



Impact of vehicle classification system to emission inventory development in China

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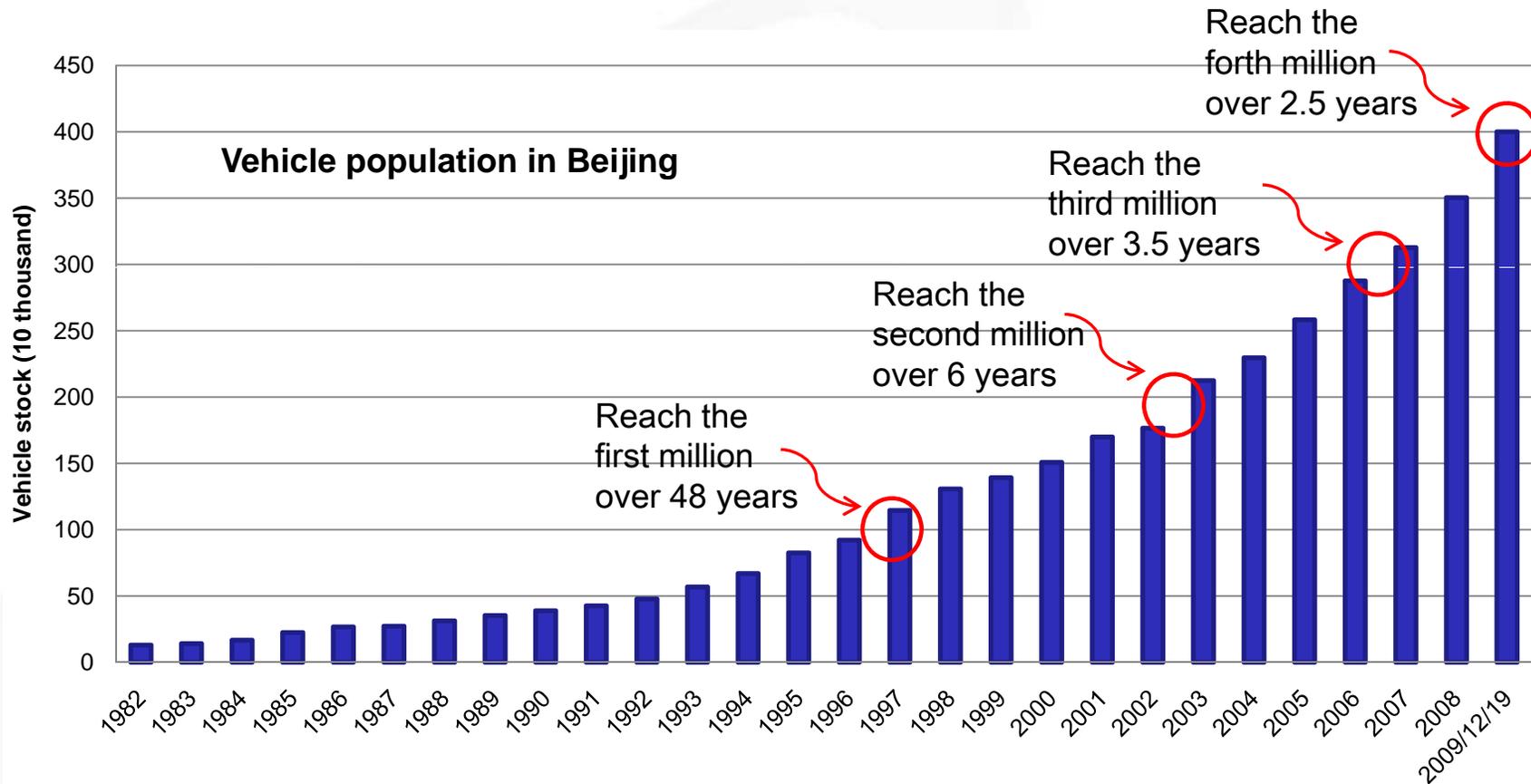
Overview



- **Introduction**
- **Method and data**
- **Result**
- **Conclusions**



Introduction

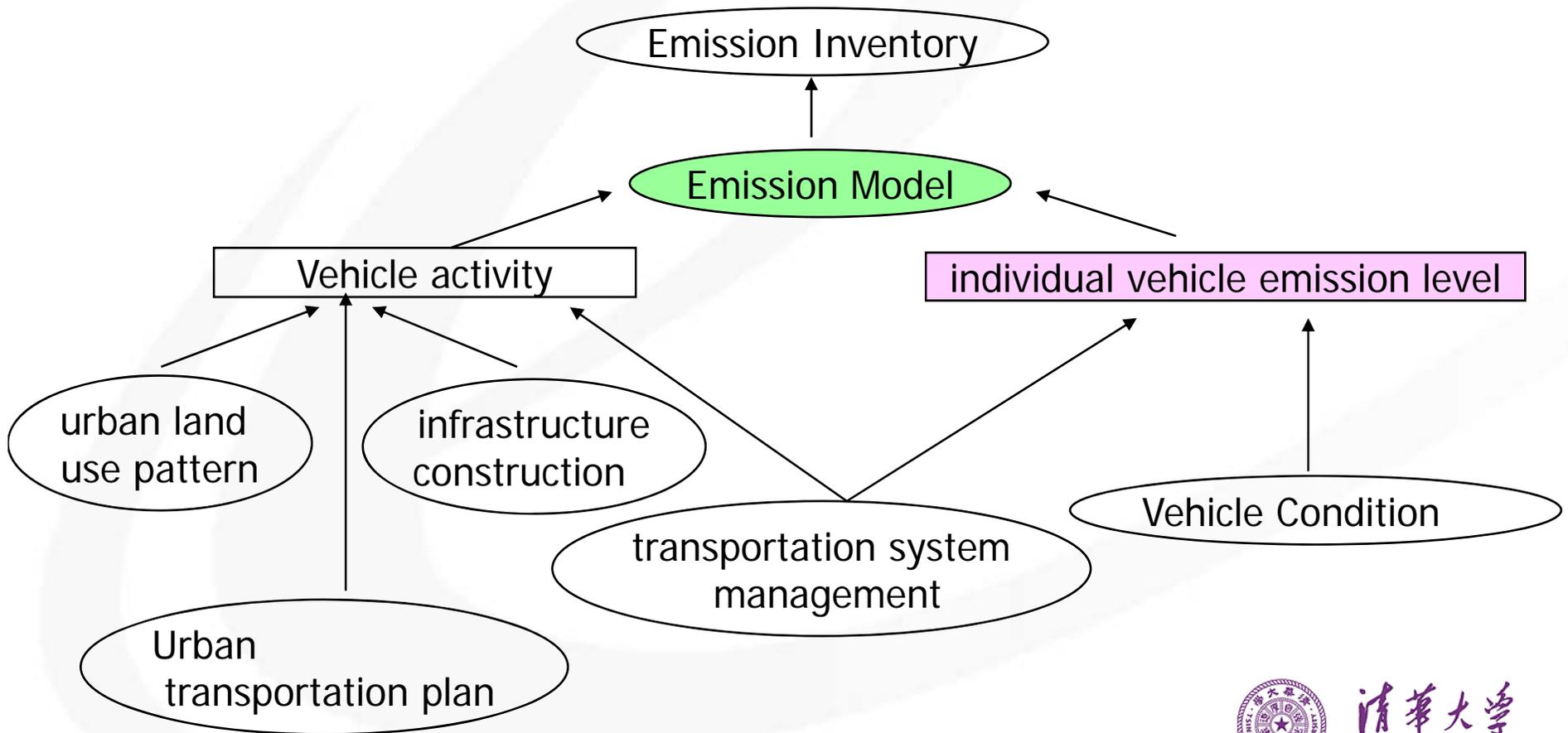


Source: China Automotive Industry Yearbook



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What is needed for Decision Makers?



Are the emission factor models suited for China?

- Little research has been done on application of vehicular emission models and their adaptability in China.
- We aim to improve the method of developing the vehicular emission inventory in China to make the vehicle classification data from China match the requirements of the emission factor model.



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The LDT in Chinese classification



GVWR is 1789kg



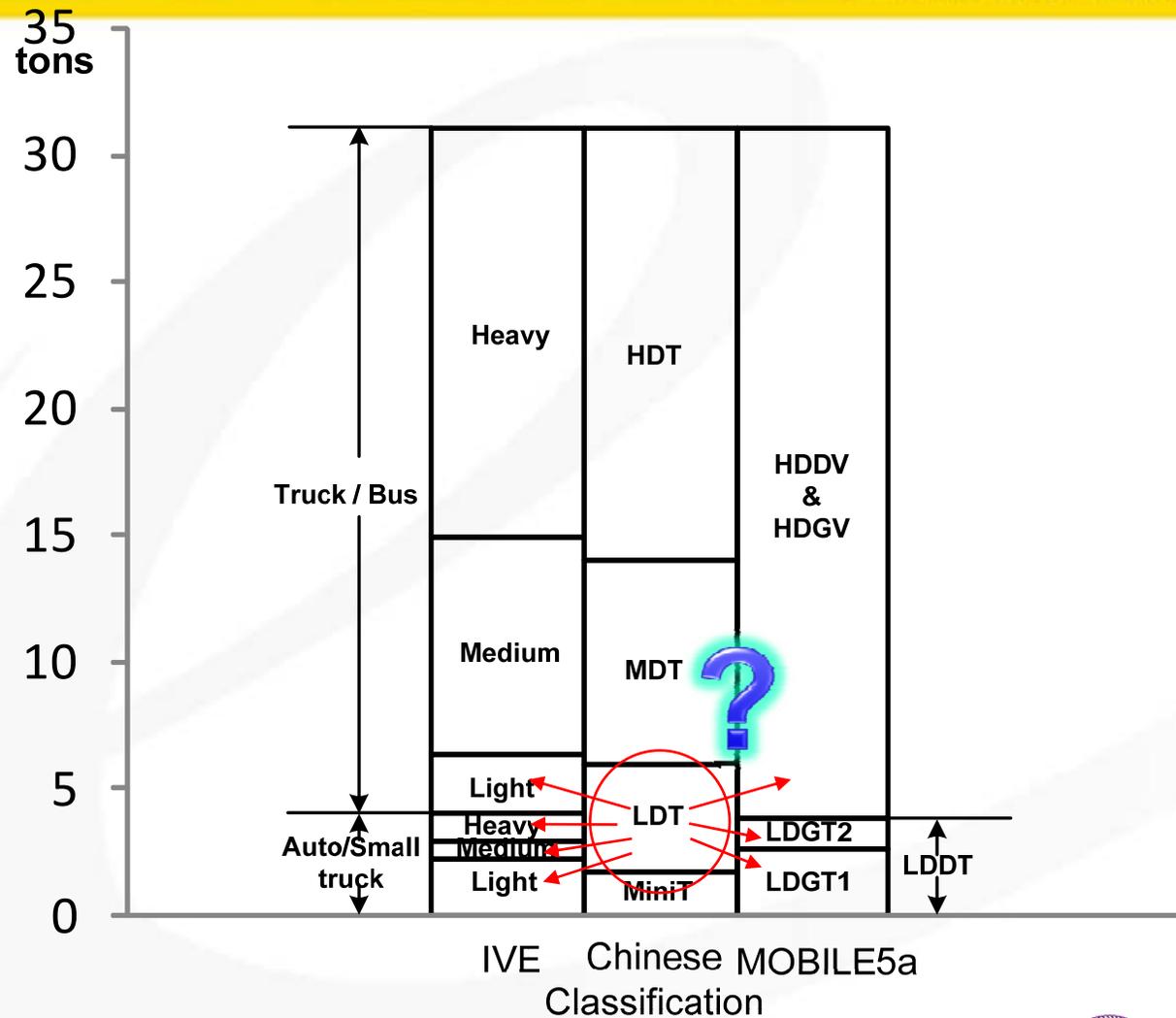
GVWR is 6495kg

Both of them are defined as LDT in Chinese classification



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The classification systems in different models



The classification of truck by China Automotive Industry Yearbook, IVE and MOBILE5a



Method

- Investigate the weight of vehicle in China
- Develop the weight distribution of vehicle
- Match the vehicle in China with vehicle classification system of emission factor models by the weight distribution of vehicle



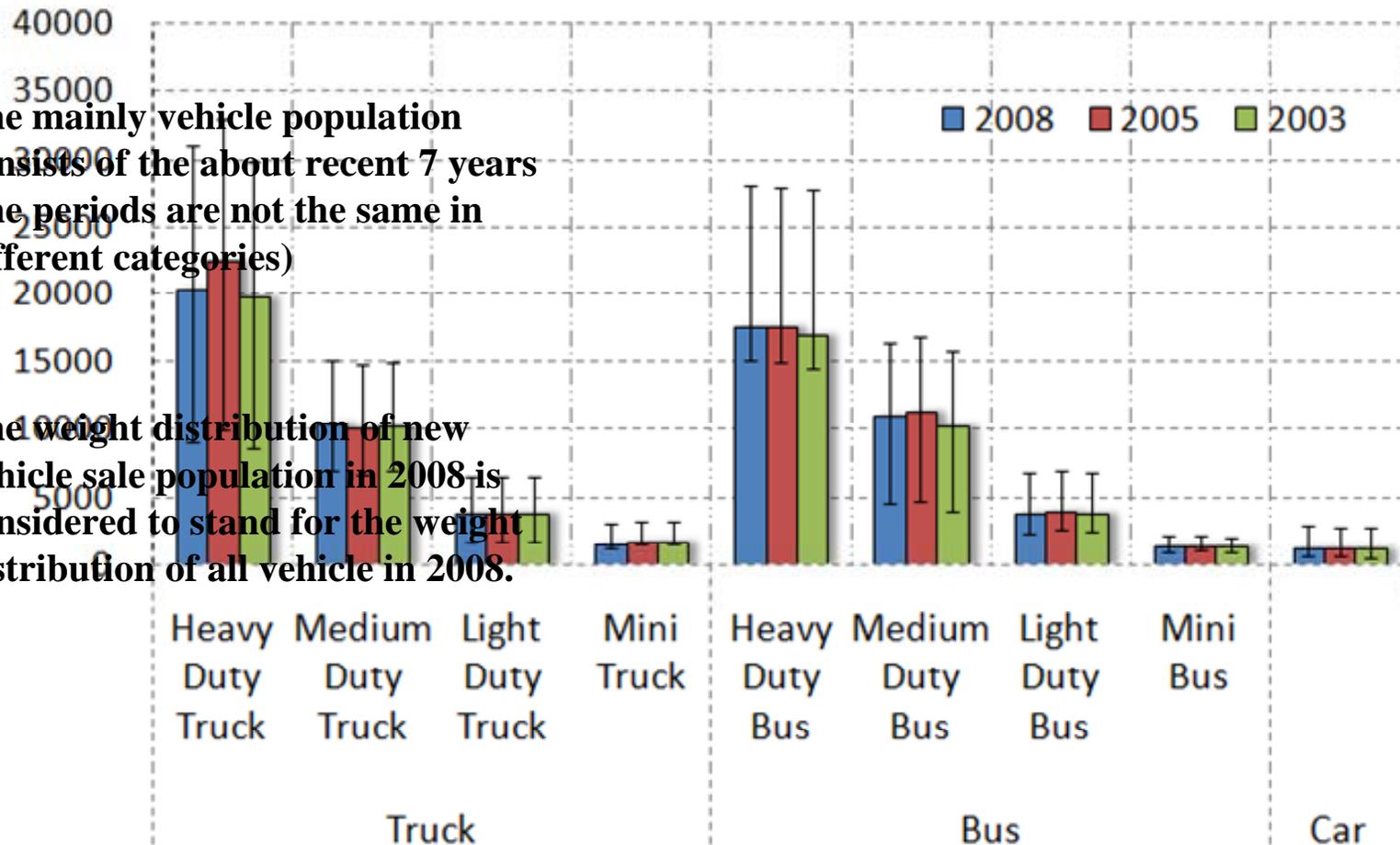
Method

- **The motorcycles do not be contained in this study.**
- **The weight distribution of new vehicle sale population in 2008 is considered to stand for the weight distribution of all vehicle in 2008.**



Average weight and range of new vehicles in different categories

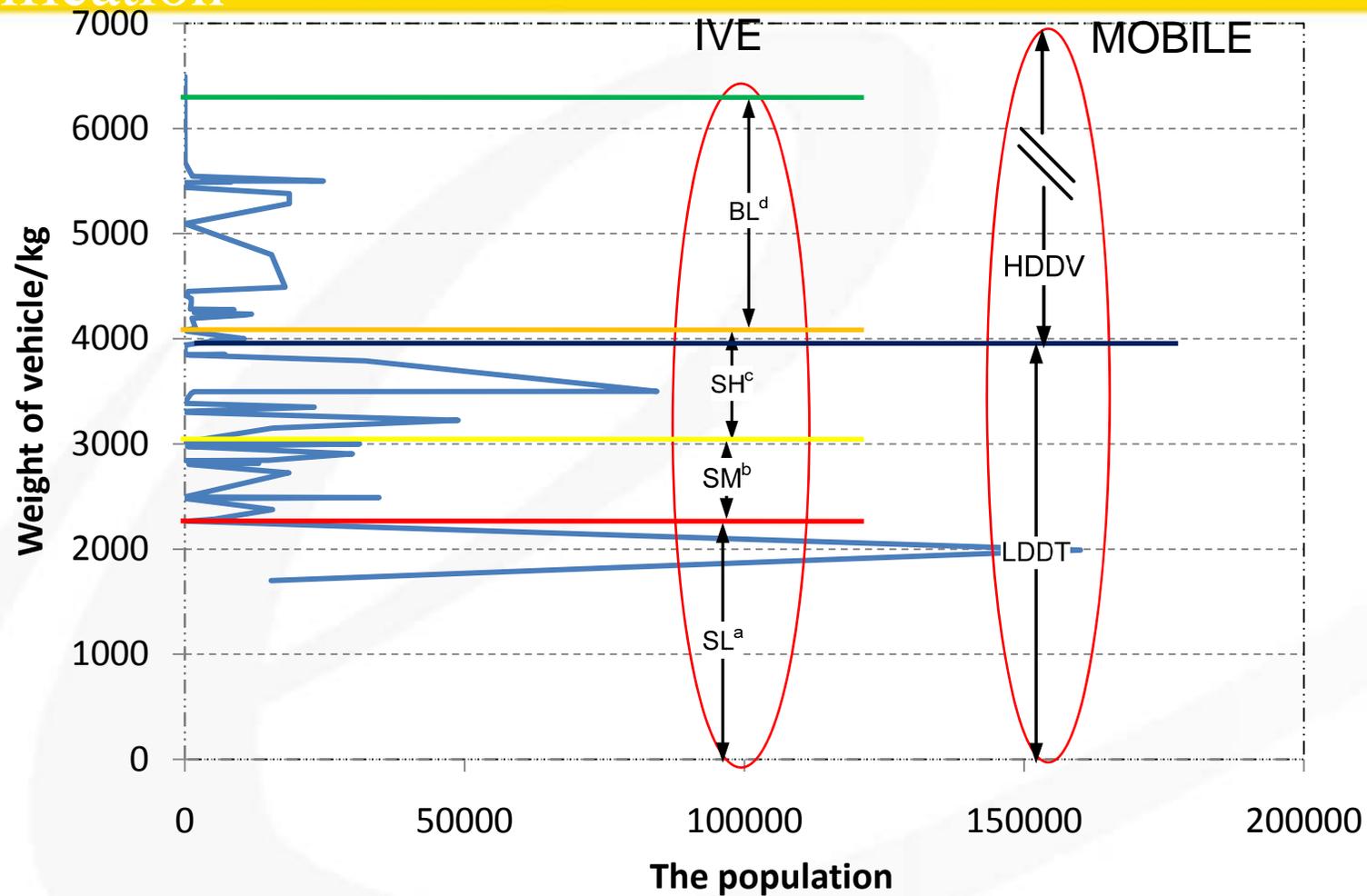
- The mainly vehicle population consists of the about recent 7 years (the periods are not the same in different categories)
- The weight distribution of new vehicle sale population in 2008 is considered to stand for the weight distribution of all vehicle in 2008.



Average weight and weight range of new vehicles in 2003, 2005 and 2008



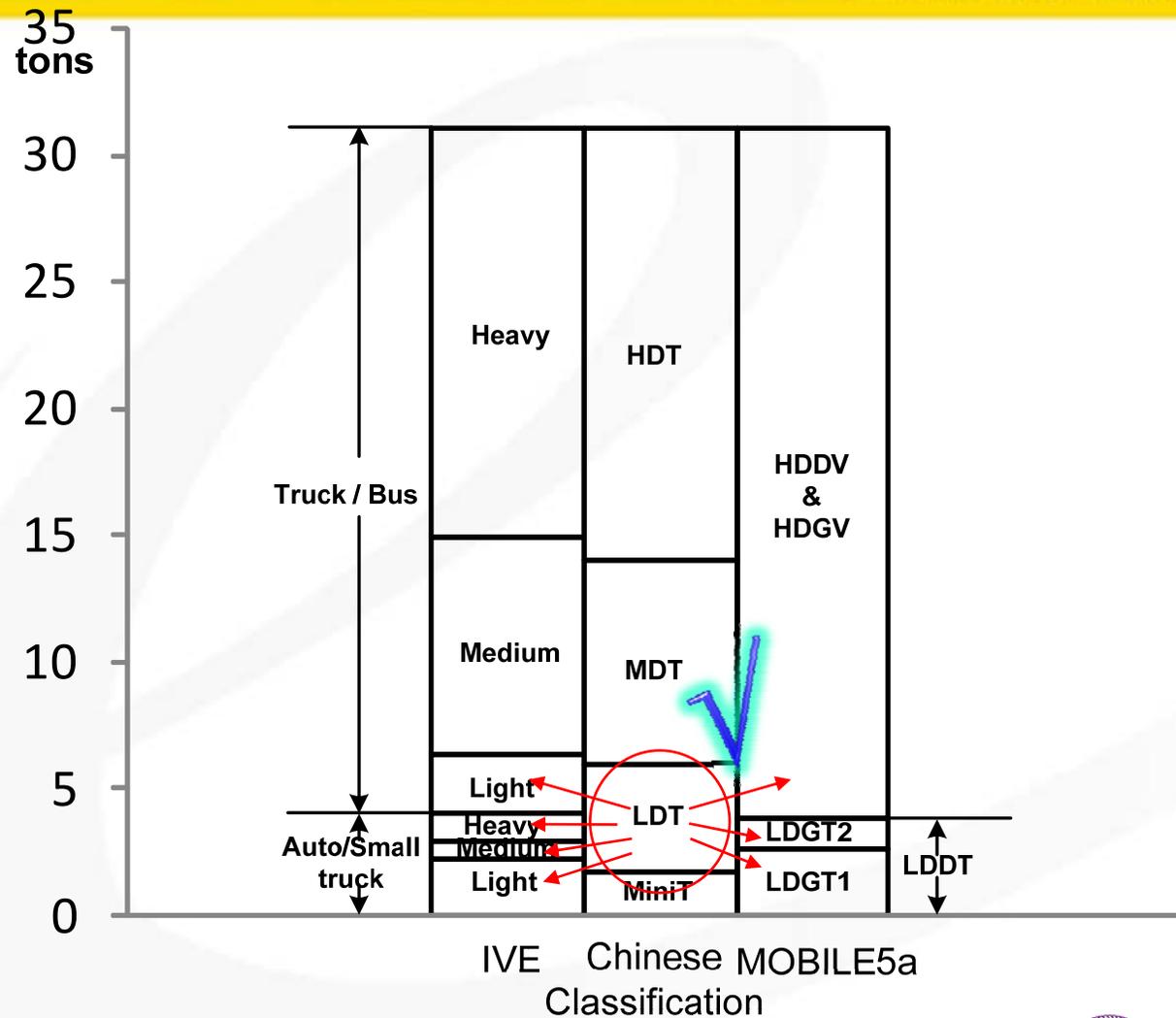
Weight distribution of Diesel LDT in Chinese classification



— weight distribution of LDT



The classification system in different models

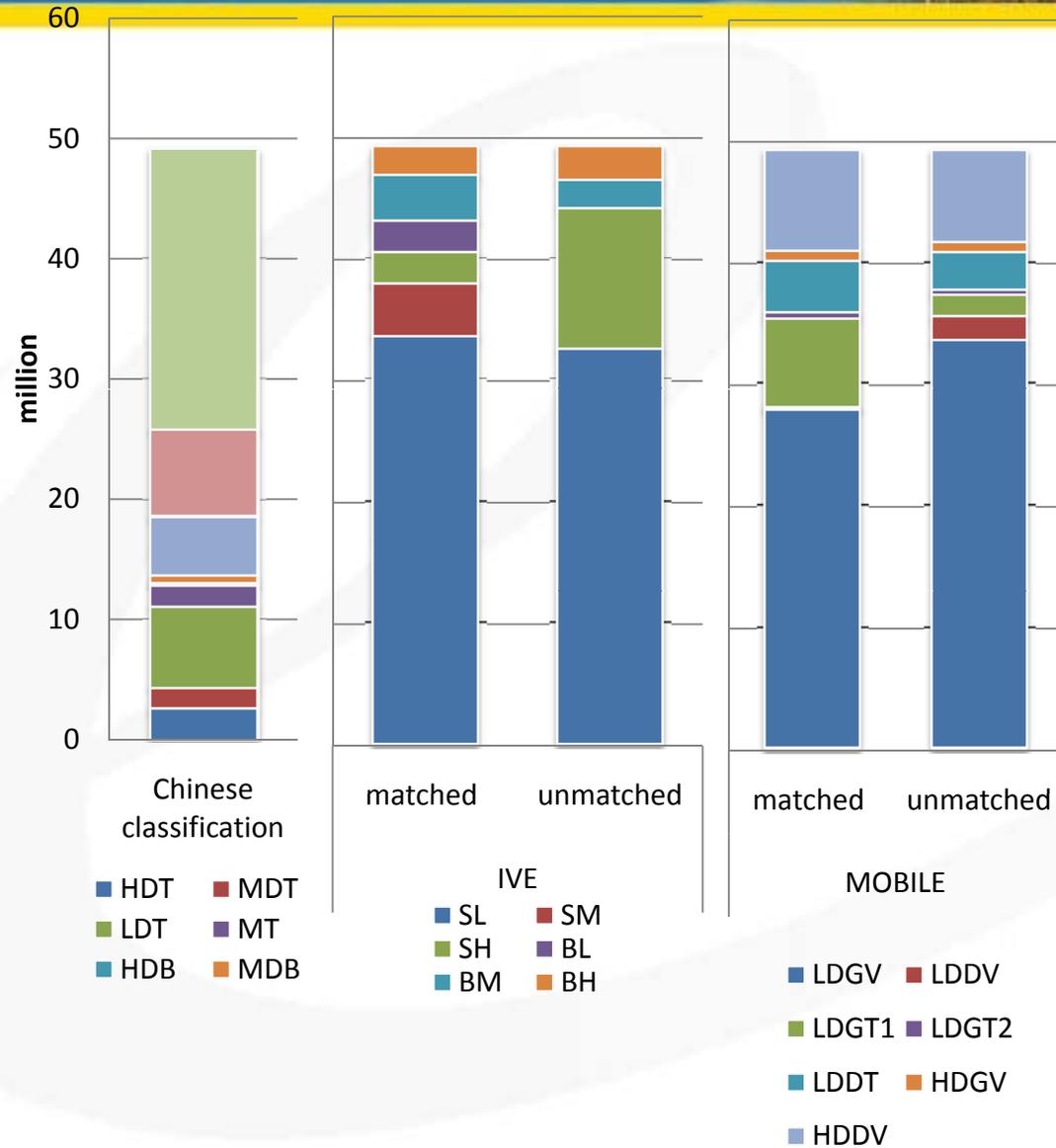


The classification of truck by China Automotive Industry Yearbook, IVE and MOBILE5a



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Vehicle population in different categories



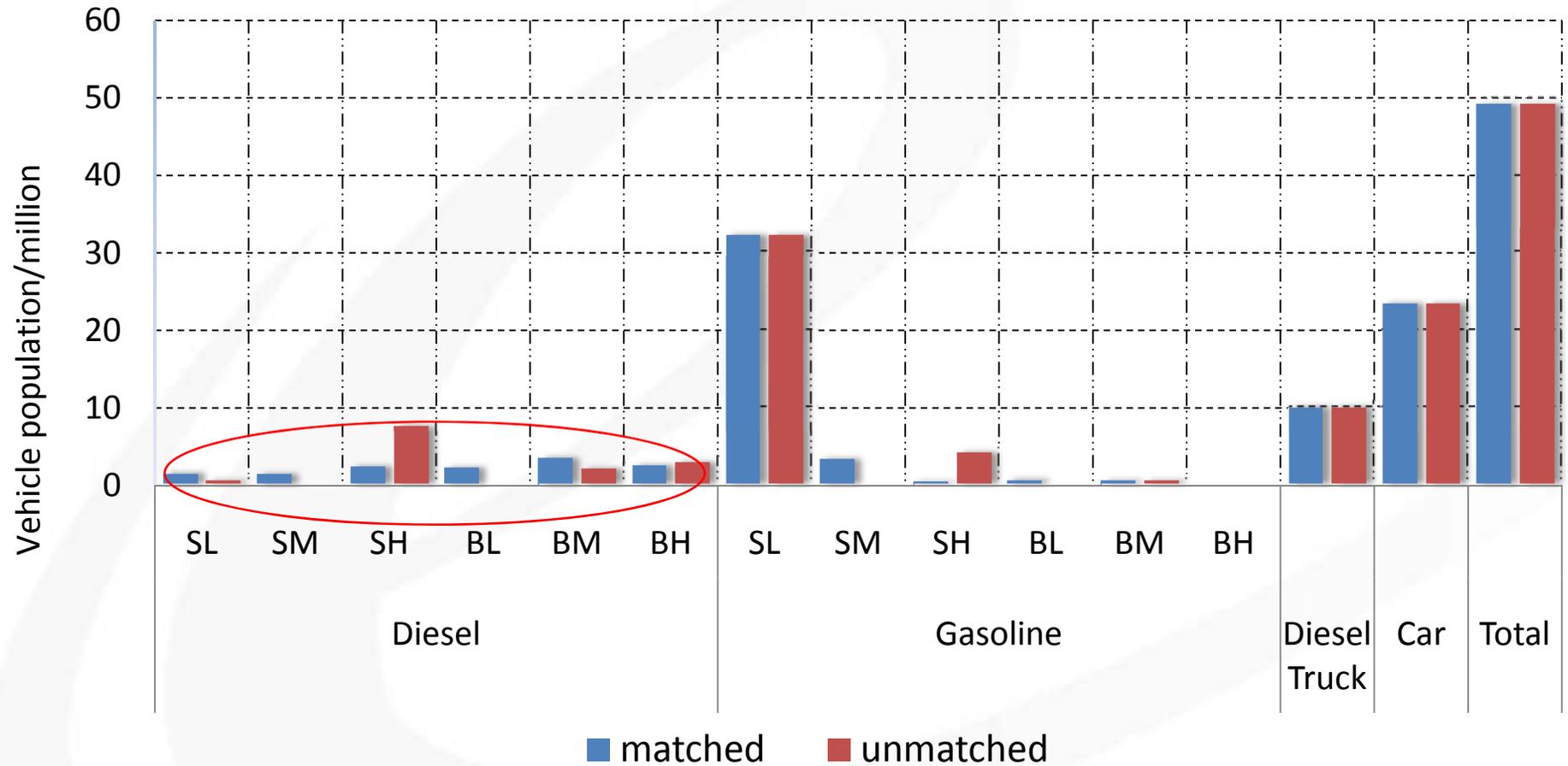
Overview



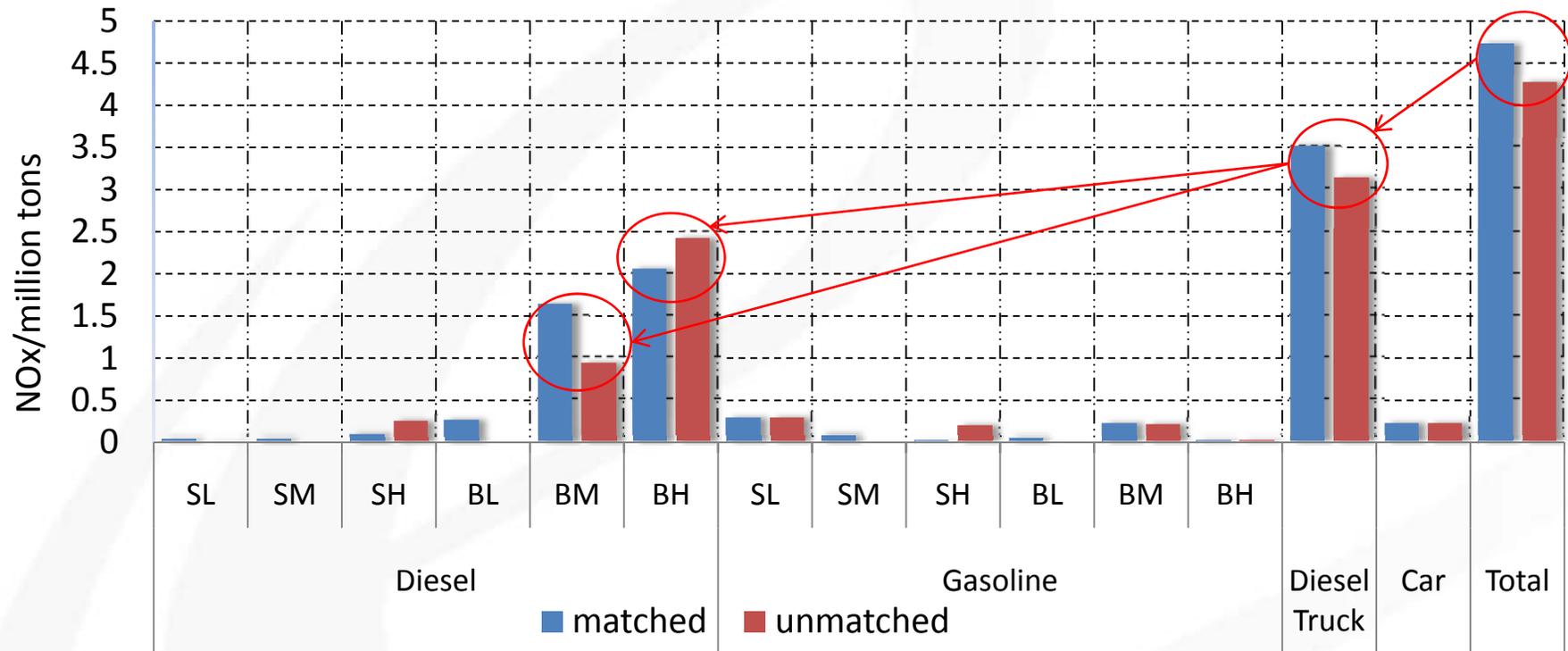
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Results from IVE



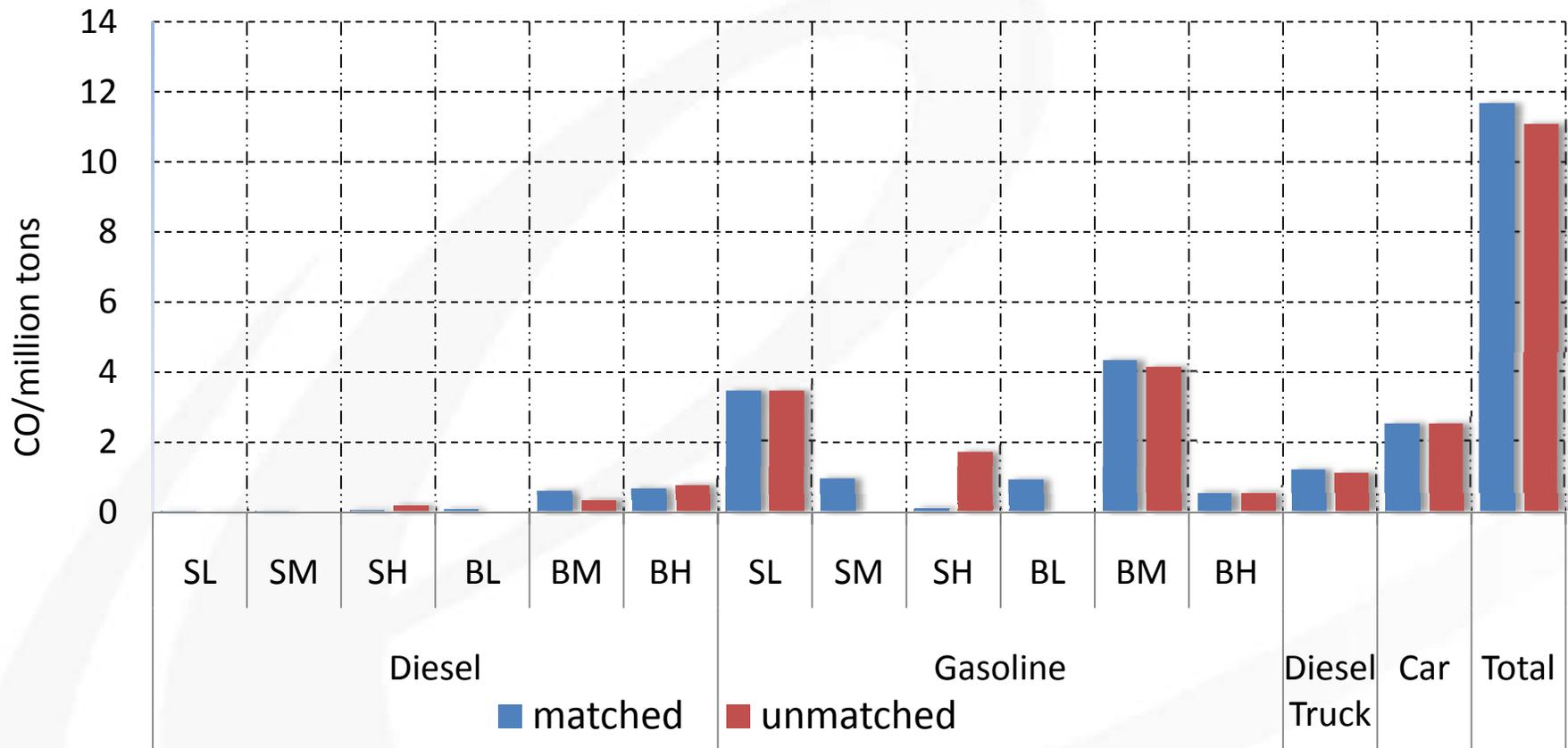
Results from IVE



Depending on the matched data the NO_x of vehicle emission is 10.84% higher than unmatched data



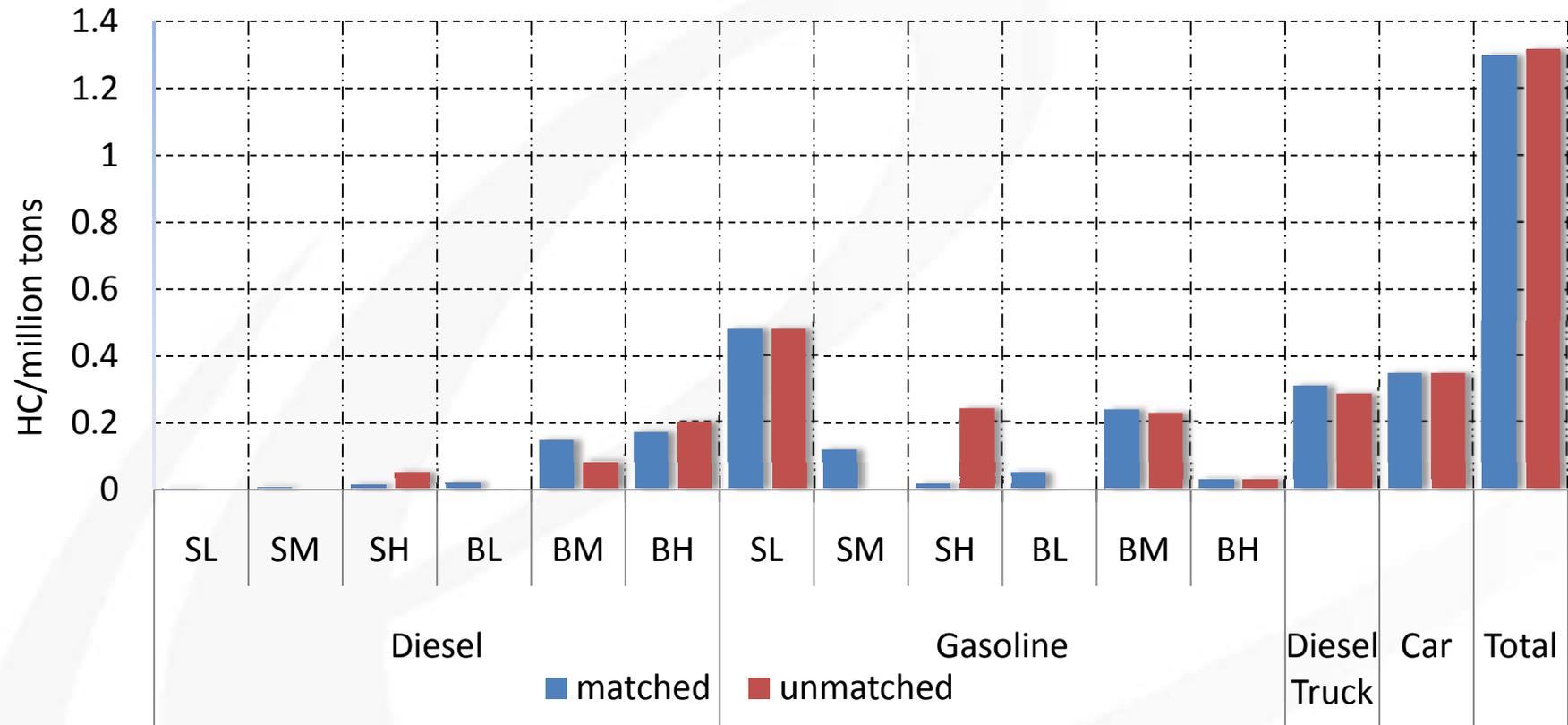
Results from IVE



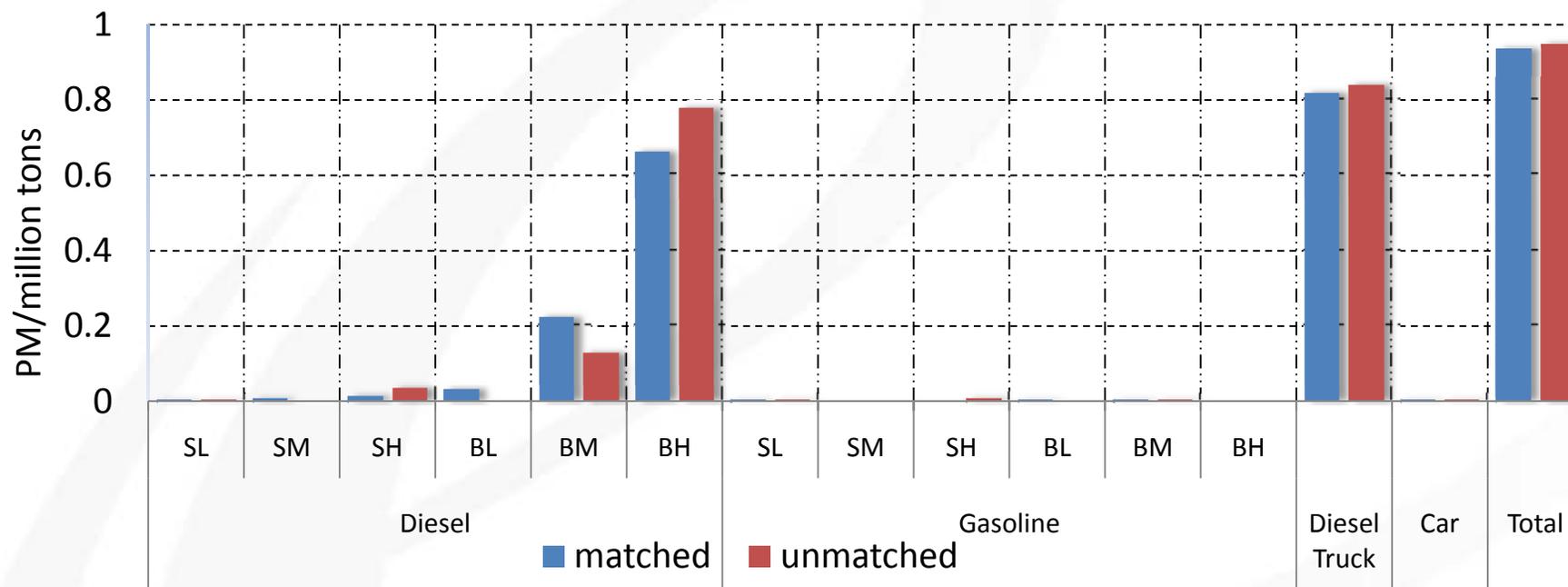
Depending on the matched data the CO of vehicle emission is 5.29% higher than unmatched data.



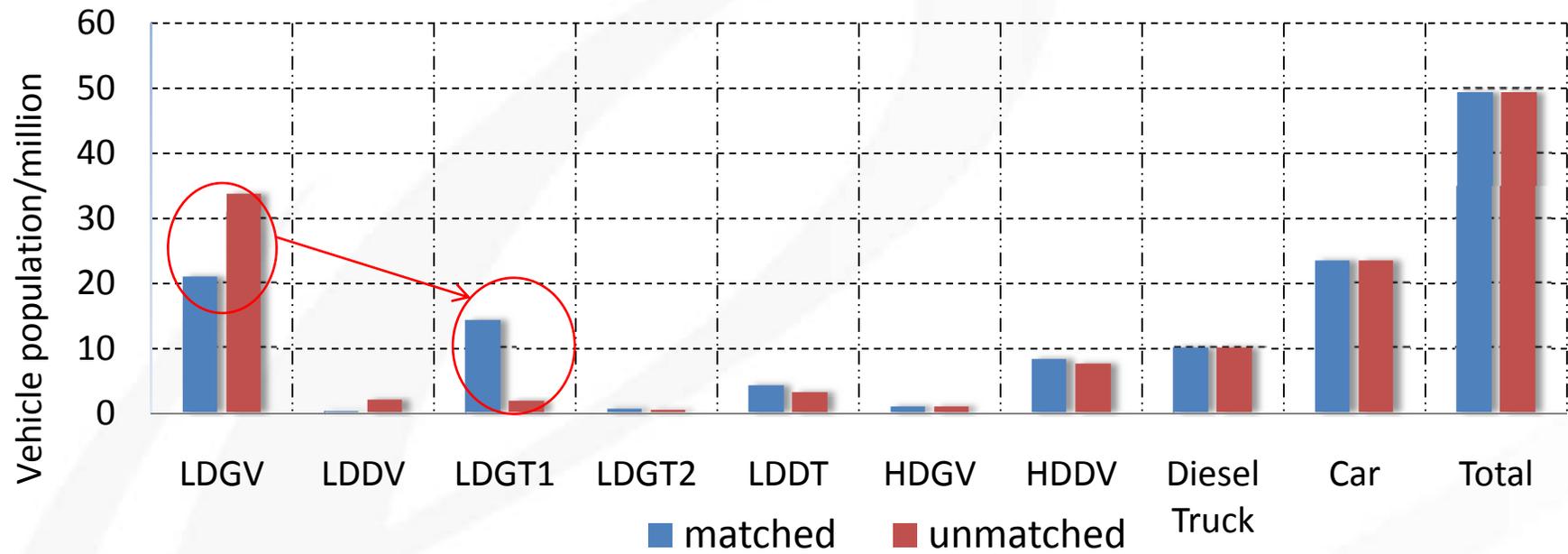
Results from IVE



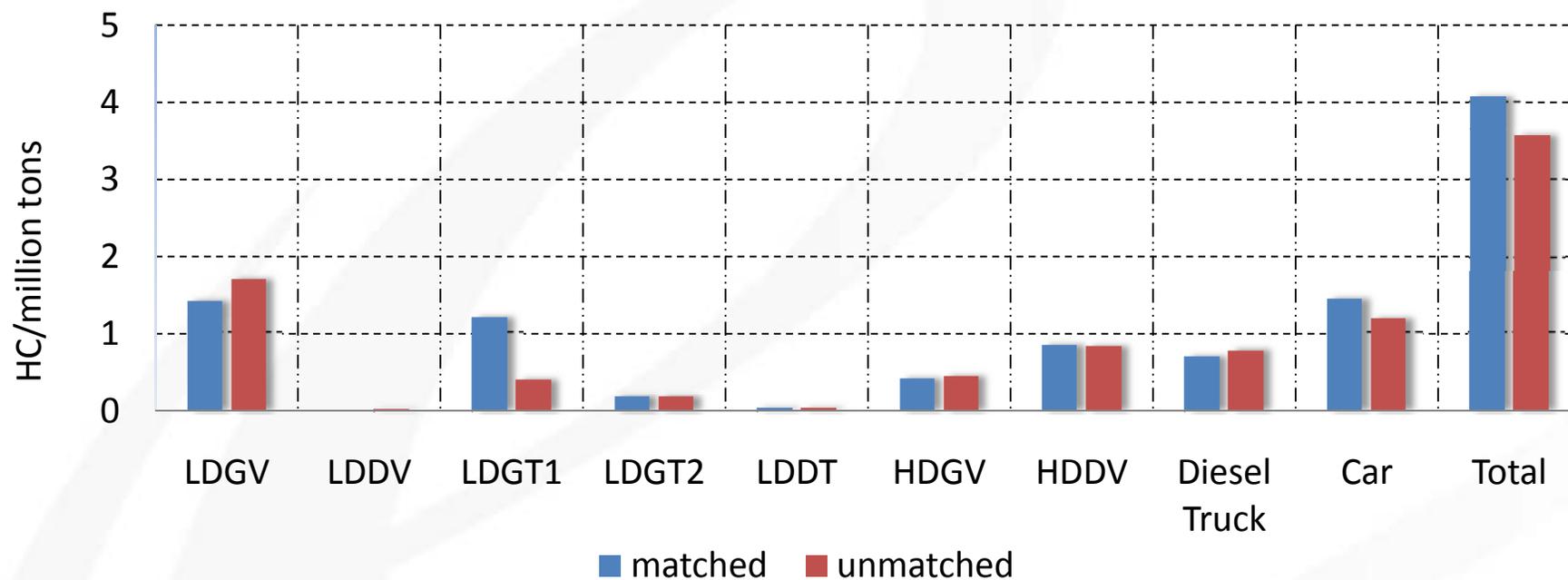
Results from IVE



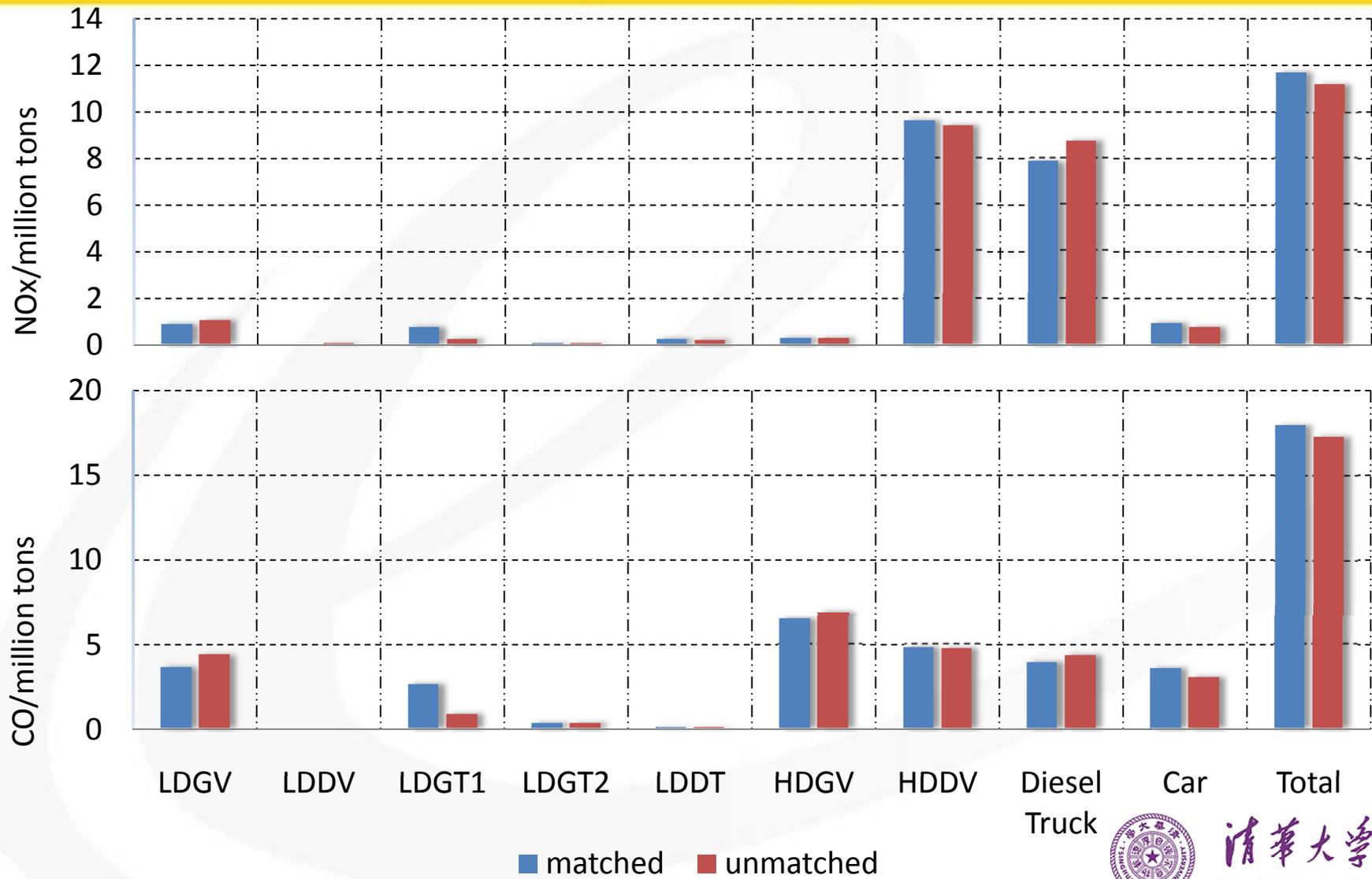
Results from MOBILE



Results from MOBILE



Results from MOBILE



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Conclusions

- **The vehicle weight distribution is a key factor that helps vehicle classification to match the classification of emission factors models especially for the emission factor models which are not designed for China.**
- **The impacts of weight distribution in the different classification system are not the same.**
- **In order to estimate the accuracy of the vehicle emission inventory calculated by the emission factor models, it is necessary to determinate the weight distribution of vehicles by collecting the data.**



Thank you !

