

Recent Trends in the Travel Intensity of the US Economy

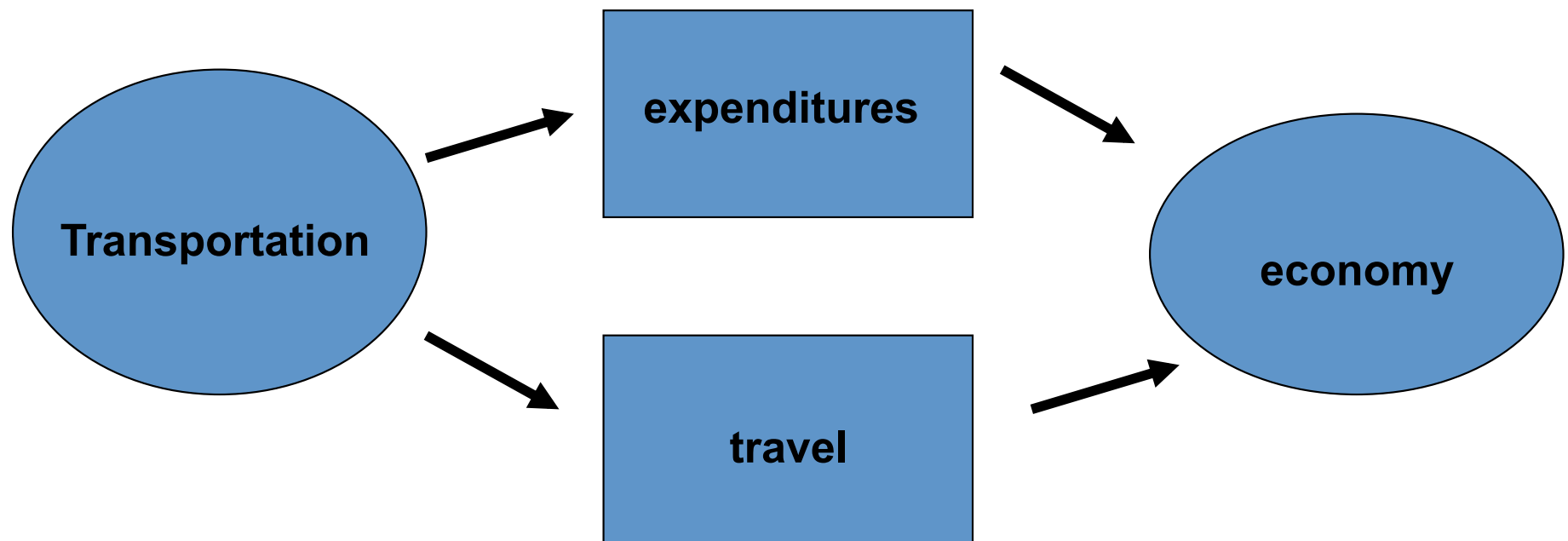
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Steve Winkelman
Center for Clean Air Policy
WSTLUR – 27 July 2011



Question: Is driving making us prosperous?

Answer: Not like it used to.

Transportation and the economy



Travel intensity of the economy:
The ratio of VMT to GDP

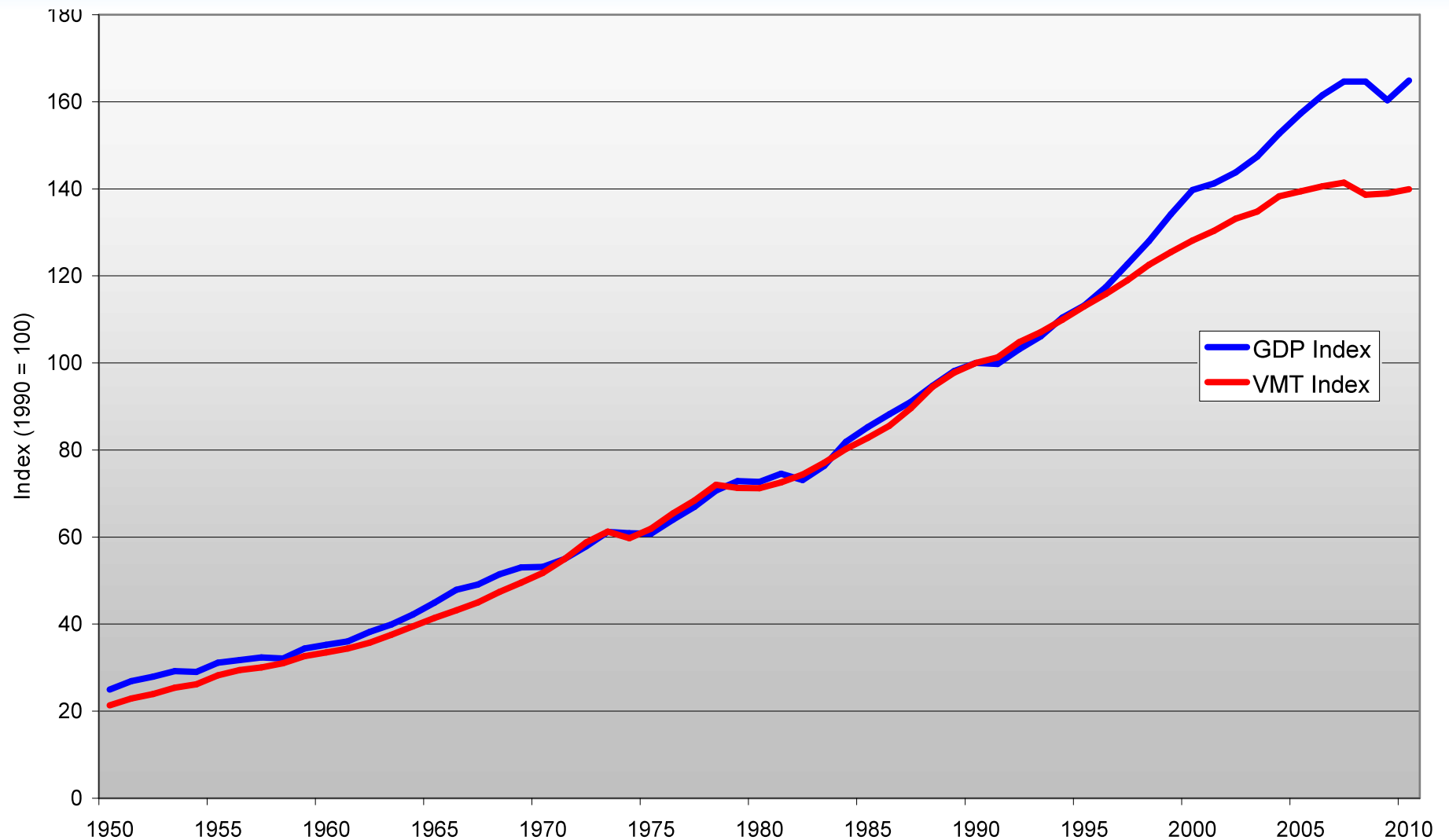
Aggregate level:

- National
- State
- Metro

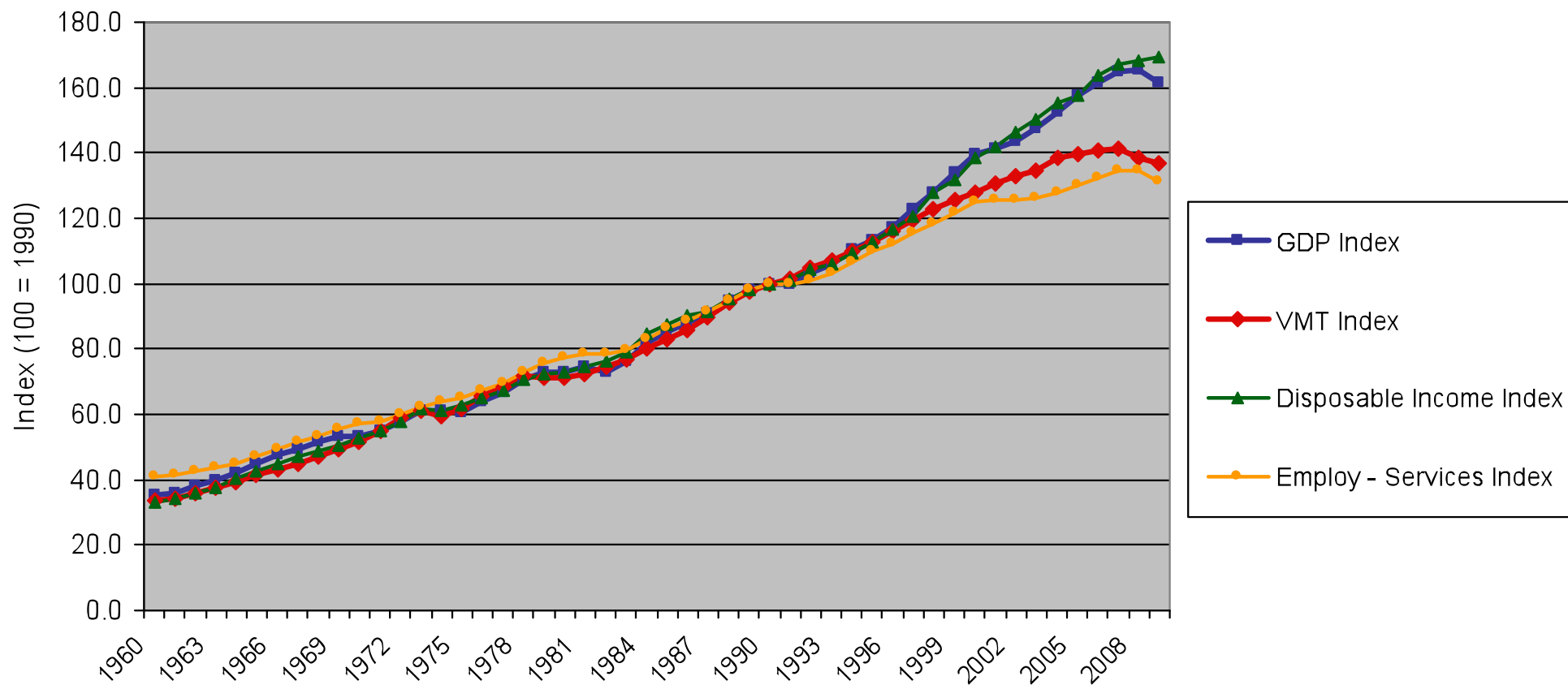
Intervening factors

Disaggregate level

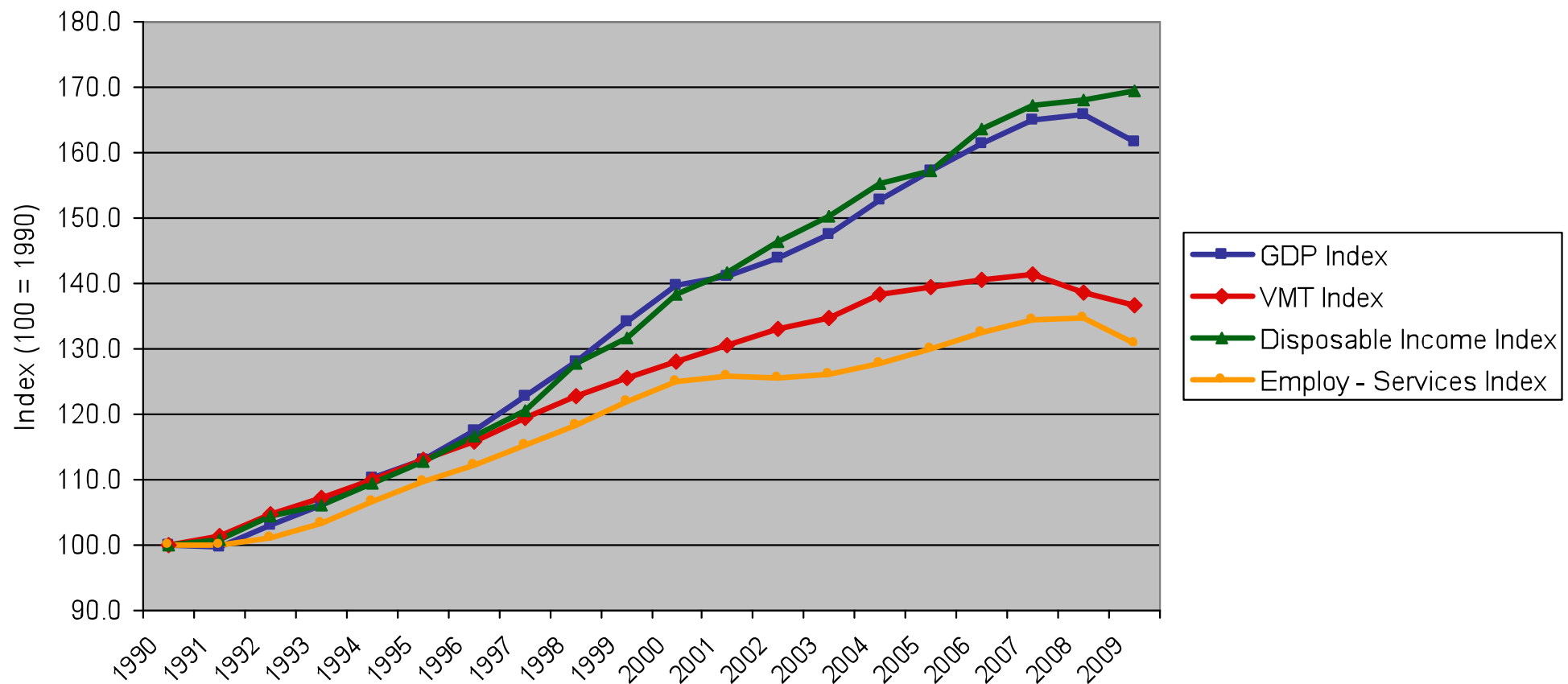
US National Indexed VMT and GDP, 1950-2010 (1990=100)



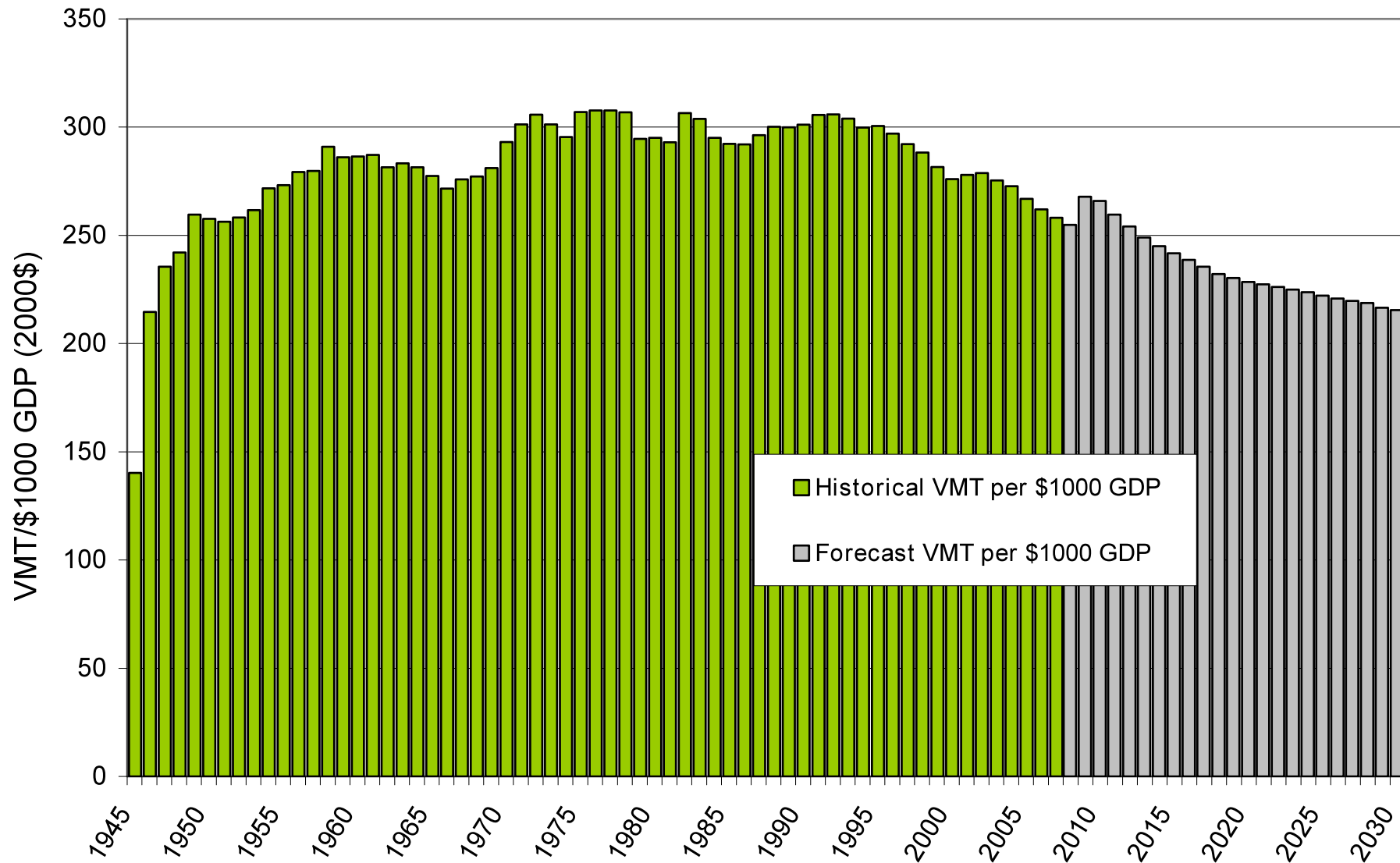
US National Indexed VMT, GDP, Disposable Income, Employment - Services 1960-2010 (1990=100)



US National Indexed VMT, GDP, Disposable Income, Employment - Services 1990-2010 (1990=100)

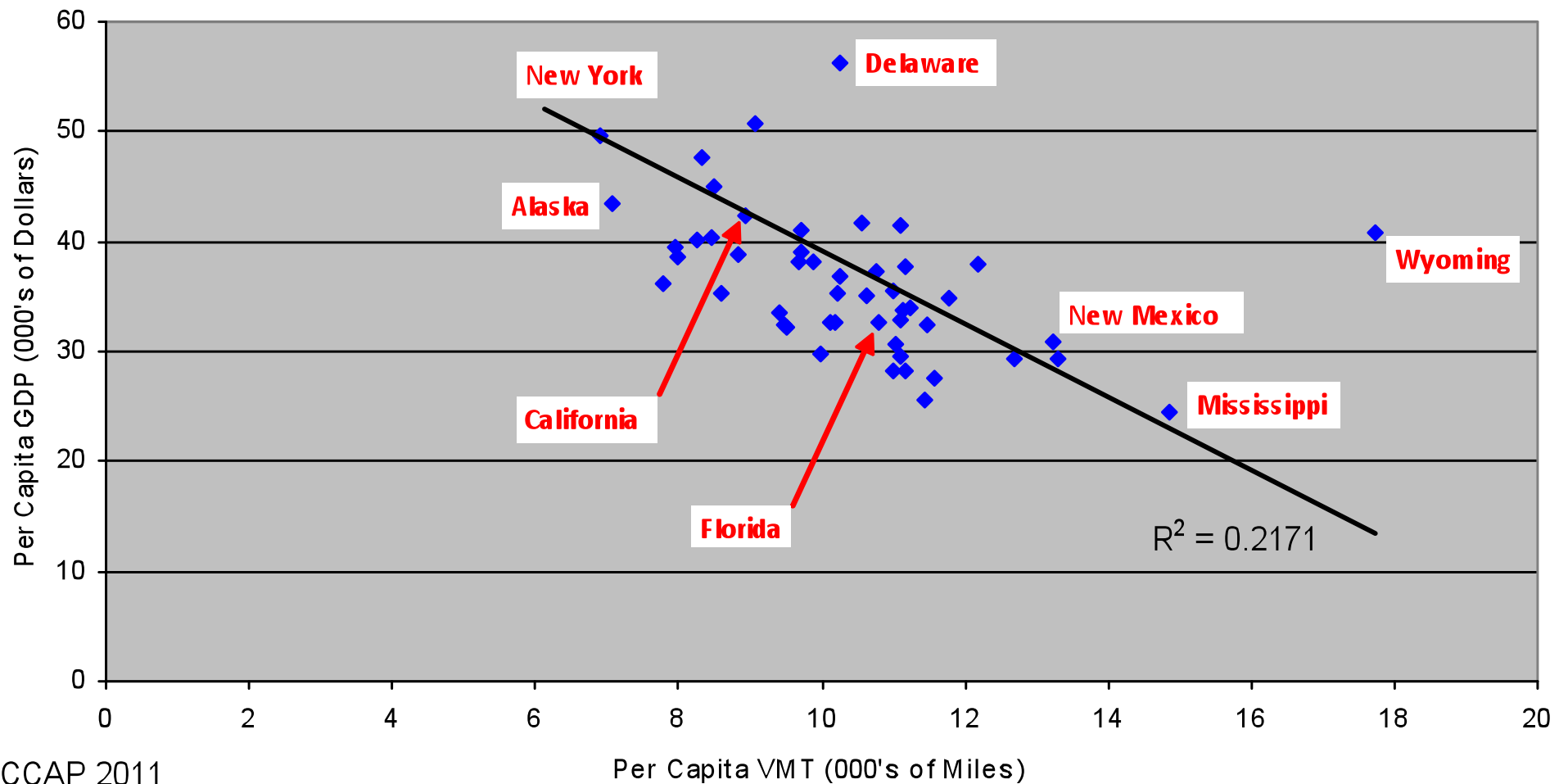


Transportation Vehicle Miles Traveled/\$GDP, 1945-2030

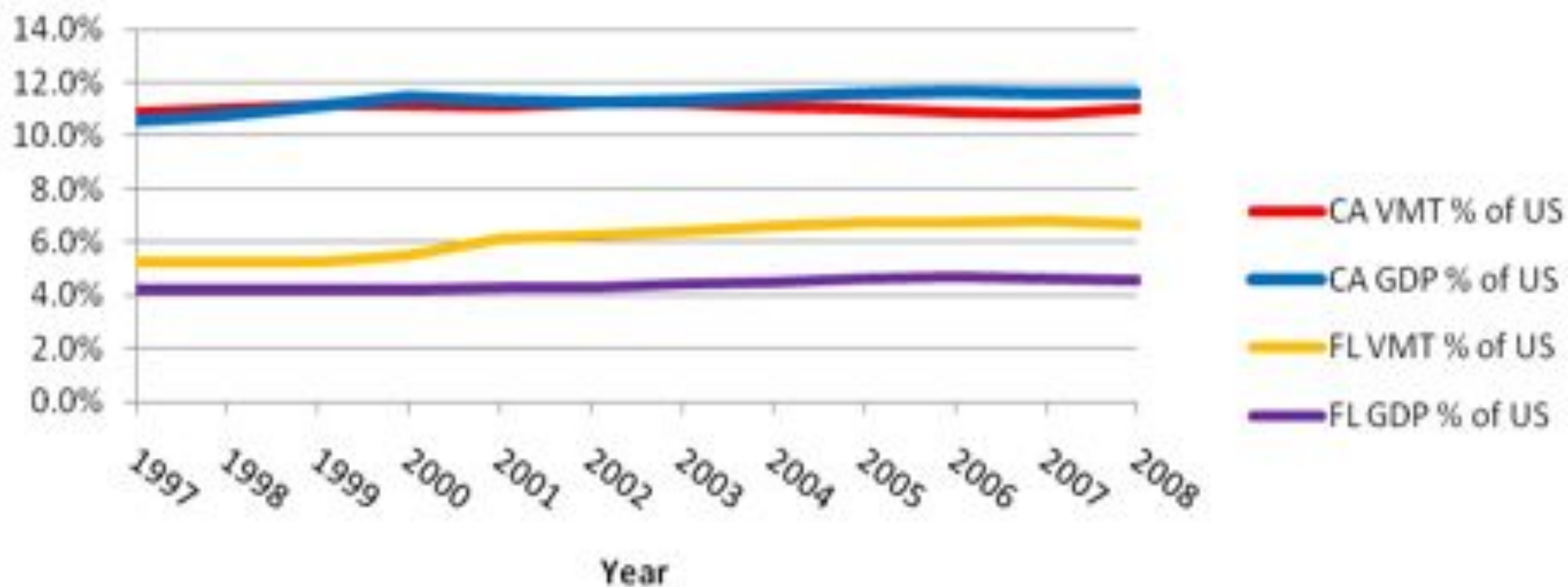


(US Chamber of Commerce, 2011)

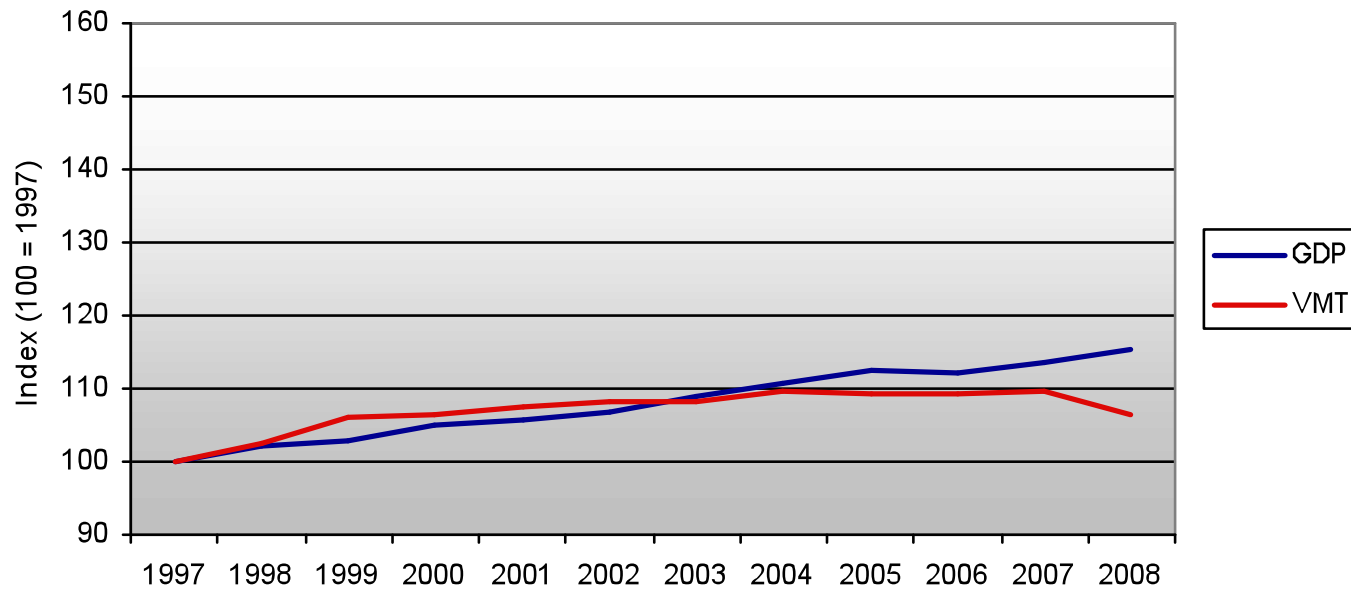
State-Level Per Capita GDP vs Per Capita VMT (2008)



Historic Percent of National VMT and GDP California vs Florida



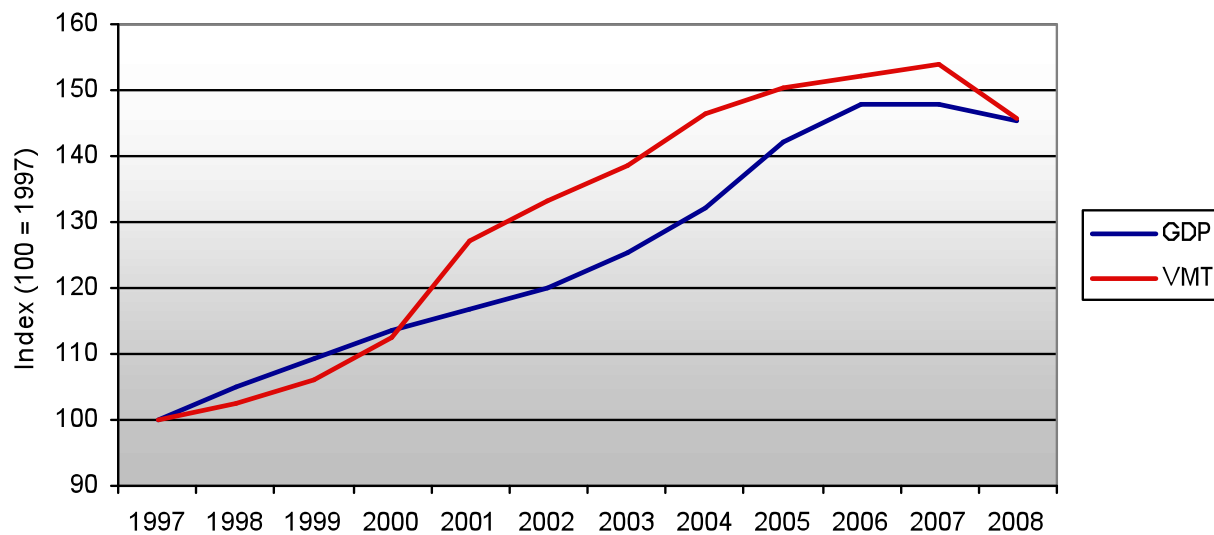
Indexed Missouri GDP & VMT, 1997 - 2008



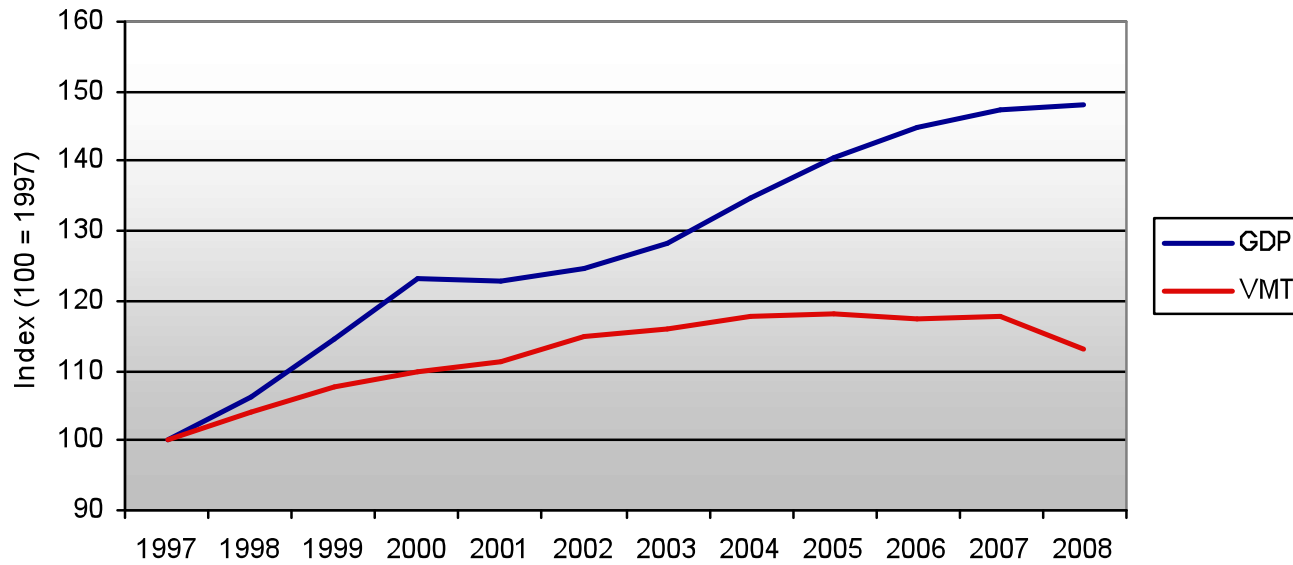
← MO.

FL. →

Indexed Florida GDP & VMT, 1997 - 2008

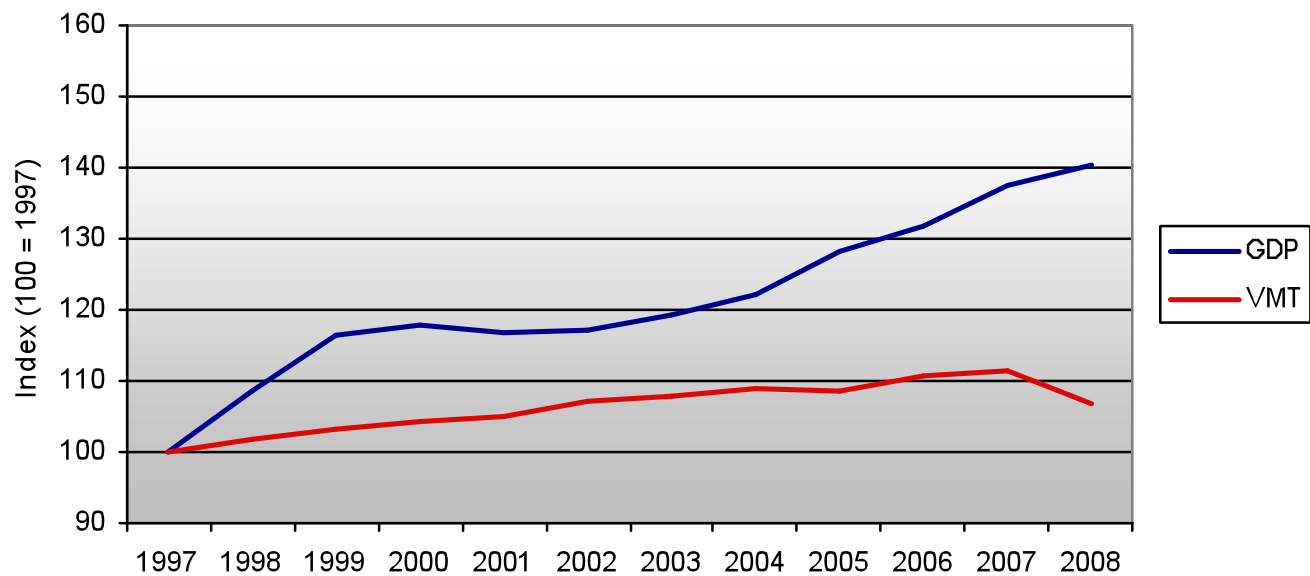


Indexed California GDP & VMT, 1997 - 2008



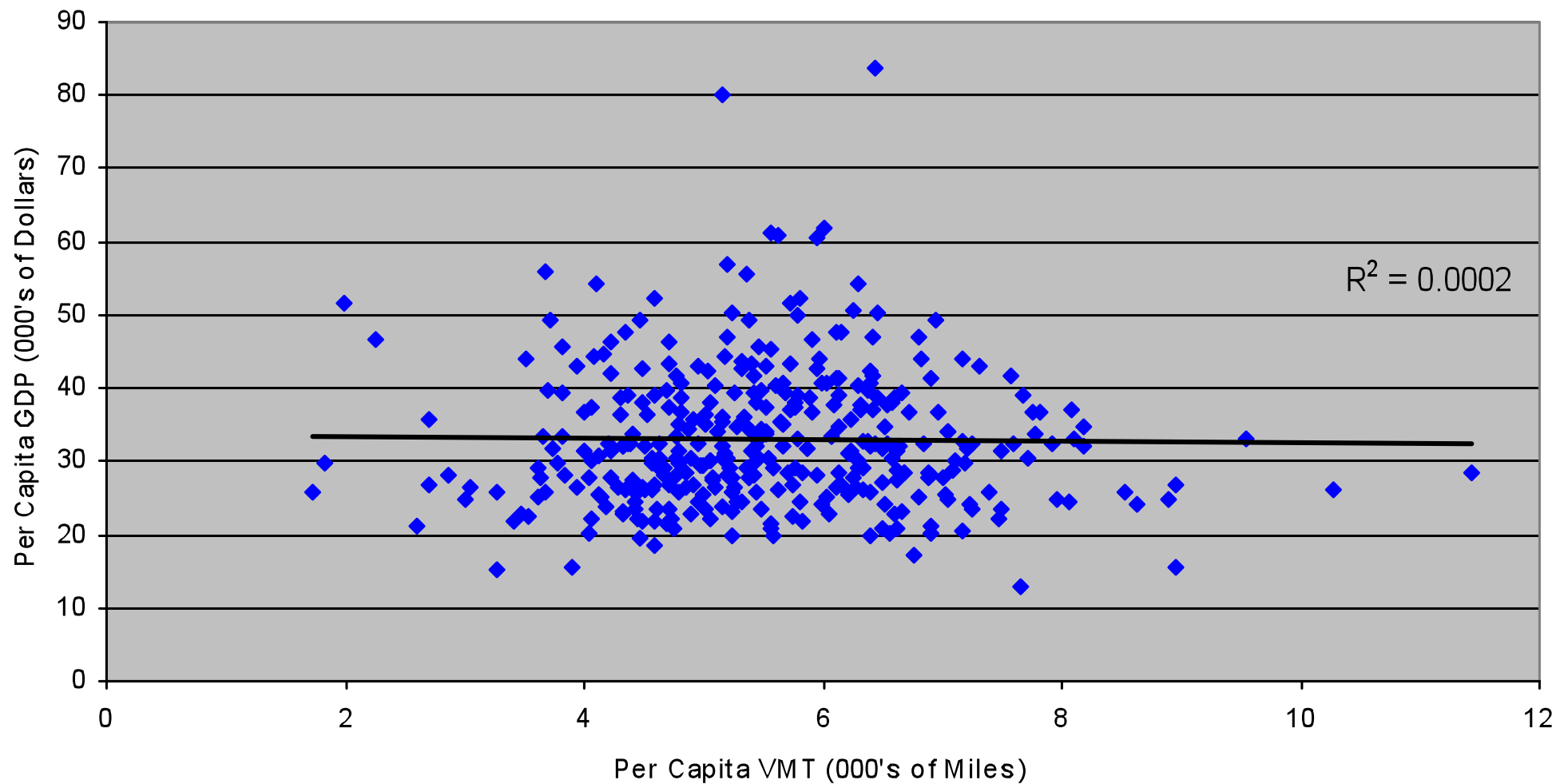
← CA.

Indexed Washington GDP & VMT, 1997 - 2008

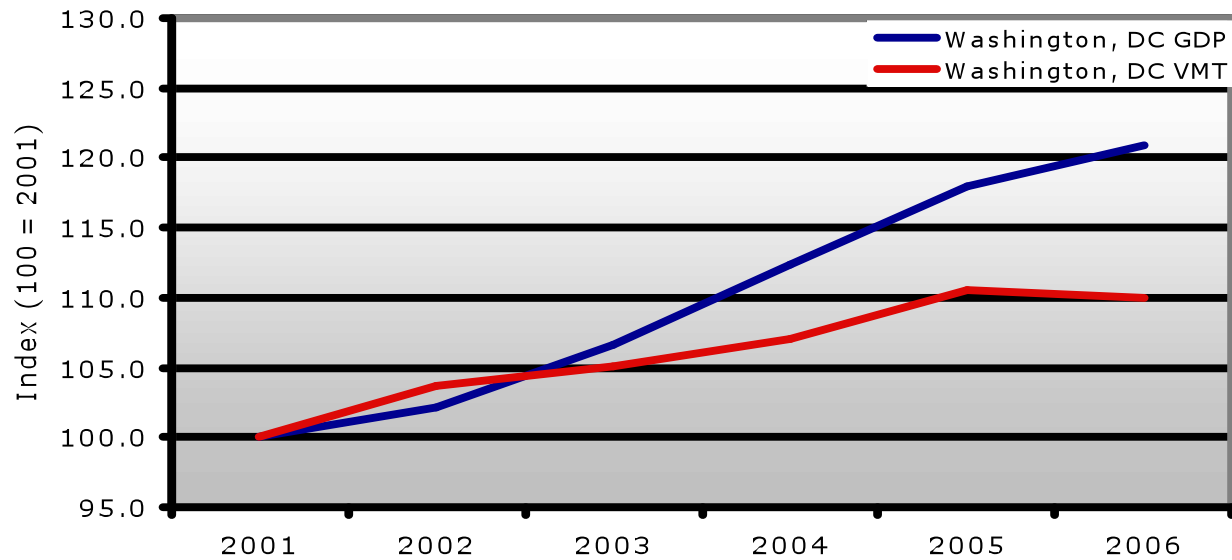


WA. →

Metropolitan-Level Per Capita GDP vs Per Capita Primary Arterial VMT (2007)



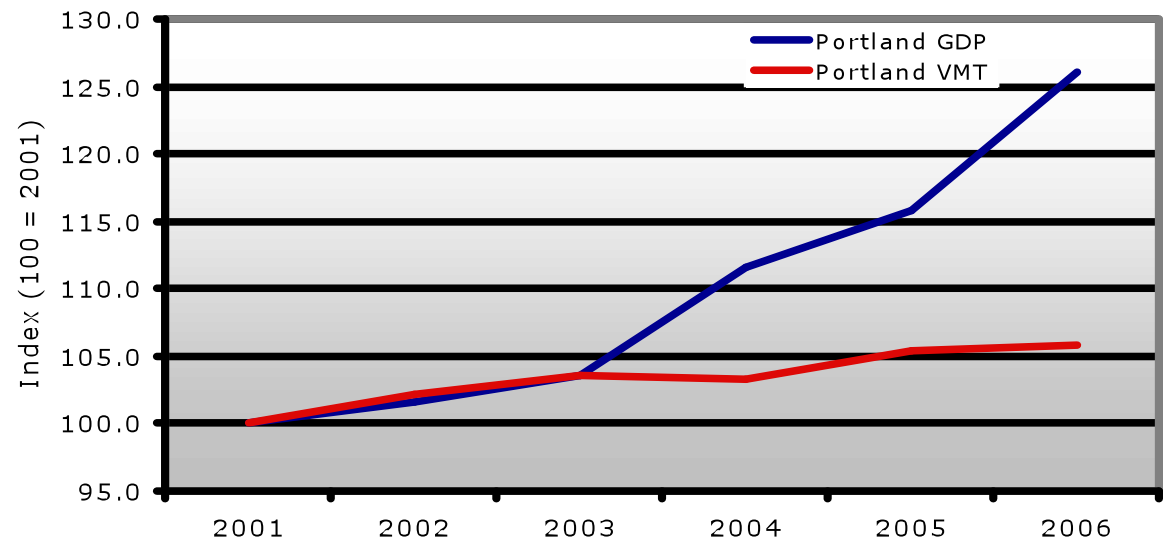
Indexed Primary Arterial VMT & Total GDP Growth in the Washington, DC CBA, 2001 - 2006

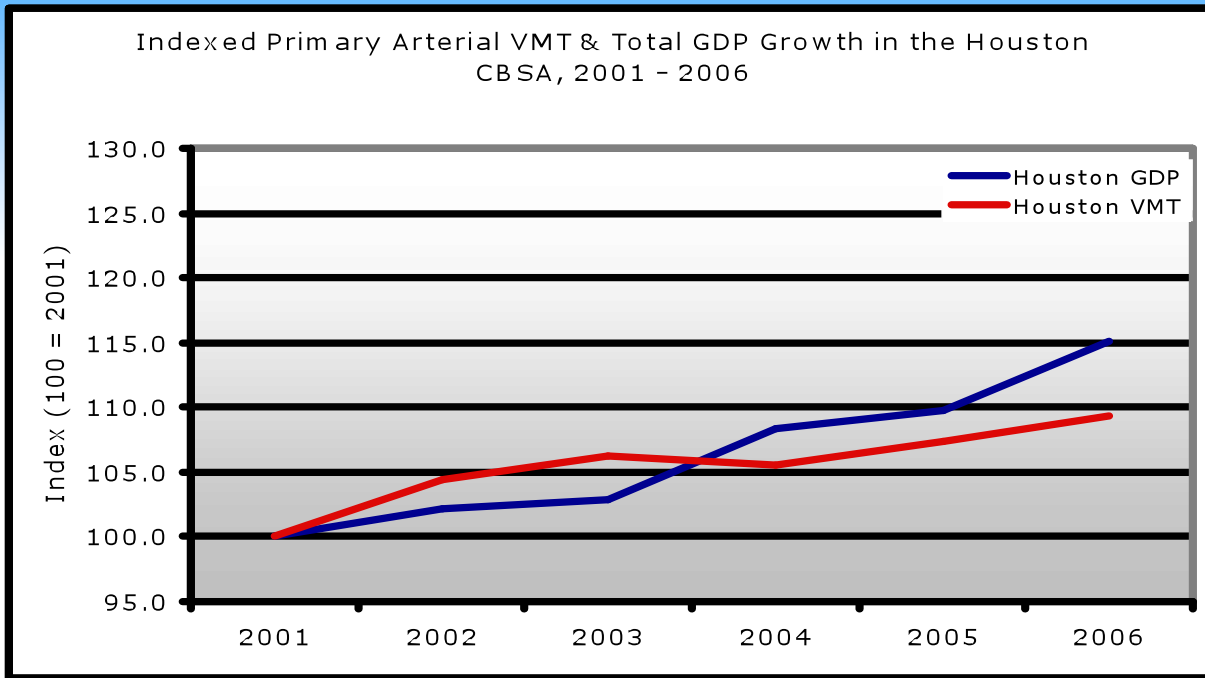


← Washington, DC

Portland →

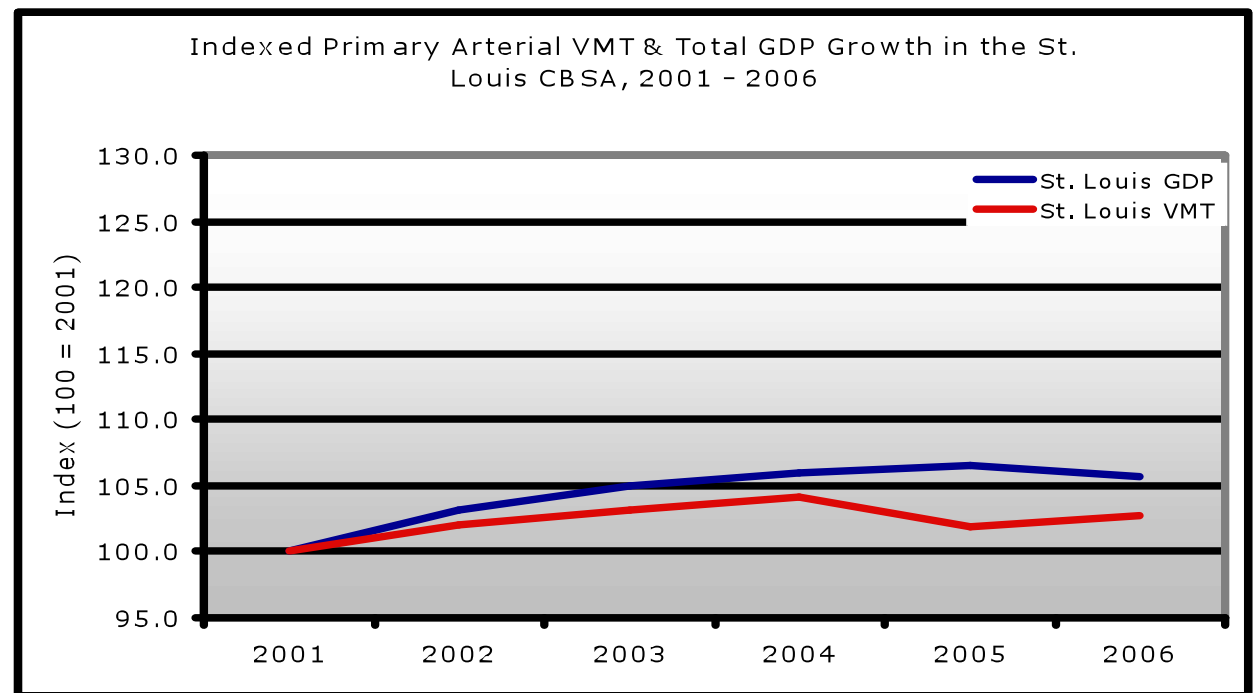
Indexed Primary Arterial VMT & Total GDP Growth in the Portland CBA, 2001 - 2006





← Houston

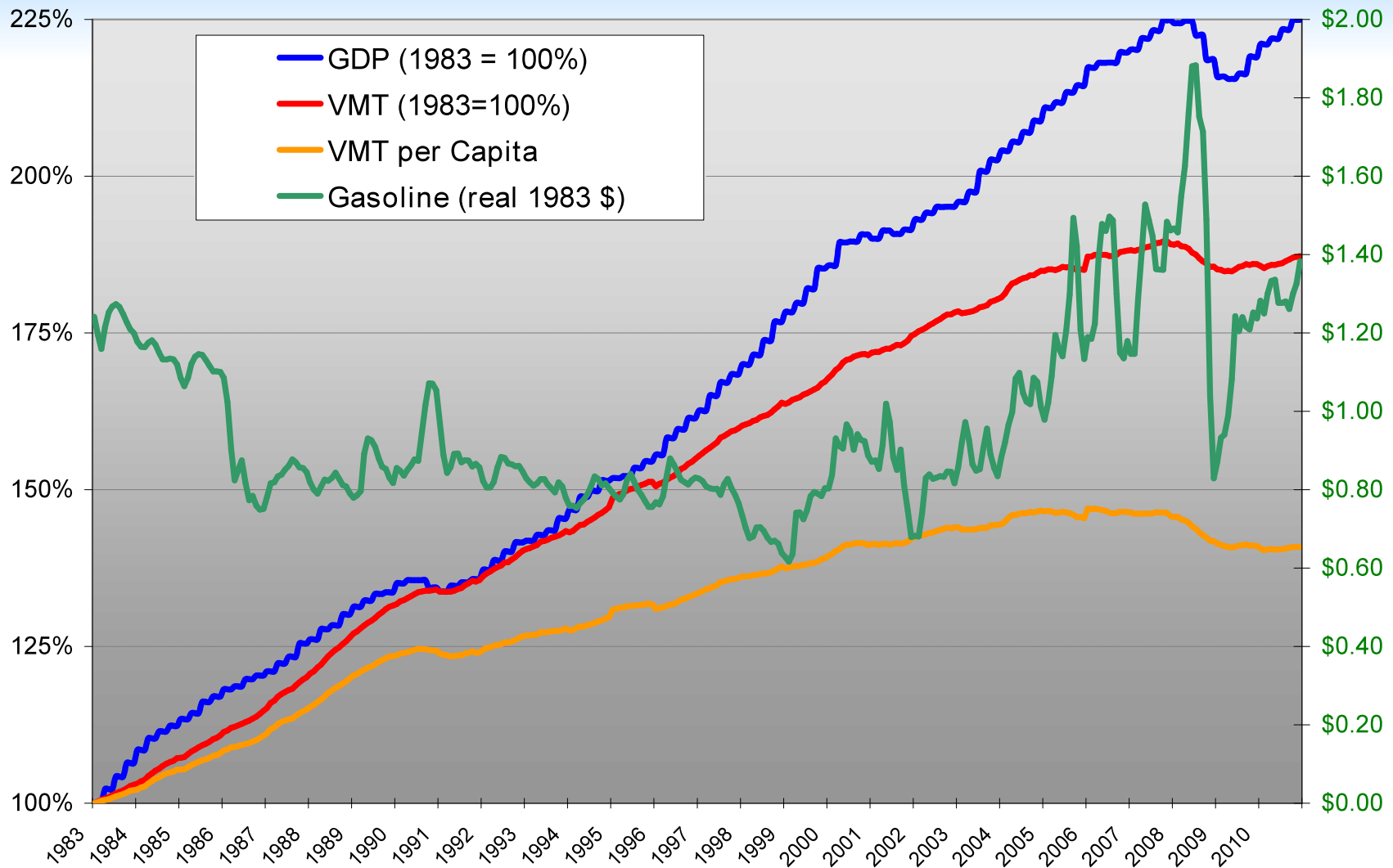
St. Louis →



Intervening variables

- Demographic shifts
- Fuel prices
- Congestion
- Growth of Service Sector
- Telecommuting and E-commerce
- Freight vs Passenger travel
- Empty vs Productive miles

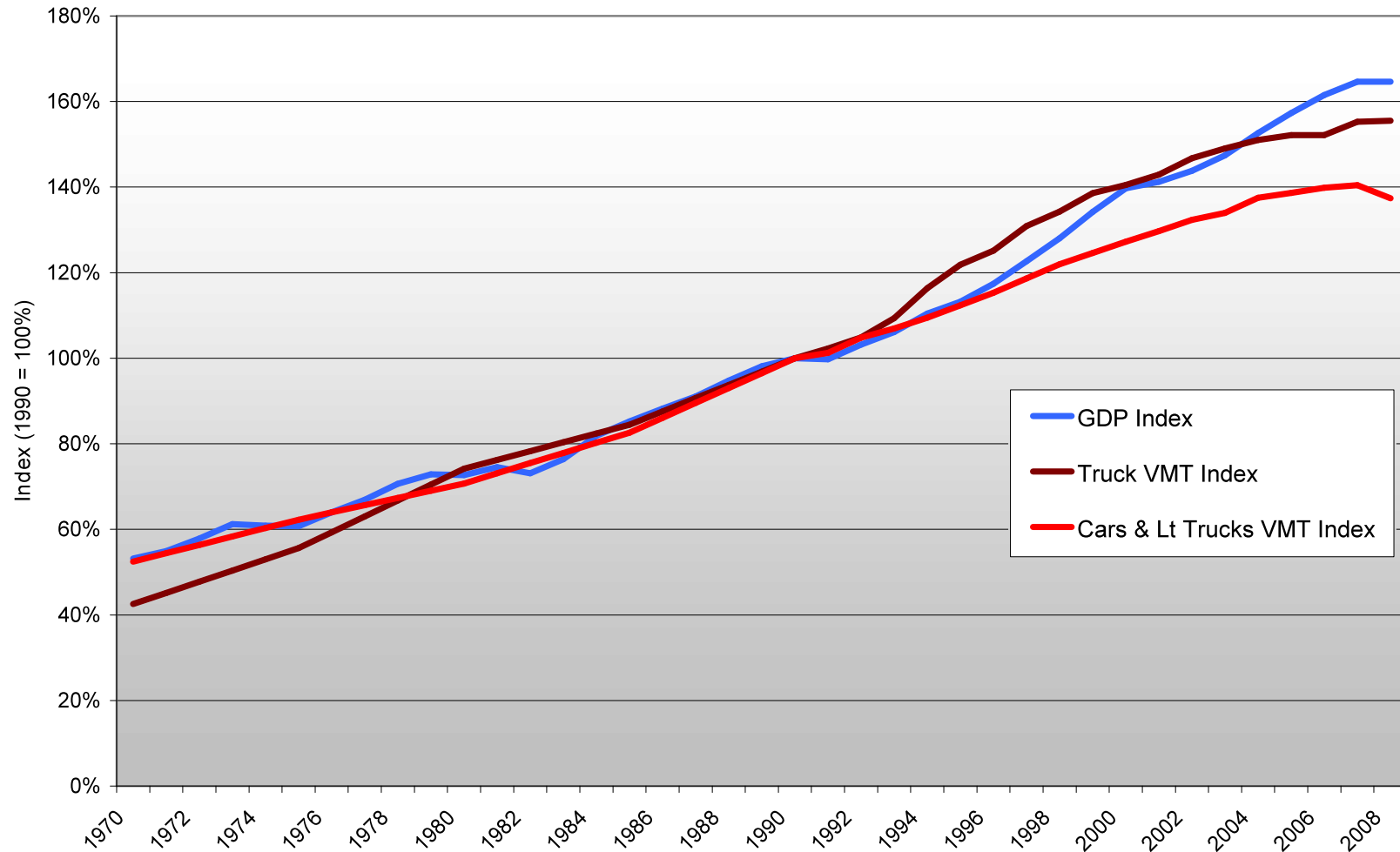
GDP, VMT and Real Gasoline Prices, 1983-2010



S. Winkelman, 2011

GDP: (BEA, 2011, Table 1.1.6). VMT: (FHWA, 2010, Figure 1). Gasoline Price: (USDOE, 2011, Table 9.4)

Growth in GDP, Truck VMT and Car VMT 1970-2008



VMT data from (USDOT, 2010, Table 1-32). GDP data from (BEA, 2011, Table 1.1.6)

US GDP Growth by Sector, 1967 – 1997

FIRE and Services no more than 50% of growth

Industry	Share of GDP (non govt)				Share of GDP growth (non govt)		
	1967	1977	1987	1997	1967 - 77	1977 - 87	1987 - 97
Agriculture, forestry, and fishing	3%	3%	2%	2%	3%	1%	1%
Mining	2%	3%	2%	2%	4%	2%	1%
Construction	6%	5%	5%	5%	5%	5%	4%
Manufacturing	31%	27%	22%	19%	24%	18%	15%
Transportation and public utilities	10%	10%	10%	9%	11%	10%	8%
Wholesale trade	8%	8%	8%	8%	8%	7%	8%
Retail trade	11%	11%	11%	10%	11%	10%	10%
<i>Subtotal</i>					66%	54%	48%
Finance, insurance, and real estate	16%	17%	20%	22%	17%	23%	23%
Services	13%	15%	19%	24%	16%	23%	29%
<i>Subtotal</i>					34%	46%	52%

US GDP Growth by Sector, 1998 – 2008

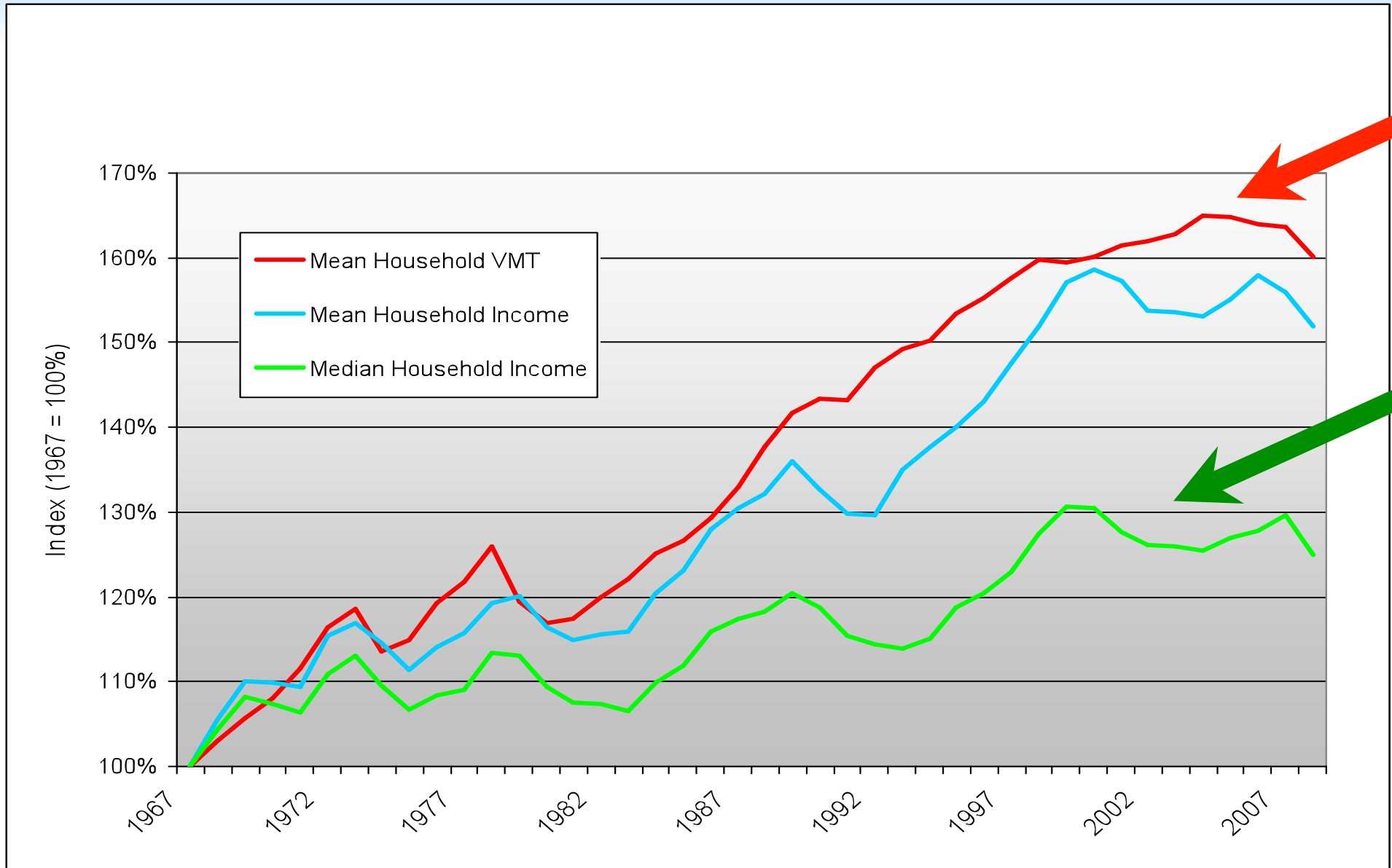
FIRE and Services 2/3 of growth

	Share of GDP (non govt)		Share of GDP growth (non govt)
Industry	1998	2008	1998 - 2008
Agriculture, forestry, fishing, and hunting	1%	1%	1%
Mining	1%	3%	5%
Utilities	2%	2%	2%
Construction	5%	5%	5%
Manufacturing	18%	13%	7%
Wholesale trade	8%	7%	6%
Retail trade	9%	7%	4%
Transportation and warehousing	4%	3%	3%
<i>Subtotal</i>			33%
Information	5%	5%	6%
Finance and insurance	9%	9%	10%
Real estate and rental and leasing	15%	15%	17%
Services	29%	30%	35%
<i>Subtotal</i>			67%

Household level

US VMT per Household and Household Income

1967-2008 (Indexed)

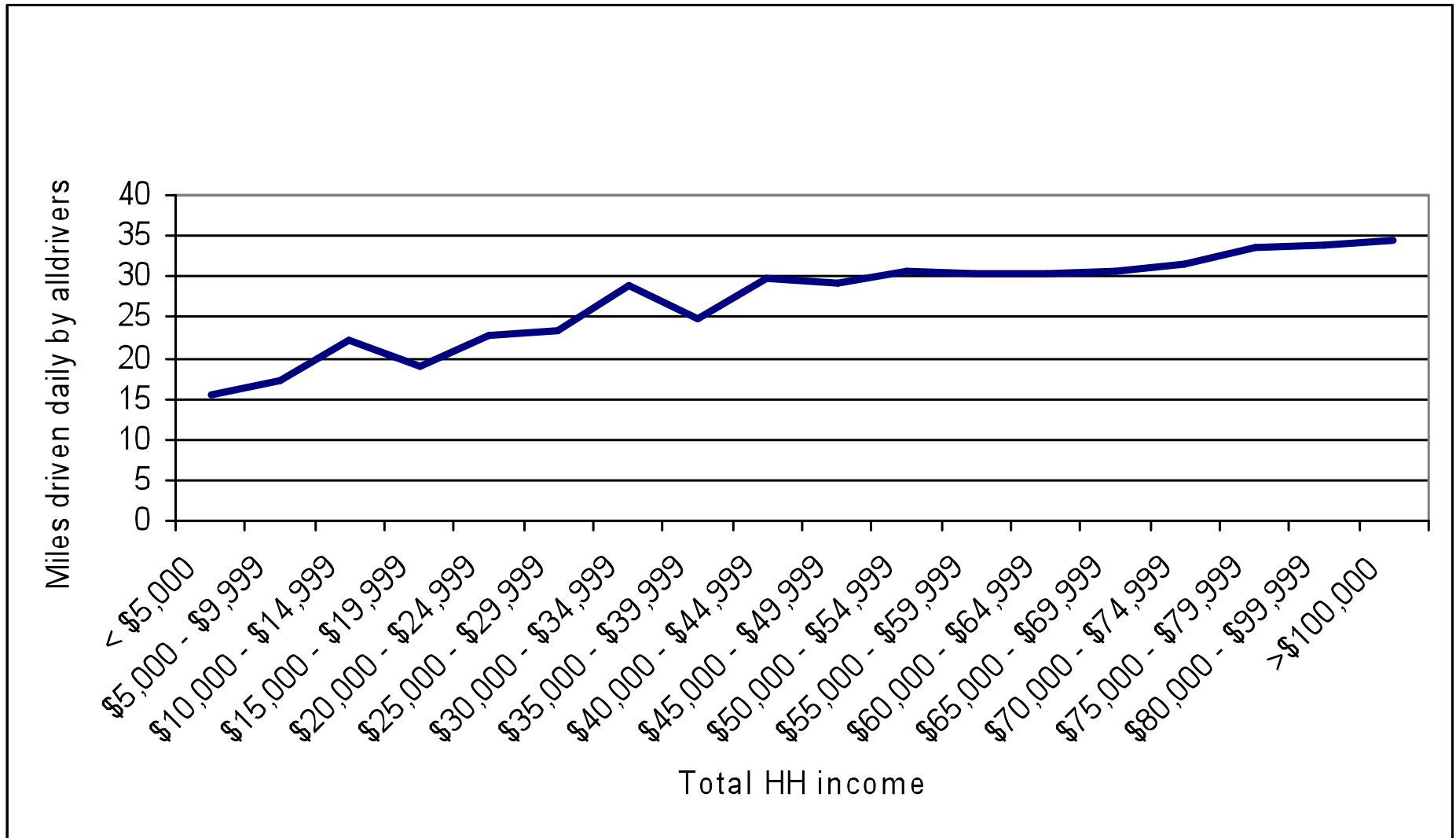


Income from (US Census Table, 2010, Table H-5).

HH VMT calculated (US DOT, 2010 Table 1-32) and (Infoplease, 2010)

Average Daily Miles Driven by Income Group

(FHWA 2009 NHTS)



Further Research Areas



Travel that contributes little or nothing to households and local economies might be called “empty miles”



Mobility – the ability to move

Accessibility – the ability to get
where you want to go

Four Components of Wealth

1. Treasure

2. Tangible Assets: land, infrastructure, water, air, biodiversity, etc.

3. Intangible Assets: health (of the individual, population or environment), education (of the individual or population), social cohesion, historic/cultural heritage, quality of life, etc.

4. Stability: (i.e., confidence in predicting your future relationship to the other three components of wealth)

Big Picture Questions

- How can we maximize productive trips and minimize “empty miles”? For who?
- What is the relationship between accessibility and a world economy?
- How is travel related to other dimensions of “wealth”



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