100



Sources: USDA , BEA, Moody's Analytics

North Dakotans Took More One-Time Gains...

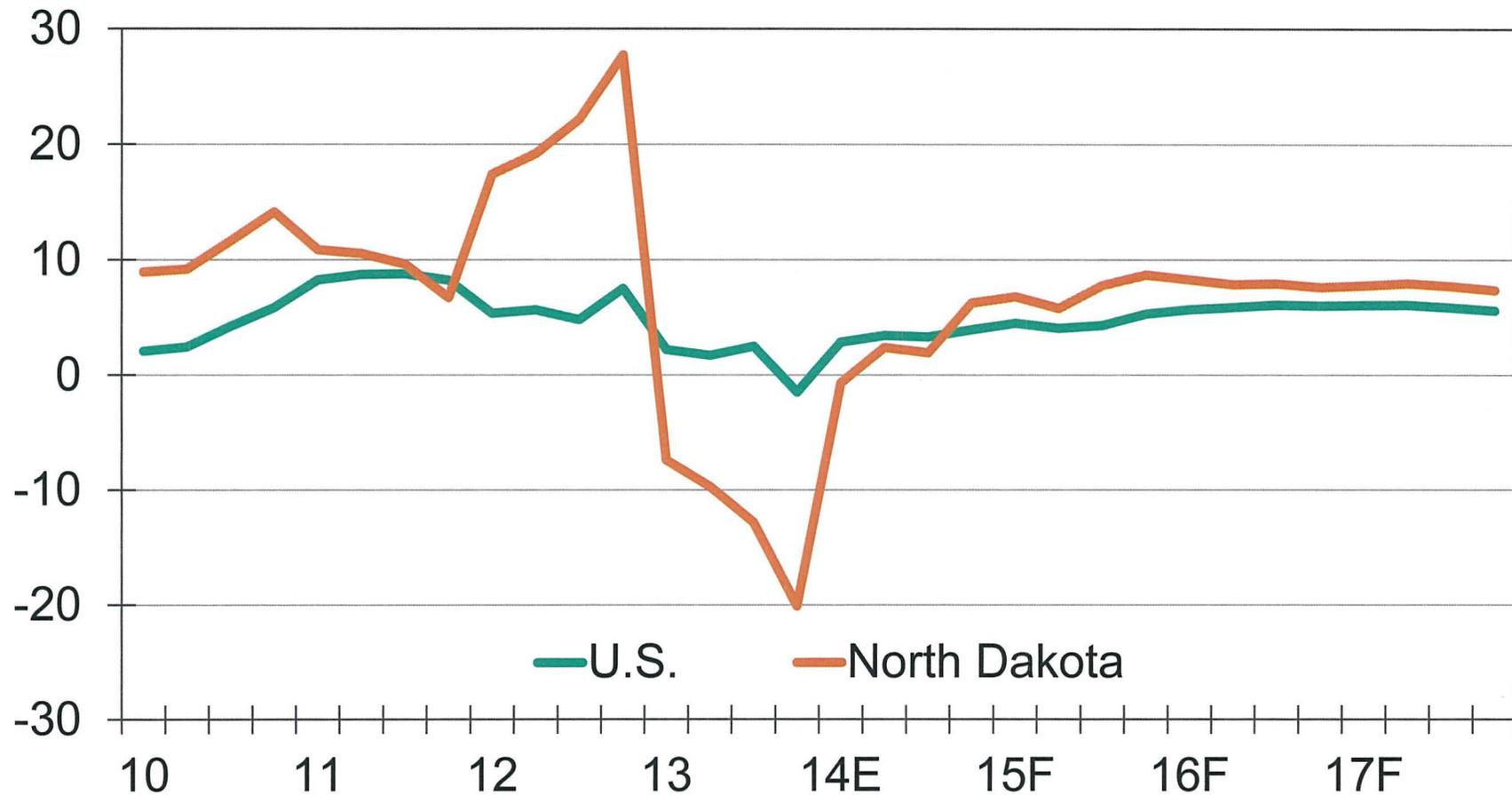
2000Q1=100



Sources: USDA, BEA, Moody's Analytics

...Distorting the Income and Tax Picture

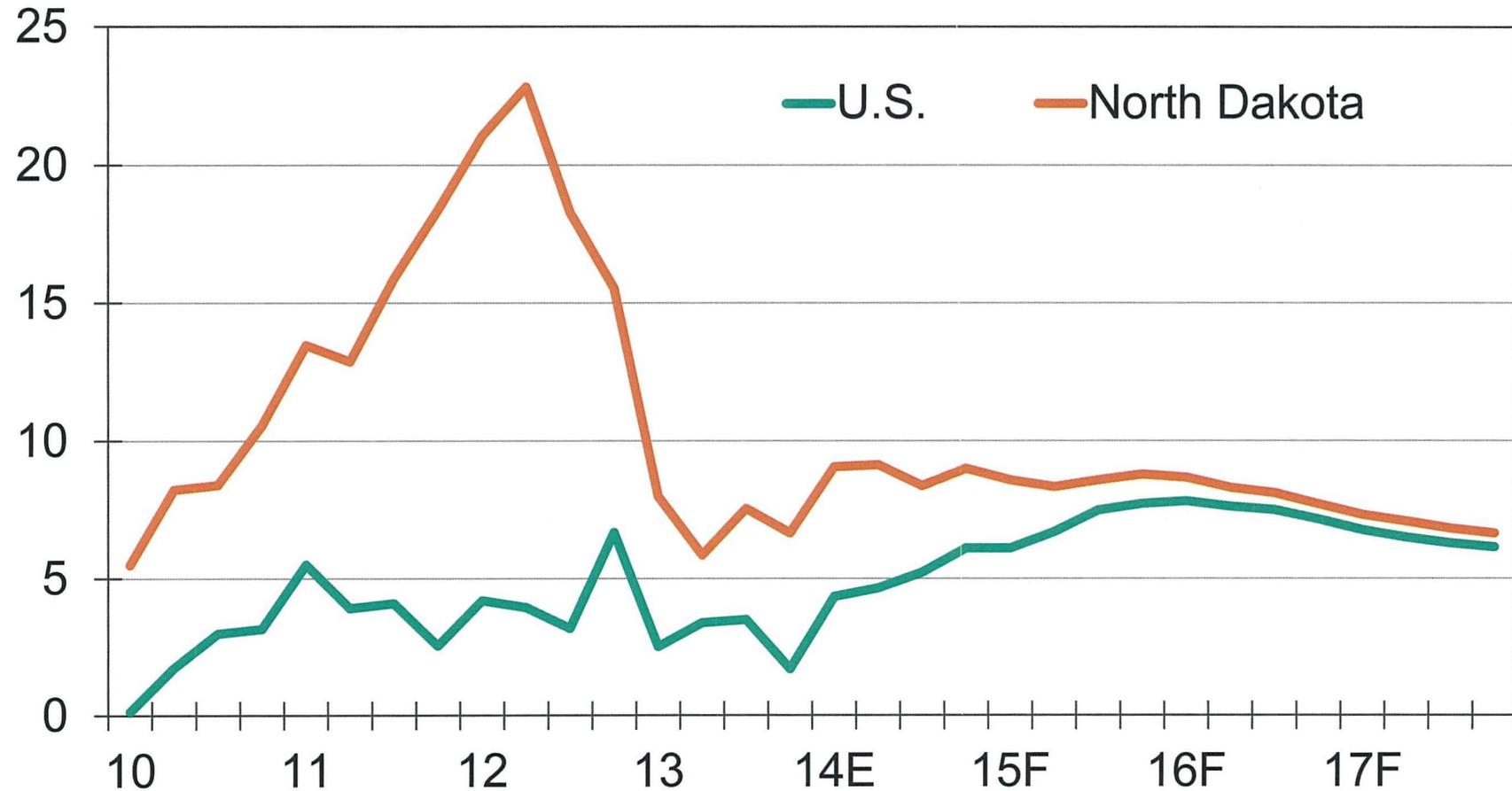
Non-wage income, % change yr ago



Sources: BEA, Moody's Analytics

Wage Gains Make Up the Difference

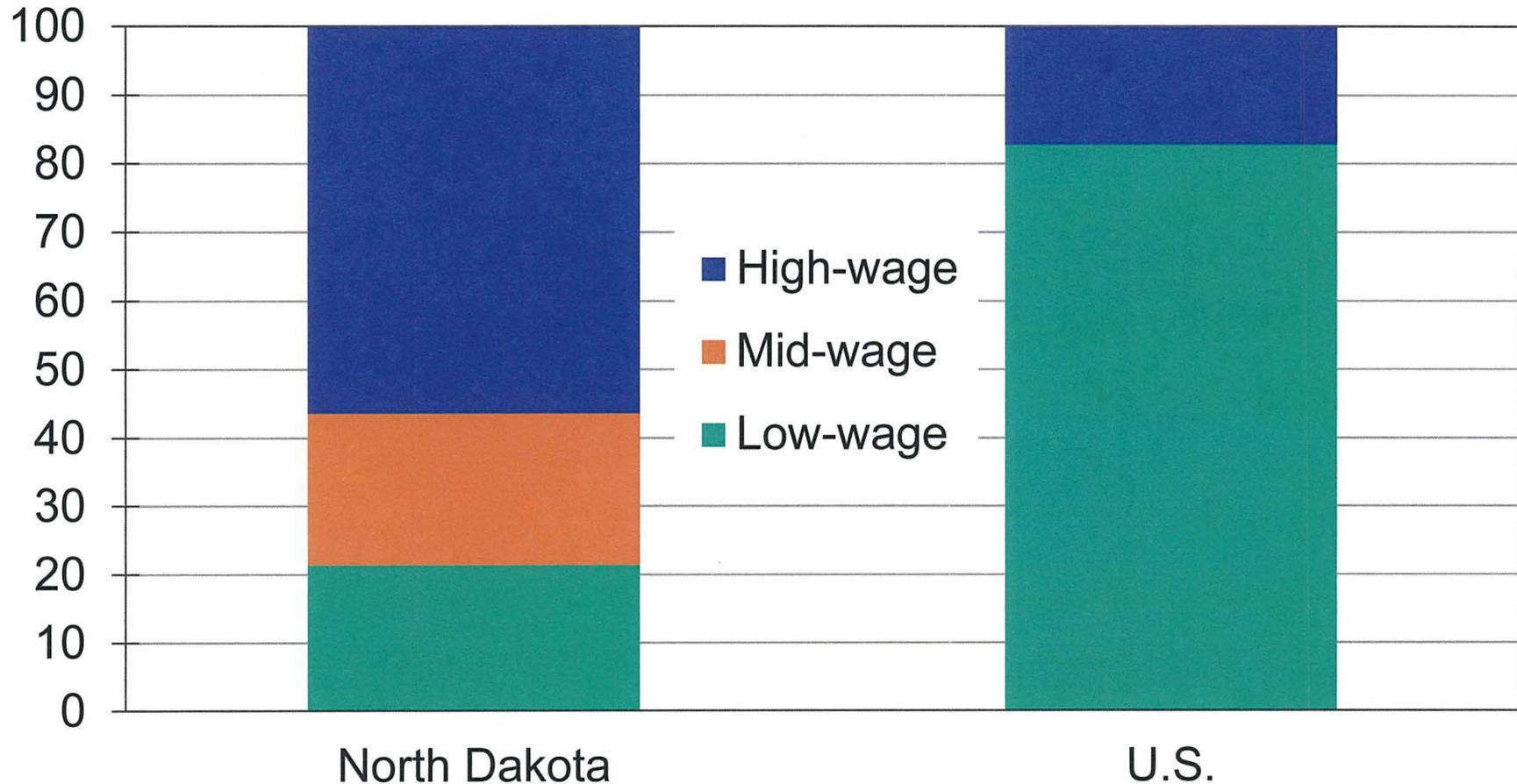
Wage and salary income, % change yr ago



Sources: BEA, Moody's Analytics

Outperforming in Quality as Well as Quantity

Jobs created since Dec-07 by wage-tier



Sources: BLS, Moody's Analytics

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NORTH DAKOTA

ECONOMIC DRIVERS

ENERGY & RESOURCES

AGRICULTURE

LOGISTICS

EMPLOYMENT GROWTH RANK

2013-2015

1

1st quintile

2013-2018

2

1st quintile

Best=1, Worst=54

BUSINESS COSTS

INDEX

90%

U.S.=100%

RANK

41

Highest=1, Lowest=51

VITALITY

RELATIVE

95%

U.S.=100%

RANK

27

Best=1, Worst=51

BUSINESS CYCLE STATUS

AUGUST 2014



ANALYSIS

Recent Performance. North Dakota is head and shoulders above the rest of the country in terms of growth. Firms are hiring at 2½ times the national average, and incomes are growing at more than 1½ times the national pace. After a brief slowdown last year, hiring in particular is accelerating by leaps and bounds thanks to improvement in the state's more rural areas. Mining employment growth has resumed its upward trajectory as more oil rigs have come back to the state. House price growth has decelerated and is no longer consistently outpacing the national average, but the slowdown is due to long-awaited gains in homebuilding, which has been unable to keep up with demand in the oil patch.

Energy. The state's historic oil boom will ensure above-average growth throughout the forecast. Technological advances in hydraulic fracturing and horizontal drilling over the past decade have made the state's long sought after Bakken Shale formation economical enough for large-scale production. In less than a decade, ND has leapfrogged all other states, except for Texas, in terms of oil production. At more than 1 million barrels a day, ND outproduces all but 20 foreign countries.

Near term, the state will navigate through lower oil prices gracefully. A stronger dollar and weak growth overseas have brought West Texas Intermediate prices to their lowest levels in years. ND prices are usually 10% to 15% lower than West Texas Intermediate due to higher transportation costs. However, the impact on ND's energy sector will be minimal. The state's break-even price, estimated to be between \$40 and \$60 per barrel, is considerably below other oil plays in the U.S., meaning that producers can remain profitable in the face of continued price declines.

Agriculture. Price declines in commodity markets will have an outsize effect on the

state's farmers. This will be an important facet of the outlook, given that ND's farm industry makes up a larger piece of total income and output than in any other state. Farm income fell by nearly two-thirds in 2013 and has not shown any significant improvement this year. The Ukraine-Russia conflict has the potential to boost prices for core crops such as wheat, but agriculture will add little to statewide growth this year or next.

Government. The state's public sector will also contribute little in the way of direct job growth through the end of next year, but continued infrastructure investment will be key to the long-term outlook. The sector is performing better from a hiring standpoint now that federal payrolls have stabilized. Local governments have become more confident thanks to higher property valuations and are hiring more teachers in an attempt to keep up with rapid population growth. State policymakers have remained cautious though and are concentrating tax windfalls in reserve funds and public infrastructure investment as opposed to hiring. Such investment will remain a boon to construction spending and will help facilitate growth in the years ahead.

North Dakota's economy will outperform that of the U.S. for the next several years thanks to a booming energy industry and the positive spillover that it generates. Weakness in agriculture has the potential to eat away at ND's enviable position as the country's top-performing state, but job and income growth will remain well above average. Whether ND can build out the transportation and utility infrastructure necessary to ensure future prosperity will ultimately determine the trajectory of the state's long-term outlook.

Dan White
October 2014

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STRENGTHS & WEAKNESSES

STRENGTHS

- » Rapid growth of energy exploration in the Bakken Shale formation.
- » Major producer and exporter of several important agricultural commodities.
- » Strong state fiscal situation.
- » Location along a key trade corridor and proximity to Canada and major interstates.

WEAKNESSES

- » Lack of strong growth drivers outside energy and agriculture.

FORECAST RISKS

SHORT TERM

↓

LONG TERM

↑

RISK EXPOSURE 2014-2019 5 1st quintile Highest=1 Lowest=51

UPSIDE

- » Increases in energy production boost incomes enough to offset near-term ag weakness.
- » Western infrastructure is updated quickly enough to accommodate rapid growth in the energy industry.

DOWNSIDE

- » Safety concerns force costly regulations and decreased volumes of oil traveling by rail.
- » Oil prices fall far enough to stunt growth in energy investment.

MOODY'S RATING

Aa1

AS OF DEC 16, 2010

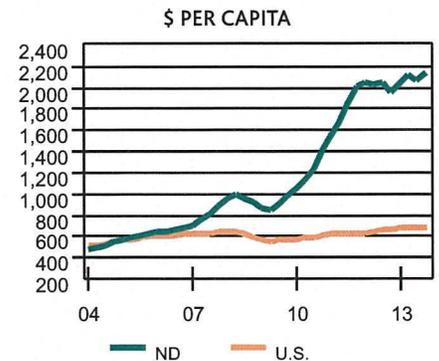
2008	2009	2010	2011	2012	2013	INDICATORS	2014	2015	2016	2017	2018	2019
31.6	32.1	34.6	37.7	45.4	49.8	Gross state product (C09\$ bil)	52.2	54.8	57.0	58.7	60.3	61.8
367	367	376	397	429	444	Total employment (ths)	464	480	494	503	508	512
2.4	-0.2	2.5	5.5	8.2	3.6	% change	4.4	3.5	3.0	1.8	1.1	0.8
3.2	4.1	3.8	3.4	3.0	2.9	Unemployment rate (%)	2.6	2.8	2.9	2.9	2.9	2.8
14.0	-1.0	9.6	12.3	20.5	-2.6	Personal income growth (%)	6.6	8.8	8.2	6.9	5.7	4.6
658	665	674	685	701	723	Population (ths)	742	753	761	768	775	781
1.2	3.8	5.8	6.9	12.2	18.1	Net migration (ths)	14.0	7.0	4.1	3.9	2.8	2.5
1,888	1,704	2,084	2,913	4,540	3,899	Single-family permits (#)	7,465	6,503	5,923	5,141	4,744	3,467
945	1,491	1,749	3,288	5,800	6,633	Multifamily permits (#)	7,454	5,551	4,731	3,179	2,763	2,367
248	252	255	264	280	308	FHFA house price (1980Q1=100)	330	335	337	345	353	364
3.0	3.8	3.4	3.2	2.9	2.7	Mortgage delinquency rate (%)	2.3	2.4	2.5	2.4	2.4	2.4
25.7	22.4	27.7	35.5	39.4	43.8	New vehicle registrations (ths)	45.8	44.6	41.5	40.0	39.5	40.3
1,307	1,528	1,582	1,222	945	792	Personal bankruptcies (#)	748	776	797	888	1,047	1,216

ECONOMIC HEALTH CHECK

3-MO MA						
	Apr 14	May 14	Jun 14	Jul 14	Aug 14	Sep 14
Employment, change, ths	2.6	2.4	2.2	1.7	1.8	1.7
Unemployment rate, %	2.6	2.6	2.6	2.7	2.8	2.8
Initial unemployment claims, ths	1.9	1.6	1.7	1.6	1.6	1.7
Labor force participation rate, %	71.0	71.1	71.1	71.1	71.1	71.0
Merchandise exports, \$ bil, NSA	4.7	5.1	5.3	5.5	5.6	ND
Average weekly hours, #	35.9	35.6	35.7	35.7	35.8	35.6
Industrial production, 2007=100	102.7	103.1	103.3	103.6	103.7	ND
Residential permits, #	18,100	16,025	18,535	16,356	16,371	14,072
	Better than prior 3-mo MA	Unchanged from 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

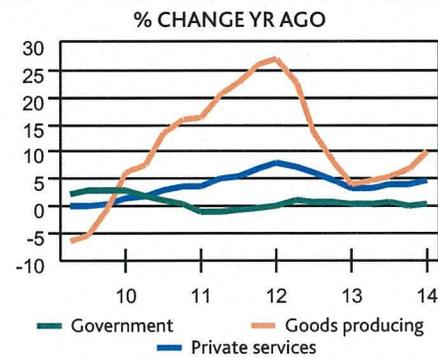
Sources: BLS, Census Bureau, Dept. of Labor, Moody's Analytics

STATE TAX REVENUE



Sources: Census Bureau, Moody's Analytics

EMPLOYMENT OUTLOOK



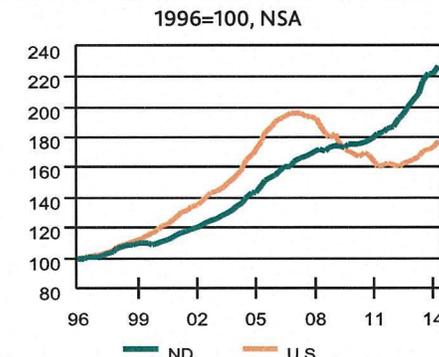
Sources: BLS, Moody's Analytics

CURRENT EMPLOYMENT TRENDS

	% CHANGE YR AGO, 3-MO MA		
	Jan 14	May 14	Sep 14
Total	3.6	4.8	4.7
Mining	11.1	17.3	26.5
Construction	4.7	8.4	9.0
Manufacturing	2.9	0.8	-0.9
Trade	4.9	6.7	5.9
Trans/Utilities	8.2	10.9	11.7
Information	-1.9	0.5	0.0
Financial Activities	4.9	5.3	5.5
Prof & Business Svcs.	2.2	3.3	0.2
Edu & Health Svcs.	2.1	1.8	0.8
Leisure & Hospitality	4.4	4.8	3.0
Other Services	2.1	0.6	0.8
Government	0.3	0.5	0.9

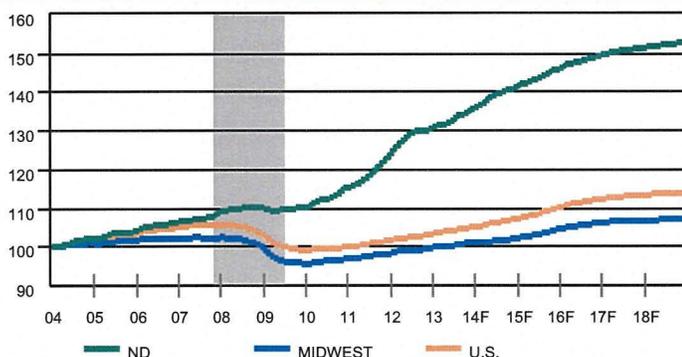
Sources: BLS, Moody's Analytics

HOUSE PRICE



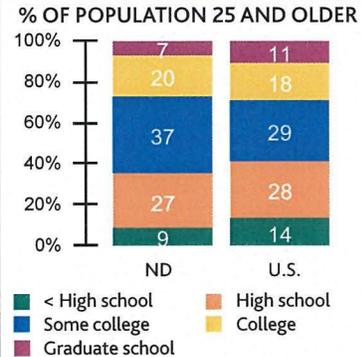
Sources: FHFA, Moody's Analytics

RELATIVE EMPLOYMENT PERFORMANCE (JAN 2004=100)



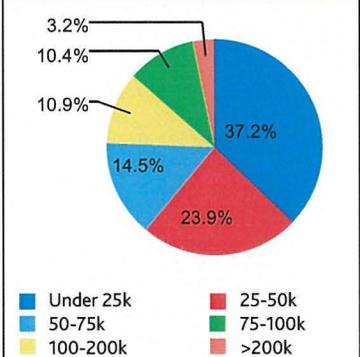
Sources: BLS, Moody's Analytics

EDUCATIONAL ATTAINMENT



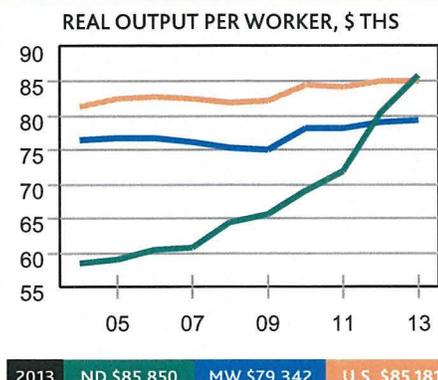
Sources: Census Bureau, Moody's Analytics, 2012

INCOME TAX DISTRIBUTION



Sources: IRS, Moody's Analytics, 2011

PRODUCTIVITY



2013 ND \$85,850 MW \$79,342 U.S. \$85,181

Source: Moody's Analytics

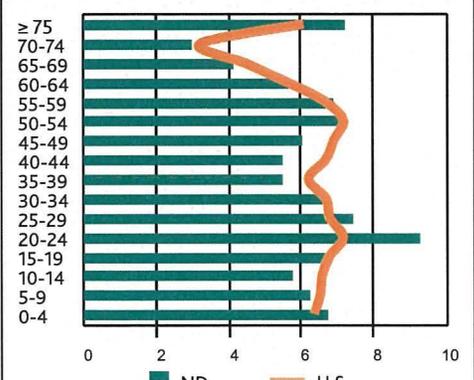
MERCHANDISE EXPORTS

Destination	\$ mil	% of total
World	3,729.1	100.0
Canada	2,666.9	71.5
Mexico	238.7	6.4
Australia	81.9	2.2
Belgium	73.1	2.0
Venezuela	58.3	1.6

Industry	\$ mil	% of total
World	3,729.1	100.0
Machinery manuf.	1,052.3	28.2
Oil and gas extraction	809.0	21.7
Crop production	512.2	13.7
Chemical manuf.	378.1	10.1
Food manufacturing	243.2	6.5

Sources: Census Bureau, Moody's Analytics, 2013

POPULATION BY AGE, %



Sources: Census Bureau, Moody's Analytics, 2012

EMPLOYMENT & INDUSTRY

TOP EMPLOYERS

Sanford Health	9,841
Minot Air Force Base	5,424
Altru Health System	4,069
University of North Dakota	2,850
St. Alexius Medical Center	2,557
Grand Forks Air Force Base	2,420
North Dakota State University	2,339
Noridian/Blue Cross Blue Shield	1,345
Wal-Mart Stores Inc.	1,063
Case New Holland Corp.	1,055
U.S. Bank Service Center	975
Essentia Health	967
Microsoft Business Solutions	870
Fargo VA Medical Center	870
MDU Resources Group Inc.	743
Minnesota State University Moorhead	735
Concordia College	733
Valley Memorial Home	714
John Deere Electronic Solutions	657
American Crystal Sugar	623

Sources: Combined Lists, Moody's Analytics, 2012-2014

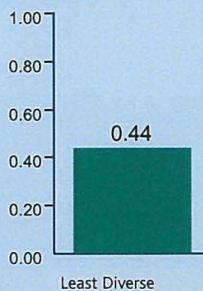
PUBLIC

Federal	9,175
State	24,842
Local	46,000

2013

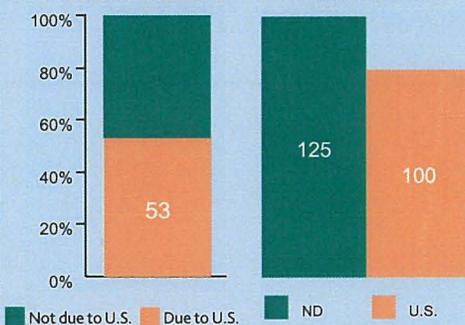
INDUSTRIAL DIVERSITY

Most Diverse (U.S.)



EMPLOYMENT VOLATILITY

Due to U.S. fluctuations Relative to U.S.



MIGRATION FLOWS

INTO NORTH DAKOTA **NUMBER OF MIGRANTS**

Minnesota	6,063
Montana	1,429
South Dakota	1,237
Texas	1,178
Wyoming	1,001
California	949
Colorado	946
Washington	643
Florida	623
Wisconsin	604
Total in-migration	23,261

FROM NORTH DAKOTA

Minnesota	5,369
South Dakota	1,163
Texas	1,123
Montana	820
Colorado	713
California	685
Florida	652
Arizona	579
Washington	530
Nebraska	356
Total out-migration	19,145

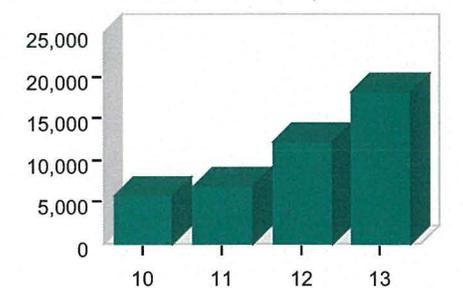
Net migration **4,116**

INDUSTRY EMPLOYMENT

Sector	% of Total Employment		Average Annual Earnings	
	ND	U.S.	ND	U.S.
Mining	5.8%	0.6%	\$99,029	\$103,753
Construction	7.3%	4.3%	\$69,719	\$60,444
Manufacturing	5.7%	8.8%	\$57,426	\$77,051
Durable	68.0%	62.8%	\$57,843	\$78,697
Nondurable	32.0%	37.2%	\$56,566	\$74,316
Transportation/Utilities	5.9%	3.7%	\$77,927	\$64,339
Wholesale Trade	6.0%	4.2%	\$80,138	\$81,024
Retail Trade	11.1%	11.1%	\$30,784	\$33,130
Information	1.5%	2.0%	\$63,669	\$102,915
Financial Activities	5.2%	5.8%	\$49,569	\$52,549
Prof. and Bus. Services	7.7%	13.6%	\$52,420	\$64,145
Educ. and Health Services	13.3%	15.5%	\$46,633	\$51,580
Leisure and Hosp. Services	8.9%	10.4%	\$19,555	\$24,893
Other Services	3.7%	4.0%	\$33,323	\$35,425
Government	18.0%	16.0%	\$55,253	\$72,104

Sources: Percent of total employment — Moody's Analytics, BLS, 2013, Average annual earnings — BEA, 2012

NET MIGRATION, #



	2010	2011	2012	2013
Domestic	3,709	6,042	10,789	16,961
Foreign	2,045	858	1,382	1,090
Total	5,753	6,900	12,171	18,051

Sources: IRS (top), 2011, Census Bureau, 2013, Moody's Analytics

INCOME

Median Household

Per Capita



Sources: Census Bureau (household), 2012, BEA, 2013 (per capita), Moody's Analytics

HIGH-TECH EMPLOYMENT

	Ths	% of total
ND	10.3	2.3
U.S.	6,431.1	4.7

HOUSING RELATED EMPLOYMENT

	Ths	% of total
ND	43.4	9.8
U.S.	12,401.4	9.1

Source: Moody's Analytics, 2013

LEADING INDUSTRIES BY WAGE TIER

	NAICS Industry	Location Quotient	Employees (ths)
HIGH	2131 Support activities for mining	17.7	28.2
	4842 Specialized freight trucking	9.4	15.0
	GVF Federal Government	1.0	9.2
MID	4238 Machinery, equip., & merch. wholesalers	3.7	8.9
	6221 General medical and surgical hospitals	1.1	16.8
	ML Total Military Personnel	1.6	11.8
LOW	2382 Building equipment contractors	1.5	9.6
	5221 Depository credit intermediation	1.2	7.5
	GVL Local Government	0.9	46.6
	FR Farms	3.2	30.6
	GVS State Government	1.4	24.7
7225 Restaurants and other eating places	0.7	24.3	

Source: Moody's Analytics, 2014