China Vehicle Growth in the Next 35 Years: Consequences on Motor Fuel Demand and CO_2 Emissions

Dongquan He and Michael Wang
Center for Transportation Research
Argonne National Laboratory

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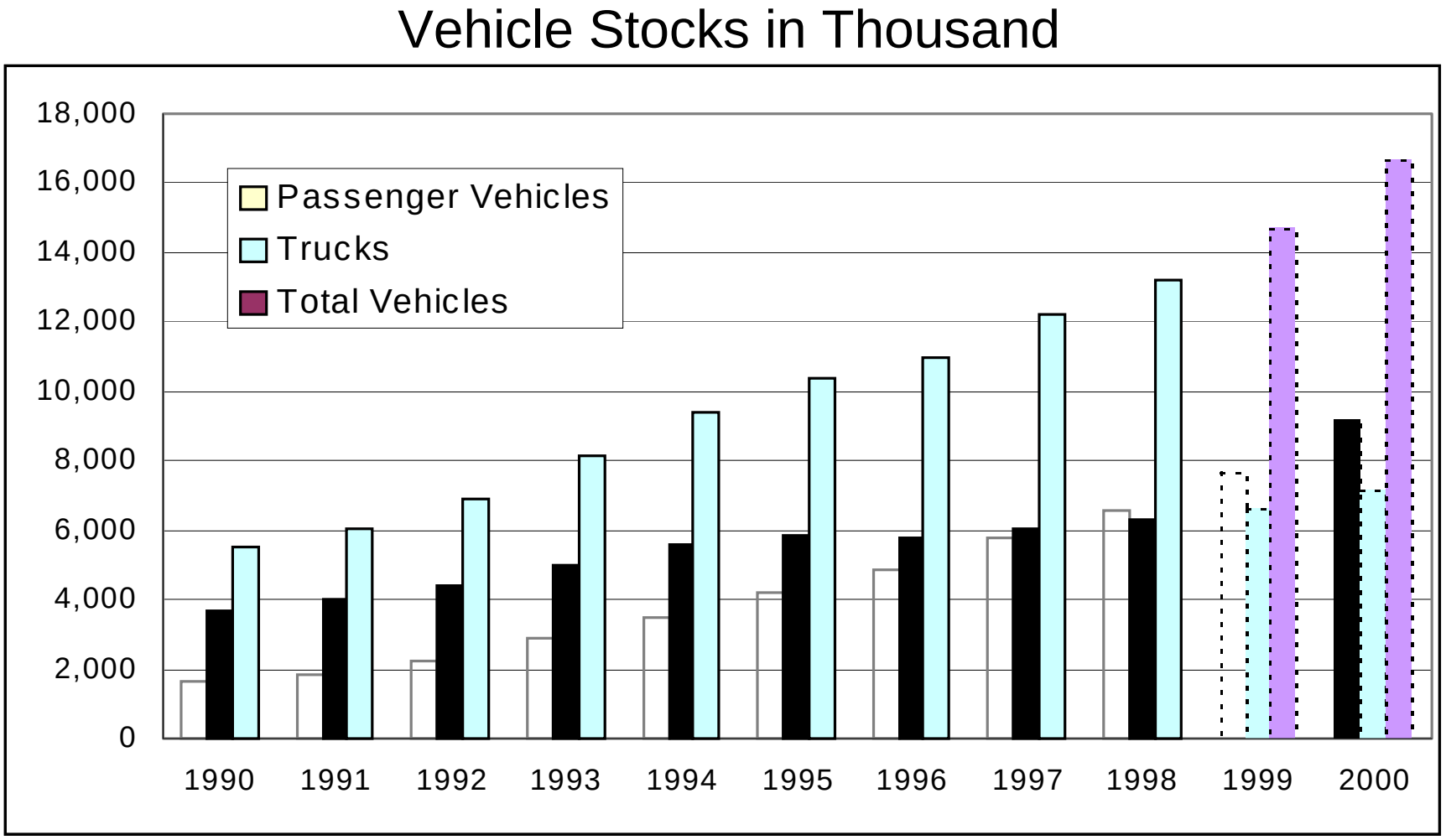
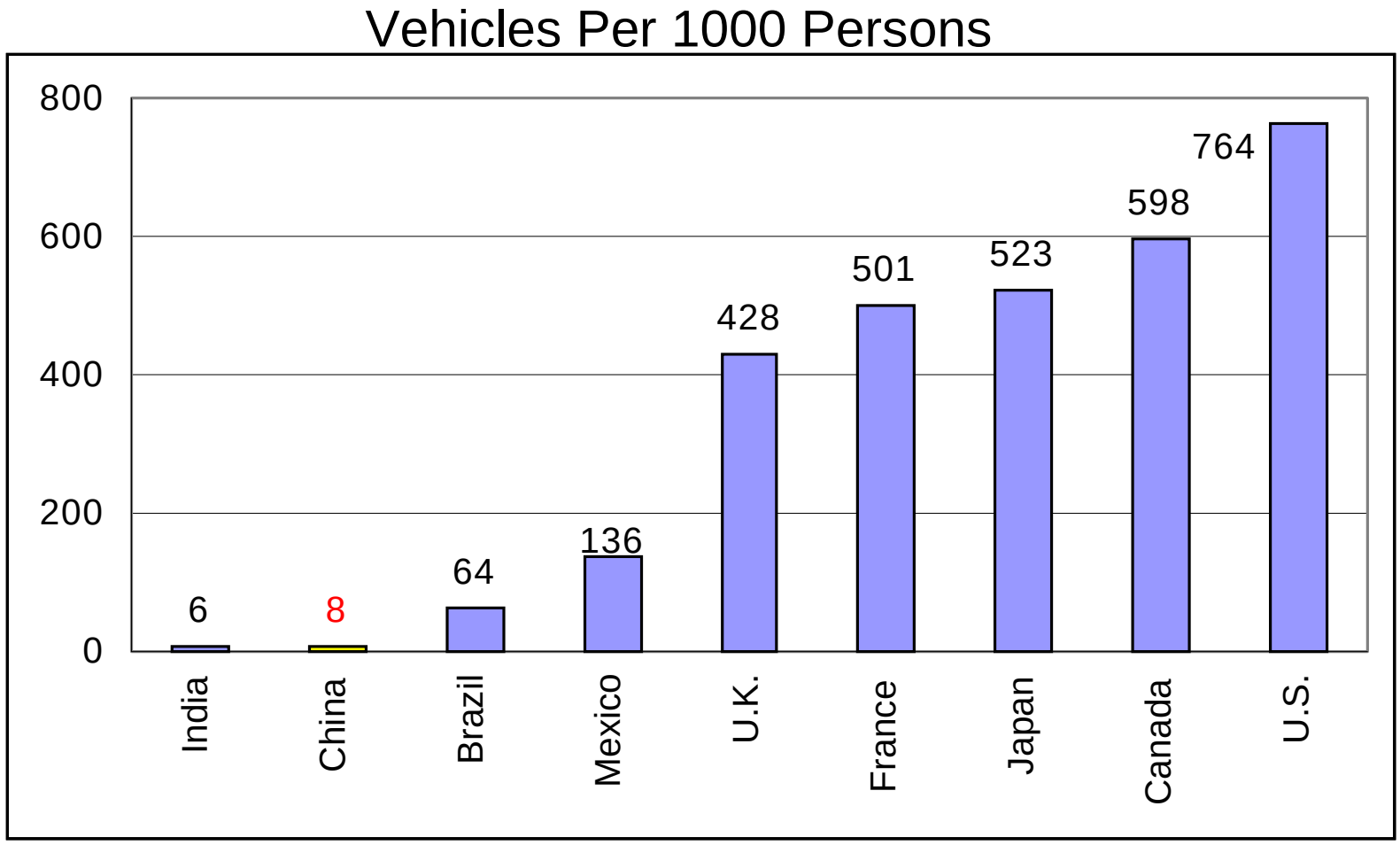
China Has Experienced Rapid Growth in Motor Vehicles



From Other Countries' Experiences, China Has a Great Potential for Continuous Vehicle Growth



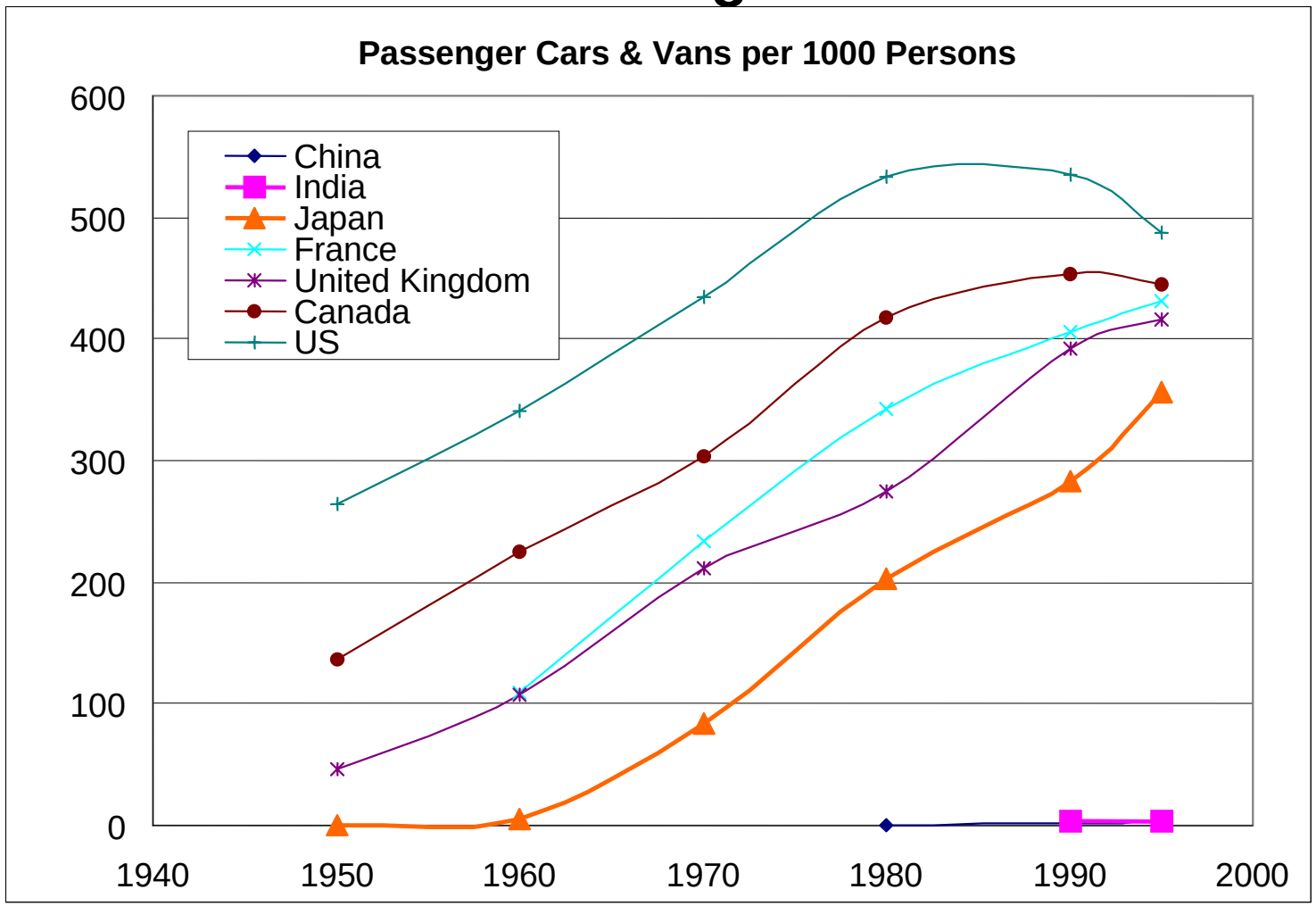
This Study Is Intended To Answer Three Questions

- If China is to follow vehicle growth in some developed countries as experienced in the past 50 years,
- How much growth is going to be for China's total vehicle population in the next 30 years?
- How much motor fuel demand is required to fuel Chinese vehicles?
- How much CO2 emissions are to be produced from such growth?

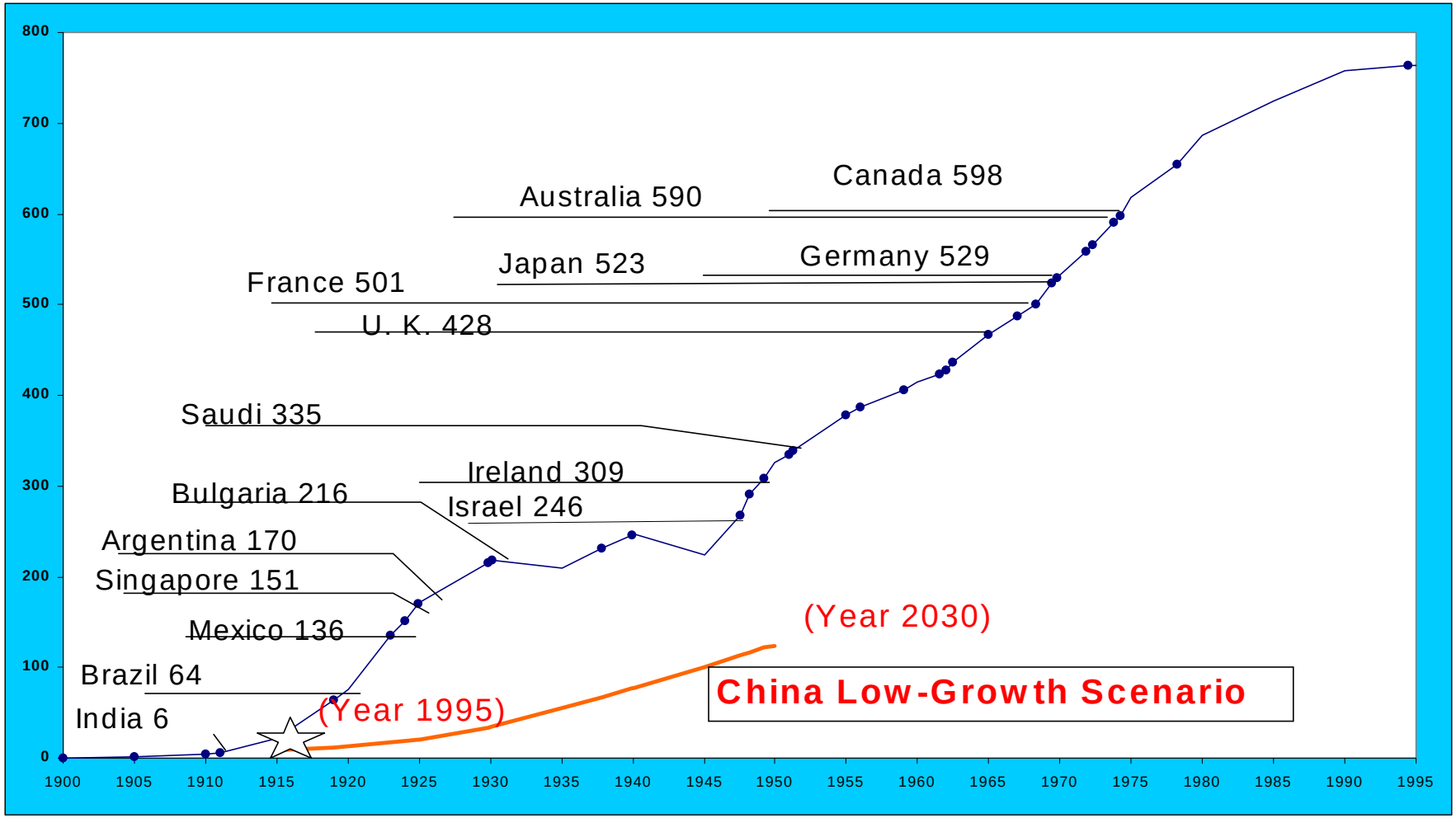
This Study Takes the Following Steps In Projecting Chinese Vehicle Growth

- Adopt economic and population growth projections by others
- Investigate vehicle growth in relation to economic and population growth in other countries
- Develop two vehicle growth scenarios for China
  - A high-growth scenario reflects historical growth pattern in some developed countries
  - A low-growth scenario takes into account resource constraints in China (adequacy of transportation infrastructure, urban land availability, slower economic growth, etc.)
- Projections are conducted for
  - Individual vehicle types: cars, vans, LDTs, HDTs, buses, motorcycles, and agricultural vehicles
  - Three regions: eastern, central, and western regions

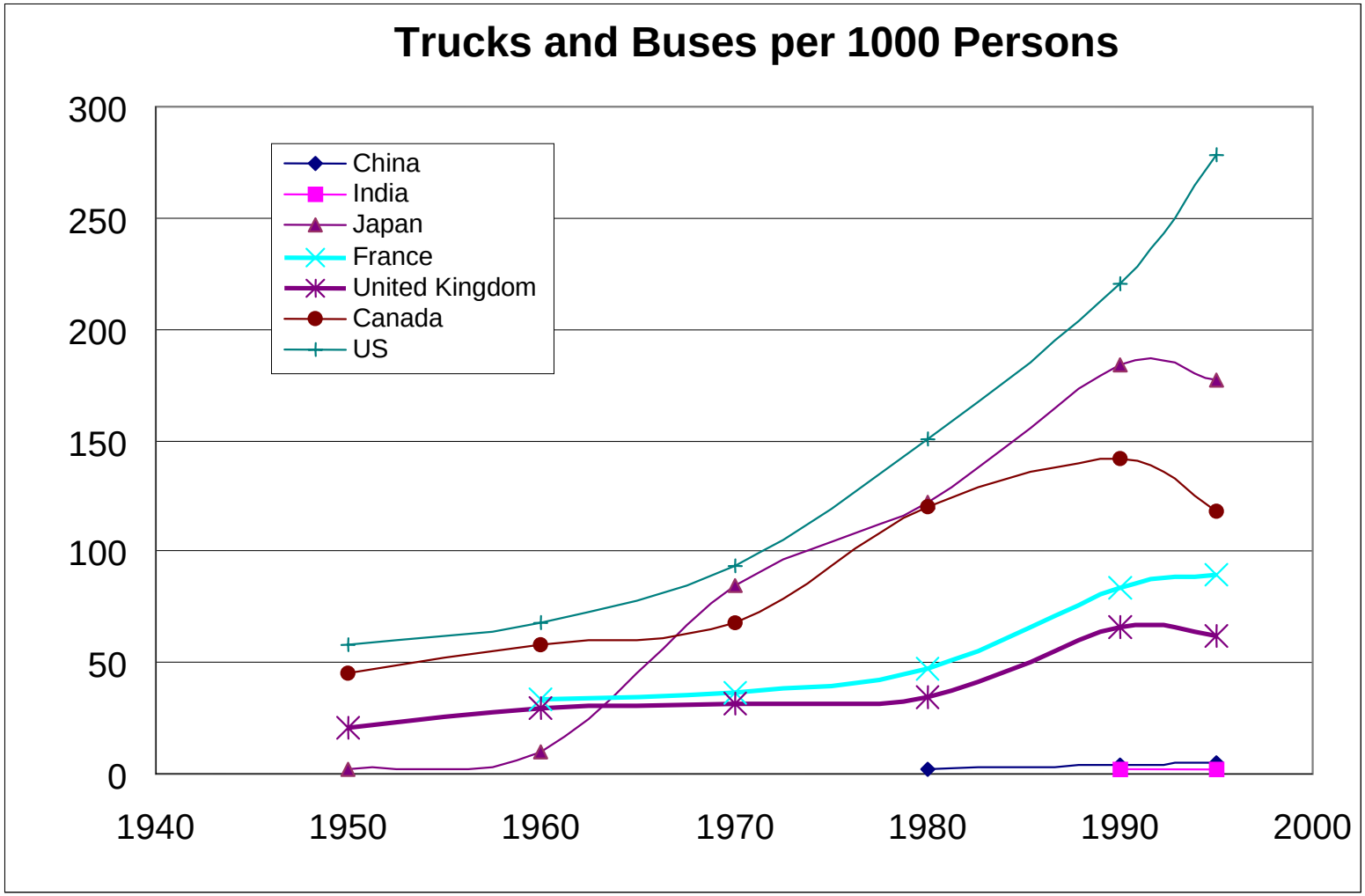
Our High-Growth Scenario for Passenger Vehicles Follows Other Countries' Historical Trends but with Time Lag



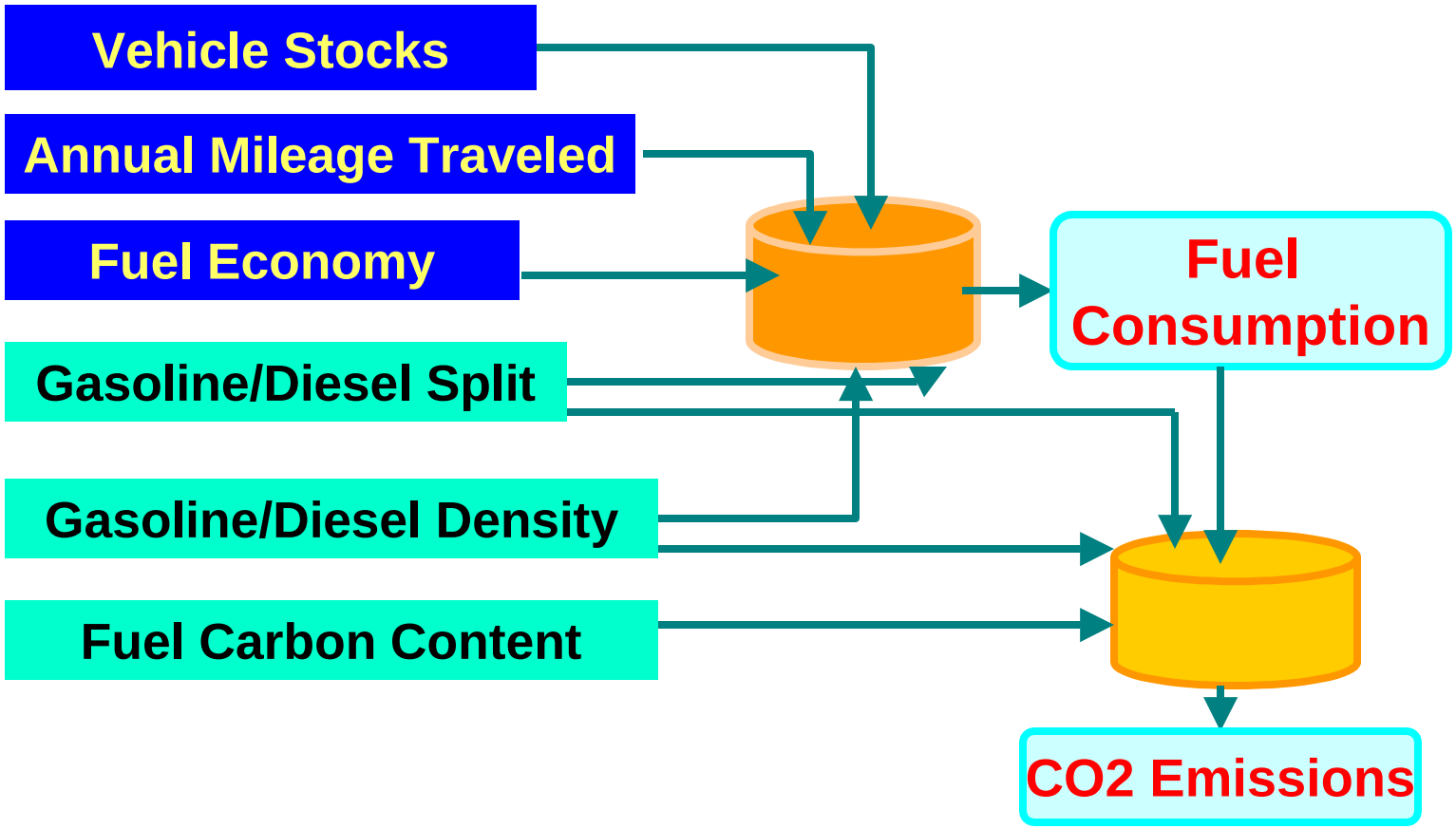
Our Low-Growth Scenario for Passenger Vehicles Follows a Very Slow Growth Curve



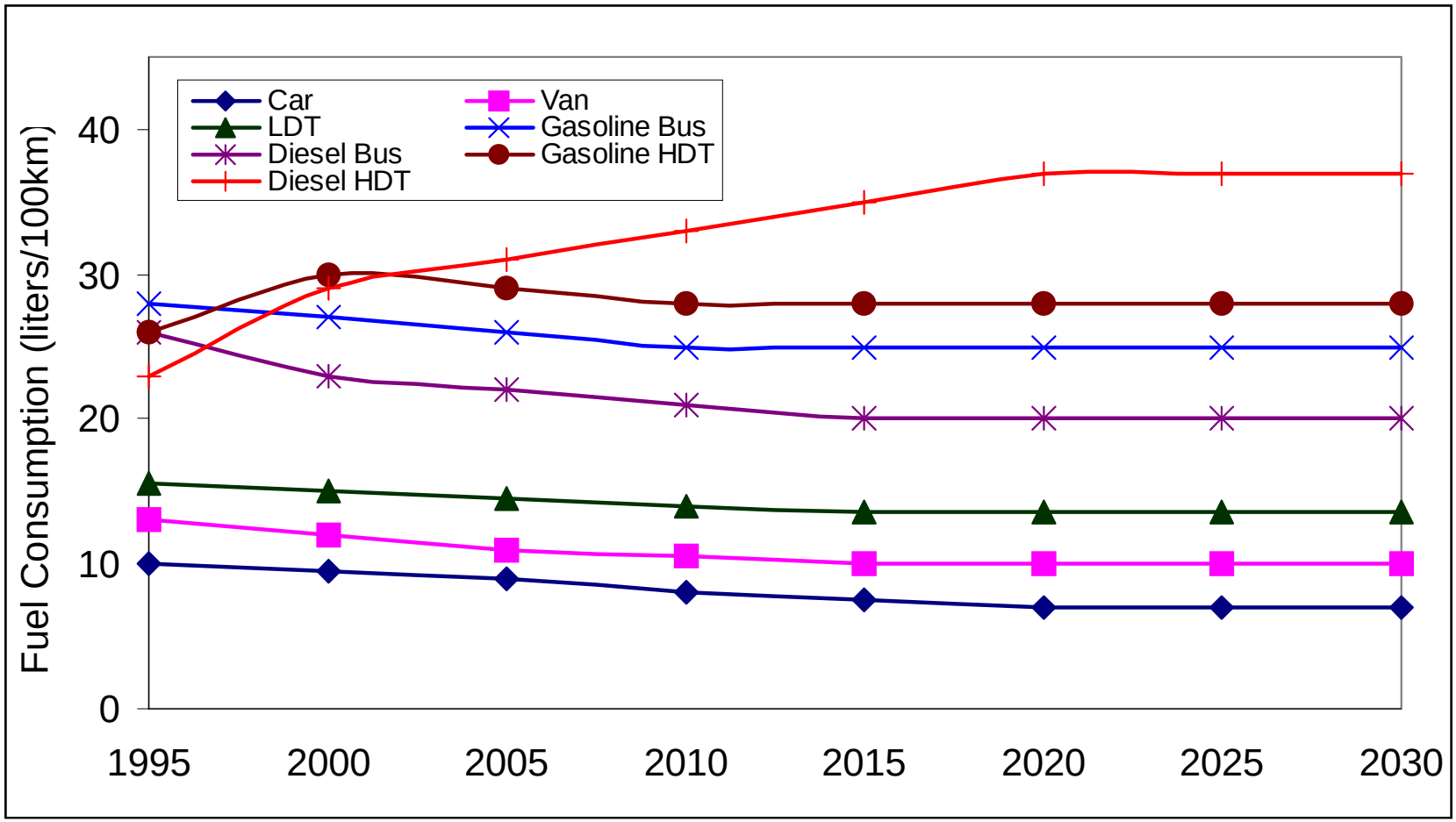
Our Truck Projections Relied Primarily on French and U.K. Historical Growth



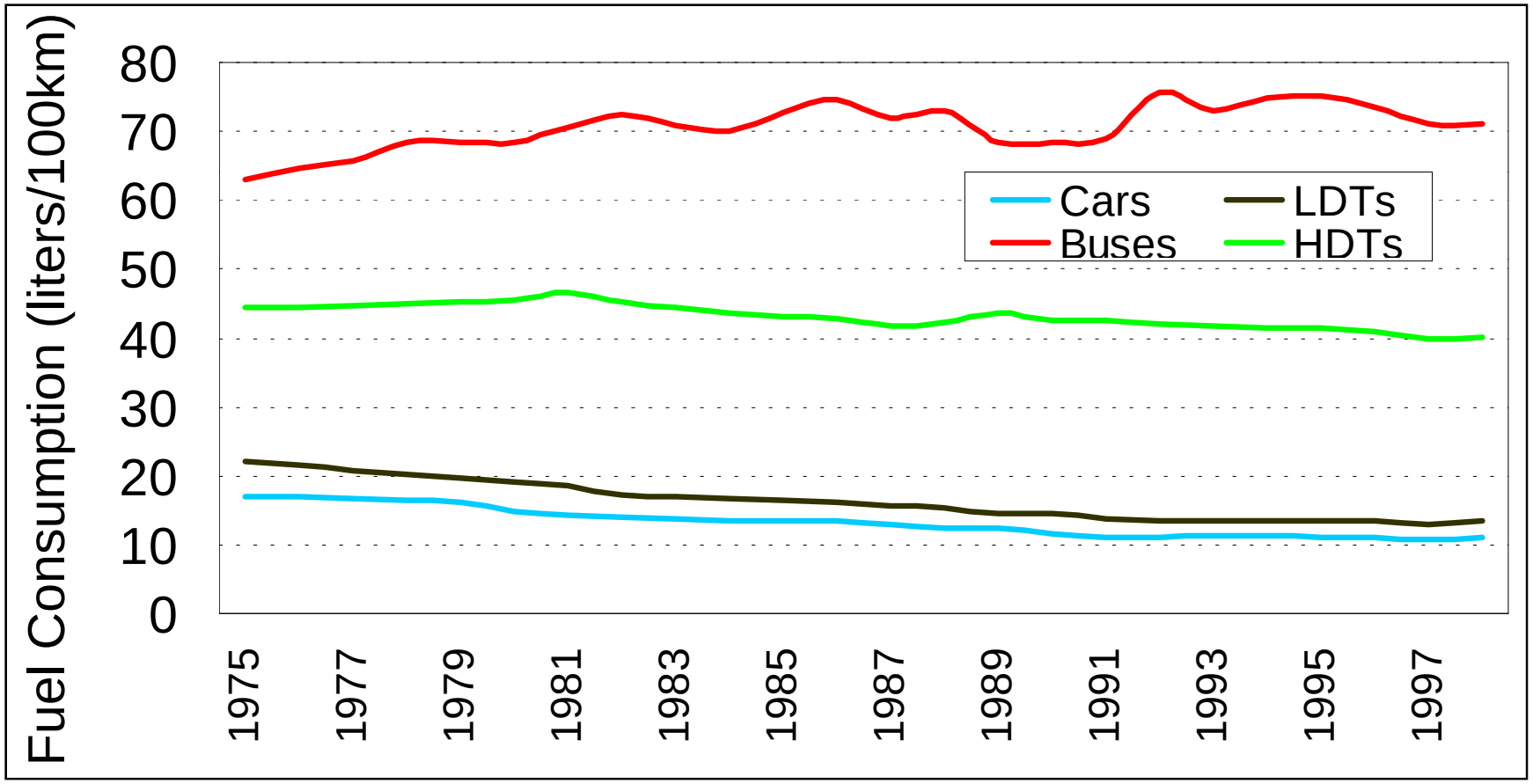
Fuel Consumption and CO_2 Emissions Are Calculated with These Inputs



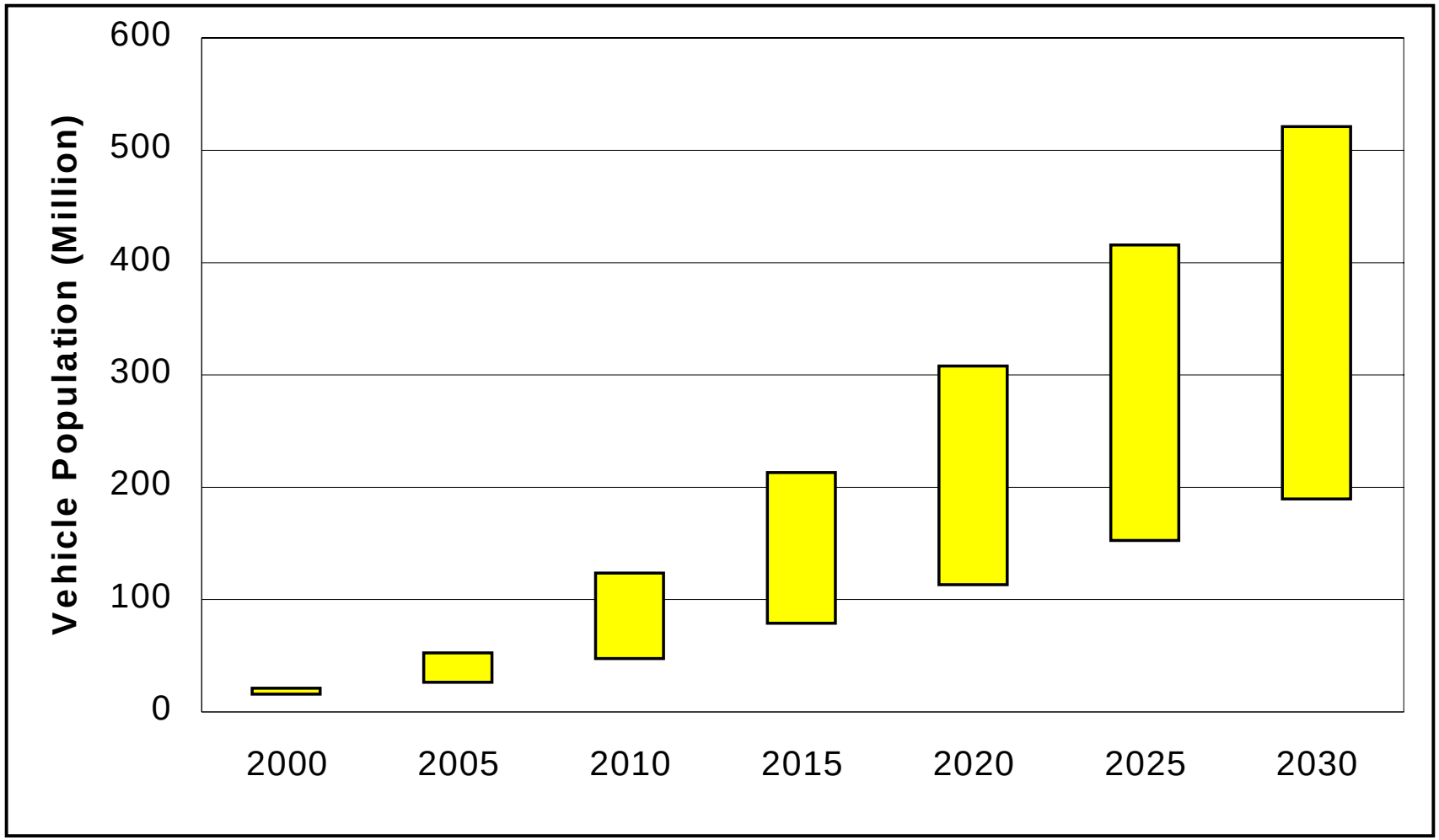
We Have Assumed Moderate Improvements in Vehicle Fuel Consumption Rates



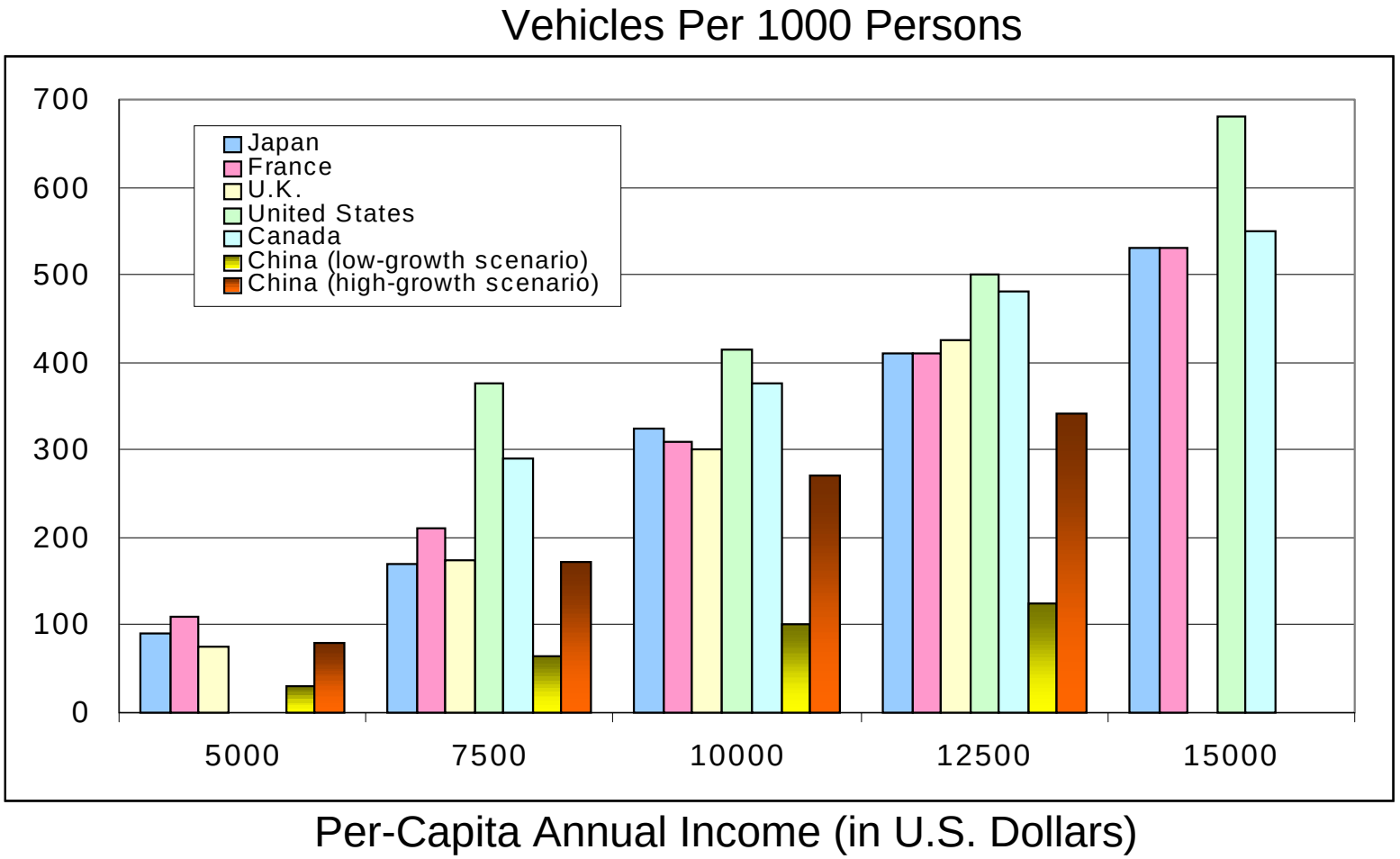
U.S. Data Shows Fleet Fuel Consumption Rates Change Slowly



Chinese Vehicle Population May Reach 200 - 520 millions by 2030

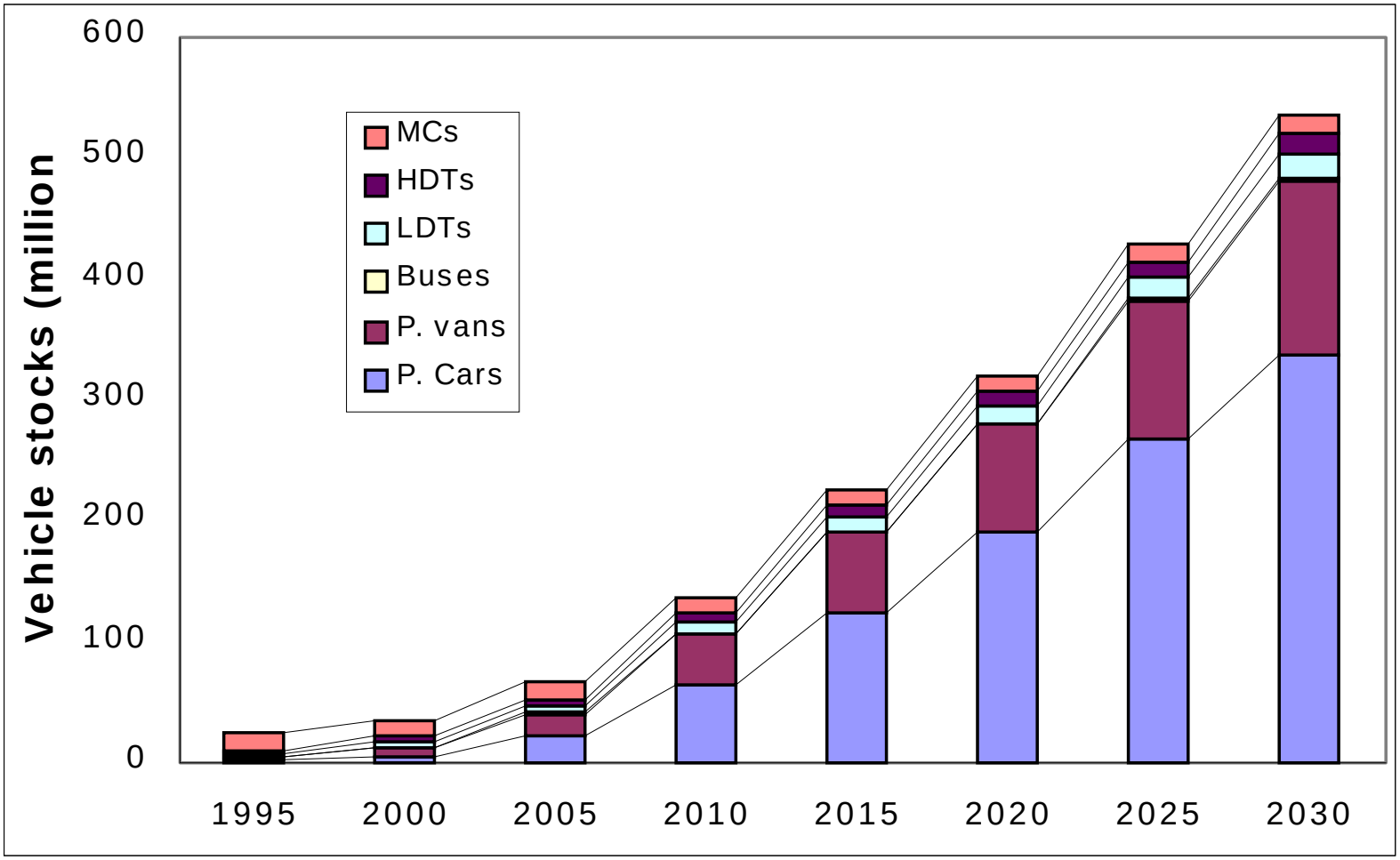


Vehicle Ownership at Various GDP Levels Among Countries



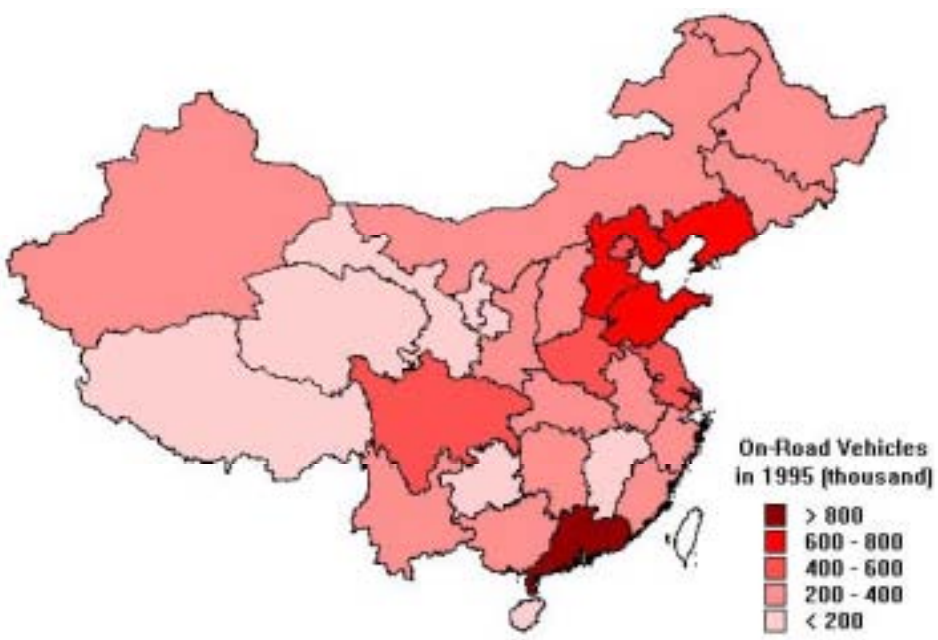
Passenger Vehicles Will Dominate Chinese Motor Vehicle Fleets

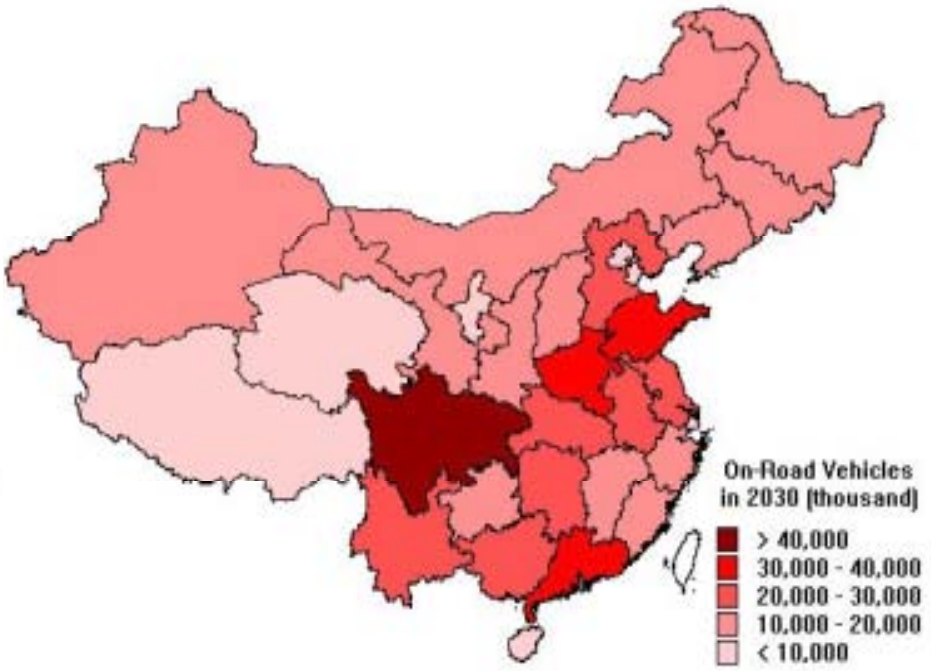
(High-Growth Scenario)



Chinese Vehicle Growth Will Concentrate in Eastern and Central Regions

(High-Growth Scenario)

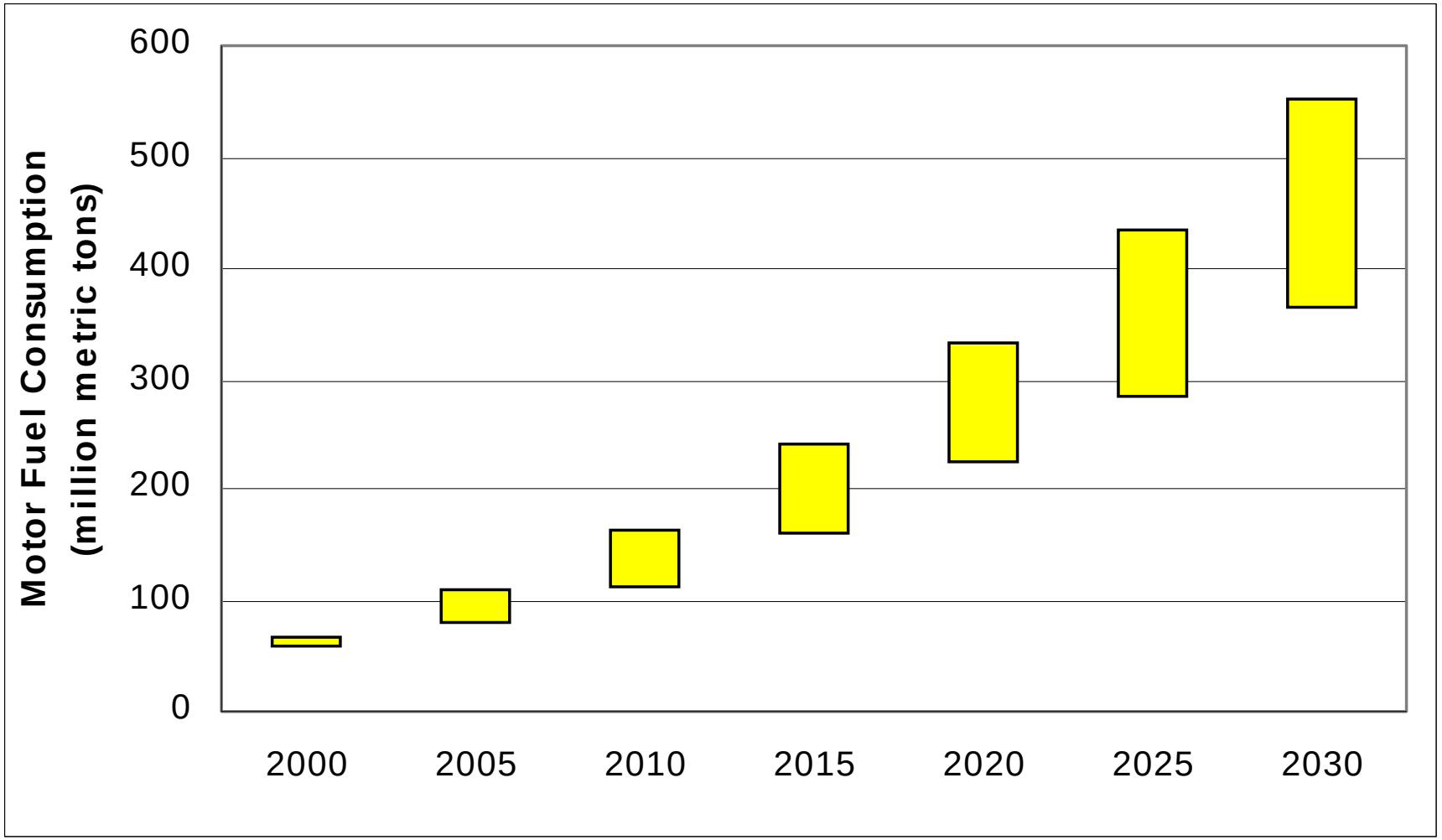




1995 (10.4 millions Vehicles)

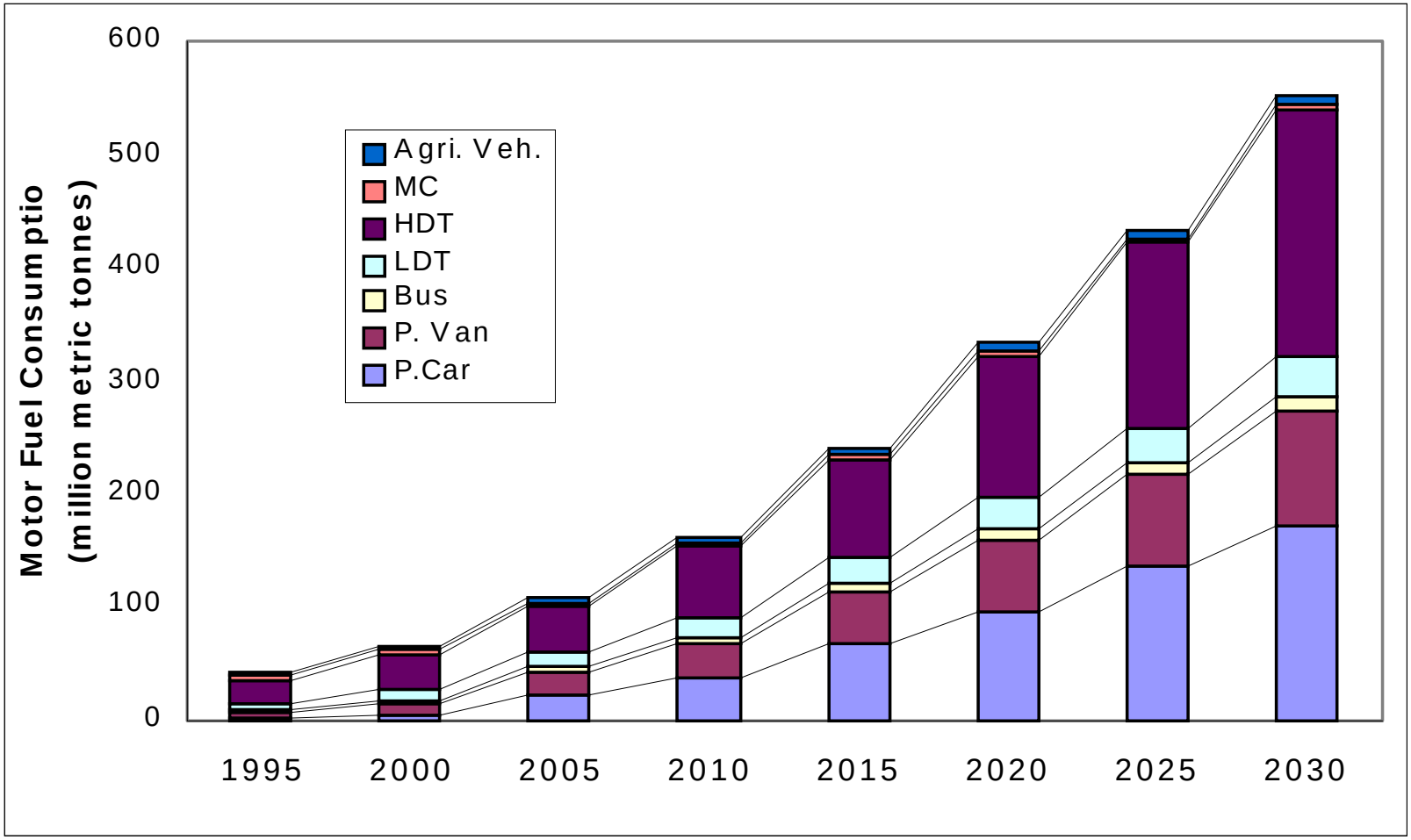
2030 (521 Million Vehicles)

Annual Chinese Motor Fuel Use Could Reach 365 - 552 Million Metric Tons by 2030

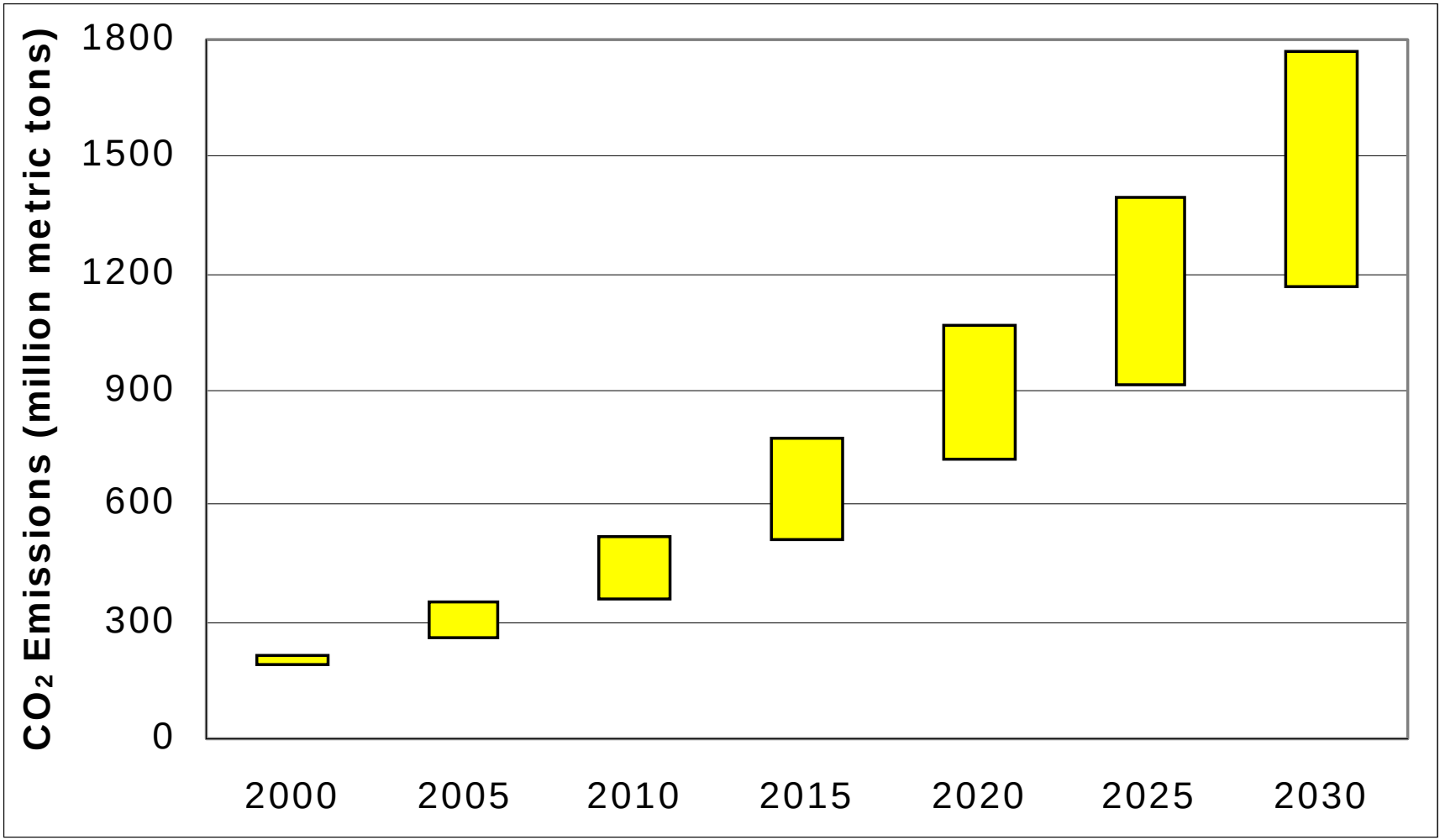


Passenger Vehicles and HDTs Will Consume the Majority of Motor Fuels

(High-Growth Scenario)



Chinese Vehicles Could Emit 1,169 - 1,763 Million Metric Tons of CO2 a Year by 2030



Conclusion

- Chinese motor vehicle population could grow to 190 - 521 millions by 2030
- Fuel use by and CO2 emissions of Chinese motor vehicles could increase by 9 - 13 times from 1995 to 2030
- The rapid Chinese vehicle growth will pose a great energy and CO2 emission challenge
- Great uncertainties exit in projecting China's vehicle population growth
  - Uncertain economic growth
  - Resource constraints
  - Lifestyle changes