# The Tipping Point

By Alan E. Pisarski

May 22, 2009

## INTRODUCTION

In March 2009, the Secretaries of the Departments of Transportation and Housing and Urban Development issued a joint press release announcing a new interagency partnership and task force to create "affordable, sustainable communities." Among the several projects this partnership and its task forces will take on is the development of a new cost index that combines housing and transportation costs by "redefining affordability and making it transparent."

Efforts to "redefine" and "make transparent" housing and transportation costs have been the subject of a growing debate over the past decade as opposing sides of the *cities versus suburbs* debate and the *cars versus trolleys* debate have offered up conflicting data on the relative costs of these choices. How the new DOT/HUD partnership will address these issues and competing contentions is unknown, but many recent state and local trends on these issues suggest a narrowing of opportunity for the average household is the chief risk.

The recent jump in gasoline prices has heightened interest in these issues as Americans have cut back on their driving, while transit has captured at most about 3 percent of this decline. Some wonder if these Hummer-loving, McMansion-living families are finally getting what's coming to them. And will they all come crawling back to the city to live in apartments and bicycle to work?

Many issues have been raised as the call increases for policy intercession, which basically take offense at the public's choices:

- The public spends too much on transportation.
- The low-income population is "transportation poor."
- The transportation trade-off with housing costs has created losses for households.
- The sprawling of jobs to the suburbs is a problem that needs to be solved.

Do these things happen because the public is coerced by circumstances, or are they just making really dumb choices? Somehow the sense is that these mistaken choices can be resolved by everyone coming back to the cities and the jobs returning with them.

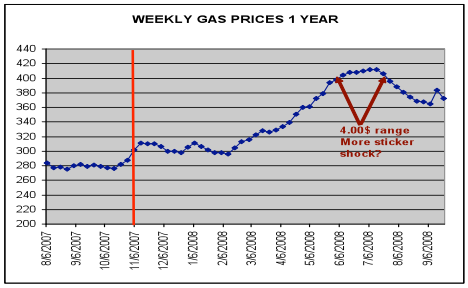
This presentation works its way through the morass of conflicting claims and provides some factual outlines for a sensible policy structure. The presentation focuses in particular on two issues in this debate: 1) The transportation–housing trade-offs of suburban, urban, and rural living, and 2) the massive importance of access to skilled workers in our future economy.

THE GAS PRICE BACKGROUND

In November of 2007 gasoline prices clicked over $3 a gallon and vehicle miles of travel dropped—dropped just slightly, but enough to cause public notice. By the summer of 2008 prices plateaued above $4 for only about 10 weeks, but that sticker shock seemed to make an indelible mark on people's thinking. It was then that the recession began in earnest. Actually, if one studies the history and updates the 1981 gas prices after the last energy crisis to present dollars, it seems we were paying the equivalent of above $3 a gallon back then, and with the differences in average fuel economy now and then we were paying more per mile back then—about 19 cents then per mile vs. 13 cents recently. Even at $4 we are doing better now than then.

## FUEL CHEAP NOW?

| | Cost/ gal | Fuel Efficiency | Cost/ mile |
|---|---|---|---|
| 1981 2007$ | 3.09 | 16.4 | 18.8 cents |
| 2007 | 2.85 | 22.4 | 12.7 cents |
| 2008 approx. | 4.00 | 23.7* | 16.8 cents |




There were really two sets of reactions to the gas prices and the accompanying fall in travel activity: a kind of a Schadenfreude-based Hooray and a more negative Boo. Some of the elements of those opposed views are listed below:

## TWO REACTIONS TO $4 GAS

**HURRAY!**

- **Schadenfreude!**
- **Those suburbanites had it coming!**
- **At last we are at "the Tipping Point"**
- **Now there will be a rush to the center of people and jobs**

**BOO !**

- **Less VMT = social and economic interactions lost**
- **Now is the worst time to be cutting economic activity**

The number of reporters who were convinced that $4 was "the tipping point" was astonishing. They were disappointed when the reality of the situation suggested otherwise. Folks are not going to rush back to the center for a whole number of reasons, not least of which are:

- Jobs are no longer in the center; they are in the suburbs where the workers are already located.
- Their houses are worth much more than their work places—if something is going to be abandoned its not the houses.
- Employers will continue to seek out the skilled workers who are in short supply wherever they may be.

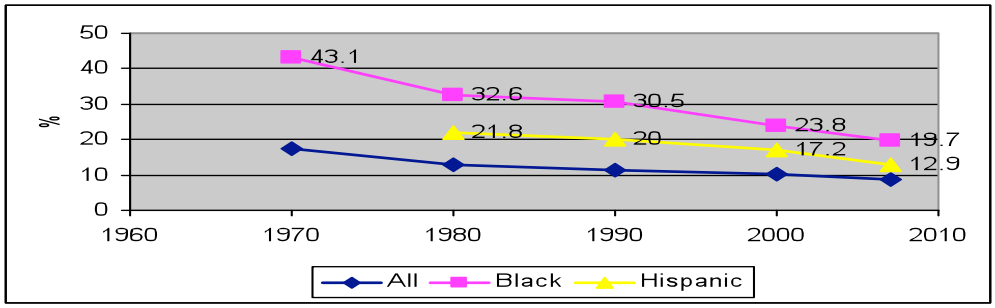
Just as congestion does, the increased cost of fuel modifies the calculations of commuters about one element of basic living costs, which is based on the sum of housing and transportation costs. The current declines in congestion and fuel prices changes that relationship once again.

This raises the question: "What price of fuel would change that calculus appreciably?" "Would $5 or $6 gasoline change America?" My answer is "No!" The answer again and again over the years has been the same. Life style preferences determine our goals; and technology responds. The most likely response to high prices is more fuel-efficient vehicles. The consumer benefit of the automobile is colossal. Recognize that toll costs often add another $4 a gallon equivalent to auto travel and people willingly pay it. In Europe, where fuel prices are at $8 and $9 a gallon in U.S. dollar terms, there are still traffic jams as Europeans drive to their homes in the emerging suburbs.

To be sure, there would be effects, some very negative, such as:

- Increased rural stress—while much of the debate is cities vs. suburbs it is the rural population who are most dependent on mobility to sustain their life styles;
- Increased costs of transportation congestion or fuel costs reduce access of workers to a larger field of job opportunities—never good, but particularly bad now;
- Rising fuel costs will impede access of our minority and lower income populations to automobility and the empowerment it provides.

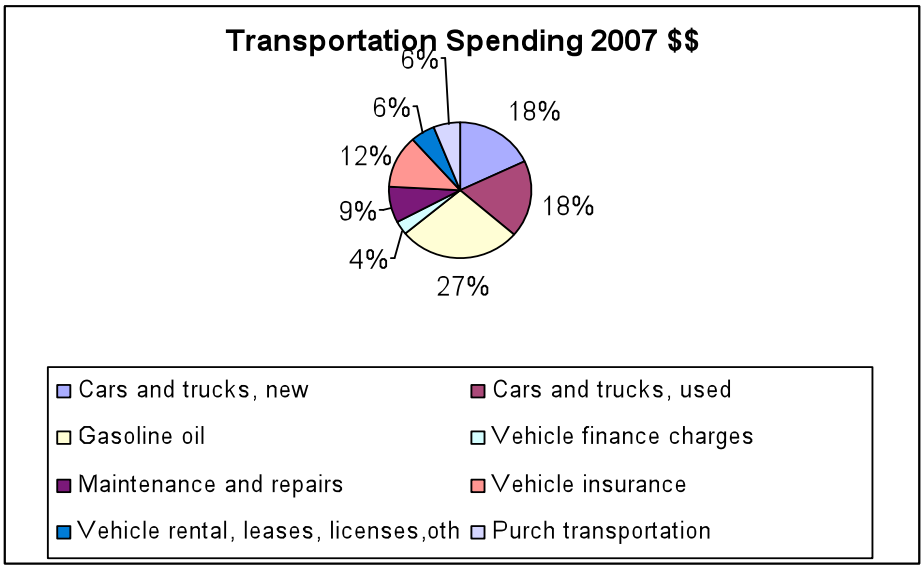
Households without Vehicles



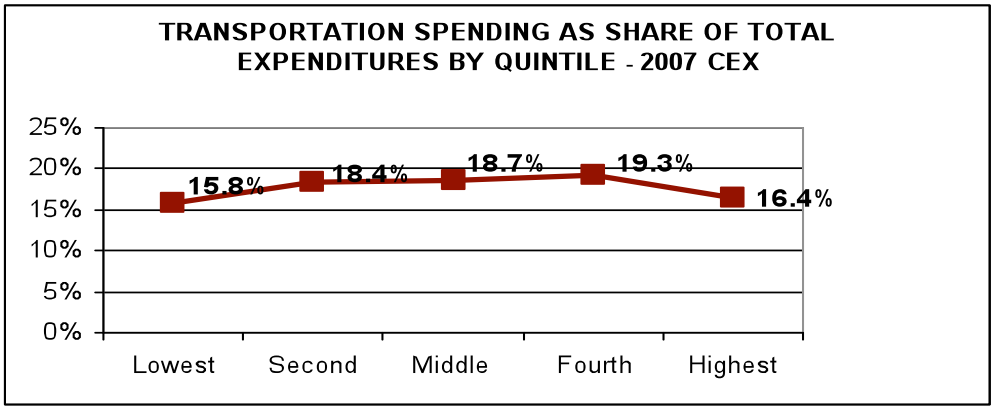

There have been tremendous gains on the part of African-Americans and Hispanics in terms of vehicle ownership as households without vehicles have declined consistently for 40 years. Can anyone say that is a bad thing? For them? For Society?

HOW WE SPEND OUR TRANSPORTATION DOLLAR

The accompanying chart displays how the typical American household spends its money on transportation.[1] Roughly, about 18% goes for new car purchases, an equivalent amount for used car purchases; maintenance, insurance and financing fees add up to about 25% and gasoline about 27%.



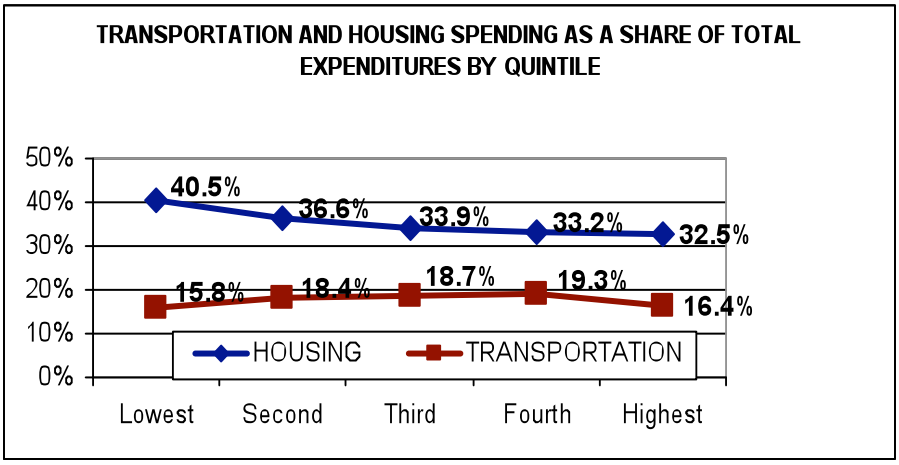

Clearly the dominant share of that spending is for the acquisition, use, and care of household vehicles. All purchased transportation, anything we pay a fare or buy a ticket for—taxis, transit, cruise ships, bus tours, and air travel—amounts to about 6% of household travel expenditures. Air travel accounts for about two-thirds of that 6% of spending and transit for about 13%. The proportions, of course, among the purchased services varies sharply by income group.




[1] These data and that following are derived from the Consumer Expenditure Survey of the Bureau of Labor Statistics; they include only un-reimbursed expenditures by households. Expenditures reimbursed by an employer or other institution, or individual are not included.

Americans spend about $9,000 for transportation out of $50,000 in spending per household—about 18%.[2] As many have noted, second only to housing in its claim on household budgets. If we examine this spending by quintile,[3] something very notable emerges, as shown in the figure. We would expect transportation spending to rise with rising incomes, but most significantly the percentage of spending going to transportation rises with incomes, with the exception of the very highest income group. Thus the lowest income group actually spends the lowest share of its expenditures on travel. What explains this? Transportation, like housing, food and other spending categories has two fundamental components: one is obligatory or fundamental spending—that which one needs to do to function—for example get to work, school, meet medical needs; the second is more discretionary—a better car, more recreation travel, more visits to grandma, etc. The same of course is true of clothing, housing, and eating. On average, for example the highest quintile spends about 4.7 times more than the lowest for all expenditures; however, they only spend about 2.6 times as much in eating at home but the ratio rises to five times for eating out. Transportation's ratio is just slightly above the average for all spending at 4.9 indicating discretionary spending growth—particularly in purchased transportation.

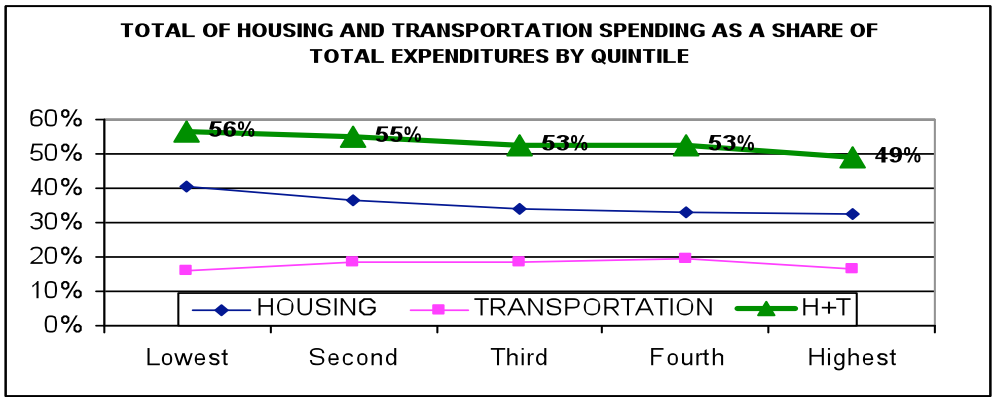
When housing is shown as a percentage of spending it can be seen that it declines as a percentage of spending in all quintiles.




[2] More detailed: $8,736 out of $50,391 or 17.64%

[3] The Consumer Expenditure Survey divides the nation into five income groups ranked from low to high with more than 20 million households in each quintile.

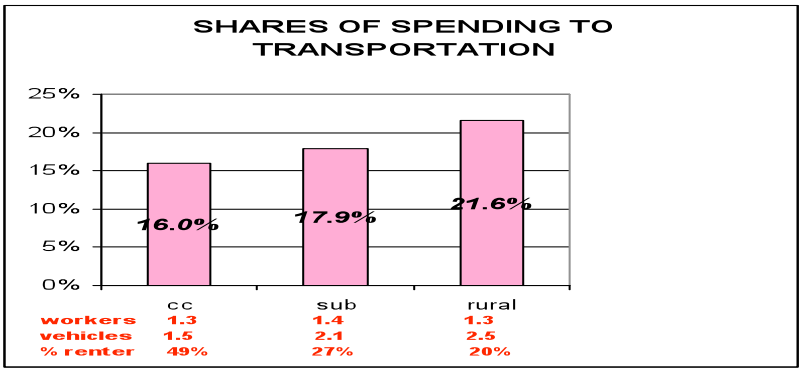
When added, the combination of Housing + Transportation shows a declining pattern.



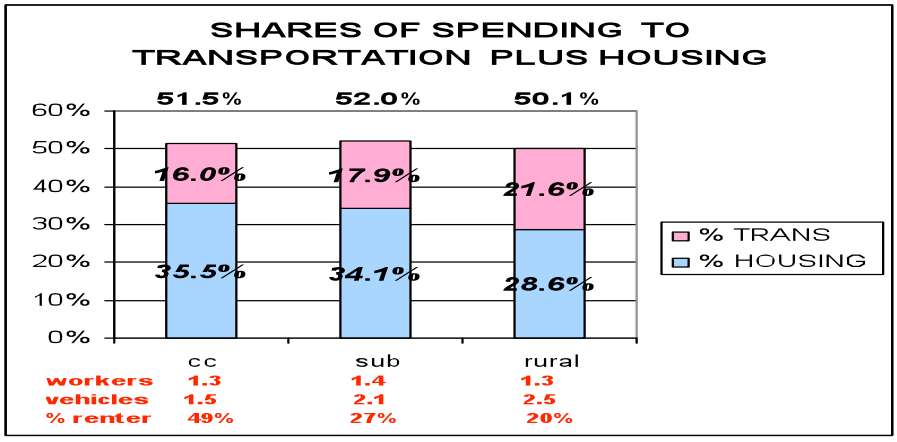

This needs to be pursued further to gain a better understanding of the patterns and trends.

THE TRANSPORTATION HOUSING TRADE-OFF

If we go beyond the quintile approach and stratify these expenditures rather by the location of the spending households, we see that central city residents spend about 16% of their expenditures on transportation; this rises to almost 18% in suburbs, and rural residents spend above 21%, almost 22%, on transportation.



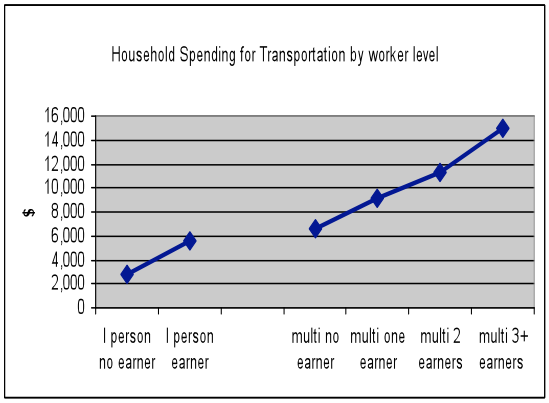

But when we examine spending based on the joint expenditure for housing plus transportation we see that the extra spending on transportation helps to buy lower total costs for housing plus transportation. The differences between the groups are slight, but have remained in that relationship for many years. It indicates that the trade-off especially typical of younger couples to trade off travel time for housing value pays off. Note also in the figure that if the spending for transportation is adjusted for number of workers in the household then central city/suburb spending is more in line. But the main effect shown in the figure is that central city residents have a home ownership level around 50% while that percentage rises to 73% in suburbs and 80% in rural areas. It would not be inappropriate to surmise that the level of housing is superior in those areas as well. So even if the share of expenditures were roughly the same for each area, varying only in the proportions of the component elements, it would be quite reasonable to conclude that at least the suburban and rural groups are making the trade-offs they prefer.

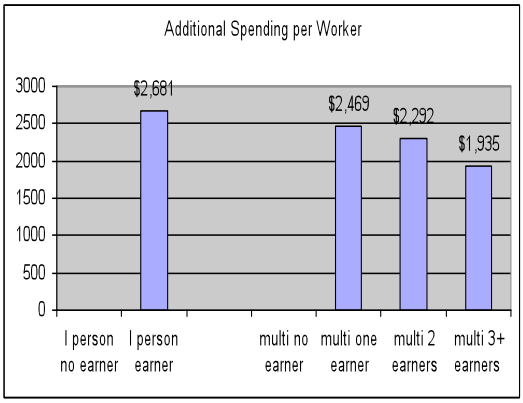



Pursuing the transportation spending question further, it is important to appreciate that transportation spending is tightly tied to the number of workers in the household. The

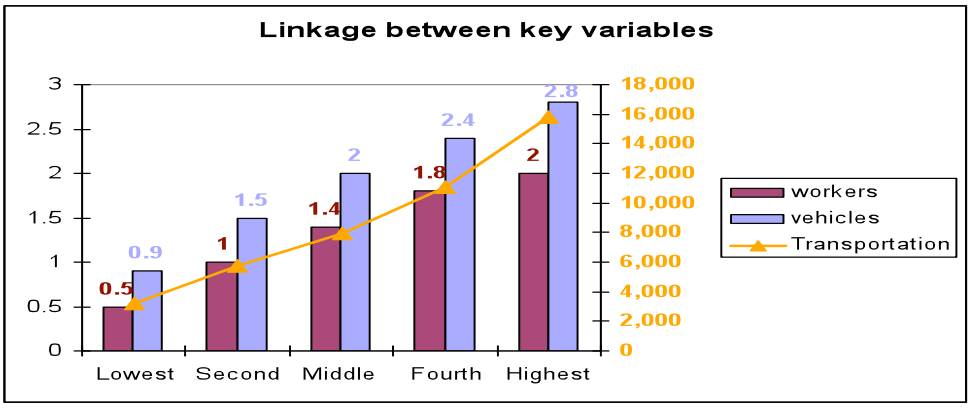
accompanying figures show that in a single-person household the difference between not working and working adds about $2,700 to the person's transportation budget. In a multi-person household the first worker adds about $2,500 to spending with decreasing increments for each added worker, as shown.

Chart 14 both figures




The following graphic and bullets make the case for why we are a rich nation. Note that the highest quintile households have four times the workers as the lowest quintile households. Vehicle ownership grows in step with workers,[4] and transportation spending tracks directly with both.

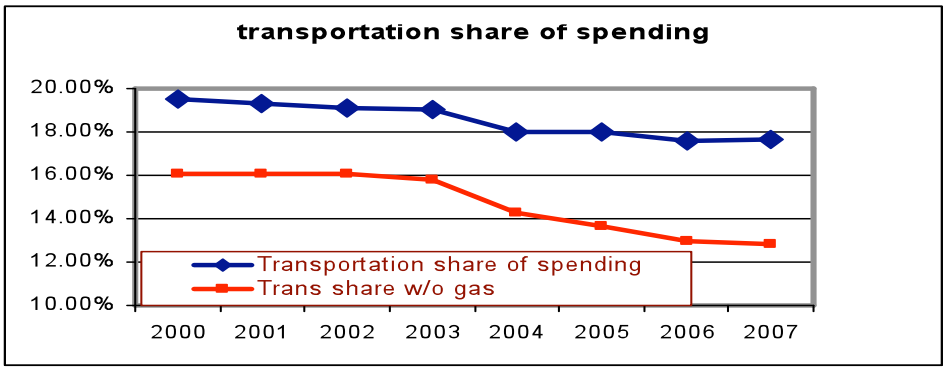



- Americans are wealthy because they work
- Americans have cars because they work
- Americans spend $ on transportation because they work
- The ratio of highest to lowest same for trans as for all spending (about 4.8)

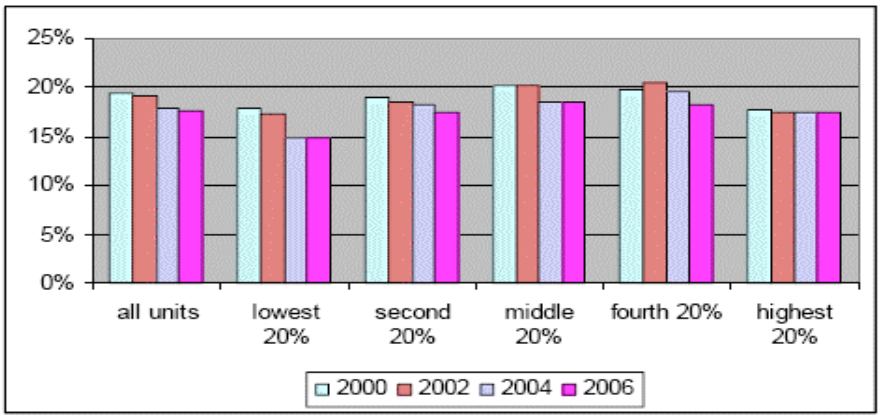
[4] Commuting in America III shows that for every category of number of workers in households the majority of households have the same number of cars as workers, or more.

RECENT TRENDS IN TRANSPORTATION AND HOUSING SPENDING

The figure below shows definitively that the trend in this decade has been to spend less on transportation as a percentage of total spending, either with or without fuel costs included. Several points are pertinent: inspection of more detailed spending trends shows that purchases of new and used vehicles began to slow as fuel prices grew.[5] It suggests that one possible interpretation is that many households behave as though they have a transportation budget and that when fuel rises in price it crowds out other transportation spending options, so instead of buying more efficient vehicles in response, car purchases are delayed until better times or necessity demands it.

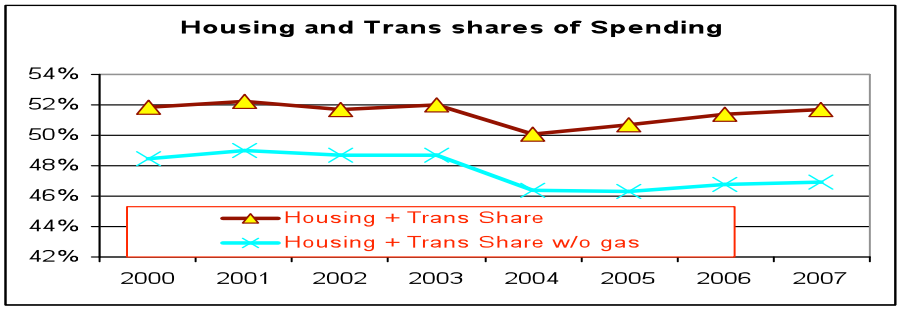



The following figure simply establishes that the decline in transportation spending as a percentage of all spending has been pretty much a given among all income groups.

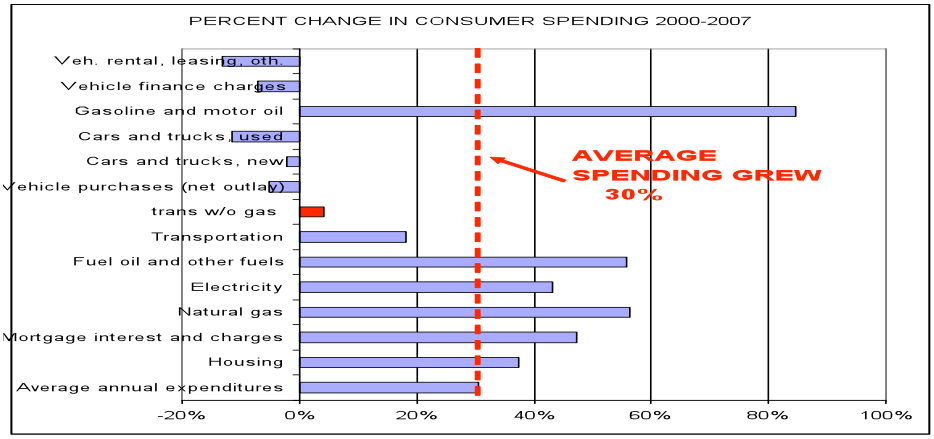



[5] A similar pattern was noted in consumer expenditures after the first two oil crises of the '70s.

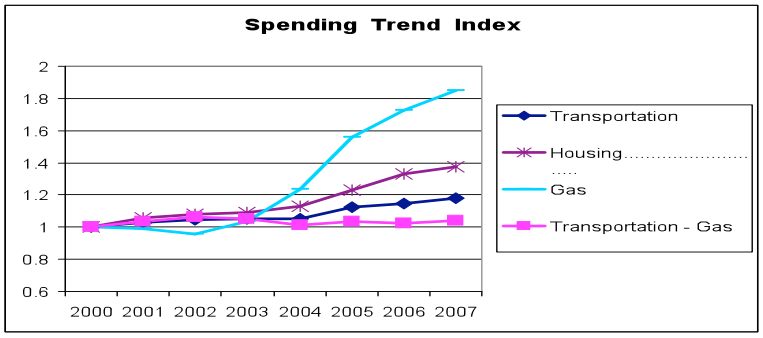
The following figure recalls an earlier treatment of housing plus transportation spending and shows that the joint spending total dropped sharply in 2004 with and without fuel costs and then slowly began to rise. This might well demonstrate the impact of rising spending on housing. Note that transportation spending without fuel costs remained fundamentally stable throughout the period, relative to the other trends.




The final graphic in this series bears some explanation. It shows that the average rise in spending so far in the decade through 2007 has been about 30%. Housing and fuels of various kinds are substantially above that in growth in expenditures. The index graphic depicts the relative trends.




The transportation elements are very revealing: vehicle renting and leasing, vehicle financing expenditures, new car sales, and particularly used car sales showed sharp decreases in actual spending. While transportation spending grew at almost exactly18% for the period, without fuel, total growth in transportation spending was only at almost exactly 4%. Were inflation factored in this would indicate an actual decline in spending in real terms.

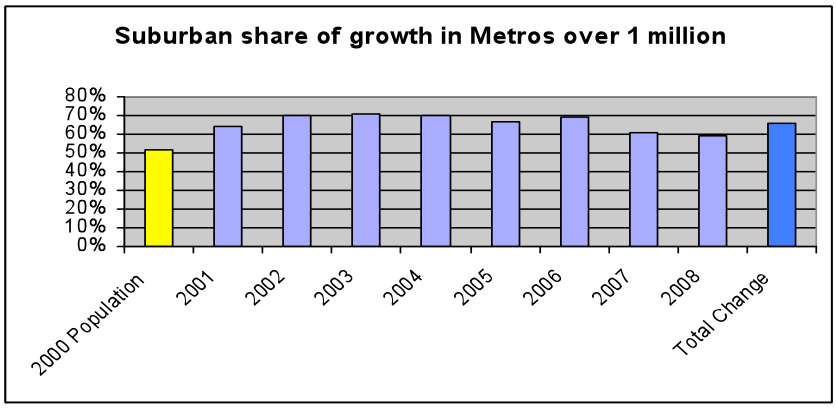


THE SUBURBAN GROWTH TREND

Interrelated with trends in transportation spending are suburbanization trends. Part of the thinking today on the subject is that if we could just all move closer to work many of our energy and GHG problems would be solved, and a big part of our transportation expenditures would be obviated. These ideas need examination.

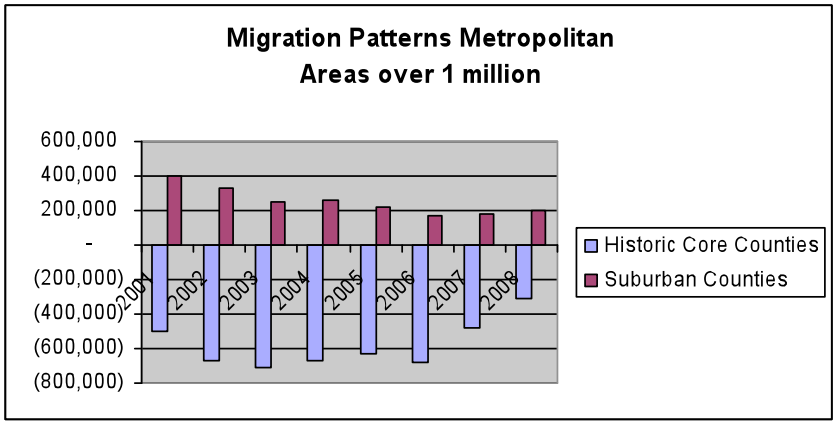
The emphasis on suburban growth continues in this decade although it has been slowed to some extent by economic trends. A weak economy tends to slow people's moves whether for job-related purposes or other reasons. The strong role of housing in this slowdown has exacerbated the tendency to stay in place, freezing people in place, unable to sell or to finance new purchases. From 2007 to 2008 only 35 million people moved in the U.S., down from 40 million in 2005-2006. The mover rate dropped below 12%, the lowest rate ever recorded since the Census Bureau began measurement in 1948. A significant background factor is that an aging society is a more sedentary society with much lower tendencies to move. Whether the tendency of the housing problem to hold people in place will impede labor mobility and retard the economic recovery needs to be watched carefully.

Despite all of this, the suburban share of population—which was 51.3% in metropolitan areas over one million in 2000—gained about two-thirds of the limited growth so far in the decade and arrived at a share of 52.5% in 2008.



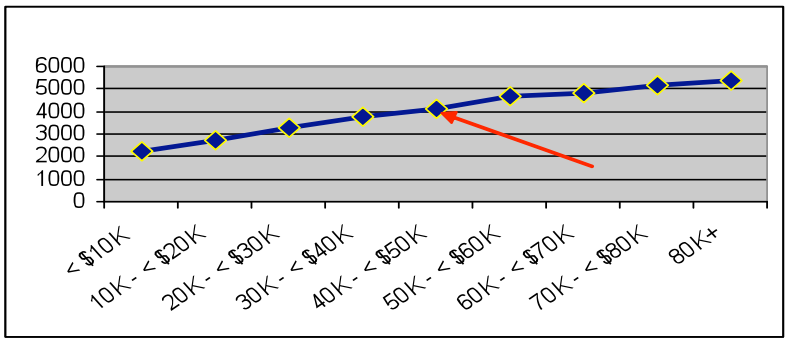

Domestic migration patterns, which measure flows of residents between areas, make the point even more strongly than this, as depicted in the second part of the figure showing that net moves by residents was sharply outbound in core counties and inbound in suburban counties.[6]

[6] Analyses by Demographia; note that this uses core counties not central cities and so actually underestimates suburbanization trends

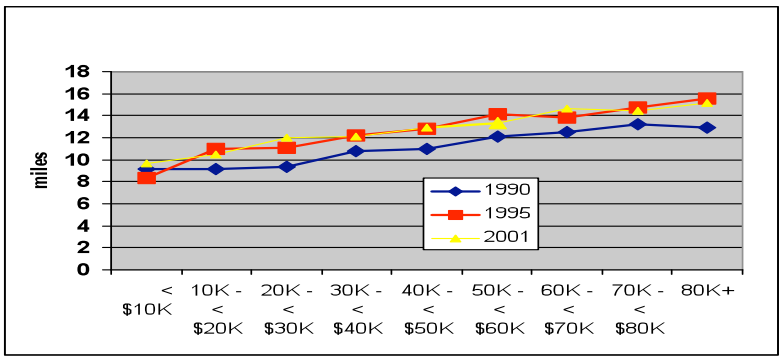



Job patterns continue to show the shift to the suburbs as well. Understanding this behavior is key to better understanding related policies. The figures below show that households travel more as income rises and particularly work trip length grows with income. This indicates that as people are more free to choose economically their choices are not to reduce their work trip but to optimize other aspects of their life—schools, safety, attractiveness, housing size, access to amenities, etc. Of course, people have the option to live closer to work, but few appear to wish to make that particular trade-off.

Annual Household Travel and Income




Work Trip Length and Income




Source: NHTS 2001, FHWA

This suggests that we don't need to redesign our world to make it more "efficient." The existing distribution of jobs housing and other destinations provides ample opportunities to live closer to destinations if we should choose. There is no indication of such a preference.

- Work trip length increases with income!
- In a job-scarce environment access to jobs over greater distances is a key economic survival factor.
- Work trips are increasingly a minor part of people's lives.[7]

The days of living outside the factory gate are gone. There are sound reasons why most people don't focus on living near work. Among them:

- The typical worker changes jobs about every 2½ years or so—would they move each time? There are immense economic and social frictions involved. They might be back in a few years!
- Jobs and workers are more dispersed; typically at smaller work destinations; there are far fewer factory gates to live next to.
- 70% of workers live in a household with other worker(s). Whose job are they going to live next to?
- Expansion of job specialization spreads the range over which one can/must seek jobs
  - If we work in a chain store—the closest one is probably as good as others
  - Work in environmental physics—is there a reactor down the street?

Since the suburban boom of the fifties and sixties jobs have been following workers to the suburbs; first retail jobs and household-related services, then the fundamental job base. A recent study[8] indicates:

- 17 of 18 industries decentralized further from 1998 to 2006
- Only 21% of jobs were within 3 miles of center in 98 metros; 45% of jobs more than 10 miles
- Outer parts grew 17% in employment: center by 1%

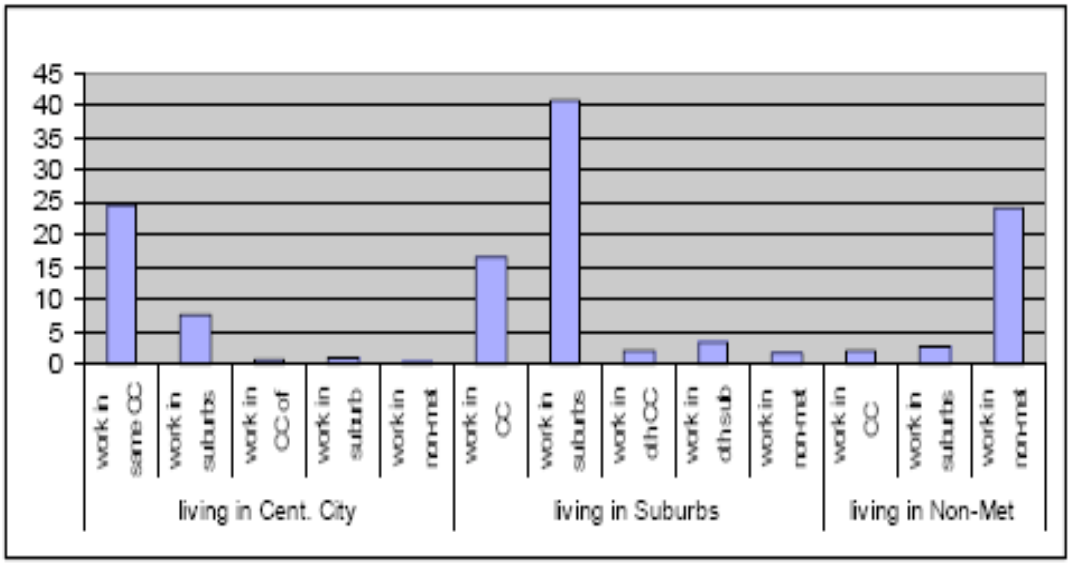
Instead of putting a pejorative cast on these trends we should recognize the strong potential balancing effect they engender. There is really nothing special or beneficial about a process in which suburbanites rush to the center each morning and return at night. A lower jobs/worker ratio in the center and a higher ratio in the suburbs as jobs shift outward would seem, at least on the surface, to provide a more positive context for work travel.[9] The figure below shows the dominance today of circumferential suburb to suburb work flows. The last census showed that the growth in work flows outbound from the center to the suburbs was greater in absolute numbers than inbound. At least we are

[7] Work trips are a small and declining share of travel, roughly below 20% of travel; Commuting in America III

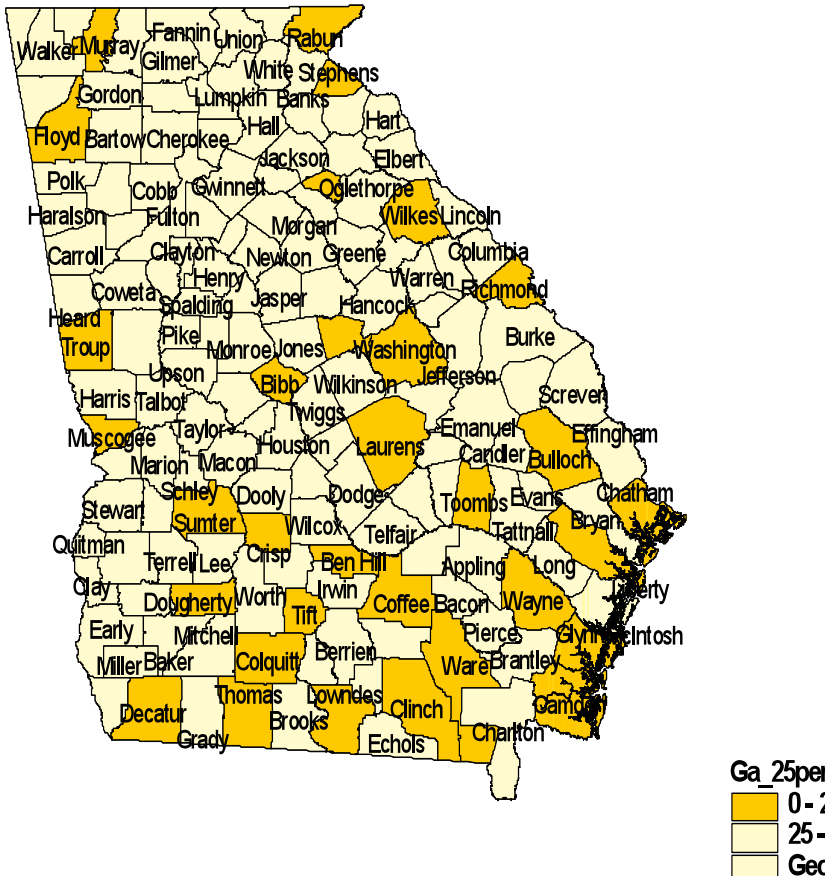
[8] Job Sprawl revisited, Brookings Institution

[9] Ultimately it is the mix of worker skills and job requirements that are dispositive

using our transportation systems in both directions instead of one way in the morning and the other at night.




An important measure of this is the continuing increase in the percentage of workers leaving their home counties to work. In 1990 it was just below 24% rising to almost 27% by 2000 and at 27.4% in 2007. Virginia, the state that leads the nation, rose to about 52.5% in 2007, i.e. more than 52% of workers in Virginia leave their home county to work. Some might see this as a bad thing and evidence of some kind of failure. Rather it needs to be recognized as a powerful knitting together of very large labor forces and jobs on the order of millions of jobs and workers in our largest metropolitan areas. In this way transportation makes metropolitan areas both smaller and bigger. Smaller in that the times to traverse large distances are reduced; bigger in that a metropolitan area knitted together with effective transportation acts bigger both economically and socially. The example of Atlanta, one of the nation's biggest growth centers, is significant. The region, encompassing about 26 counties, with strong flow among them, is a powerful economic force. Were all the counties to serve their own workers it would be 26 hamlets that happened to be adjacent. The map of Georgia below shows the counties with greater than 25% of commuting outbound as of 2000.


Walker
Murray
Fannin
Union
Rabun
Gilmer
White
Stephens
Gordon
Lumpkin
Banks
Floyd
Bartow
Cherokee
Hall
Hart
Jackson
Elbert
Polk
Cobb
Gwinnett
Oglethorpe
Haralson
Fulton
Morgan
Wilkes
Lincoln
Carroll
Clayton
Newton
Greene
Columbia
Henry
Warren
Richmond
Coweta
Spalding
Jasper
Hancock
Heard
Troup
Pike
Monroe
Jones
Washington
Burke
Upson
Bibb
Wilkinson
Jefferson
Harris
Talbot
Twiggs
Screven
Muscogee
Taylor
Houston
Laurens
Emanuel
Effingham
Marion
Macon
Candler
Bulloch
Schley
Dooly
Dodge
Toombs
Evans
Chatham
Stewart
Sumter
Wilcox
Telfair
Tattnall
Bryan
Quitman
Terrell
Lee
Crisp
Ben Hill
Appling
Long
Clay
Irwin
Dougherty
Worth
Tift
Coffee
Bacon
Wayne
Early
Mitchell
Pierce
Glynn
Intosh
Miller
Baker
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Ware
Brantley
Thomas
Lowndes
Clinch
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As noted earlier, work trips account for less than 20% of travel and are rarely the majority of trip purposes even in peak periods. Households could obviously choose to live closer to other services that they use, or could choose to use the closest of those services, rather than traveling to a more distant similar service. This obviously does not happen and to understand why we need to appreciate the vast array of options the world presents today. We could just go the nearest:

- Doctor
- Day Care Center
- Grocer
- Restaurant
- House of Worship

But in fact we do not. People today are far more focused on the immense array of highly specialized choices available. Fifty years ago families had one doctor. Today a household can have dozens. If a doctor, specialist, surgeon is needed, distance is probably the last of the criteria for selecting one. The typical supermarket today has dozens of kinds of milk or lettuce or bread. The little neighborhood grocer is likely to have very limited choices and to charge monopoly prices when buyers lack the mobility to seek alternatives.

WHAT NEXT ?

It is not too strong an assertion to see the policy conflicts as bounded by two sets of opposing views of the world as shown below:

| ***"Neighborhood" View*** | ***Globally Integrated View*** |
|---|---|
| Shorter trips | *Longer trips* |
| Walk/bike | *Broad "community"* |
| Land use solutions | *Choices* |
| Design | *Market forces* |
| What's freight? | *Major role for freight* |
| Accessibility | *Mobility* |
| Public | *Private* |
| Mass | *Personalized* |
| **Behavior change** | ***Technological fix*** |
| **Make it happen** | ***Let it happen*** |

The two key elements that characterize these views, shown in the last two lines, is the focus on behavior change of the population rather than trusting to technological development to address deficiencies in the cost or other effects of choices. Finally, the conflict is between making good things happen by public policy fiat or by letting good things happen by market forces acting in an open regulatory environment.

The taste for changing the public's behavior, as if they were recalcitrant children who need guidance, leads to potentially deeply injurious effects, at a minimum expensive, coercive, antagonistic to the preferred lifestyle opportunities of the public, and fundamentally ineffective. This focus on behavior change diverts us from very real issues that the society faces such as:

- Enhancing economic opportunities
- Increasing access to workers; access to jobs
- Mainstreaming minorities
- Safety
- Serving an aging population
- Greater freedom of mobility
- National infrastructure reconstruction
- And more!

We have no choice but to care greatly about transportation. Transportation is all about reducing the time and cost penalties of distance on our economic and social interactions. To the extent that nations succeed in that function they enable tremendous forces of economic opportunity, social cohesion, and national unity.

Peering into the future as various legislative options move forward. One can see strong threats in the offing as well as tremendous opportunities.

Among the threats:

- The enactment of policies to penalize current life style preferences such as:
    - Dispersed housing
    - Dispersed job locations
- The enactment of policies to promote
    - Higher density
    - "Organized" society
- The utilization of subsidies to
    - Recentralize populations and jobs
    - Promote density

Among the opportunities:

- Market forces are naturally moving jobs closer to skilled workers
- Increases in mobility, especially among minorities, has been growing and should continue absent contravening policies
- Better long distance transportation promotes greater/broader job access
- America is reaching a stage that no other nation has ever achieved, in which people can live where they want and work where they want. Hard to believe the government—much less the society—would decide that that is a bad thing.

Nothing is more fundamental to ways of living preferences than the density at which people live. An array of density options ought to exist to serve the various choices and preferences of the society. Nothing that has been said here precludes the opportunities for higher density clusters in suburban areas as portions of society—perhaps younger people and retirees—opt for that life style. But it is clear that the American people have no obligation to life in ways that make it convenient for governments to serve them.