

A (very Tiny) multisectoral model for France: present stage of development

Rossella Bardazzi
University of Florence

The data (1 / 3)

- ▶ Two alternative sources: Eurostat and INSEE
 - ▶ Problems: inconsistencies between the sources and the methods used. Eurostat data is available with a longer time delay
 - ▶ Example: Supply and use tables for Eurostat are available for the years 1995-2005. SUIOT: 2000-2005. Latest release from France: July 31, 2008
- But:
- current prices: 1996, 1998, 2005
 - previous year's prices: all other years including 2000 which is the base year for chained values

The data (2/3)

- ▶ Eurostat National accounts at sectoral level (31 NACE branches) are available for:
 - Gross value added
 - Compensation of employees
 - Wages and salaries
 - Total employment
- ▶ Then gross fixed capital formation by 6 asset types and final consumption expenditure by 2 digits COICOP classification are available.

The data (3 / 3)

- ▶ INSEE data have pros and cons:
 - PROS: They are more detailed (sometimes too much!), time-series are longer, updates are released more frequently
 - CONS: methodology is not always consistent with Eurostat standards (*“our method of compiling supply and use tables remains unique in the world...”*), no cooperation from INSEE staff, methods not well documented
- ▶ Summing up all this, our decision has been to use
- ▶ INSEE data.

TES – Tableau des entrées-sorties

Organisation du TES

Tableau des ressources en
produits

Tableau des entrées
intermédiaires

Tableau des emplois finals

Compte de production par
branche

Compte d'exploitation par
branche

TES – Tableau des entrées-sorties

- ▶ 3 levels of classification (French economic classification, NES):
 - 118 branches/products (1999-2004)
 - 40 branches/products (1978-2006)
 - 16 branches/products (1978-2006)
- ▶ Valuation Tables (tax flows, commercial and transport margins, and transfers tables) are NOT published.

TEE and Institutional accounts

- ▶ A table called TEE (Tableau économique d'ensemble) contains the accounts for institutional sectors to show how the value added is used by institutions (households, firms, public administration, ...).
- ▶ Fully consistent with the TES.
- ▶ Limitation: both institutions and items are too aggregated
- ▶ Therefore a series of detailed institutional accounts is used (1959-2007)
- ▶ National accounts in chained prices are available (1959-2007) based upon the NAF classification
- ▶ (nomenclature d'activités française, 41 classes)

Building the VAM file

```
# reading into VAM from Excel files
do {
  xl missing "N.D."
  # reading the intermediate flows
  xl open c:\insee\TES\cla40\TES_40_%1.xls
  xl invisible
  xl open worksheet 4
  xl matread c(C-AQ) r(5-47) b.TEI c(1-41) r(1-43) %1
  # reading the final demand components (matrix TEF)
  xl open worksheet 3
  xl vecread c(C) r(5-47) right b.pceio v(1-43) %1 %1
  xl vecread c(D) r(5-47) right b.govcol v(1-43) %1 %1
  xl vecread c(E) r(5-47) right b.govind v(1-43) %1 %1
  xl vecread c(F) r(5-47) right b.gov v(1-43) %1 %1
  xl vecread c(G) r(5-47) right b.isbl v(1-43) %1 %1
  xl vecread c(H) r(5-47) right b.depTot v(1-43) %1 %1
  xl vecread c(I) r(5-47) right b.invest_snf v(1-43) %1 %1
  xl vecread c(J) r(5-47) right b.invest_hh v(1-43) %1 %1
  xl vecread c(K) r(5-47) right b.invest_sf v(1-43) %1 %1
  xl vecread c(L) r(5-47) right b.invest_gov v(1-43) %1 %1
  .
  .
  .
  xl close
} (1978-2005)

xl missing "nc"
```


Building a simplified version of the model (1 / 3)

- ▶ The environment: the model has been built with G7 and Turbo C++ (freeware) under Windows Vista OS.

There are still problems working under Vista as it's necessary to use G7 to build the VAM file and analyze the results, Turbo C++ to compile and link the model, the DOS environment to run the model (several windows opened at the same time).

Building a simplified version of the model (2/3)

- ▶ The procedure: Craft vol.3 has been followed.
 - First a very simple model using G only has been built: very useful to check data inconsistencies and detect mistakes.
 - Then an Interdyme model with macro equations has been developed for the real side and a simple accountant has been built: an important step to get familiar with the structure of the model and the sequence for building and running a model.

Building a simplified version of the model (3/3)

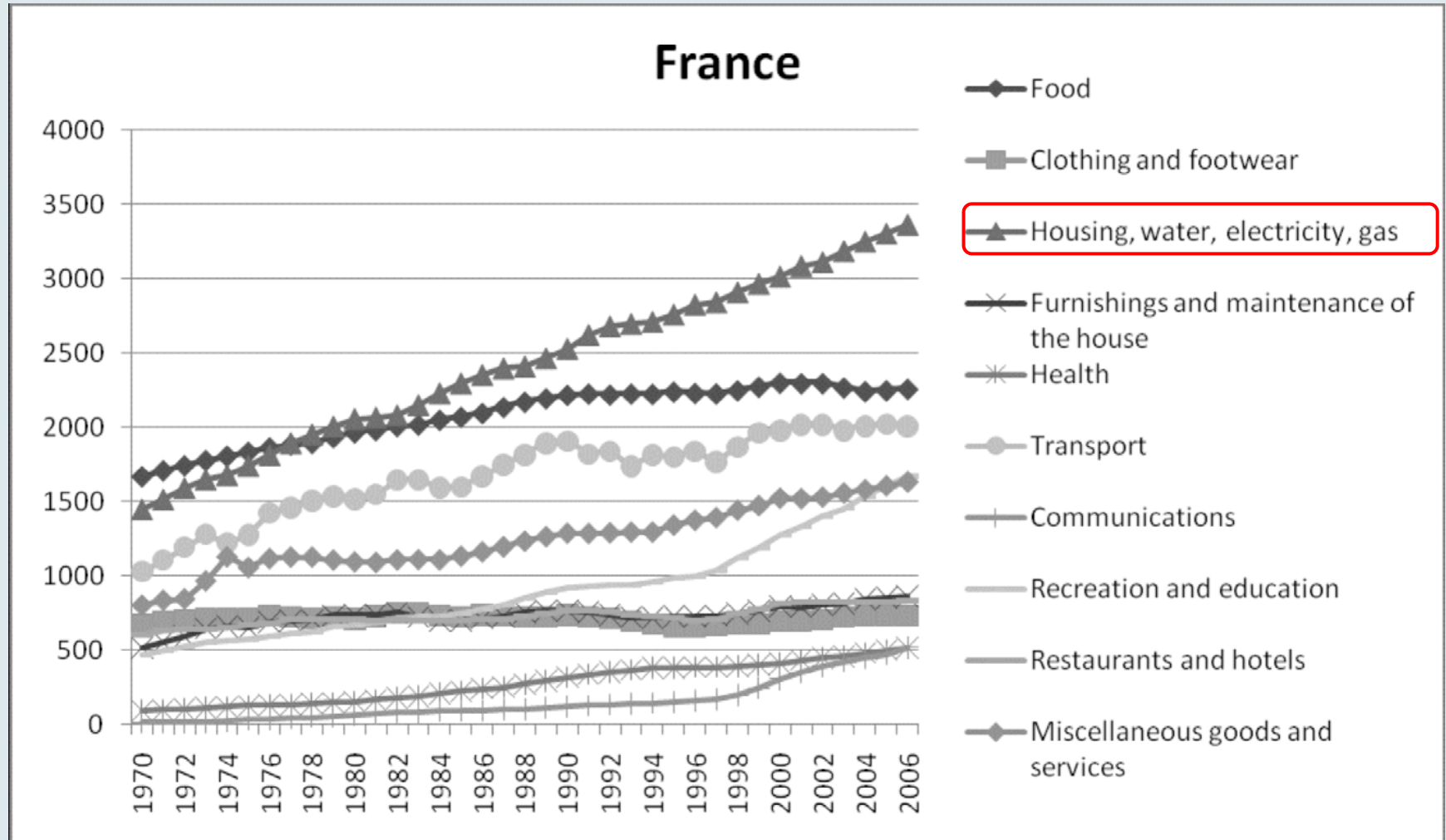
- Finally, detached coefficient equations have been introduced for some variables of the real side and a more detailed accountant using the institutional accounts has been developed.
- The introduction of the accountant part of the model at this early stage of development has been very useful not only to generate variables which are useful in sectoral equations but also to check consistency in the model, by building several balances to be satisfied.

At the present stage of development the price side has not been developed yet.

An example: the private consumption estimation

- ▶ Within the real side, a system of 56 household consumption functions has been estimated with PADS. Results of this estimation are compared to the Italian case.
- ▶ Estimation results were more reliable in the French case than in the Italian one: the main driver behind most of consumption decisions is disposable income whereas for Italian households other factors – demographic changes, financial conditions, labour market reforms – seem to be at work in influencing consumer behaviour.

Housing expenditure increases in real terms



Tab. 5. Housing expenditures estimation: Italy and France

<u>ITALY</u>							
<i>Equation</i>	<i>Included</i>	<i>lambda</i>	<i>share</i>	<i>IncEl</i>	<i>OwnPrEl</i>	<i>Time</i>	
16 Rents	0	0	0.018	-0.12	0	0.36	
17 Tenant Occupied Rent	0	0	0.103	0.3	0	8.65	
18 House maintenance	1	0.23	0.012	1.28	-0.48	-2.77	
19 Water and other household services	1	0.21	0.017	0.52	-0.45	1.66	
20 Electricity, gas, and other fuels	1	0.21	0.034	0.07	-0.45	3.37	
<u>FRANCE</u>							
16 Rents	0	0	0.039	0.51	0	6.94	
17 Tenant Occupied Rent	0	0	0.128	0.39	0	21.51	
18 House maintenance	1	0.23	0.013	0.07	-0.36	1.65	
19 Water and other household services	1	0.21	0.014	0.09	-0.34	3.51	
20 Electricity, gas, and other fuels	1	0.23	0.035	0.71	-0.35	0.4	

Expenditures for water, electricity, gas and other fuels are subctrated from arbitrage and represent a constraint within the household budget with fewer substitutes (highly regulated markets). Therefore they are less price sensitive.

Future work

- ▶ To complete the model!
- ▶ Valuation matrices?
- ▶ Bridge matrices?