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**Estimation of the annual balance of road traffic
and fuel consumptions on the French national territory :
The case of passenger cars**

Transmitted by the Ministry of Transport, France

The demand for statistical information on road traffic in France is increasing, for transport policy and environmental considerations.

In addition to local studies, the French Ministry of Transport publishes every year a road traffic balance at the national level, presented to the National Commission of Transport Accounts (*CCTN*), as part of a larger official annual report. It is also published in the internet (<http://www.statistiques.equipement.gouv.fr/>) (see chapter II 2 “*Le bilan de la circulation*”).

This report is prepared by the Statistical Service of the Ministry of Transport (*SESP*), along with a group of experts. Estimations are made by type of vehicles, nationality (French or foreign registration), type of fuel (petrol and diesel) and type of road. The aim is to minimize the ‘statistical gap’, knowing the total amount of fuel delivered on the one side, and the estimation of total fuel consumed on the territory on the other side (by type of fuel).

Permanent counts are made on the national road network (by around 2,000 traffic count stations on 35,000 km of roads and highways; half of this network will be maintained at the departmental level after 2006). For passenger cars, two surveys are used to estimate the average annual kilometres by vehicle, and the average consumption per 100 km (by type of fuel). The French fleet is known from administrative data (national register). But, since the year 2000, the information related to the annual tax "*vignette automobile*" is no longer available, this tax having been suppressed. As older vehicles are overrepresented in the register, new calculation methods are used to take this bias into account.

A new registration system of the fleet will be implemented in 2007 (2008?). For the time being, to improve the estimations, a new source of information is being tested, from biennial vehicle inspections (*UTAC* files, to be merged with national registers). But surveys will still be needed to analyze the road traffic.

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Introduction

There is an increasing demand of studies on the road traffic on the territory, for different purposes: equipment policy at local, national and international levels, environmental issues (emissions) or market studies from the automotive industry.

In France, there is not yet any homogeneous regional information system on total traffic to be consolidated at the national level. Direct counts are only made on the national road network (nearly 40% of traffic), with publication of a monthly index. But every year since 1991, the National Commission of Transport Accounts (*CCTN*) publishes a report including estimations of traffic by categories of road vehicles, categories of road networks and the corresponding fuel consumptions. Two balances are established: one for gasoline, and one for Diesel oil. These figures are a common basis for further studies. Multiple actors, with the Ministry of Transports, bring their data and expertise to elaborate the final balance.

The estimation of passenger cars traffic in France is thus embedded in a larger estimation of traffics and fuel consumptions. The different components of the balance are more or less precise, according to the type of information available. But the result is a coherent system of statistics and estimates, in two folds: first, evaluation of the fleet in use, of average yearly distances and of total traffic on national territory; second, evaluation of the unit consumptions and total consumptions related to this traffic. The total consumptions are then compared with the volume of different fuels delivered, which are rather well reported. But there is not a strict equality between consumption and deliveries: France is an open country, and the traffic of foreign vehicles has to be considered (and the traffic of French vehicles abroad as well); all the more, miscellaneous fuel consumptions (motorcycles, special purpose vehicles, boats...) are to be taken into account as well. In the last years, fuel consumptions are estimated to be about 4 or 5% higher than deliveries.

This paper is oriented on methods and data sources used to establish these balances, and gives some results. One can find more detailed results in the annual report of the *CCTN* (in French) and its annexes (for 2004 accounts, released in 2005: see annexes A II 2.1 to 2.6b, with possible downloads in excel tables; English version of these tables is available on demand to the author).

Part I: Fleet and traffic

I A Number of vehicles in use

The total fleet of vehicles registered in France is rather well known. The Ministry of Transport (SESP) publishes each month statistics of registration documents (new and used vehicles), at the regional and departmental level. The central administrative vehicle register ('FCA') is the main source for estimation of road vehicles fleet in use, estimated yearly with *CCFA*, the French committee of automotive manufacturers.

Additional information was taken into account for these estimations until 1999, as specific taxes for passenger cars ("*vignette automobile*") or for heavy goods vehicles ("*taxe à l'essieu*"), and inspection statistics for buses and coaches (which are inspected twice a year). But after the

cancellation of the “*vignette*” in 2000, the estimations of the number of passenger cars in use mainly rely on the hypothesis on mortality rates. The average lifetime of a passenger car was estimated between 13 and 14 years in 2000 (lognormal distribution).

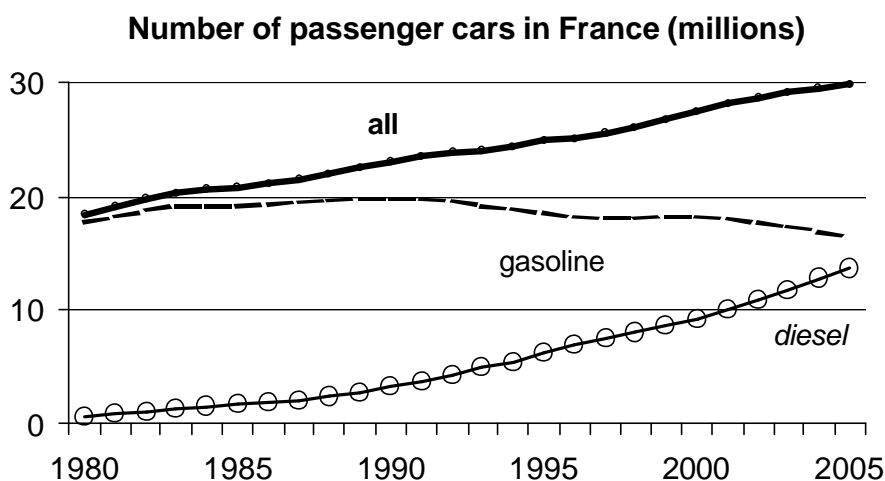
As some vehicles are not always deleted from the register, when sold abroad or destroyed, the detailed statistics of stocks directly issued from the national register usually do not include the eldest vehicles. In SESP publications, the conventional age limit is 10 years for road tractors, 15 years for passenger cars, light commercial vehicles or lorries, and 20 years for buses, coaches, semi-trailers or trailers.

On average, the age of vehicles is increasing, +1.4 month annually, between 1990 and 2004 (CCFA). It was estimated at 7.6 years in 2004.

In fact, it is correlated with the structure of motorization, dramatically changing in favour of Diesel cars (cheaper fuel, lower unit consumption, better performances of Diesel vehicles in the recent years and decreasing price, relatively to petrol cars). In 1980, only 4 % of passenger cars had a Diesel motorization. In 1990, this percentage rose to 14%, 34 % in 2000 and 45 % in 2005 (first January : 13.6 million over a total of 30 million vehicles, see graph 1). In other terms, the average rate of growth from 1980 to 2005 is 2.0 % for all passenger cars, but +12.4 % for diesel cars, and -0.3 % for petrol cars!

The dieselization movement is going on, even if the difference of taxes between gasoline and diesel oil began to decrease in 2004 (rise of tax “TIPP” on diesel oil, from 0.39€ to .42€ a litre, and stability on gasoline, at .64€ a litre). In 2004, seven out of ten new cars were Diesel cars: 1.4 million over 2.0 million). Those structural changes have an important impact on multiple parameters: age distribution, average kilometres performed, and unit consumptions.

Graph 1 Evolution of the fleet of passenger cars (source : CCFA)



I B Estimating average mileages: surveys

A workshop with multiple partners of the Ministry of Transport (see list after the appendix) was constituted in 1999-2000 to revise the levels of traffics (series from 1990 to 1998) and define a common methodology for future annual evaluations.

Commercial vehicles

Mileages are, in a first step, estimated by type of vehicles independently, from different surveys or administrative data. For heavy goods or passenger vehicles, traffic estimations are mainly issued from annual surveys: samples of vehicles are observed during a week, with a representative distribution of weeks all year long. For heavy goods vehicles, it is a European survey. For the public regional passenger transport in "Ile de France", information comes directly from RATP, the public transport body for this region. As for light commercial vehicles, the survey only takes place every four years, in principle: the last was in 2000, and the next will be carried out in 2006. No direct information is available in between.

These surveys are mainly used in evolution, as their scope do not cover all vehicles. For the base year, the estimation of French and foreign traffic in France relies on counts on the national road network made by the service of the Ministry of Transport in charge of technical studies on roads and motorways ("SETRA") in 1990 and 1996 (next one in 2005). In this survey, automatic counts are enriched by a sample of extra information manually collected, as the origin of vehicles (from the registration plates). In addition, for heavy goods vehicles, specific surveys are implemented by interviews at the main border points, in particular, near the Alps and Pyrenees. The aim is to study the flows of international traffics (through and bilateral traffics), from origin to destination, by corridors, and with some information on fuel purchases ("enquête transit" conducted in 1993, 1999 and in 2004-2005, with over 48,000 interviews). Updating this information is important, as one estimates that transit represents now about half of the total international road freight in France, and this share is increasing (next detailed results will be available in 2006).

Passenger cars

As for passenger cars, the only household surveys now available for the annual estimations are the SECODIP panel (since 1987), and the SOFRES "parc auto" panel (since 1976). The previously used short-term Insee survey was interrupted in 1995.

The SOFRES panel is considered as the more accurate to estimate the annual mileage per car. It is co-financed by multiple public or private partners. Two public bodies, Inrets and Ademe, have jointly been studying its data since 1983. The questionnaire is sent to 10,000 households at the end of each year, and results are available five months later. Information requested is equipment on vehicles (light commercial vehicles included since 1994), car purchases, number of kilometres driven by each vehicle during the whole year, and unit consumptions.

The SECODIP panel gives also some information on mileages, but is rather designed to measure the fuel consumptions. This consumer panel of 3,300 cars is co-financed by public bodies, including SESP, and petroleum companies. Notebooks are given for every car, with reporting sent every two weeks. For each fuel purchase, the driver is required to fill in the number of kilometres of the car and the volume of fuel purchased (along with type of fuel, brand, price).

Early results are available from this survey, but the highest mileages are underestimated (and cars that do not move as well).

I C Estimating total traffic: standard vehicles, foreign vehicles and miscellaneous (motorcycles, etc.)

The total traffic is directly measured on the national road network by SETRA, the public service in charge of technical studies on roads and motorways. But this system only covers the traffic on national network, i.e. less than 40% of total kilometres realized on French territory (see appendix A1 on the SIREDO stations). Estimation of levels by categories of vehicles, and by nationality, for the base year, need extra information. For this purpose, the automatic counts are enriched periodically by surveys on roadside, as mentioned above (SETRA and “transit” surveys).

Another approach, for registered French vehicles, consists in estimating the total traffic by type of vehicles and type of motorization using the following formula :

$$\text{Traffic (vehicles-kilometres)} = \text{fleet (vehicles)} * \text{annual average mileage (kilometres)} (1)$$

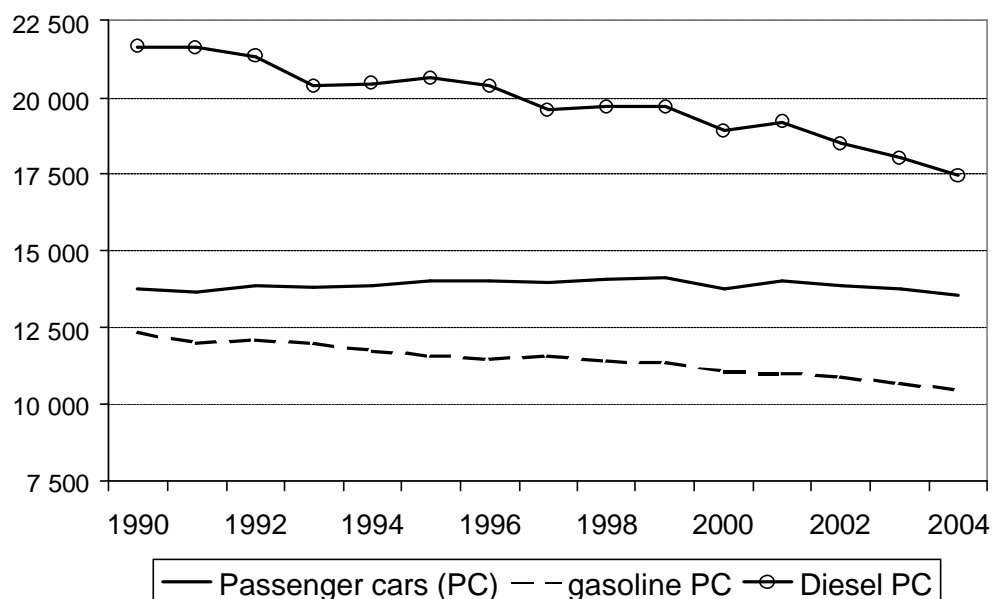
For passenger cars, both average mileages from the SOFRES survey and the SECODIP survey are looked at, with a preference for SOFRES information whenever it is available (not for first evaluations, released in March). In the past years, the evolutions from both surveys were quite similar. But in recent years, the SECODIP survey seems to overestimate this variable: in fact, consumers who do not purchase fuel are not really included in this database. These results suggest that the share of cars that move very little is increasing, as the population is getting older, and the multi-equipment of households is going on.

For heavy goods vehicles, the only survey available is the European survey on road freight: the evolution of total traffic is taken into account, and the annual average mileage per vehicle is calculated (with the reverse formula).

These traffic estimations have to be completed by direct evaluations of traffic of unregistered vehicles, not in the scope of the surveys (for example, special purpose vehicles as dump lorries, the eldest vehicles, army vehicles are not included) and for traffic of foreign vehicles (passenger cars, light and heavy commercial vehicles). The evolution of traffic generated by foreign passenger vehicles (cars and coaches) is directly estimated from tourism indicators or from European surveys on road freight (lorries and road tractors). In fact, the number of foreign vehicles on French territory may vary substantially from one year to another, and the information from ECMT is incomplete when the balance is made (end of May).

Traffic of motorcycles is not really well known. All motorcycles did not have to be registered, until 1 July 2004. For the base years, estimation of stocks were made in 3 categories (less than 50 cm³, 50 to 125 cm³ and over 125 cm³), from multiple data sources: insurance societies and “chambre syndicale du motocycle”. Average mileages were deduced from SOFRES panel. But there is still a need to improve the current estimates, as the number of motorcycles has been sharply increasing, particularly since 1998. The next evaluation of stocks will stand on the national register (the new registration system is already operating for motorcycles under 50 cm³ since mid 2004), as it will progressively cover all French motorcycles.

Graph 2 - Evolution of average annual mileages of passenger cars, in France (kilometres) (source : CCTN)



Part II: Unit and total fuel consumptions

Following the traffic estimations, fuel consumptions are estimated annually by type of vehicles and type of fuel, and total consumptions by light and heavy vehicles are added, to be compared to the total fuel deliveries.

II A Unit consumption of gasoline and diesel vehicles

The unit consumption of vehicles depends on multiple factors, some related to the vehicle itself (horsepower, weight, shape, age, quality of maintenance...), others related to the driving conditions (congestion, speed, kind of road and pavement, load, climate...). Some are positively correlated with consumption, some negatively, and the relationship is not always simple (speed for example).

For passenger cars, the two households surveys mentioned above give information on fuel consumptions. But the SECODIP survey is better designed to give information on the real unit consumptions, with the bi-monthly detailed reports (results are available by socio-economic variables of the owner, vehicle characteristics are well known, as the main category of road network used).

For heavy goods vehicles or passenger vehicles, (partial) information comes from the same specific surveys described in the traffic section. The evolution of unit consumptions may, at the margin, be modified by the expertise of the partners, when the fuel balance is discussed.

II B Total consumptions on national (metropolitan) territory: adjustments

The scope of the annual evaluation is traffic and fuel consumptions on the metropolitan territory.

To estimate the fuel consumption issue from traffic in French territory, this second formula is used, by category of vehicles (from traffic to fuel consumption) :

$$\text{Total consumption (in France, m}^3\text{)} = \text{traffic} * \text{unit consumption (litres/100 km)} \quad (2)$$

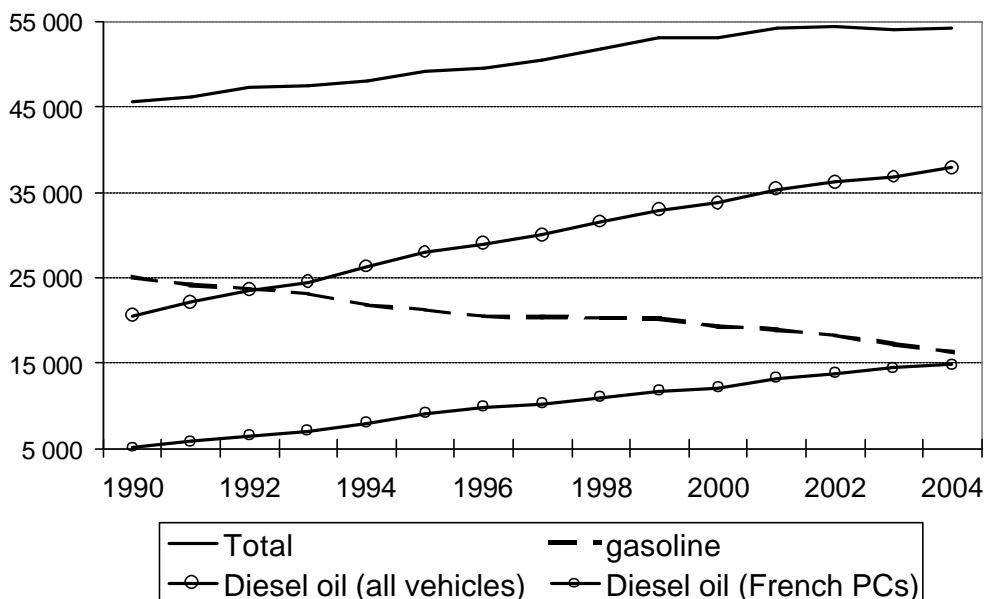
This formula applies on traffic of French and foreign vehicles. The evolution of foreign unit consumption is generally supposed to be similar to the evolution measured on French vehicles, for the same category of vehicles (but other parameters may be considered as well, for tuning the estimations).

Some results :

The total fuel consumption (in m³) of French passenger cars is, in 2004, globally stable (-0.1%), after an increase of 7% from 1990 to 2004 (i.e. +0.5% in annual rate). But the structural change in motorization induces diverging evolutions for gasoline and diesel oil.

From 1990 to 2004, the total gasoline consumption, by French cars, decreased by 37% (-3.2% in annual rate), and conversely, the diesel oil consumption increased by 190% (+7.9%). The rate of growth of diesel consumption is now stabilizing: +5.2% in annual rate during in the last four years, and +2.8% in 2004. But the reduction of gasoline consumption is still significant: -4.7% during the last four year, and even -6.3% in 2004.

Graph 3 Evolution of total fuel consumptions in France (1000 m³; all gas and diesel oil)
(source : CCTN)



Part III: The traffic and fuel balance

III A Fuel deliveries

Fuel deliveries are rather well known (from CPDP: Professional committee for petroleum). A comparison between the annual fuel deliveries, and the estimation of total fuel consumption initiates a return on hypothesis (iteration procedure) if the gap between both values becomes too large. But, in theory, deliveries and consumption on the territory are not equal, because France is not a closed country, and some fuel purchases may be used for other purposes than road transport (such as boats, lawn mowers, etc.).

III B Estimation of fuel balance and statistical adjustment

The balance “deliveries minus consumption” is negative, up to 4 and 5% (in absolute value) since 1998: in average, there is more traffic of vehicles in France with fuel purchased abroad than traffic abroad with fuel purchased in France.

For example, according to the ‘transit’ survey implemented in 1999, foreign heavy vehicles buy only 40% of their fuel in France. The first results of the 2004 survey suggests that this percentage is even lower now, as the diesel oil is cheaper in Spain than in France. And transit traffic from Spain is strongly developing in recent years: a big lorry may pass through France without refilling its tank.

The evolution of the gap, the ‘frontier balance and statistical adjustment’, is evaluated from experts’ opinions, taking into account the estimations of foreign traffic, tourism indicators, and traffic of residents near the borderlines in respect of extra information (as price differentials across borders: not only fuel prices, but also some consumer goods prices that may generate extra traffics).

Some results:

Table: Balance of road vehicles in use, mileages, traffic and fuel consumption (levels) on French metropolitan territory.

2004	Average fleet 1 000 veh.	Average mileage km/veh.	Traffic / territory G veh.-km	Unit consumption l/100km	Total consumption 1 000 m3	Fuel deliveries 1 000 m3
Passenger Cars	29 730	13 566	403,3	7,00	28 246	
gasoline	16 571	10 488	173,8	7,70	13 376	
Diesel	13 160	17 442	229,5	6,48	14 871	
Light commercial vehicles	5 465	16 421	89,7	9,46	8 487	
gasoline	1 058	8 433	8,9	9,11	813	
Diesel	4 408	18 338	80,8	9,49	7 674	
Heavy vehicles	639	46 774	29,9	36,12	10 787	
heavy commercial vehicles	557	49 261	27,4	36,53	10 015	
buses and coaches	82	29 891	2,5	31,48	772	
TOTAL USUAL VEHICULES	35 834	14 593	522,9	9,09	47 520	
Foreign vehicles			28,7	15,23	4 479	
Miscellaneous (boats...)					2 181	
TOTAL (1)			559,9	9,37	54 180	
Gasoline			207,7	Gasoline	16 278	15 505
Diesel			352,2	Diesel	37 902	36 402
TOTAL			559,9	TOTAL CPDP*	54 180	51 907
Purchases at frontiers and statistical adjustment						-2 273

Sources : CCFa, Sofres, panel Ademe-Secodip, Setra, USAP/ASFA, SESP, estimations SESP

(1) unit consumption is estimated from total consumption of road vehicles (motorcycles included)

(*) global consumption include in particular foreign heavy vehicles in France with fuel purchased abroad.

Conclusion and outlook

Traffic of passenger cars represents an important share of total traffic in France, with 72% of all vehicle-kilometres, and 53% of fuel consumptions. Knowing precisely the traffic, at local and national levels, is important for many actors, for infrastructures, industry and environmental considerations. The evaluation of this traffic depends mainly on two parameters: the number of vehicles, and the average mileages. The precision is better on the first one, issued from the national register (with correction of bias procedures), even if improvement of administrative data are strongly recommended by the National Council for Statistical Information (CNIS). Indeed, in the national register, the reporting of destroyed vehicles, or vehicles sold abroad is not carried out (the stock of vehicles is thus overestimated).

The second parameter relies essentially on national household surveys, and the international comparisons are limited by heterogeneous practices.

Can we improve the quality of the statistics issued from the national register?

Before the implementation of the new registration system (one vehicle, one number, not before 2008), there is a need to tune the mortality rates of vehicles. In France, the insurance files are not centralized. One possibility could be to update the national register with the inspection visits files (from UTAC, the Technical Union for Automobile and Cycles), as newly visited vehicles have a higher probability to be in use.

After the last test implemented in 2005 (taking into account the fact that the registration number changes whenever the owner's residence changes from one department to another; see appendix A2 for details), it was decided to try a merge of the national register with the inspection files at a large scale. If the merging rate is good, extra information will be studied, as the kilometre variable (the quality of this variable is not tested yet). But to induce from these administrative data an average traffic per car, in evolution, is not straightforward. A new methodology should to be defined for this purpose.

APPENDIX

**A1 A monthly national traffic index system,
from the SIREDO count stations:
past, present and future (in the decentralization context)**

Each month, a national index describes the evolution of traffic on the three main road networks: conceded motorways (toll), other motorways (free) and national roads (35,000 kilometres overall). It is computed from local measures of traffic, on a sample of road sections. The measure on the conceded motorways network is exhaustive. From this index, one can estimate the monthly road distances made on the national network (roads and motorways).

The index had been modified several times since the beginning (1970).

In 1986, the geographic baseline was stabilized, with 230 count points ('postes'), spread all over the national territory, on a sample of sections for each kind of road network. The stratification of this sample was based on two variables: the traffic capacity, and the traffic flow rate on the section. Measures on these sections were weighted, in proportion with their contributions to the total traffic on each network. Since then, weights are revised each year, to fit the annual traffic statistics. The estimations also take into account missing data.

From 1991 to 1996, SIREDO count stations were installed, and index automatically computed from measures on these stations. Two software were developed: "MELODIE", for automatic data collection, and "TEMPO", for consolidation of data into index and weighting updates. At this time, samples on the conceded motorway network were replaced by an exhaustive measure of road traffic, from the toll system database.

In 1999, the list of sampled sections has been extended to include the new free motorways in the computation (i.e. A20 and A75).

Aside traffic index, the road traffic information gathered from SIREDO stations is represented on maps.

Description of SIREDO system in 2005

("Système Informatisé de Recueil de Données" : a computerized data collection system) :

Nearly 2000 stations (of all types) are installed on the national road network, of which :

-1700 « longueurs » (length) stations:

traffic flows are recorded into 3 categories, depending on the length of the vehicles

-510 « silhouettes » (shape) stations:

traffic flows are recorded into 14 categories, depending on the shape of the vehicles

-170 « charges » (load) stations:

traffic flows are recorded into 12 categories, depending on the gross vehicle weight (computed from axles load and shape)

More precisely, all count stations are equipped by sensors embedded in the pavement. There are four types of sensors (from plain count stations to the most sophisticated SIREDO stations), depending on the parameters to be measured:

	number of vehicles	speed & length	shape	axle load
One loop	X			
Two loops	X	X		
Two loops, plus one detection loop (axles detection)	X	X	X	
Two loops, plus one piezo-ceramic cable	X	X	X	X

The SIREDO is system is being modernized, and will become the SIT system (“Système d’Information Trafic”: Information System on Traffic), with a new generation of stations and new software.

Besides, from 2006, about half of the national network will be transferred at the departmental level (there are around a hundred departments in France). One estimates that the effective transfer will take about two years long (100% on 1 January 2008). In 2006, a transition period, the SIREDO counts will be always collected by the State. Thereafter, the maintenance of the information system will be decentralized (under regional directions of the ministry of transport). But the effective organization of the future data collection system is still not completely defined...

**A2 The *UTAC* inspections files
(Technical Union for Automobile and Cycles)**

Legislation (for vehicles with a kerb weight not exceeding 3.5 tons) :

Vehicles subject to inspection :

- Passenger cars (PC) (classified as type VP on registration document)
- Light commercial vehicles (LCV) (classified as type CTTE, VASP or VTSU on registration document)

Exceptions :

- Classic vehicles (these are not subject to regular inspections, but may require an inspection to be classified as a classic vehicle on the registration document)
- Diplomatic corps vehicles.
- Vehicles used by French forces in Germany

List of vehicles subject to special regulations (ministerial decree dated 18 June 1991) :

- Motor breakdown vehicles
- Ambulances
- School transport vehicles
- Taxis and tax-exempt vehicles
- Light public service vehicles (VLTP)

Frequency of inspections

First visit

- All vehicles concerned must be submitted for inspection within the six months preceding the **FOURTH ANNIVERSARY** of initial registration, as specified on the registration papers (top right-hand corner), and **EVERY TWO YEARS** thereafter.

- In addition, if a non-exempted vehicle over four years old is **OFFERED FOR SALE**, it must have an inspection certificate dated within the six month period preceding the date of application for a new registration document. The seller must provide a private buyer with the initial inspection report carried out within the past six months, together with the reports from any repeat inspections.

The vehicle inspection covers 125 items, of which 68 are considered to warrant prompt remedial repair work, requiring resubmission of the vehicle for a repeat inspection

Second visit (and eventual further repeat inspections)

If a vehicle **FAILS** the inspection, it has to be resubmitted for verification of the repair work within two months. Thereafter, it will be required to take the full inspection again.

Additional inspections

- As from 1 January 1999, light commercial vehicles using petrol or diesel fuel must be submitted for inspection within two months of **EACH ANNIVERSARY** of the last successful inspection. This yearly inspection only covers the items listed in function 0 (vehicle identification) and set 9.1 (emission levels).

Testing the *UTAC* inspection files to improve the estimates

Information available on the *UTAC* datasets for test :

Variables :

Last registration number of vehicle

Serial number

Brand and model

Date of registration

Date of inspection

Date of initial registration

Fiscal category (in CV)

Kilometres

Energy code

(Kind of vehicle: future variable required for the next test)

Reminder:

In year (n), the obligatory inspection concerns :

PCs and LCVs turning four in (n)

PCs and LCVs inspected in (n-2) (expiration of two years validity period)

PCs and LCVs offered for sale, over four years old, if last inspection certificate was older than six months

PCs and LCVs inspected in (n) or (n-1), that failed previous inspections

(and since 1999, LCVs inspected in (n-1) for the 'additional inspection')

A first test was implemented in 2002 on inspections made in January 2000, 2001 and 2002, with the situation of the national register on 1 July 2002. The result: a merging rate of 77% (percentage of *UTAC* observations found in the national register). Why were so many observations not merged?

First, in *UTAC* files, the serial number (a very long variable) and the last registration number are manually filled, source of errors. Second, in the actual register, the registration number changes in case of sale whenever the new owner is resident of another department than the previous owner (and there are around a hundred departments in France). Registrations of used cars are more than twice more frequent than new registrations (for example, in 2002, 2.1 millions new passenger cars were registered in France, against 5.5 millions used cars; compared to a total fleet of 29.2 millions vehicles on 1 January 2003).

This situation will not change before the implementation of the new registration system, in fact not before 2007 or, more probably, 2008.

A second test was conducted in 2005, from inspections made in January, February or March 2005, merged with a copy of the national register at two different dates: 1 January and 1 April 2005 (borders of the inspection period), updated with the file of destroyed vehicles. This second test, with a merge by the last registration number, was more encouraging: 95% observations were found on this enlarged register (on a dataset of 4 millions vehicles inspected in those three months).

Note: Brand and model are not codified the same way in both files. A second step merge on rejects, with a truncated registration number, but with the brand in a common codification, could reduce the rejection rate. A new variable (kind of vehicle) will be added for the next step of tests.

Conclusion:

The first aim of these merging tests was to improve the quality of the national register (to pinpoint vehicles supposed to be out of order, for statistical purpose: to improve the estimation of the fleet in use). A second aim could be to use the kilometres variable as a tool, to implement an alternative method to estimate the yearly traffic of French vehicles. But the quality of this variable has not been verified yet (October 2005), and the whole methodology of estimation is to be defined if this type of information is to be retained.

Some statistics from *UTAC* files

In 2003, 17.3 millions inspections were made (by a network of 4,900 approved inspection facility centres), of which 14.9 millions were first visits.

Type of vehicle:

Passenger cars = 12.9 millions

Light commercial vehicles = 2.0 millions

In average, 80% of passenger cars pass the first visit (i.e. 20% fail the inspection, and need at least a second visit)

Obviously, the fail rate highly depends on the age of vehicles (for example, in 2004):

Vehicles under 4 years: 6.7%

5 to 7 years: 12.4%

8 to 10 years: 20.0 %

11 years and over: 27.4%

These statistics do not include inspections of heavy road vehicles:

- every year, for heavy good vehicles
- every semester, for passenger vehicles (buses, coaches..)

Partners of the road traffic and fuel balance and related websites:

MTETM - Ministère des Transports, de l'Équipement, du Tourisme et de la Mer :

SESP - Service économie, statistiques et prospective (MTETM)

<http://www.statistiques.equipement.gouv.fr/>

(transport / Données d'ensemble)

for vehicle registrations :

> Transport / Véhicules / Immatriculations / Données détaillées

DSCR - Direction de la sécurité et de la circulation routières (MTETM)

<http://www.securiteroutiere.gouv.fr/>

for information on traffic :

<http://www.bisonfute.equipement.gouv.fr/>

SETRA - Service d'études techniques des routes et autoroutes (MTETM)

<http://www.setra.fr>

INRETS - Institut national de recherche sur les transports et leur sécurité (MTETM)

<http://www.inrets.fr>

(Survey SOFRES- "parc auto")

CERTU - Centre d'études sur les réseaux, les transports, l'urbanisme et les constructions publiques (MTETM)

<http://www.certu.fr/>

CPDP - Comité professionnel du pétrole

<http://www.cpdp.org>

CCFA - Comité des Constructeurs Français d'Automobiles

<http://www.ccfa.fr>

Observatoire de l'énergie

Direction Générale de l'Énergie et des Matières Premières (Minofi)

<http://www.industrie.gouv.fr/energie>

ASFA (French highways)

<http://www.autoroutes.fr/>

Ademe - Agence gouvernementale De l'Environnement et de la Maîtrise de l'Énergie

<http://www.ademe.fr>

Insee - Institut National de la Statistique et des Etudes Economiques

<http://www.insee.fr/>

Citepa - Centre Interprofessionnel technique d'études de la Pollution Atmosphérique

<http://www.citepa.org/>

UTAC - Union Technique de l'Automobile et du cycle

<http://www.utac.com/>

ECMT - European Conference of Ministers of Transport

<http://www.cemt.org>
