

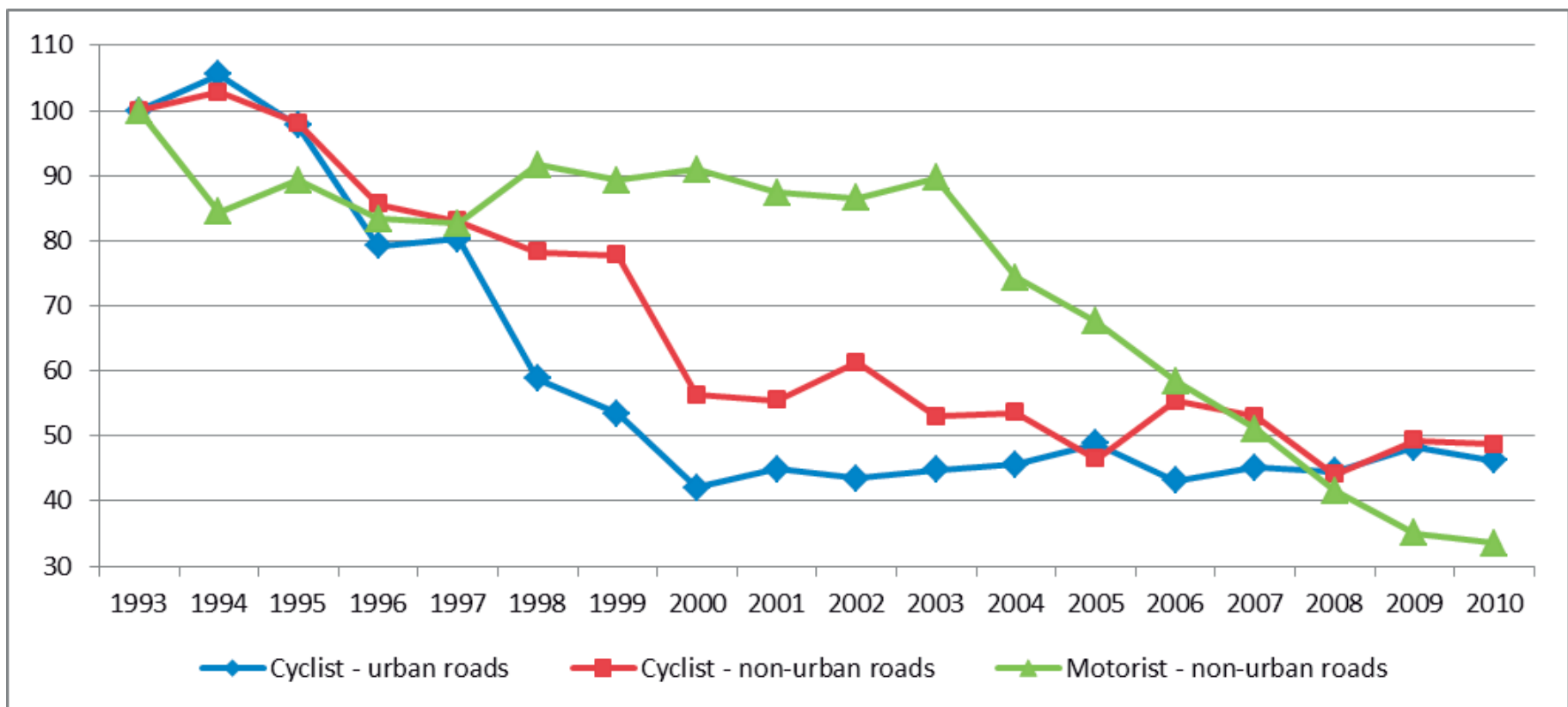
# Compulsory Cycle Helmet Regulation in Spain: Analysis and Perspectives



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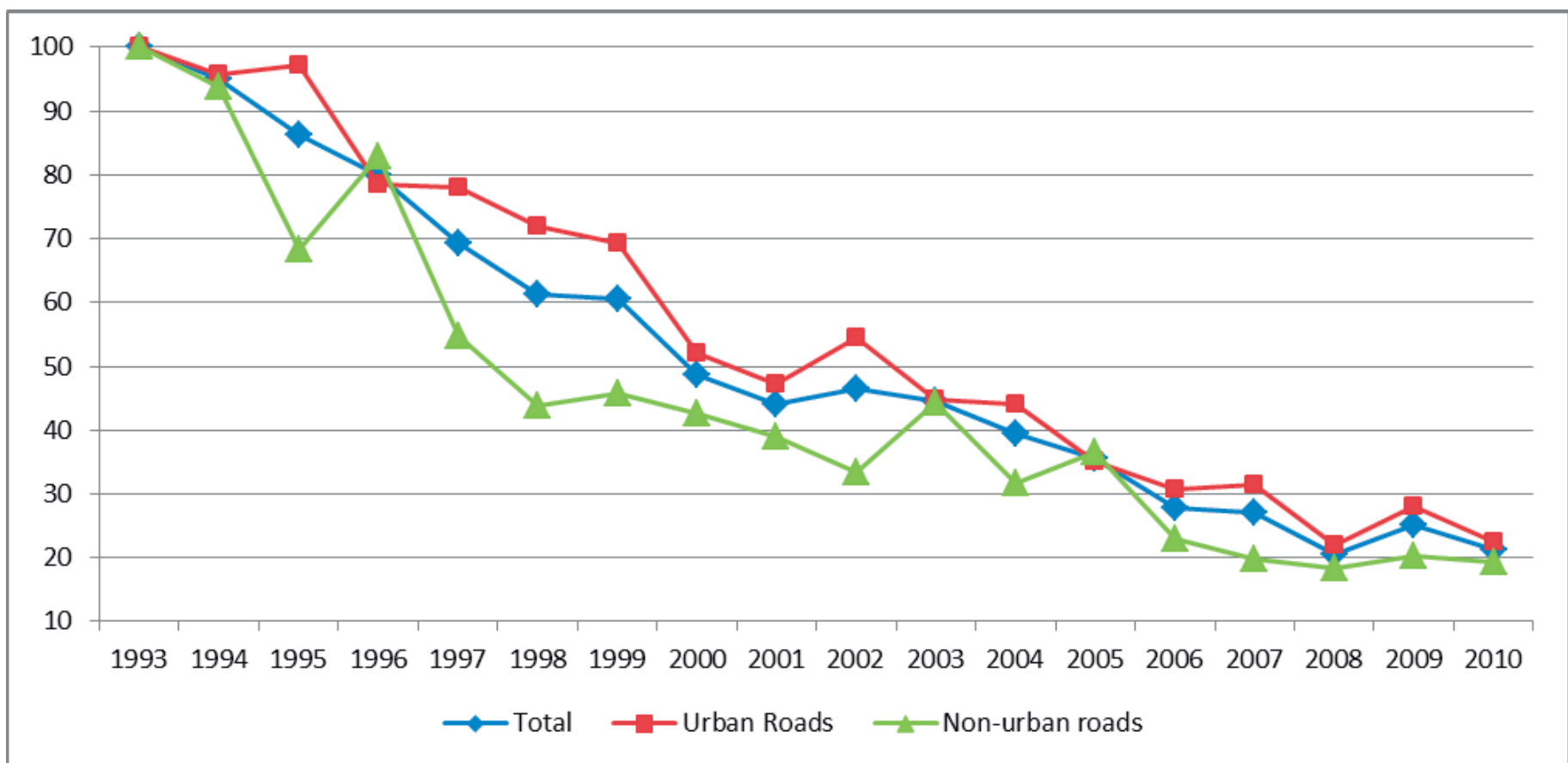
- Before 2004 helmets were not mandatory at all.
- After 2004 they became compulsory only outside urban areas.
- In 2012 the Ministry of "Interior" announced his project of making it compulsory also inside cities.

Total numbers of KSI cyclists in urban and non urban areas, and total number of KSI car occupants outside urban areas in Spain. Absolute units (1993=100).

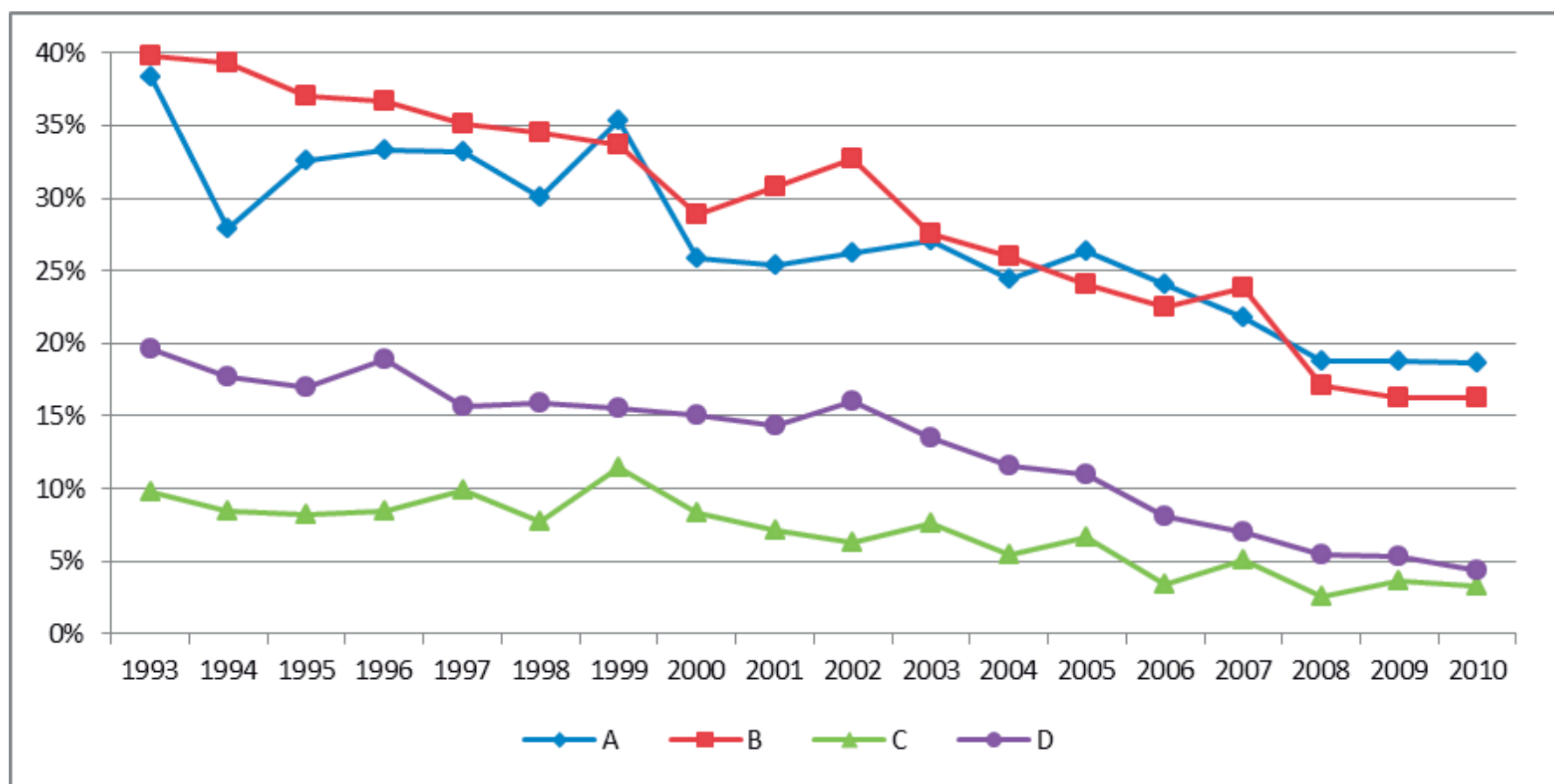


- No change in the slope of KSI cyclists after 2004.
- No significant differences between urban and non-urban areas
- Plot for car occupants shows a change in slope after 2004 (?!).

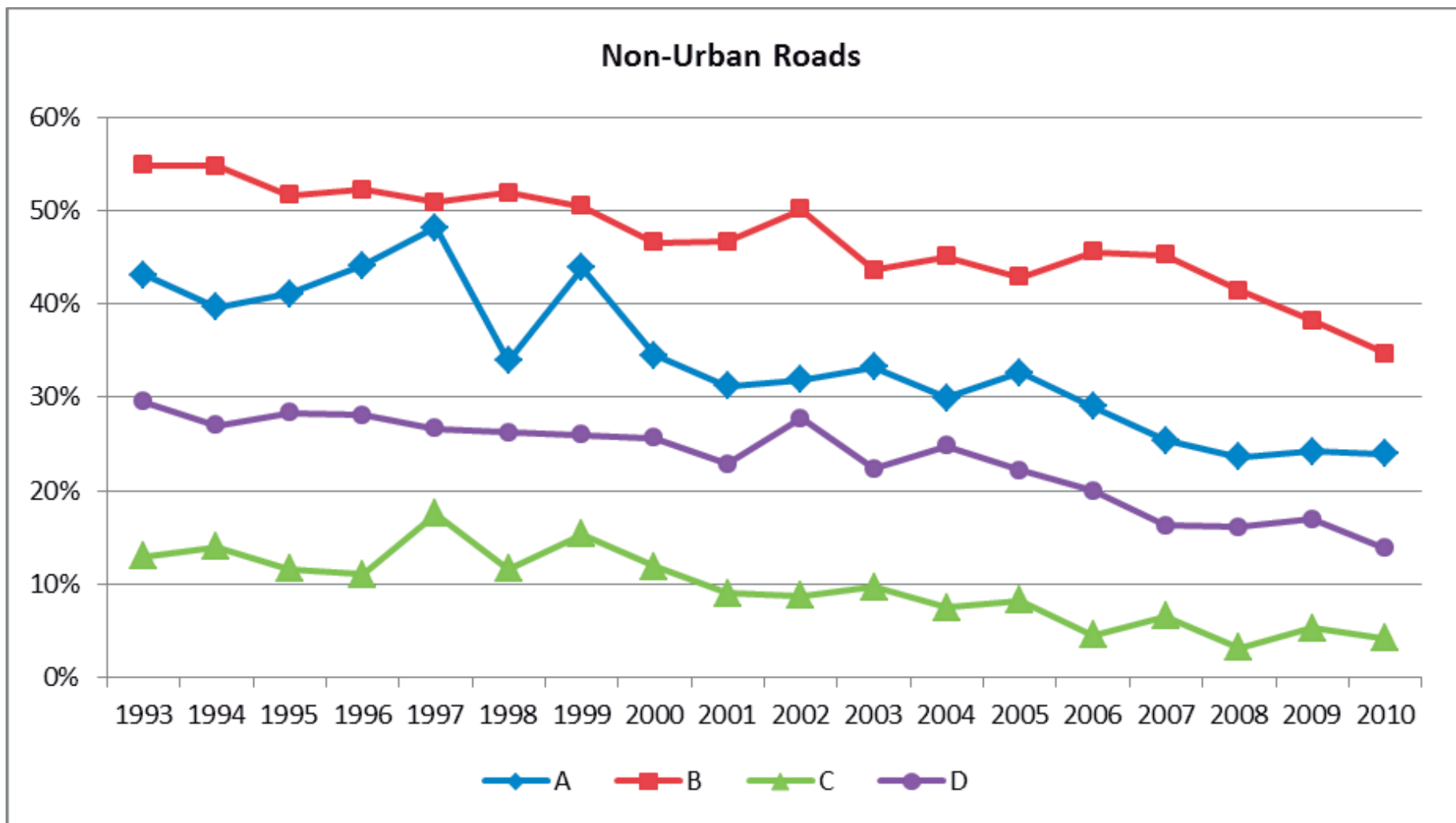
# Numbers of KSI cyclists with head injuries in all roads and in roads inside and outside urban areas. Arbitrary units (1993=100)



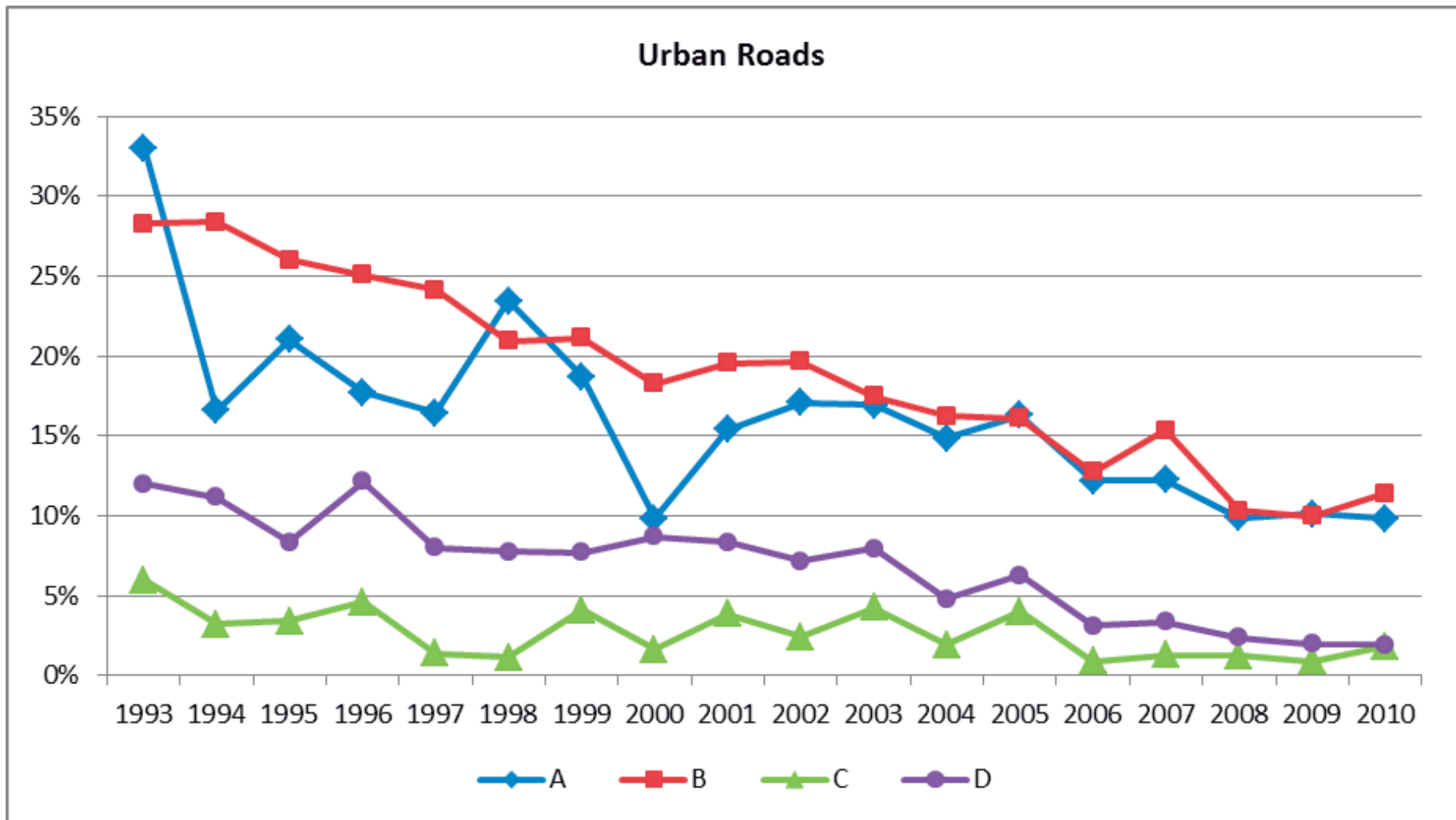
- No change in the slope of KSI cyclists with head injuries after 2004.
- No significant differences between urban and non-urban areas



- A) Percent of helmeted KSI cyclists over the total number of helmeted cyclists involved in a crash.
- B) Percent of non-helmeted KSI cyclists over the total number of non-helmeted cyclists involved in a crash.
- C) Percent of helmeted KSI cyclists with head injuries over the total number of helmeted cyclists involved in a crash.
- D) Percent of non-helmeted KSI cyclists with head injuries over the total number of helmeted cyclists involved in a crash (D).



- A) Percent of helmeted KSI cyclists over the total number of helmeted cyclists involved in a crash.
- B) Percent of non-helmeted KSI cyclists over the total number of non-helmeted cyclists involved in a crash.
- C) Percent of helmeted KSI cyclists with head injuries over the total number of helmeted cyclists involved in a crash.
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- A) Percent of helmeted KSI cyclists over the total number of helmeted cyclists involved in a crash.
- B) Percent of non-helmeted KSI cyclists over the total number of non-helmeted cyclists involved in a crash.
- C) Percent of helmeted KSI cyclists with head injuries over the total number of helmeted cyclists involved in a crash.
- D) Percent of non-helmeted KSI cyclists with head injuries over the total number of helmeted cyclists involved in a crash (D).

# Conclusions

- We have not observed any additional reduction of KSI cyclists (all injuries and head injuries only) before law was passed (2004)
- We have not observed any substantial difference between the rates of KSI cyclists inside and outside urban areas
- Probability of being seriously injured in inter-urban roads is smaller for helmeted cyclists than for non-helmeted cyclists
- However, these probabilities are almost the same inside urban areas and in general (all roads)

# Map of Spanish municipalities against compulsory helmets

(involved population > 11 M)

