



HEALTH

***The Economics Of Physical Inactivity:  
Developing a Research Agenda***

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## *Outline of Talk*

- **Economic versus public health view**
- **Physical activity trends**
- **Can we identify market failures?**

## *Economic Vs Public Health View*

- **Both play an important role in policy process**
- **Often seemingly at loggerheads**
- **Interventions supported by both perspectives most likely to be effective and politically acceptable**
- **Without understanding the economic perspective, health professionals will have limited influence**

## *The Public Health View*

- **Intervene if health could be improved**
- **Expert opinion to evaluate desirable outcomes**

## *Limitations of Public Health View*

- **No explicit role for individual preferences**
- **No explicit consideration of other trade-offs**
- **Often out-of-touch with majority opinion – making industry lobbyists seem the more “reasonable” party**

# YOU ARE TOO STUPID

...to make your own food choices. At least according to the food police and government bureaucrats who have proposed "fat taxes" on foods they don't want you to eat. Now the trial lawyers are threatening class-action lawsuits against restaurants for serving America's favorite foods and drinks.

We think they're going too far.



*It's your food. It's your drink. It's your freedom.*

*Find out more about attacks on your favorite foods and drinks at:*

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## *The Economic View*

- **Health only one of many competing goals**
- **Consumer sovereignty over outcomes**
  - **Central feature of the US institutional framework**
- **Only intervene if market failure**
  - **Externalities**
  - **Underprovision of public goods/services**
  - **Information problems**

## *Externalities*

- **Costs/benefits of an activity imposed on others, not necessarily financial (e.g. noise)**
- **Social costs of driving not reflected in gas or car prices**
  - **Cars make walking/biking unpleasant and dangerous**
- **Social costs of sprawling environments not reflected in housing prices or the costs of such developments**



## *Public Goods/Services*

- **Nobody can be excluded from public goods/services – therefore no individual incentives to provide them**
- **Are neighborhoods safe and pleasant for walking/biking to school, store, work?**
- **Are parks in good condition and accessible?**
- **No good private substitutes for safety, sidewalks, public facilities**
  - **In contrast to gyms for which there is a private market**

## ***Federal Agencies Must Identify Market Failures That Proposed Regulations Address***

- **OMB's "Regulatory Planning and Review" guidelines ask that that proposed regulations**
  - **"... determine whether there exists a market failure that is likely to be significant."**
  - **"distinguish actual market failures from potential market failures that can be resolved at relatively low cost by market participants."**
- **No actual market failure – no role for federal regulation!**

## *Outline of Talk*

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- **Physical activity trends**
- **Can we identify market failures?**

# *Why the Recent Obesity Epidemic?*

- Many competing hypotheses
  - Transportation
  - Television
  - More work hours
  - Not enough exercise
  - Fast food
- But no comparative data
- Identifying major societal trends suggests levers for change



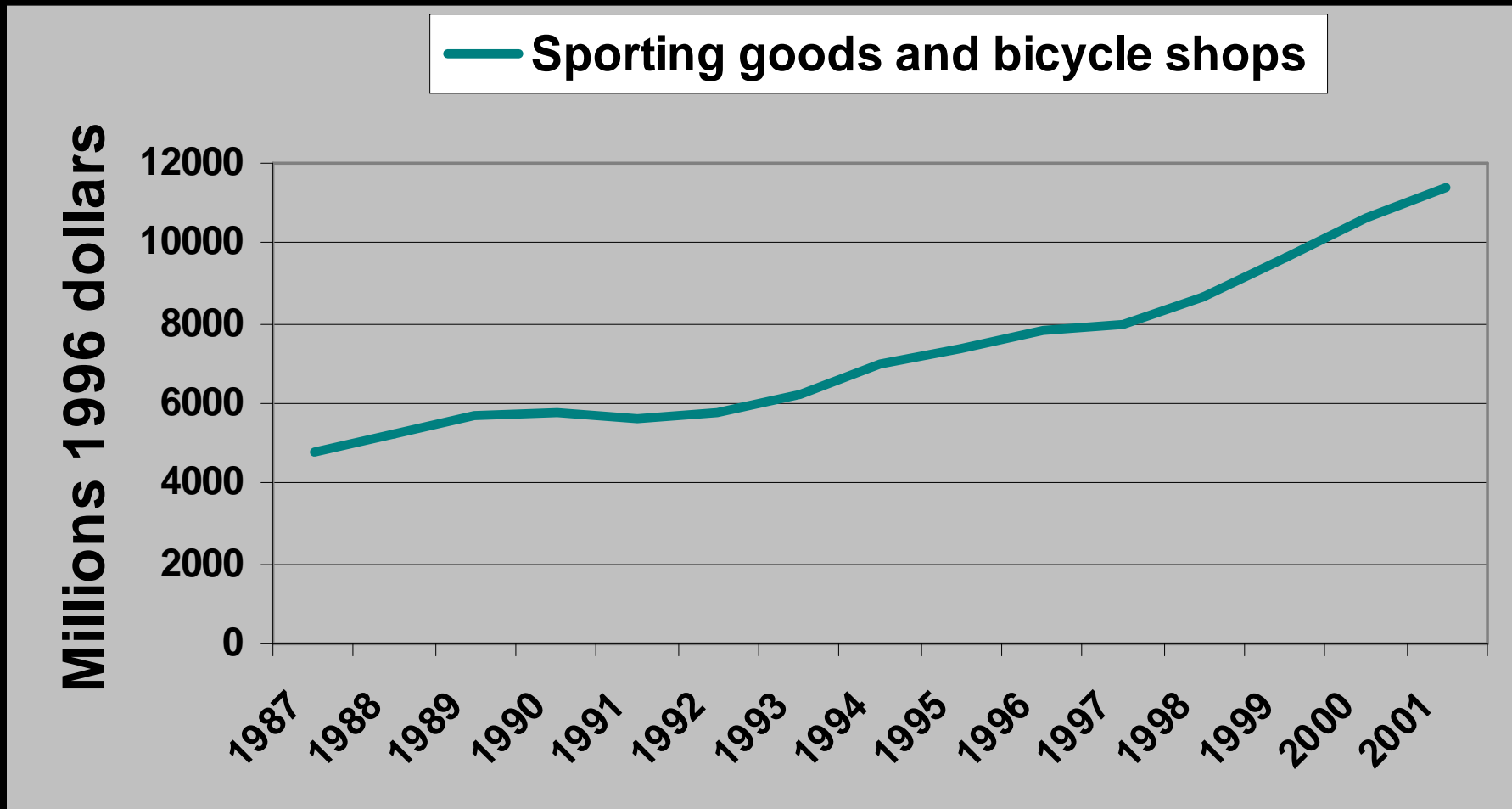
# *Time and Money: Physical Activity*

- **What do people do?**
  - **Time use data**
- **Where does the money go?**
  - **Gross output by industry**
- **Why study time use?**
  - **Scarcest resource**
  - **Regardless of economic growth, a day has 24 hours**

## *Where Does the Money Go?*

- **Is there a parallel growth for obesity rates and industries associated with sedentary lifestyles?**
- **Gross output by detailed industry compiled by Bureau of Economic Activity**

# *Retail: Sporting Goods Doubled, While Real GDP Increased 50%*

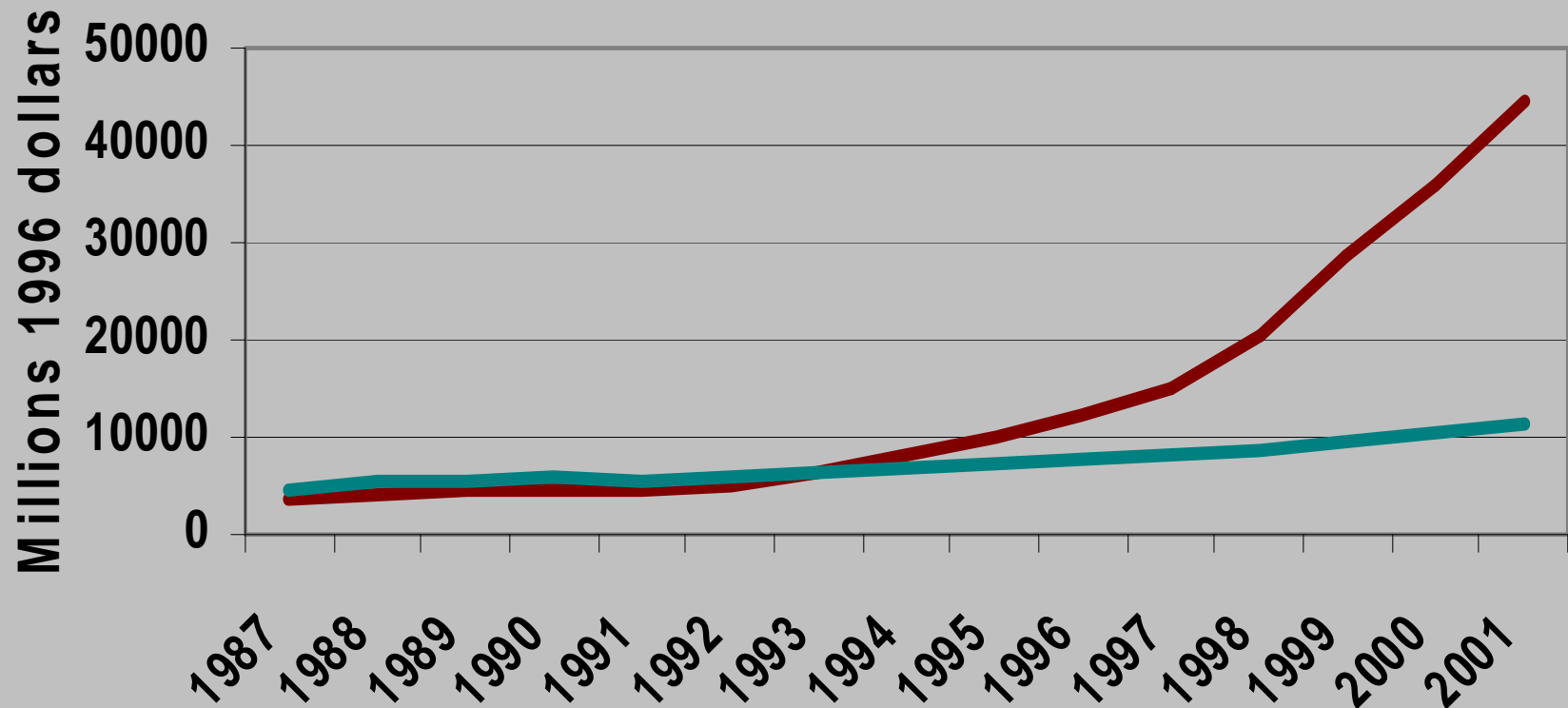


Source: Bureau of Economic Activity, Gross Domestic Product By Industry.

## *But Dwarfed By Growth of Home Electronics (TV, DVD)*

— Radio and TV stores

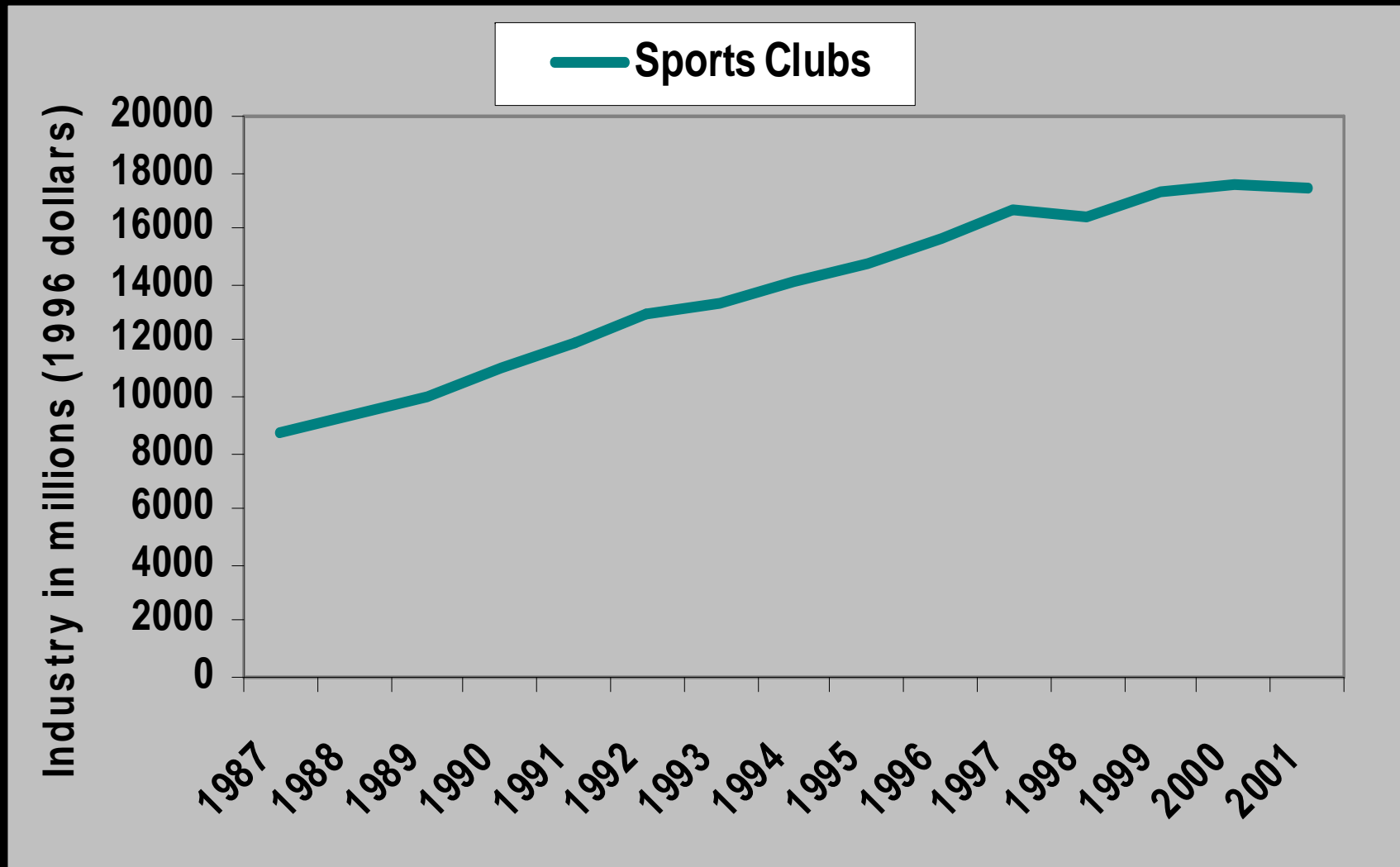
— Sporting goods and bicycle shops



Source: Bureau of Economic Activity, Gross Domestic Product By Industry.

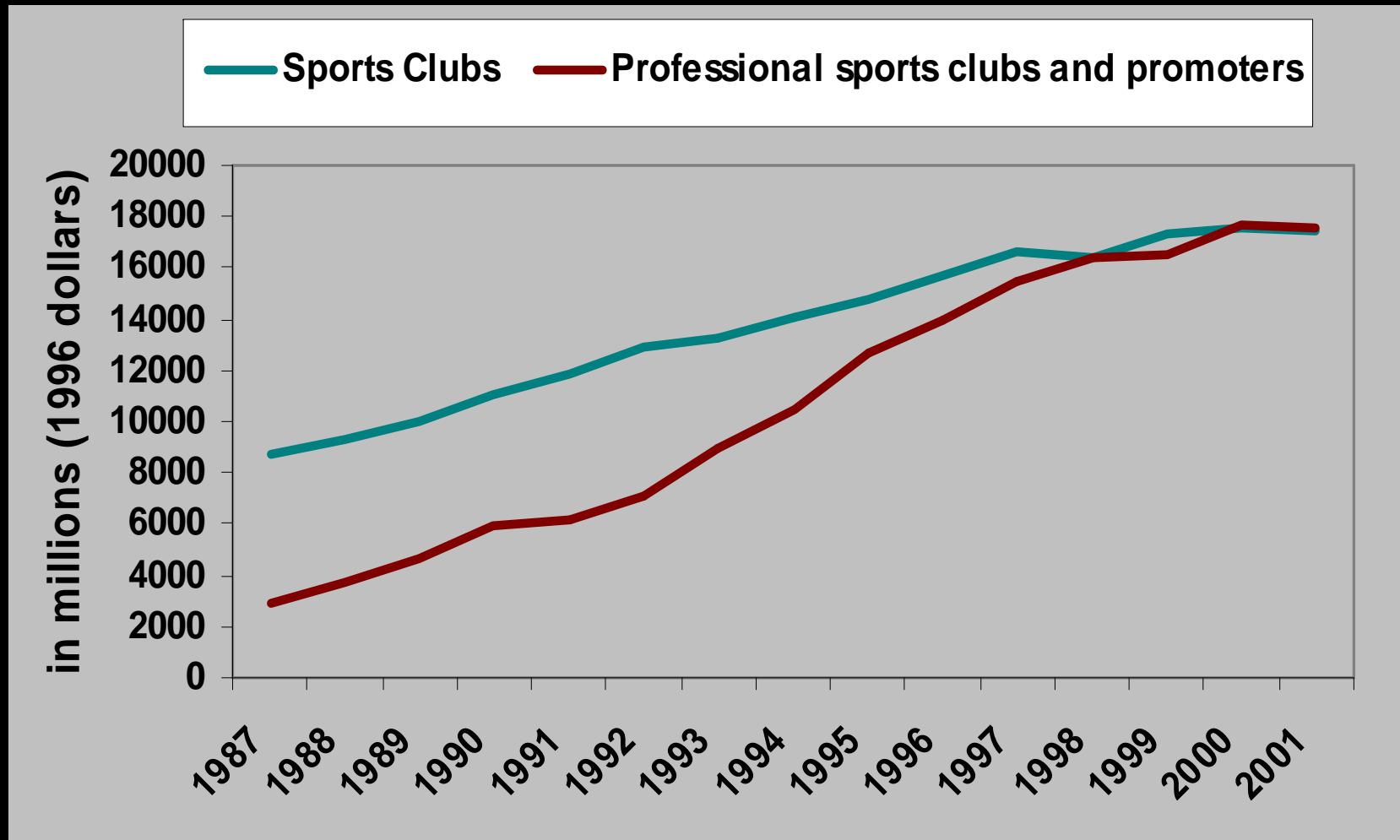


# *Industries More Closely Related to PA: Sports Clubs Doubled ...*



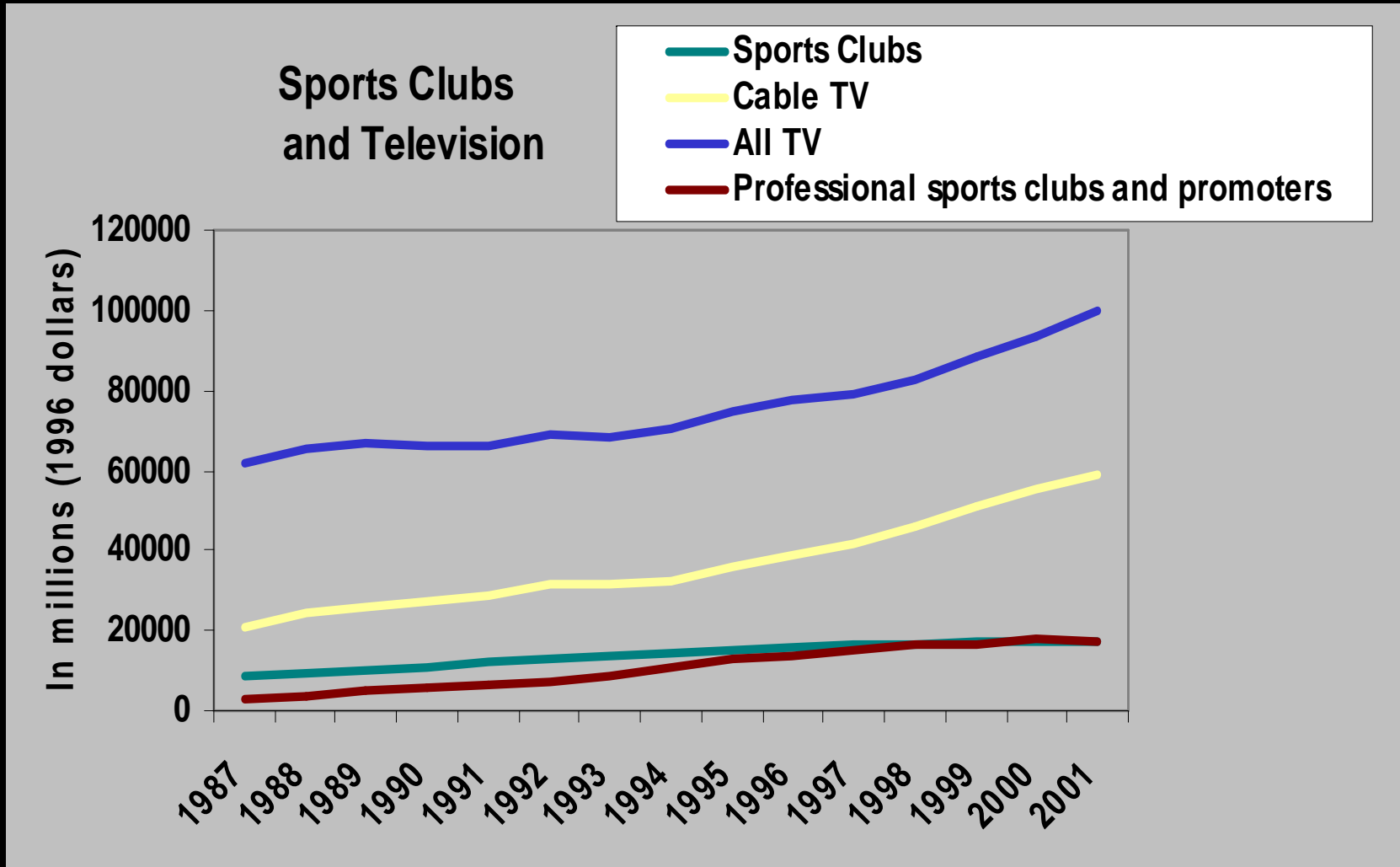
Source: Bureau of Economic Activity, Gross Domestic Product By Industry.

# *But Sedentary Spectator Sports Grew Faster...*



Source: Bureau of Economic Activity, Gross Domestic Product By Industry

## ... As Did Cable TV



Source: Bureau of Economic Activity, Gross Domestic Product By Industry.

## *Summary: Industry Output*

- **Higher real income increases demand for leisure time and complementary goods/services**
- **“Leisure time” industries growth exceeds GDP growth for “active” and “sedentary” industries**
- **But fastest growth in “sedentary” industries:**
  - **electronics, spectator sports, cable TV**

## *Why Differential Growth?*

- **Technological change**
  - **New goods/services (DVD) more interesting than largely unchanged products (dance studio, bicycles)**
- **New complementarities**
  - **Cable TV and spectator sports**
- **Unclear: Role of relative price changes**
- **Unlikely: Changing preferences through advertising**

## *Where Does the Time Go?*

- **Decompose time use into 5 dimensions**
  - **S** – Sleep
  - **L** – Leisure
  - **O** – Occupation
  - **T** – Transportation
  - **H** – Home production
- **Data from time diaries**
- **1965-1985 data come from Robinson and Godbey**
- **My calculations from 1999 survey data**

## *Time Use*

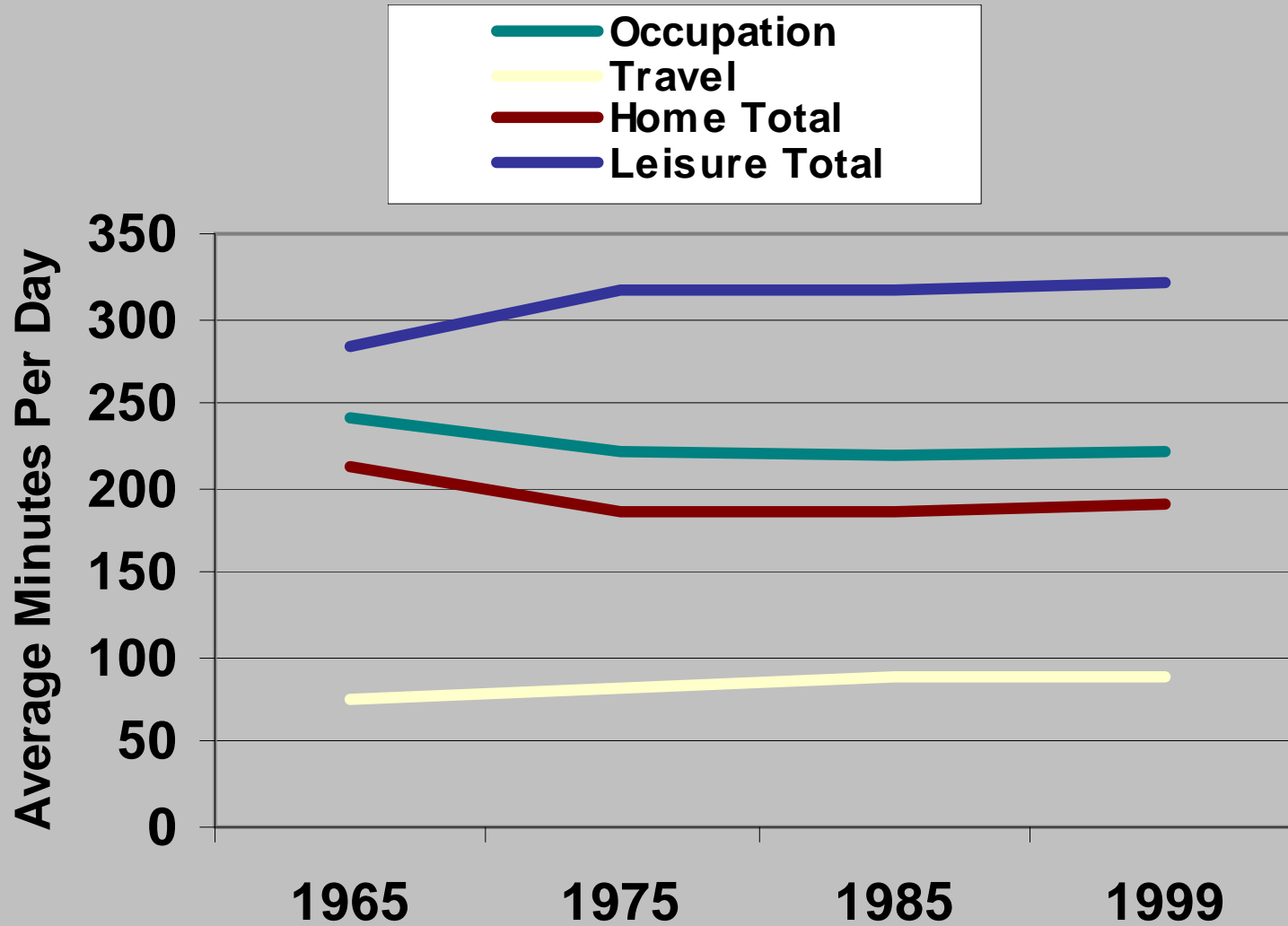
- Time allocation important for PA, less so for nutrition
- Industry growth not the same as time spent
  - More costly sports gadgets or more exercise?
  - More channels or more time spent watching?
- Time and goods complements or substitutes?
  - Dishwasher vs. golf clubs

## *Trends in Time Use*

- Overall productive activity (home and occupation) declined
  - 4 hours/week for women
  - 5 hours/week for men
- No trends in sleep, 8 hours
- Personal care/grooming time also declined (but only in last 15 years)
- Leisure and travel increased

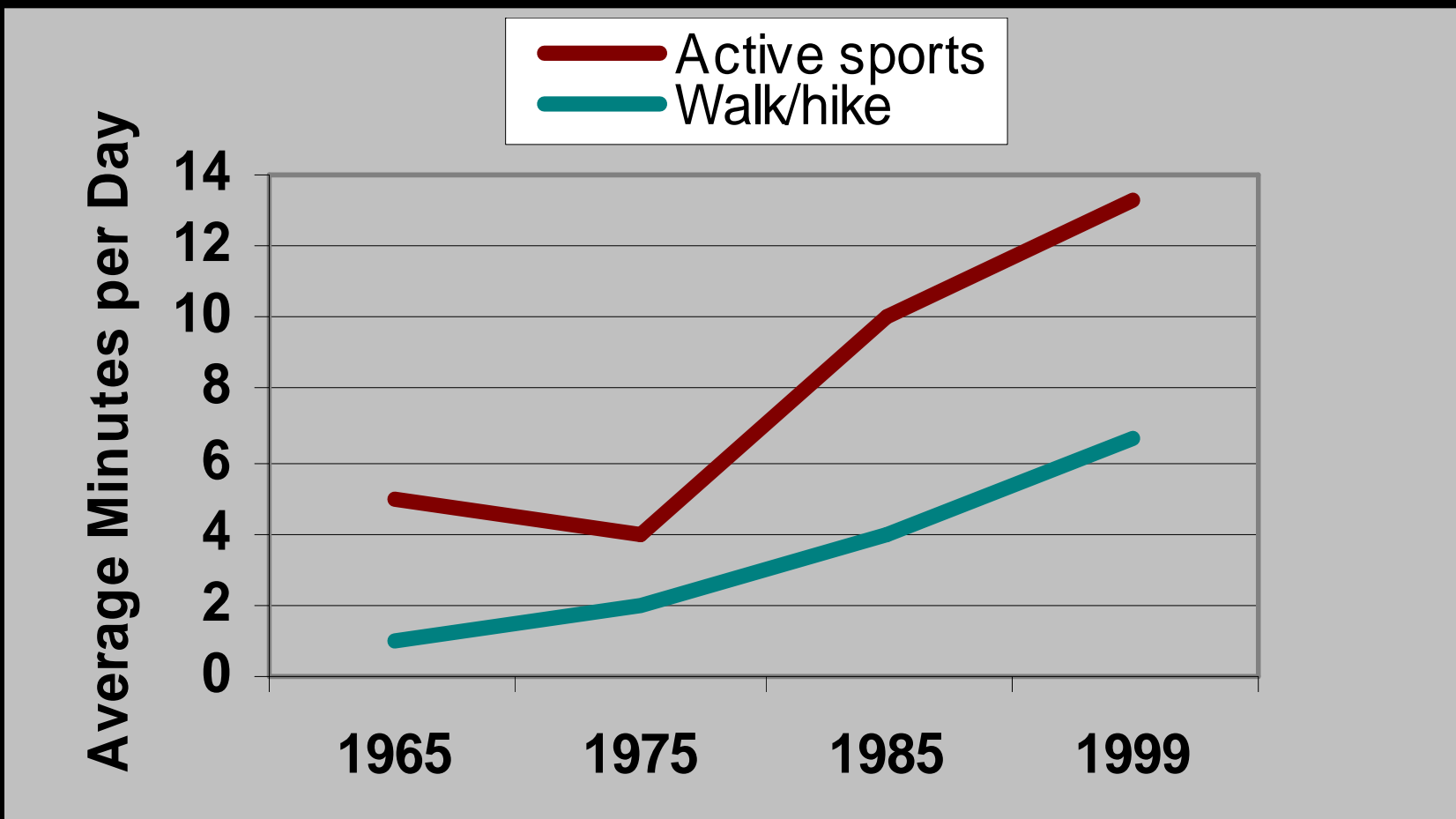


# Trends in Time Use



Source: Robinson and Godbey, 1999; my calculation using FISCT 1999

# Leisure: 15 More Minutes Active Per Day



Source: Robinson and Godbey, 1999; author's calculation using FISCT 1999

## *Leisure Time PA Keeps Increasing*

- **An additional 20 mins/week in last decade for the “typical” American**
- **Percent of inactive keeps falling**
  - **From 30.7 in 1990 to 27.4 in 2000**
  - **More than 3 percentage point**
- **Still over a quarter of population remains inactive**

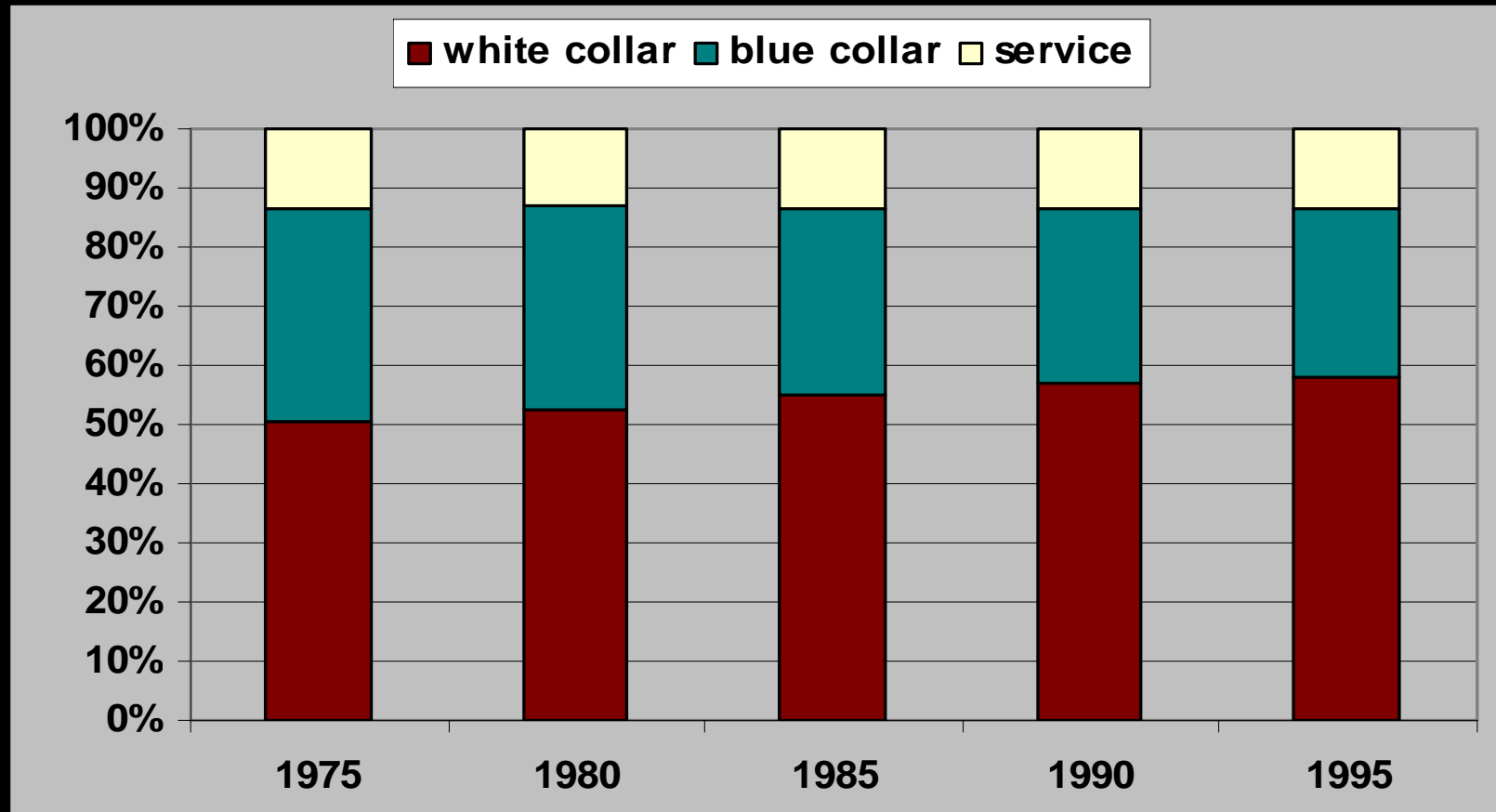
## *Trends in TV*

- **Largest increase prior to 1980, before “obesity epidemic”**
  - **Almost 4 hours/week between 1965 and 1985 (weight increased during that period)**
  - **Recent data inconsistent, TV time may even decline, but no good data for other sedentary activities, e.g. computer, videogame**
  - **Definitely a decline in TV watching among children in last decade**
  - **But remains largest leisure time activity**

## *Why So Much TV (Video, DVD)?*

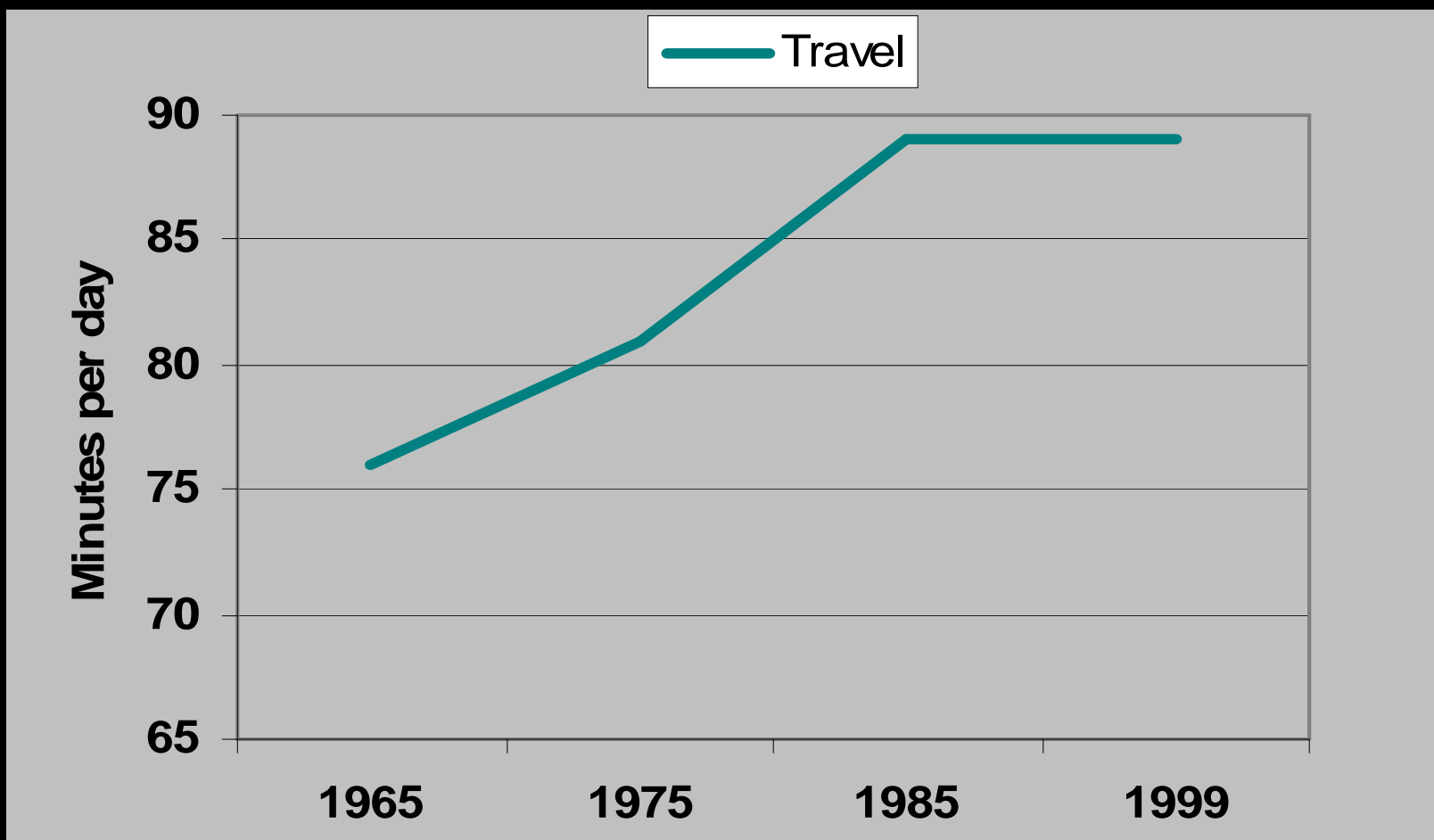
- **Low marginal cost/effort**
- **Easiest alternative if free time becomes available in small chunks**
- **TV less time-elastic: Active leisure increases more on weekends than TV time**
- **Interventions to change TV habits could use time elasticity or relative price (compared to active alternatives) effects**

# Occupation: Shifting to Less Physically Demanding Jobs Historically Important, but Probably Not Recently



Source: Calculations based on data from Kutscher, R. "Historical trends, 1950-92, and current uncertainties" *Monthly Labor Review*, November 1993 and Handbook of US Labor Statistics, 5<sup>th</sup> Edition

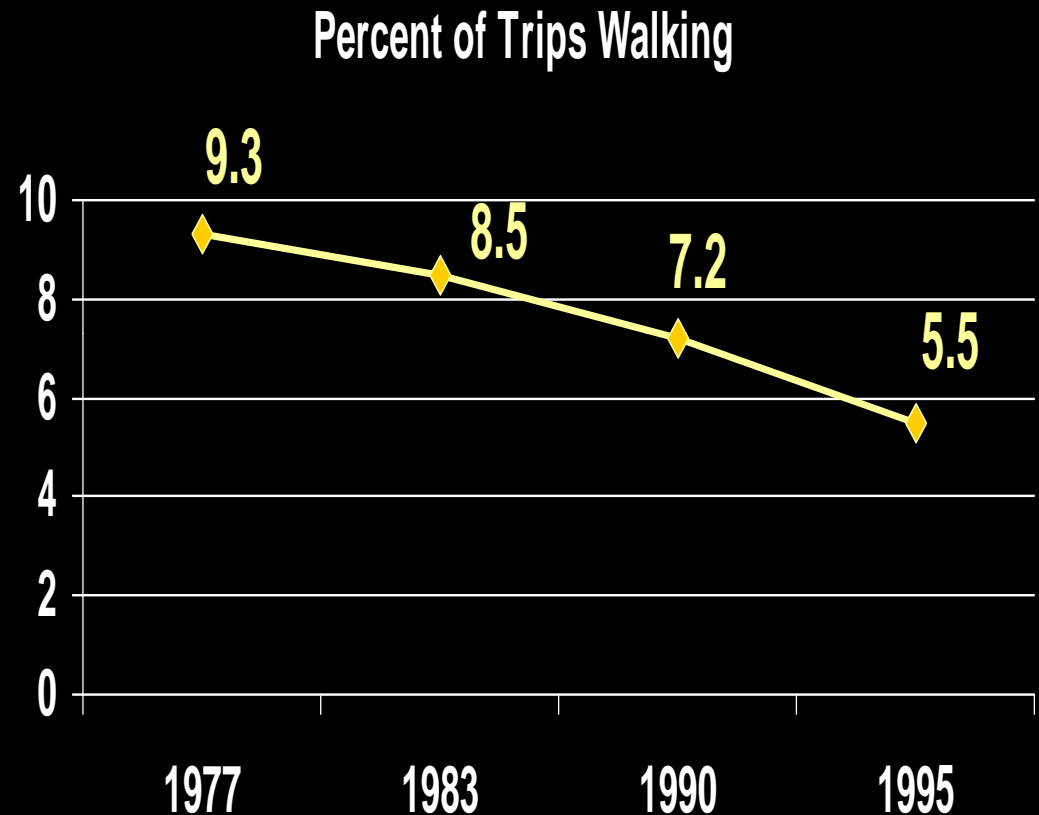
## *Transportation: 13 Minutes More Total Travel Daily – Even More By Car?*



Source: Robinson and Godbey, 1999; author's calculation using FISCT 1999

# Transportation

- Strong trends, as in this well-known graph, but account for little change in PA
- Partly because more total trips
- Rough calculation: If this trend had continued through 2000, maybe 1-2 pounds of weight gain

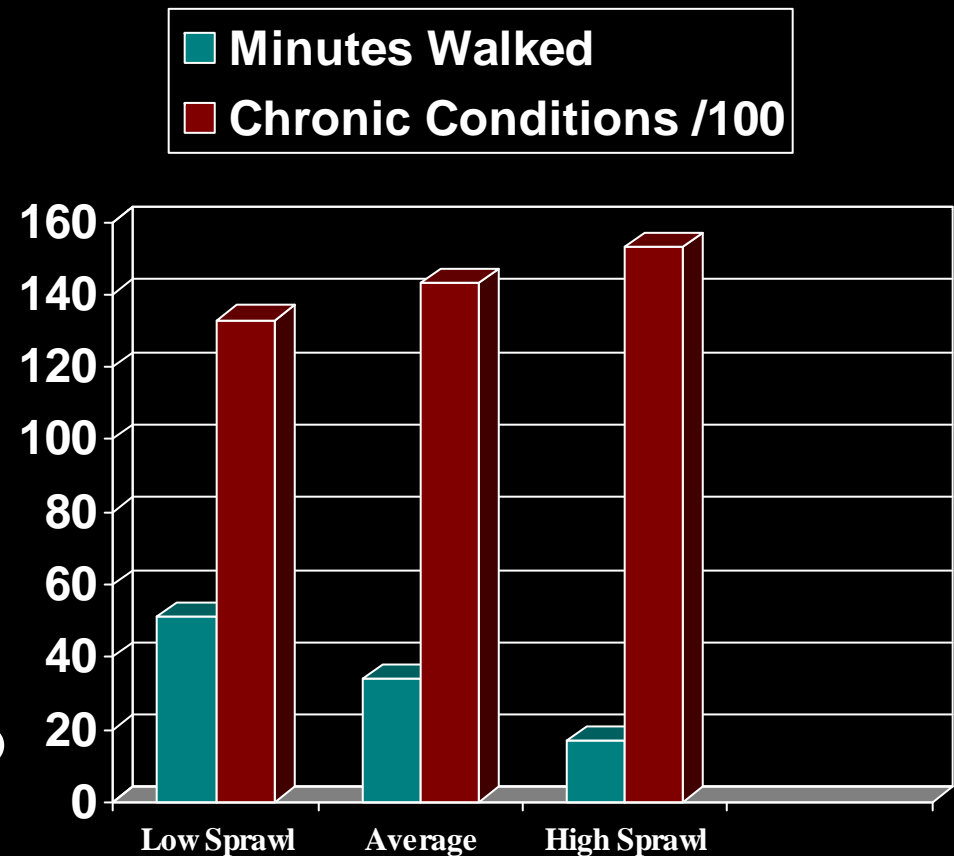


Source: NPTS 1995



# *Land Use May Be More Important Than New Technologies*

- **Urban Sprawl**
  - **Reduces utilitarian walking**
  - **Increases BMI**
  - **Increases chronic health problems**
- **But changes slowly**
- **Obesity increased everywhere, not limited to sprawling areas**



## *Home Production*

- **Drop of 2 ½ hours/week**
- **Biggest reduction in cleaning and meal preparation**
- **Meal preparation more important for nutrition than physical activity**
  - **Wider range and variety of prepared food available at lower TIME costs**
  - **Variety of snacks always available, including while watching TV/DVD**

## ***Summary of Physical Activity Trends***

- **Low levels of PA risk factor for obesity**
- **Exercise increasing, but other PA declining**
- **No dramatic change in other PA in recent decades**
  - **Maybe important for weight gain in 70s/80s**
  - **Less likely that *recent* changes in PA explain 1990s obesity epidemic, contrast with changes in food patterns**
- **PA can nevertheless be key to combat obesity**
  - **Only small changes necessary to reverse obesity, walk 1 mile/day**
  - **Markets less likely to function for PA**

## *Outline of Talk*

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- **Can we identify and measure market failures?**

## ***Do Trends in PA Reflect Market Failures?***

- **Firms will provide products if there is demand, whether for physical activity or sedentary entertainment.**
- **Industry growth reflects demand and market reaction**
- **Markets can be successful for private goods, like gyms or exercise equipment or DVD players**
- **But markets will not work for PA when**
  - **Public goods are needed and underprovided**
  - **There are externalities**

## *Exercise*

- **Gyms are a private good and growth rates exceed GDP – markets work**
- **But enjoyment of any outside activity depends heavily on environment (traffic, sidewalks, parks, safety) – markets do not work**
- **About 1/2 of people with any leisure time PA report walking as main activity, primarily an outside activity**

## *Utilitarian Walking*

- **Possible the single most important physical activity component, affected by**
  - **Traffic patterns**
  - **Urban development**
- **Economic research agenda**
  - **quantify external costs/benefits**
  - **Distribution of social costs**
- **Could integrate economics with current PA research that studies links between PA and environments**
- **Methods issues (contingent valuation)**

## *Summary of Talk*

- **Economics concerned with distribution of costs/benefits, important complement to public health view**
- **Market failures necessary to justify interventions**
- **Externalities and underprovision of public goods may be market failures that reduce physical activity below socially optimal levels**
- **Interventions may be most successful and politically sustainable when public health and economic perspectives coincide**