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Prospective de la mobilité en France : évolutions comportementales et technologiques

Mobility prospective in France : Comportemental and technological evolutions

Antoine Saglio, Jean Charles Hourcade, Jean Laterrasse, Olivier Morellet

Centre International de Recherche en Economie et Développement (CIRED)

Laboratoire Ville Mobilité Transport (LVMT)

Université Paris Est (UPE)

saglio@centre-cired.fr

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Introduction

- In France, transport sector is responsible for 34 % of CO2 emissions
- Modelisation framework to evaluate future emissions of transport in France
- Focus on people's mobility (no fret)
- Creation of a new tool with the integration of two different model
- Test of the influence of a rise in speed and implementation of a carbon taxe

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Several approaches of the mobility modelisation problem

- Transport as a derived demand for activities outside of home
- Aggregate perspective and modal shares
- Zahavi hypothesis
- Long term / short term articulation → investment problematic
- Importance of technology progress, but infrastructures constraints

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Integration of two models

- MATISSE is a systemic model of mobility. It gives households mobility function of transport supply
- ImaclimR France is a recursive CGE model which traces energy consumption in the economy (hybrid modelisation)

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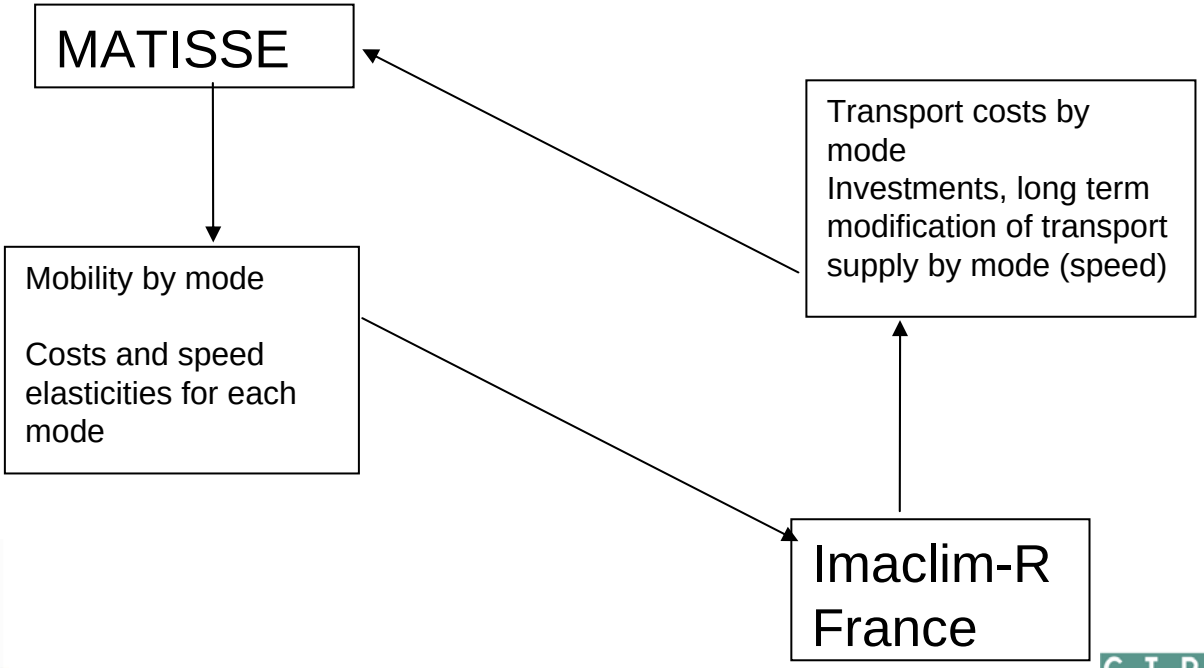
	dtrajet/dprixTC	dtrajet/dcoutcarb	dtrajet/dvitesseTC	dtrajet/dvitesseauto
TC	**-0.14**	**0.21**	**0.93**	**-0.41**
avion	0.00	-0.38	0.38	-0.38
voiture	**0.01**	**-0.09**	**-0.07**	**0.19**
Marche	0.01	0.04	0.00	-0.08
total	0.00	-0.04	0.01	0.08

	dpkm/dprixTC	dpkm/dcoutcarb	dpkm/dvitesseTC	dpkm/dvitesseauto
TC	**-0.02**	**0.25**	**0.33**	**-0.72**
avion	0.00	-0.06	0.01	-0.1
voiture	**0.00**	**-0.14**	**-0.07**	**0.42**
Marche	0.01	0.04	0.00	-0.11
total	0.00	-0.07	0.00	0.2



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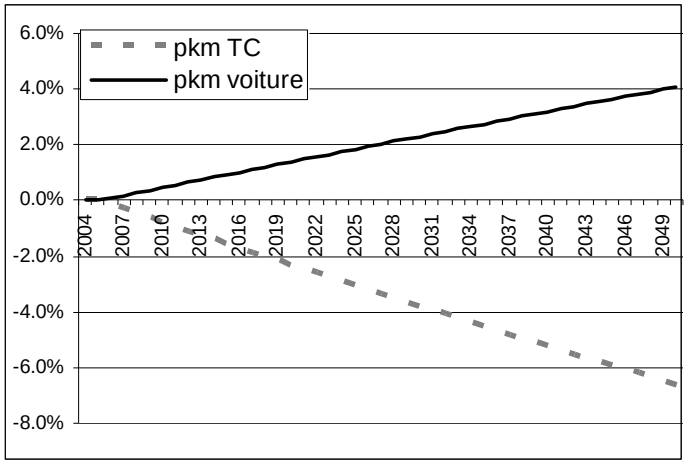
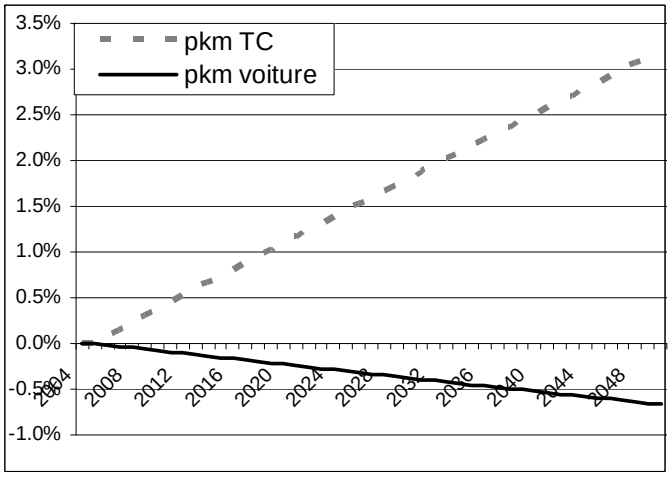
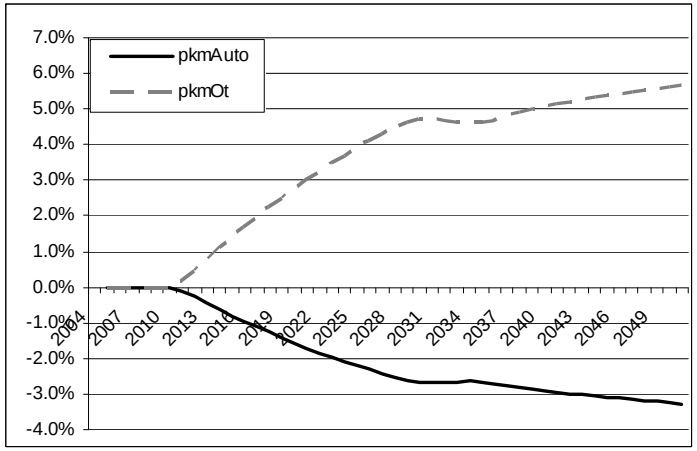
Results of modelisation exercise

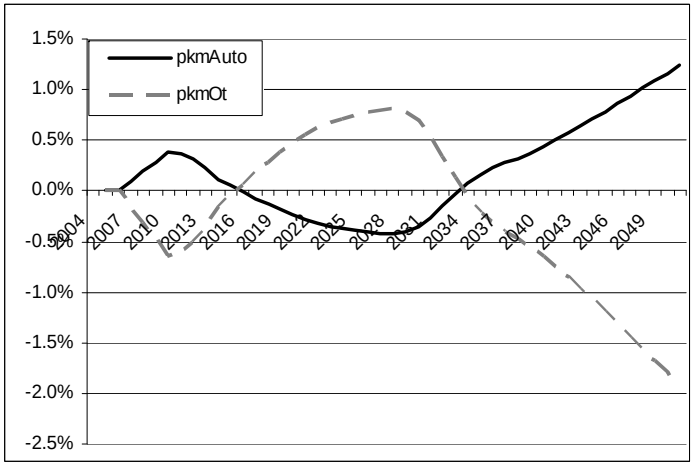


10% car speed rise in 2050



10% TC speed rise in 2050





Taxe C (10$/tCO2 in 2010, 200$ in 2050)

Taxe C and increased car speed

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Conclusion

- Creation of a new prospective tool
- Speeds are one of the main driver of mobility evolution
- If we don’t control for speed, Carbon taxe may be inefficient to reduce automobile dependance

Further research

Influence of density

Evolution of socio-economic conditions

Differentiation between poor and rich

Investment problematic (cost and timing)

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