Colloque Insee-Banque de France- ACN

Forecasting in COVID times
The strength of national accounting

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Forecast is not very exiting, unless…

▶ …usually

▶ …Covid is a game changer

▶ Building on the work @OFCE Sciences Po Paris

  ▶ 9/3/2020 : l'Economie au temps du COVID, blog post

    ▶ *« La conséquence économique pourrait être jusqu'à 5 points de PIB perdus sur une année »*

    ▶ *« 100 000 décès qui pourraient être évités en France »*

  ▶ 30/3/2020 (4 week horizon) : April GDP loss estimated to -30%

  ▶ 20/4/2020 (8 week horizon) : -30% confirmed & economic agent sector account evaluation (2/3 socialized through public debt ; 1/3 % left to business sector ; oversaving 55 mds by mid 2020

  ▶ 6/5/2020 : Labor market in France (and labor more generally as the labor market was mostly frozen)

  ▶ 5/6/2020 (4 week horizon) : International benchamrking, heterogeneity breakdown

  ▶ 19/6/2020 : The bankrupcy/default wave in France ?

  ▶ 26/6/2020 (8 week horizon) : de-lockdown analysis (rebound potential)

  ▶ 26/6/2020 : « vulnerables to COVID, a tentative of quantification, policy brief n°74 OFCE/Collège des Economistes de la Santé

  ▶ 14/10/2020 (3 month horizon) : 2020 forecast (the first one for us), France and International

  ▶ 11/12/2020 (1 month horizon) : 2nd lockdown evaluation

  ▶ 19/3/2021 : Policy brief, support and stimulus proposal for the economy

  ▶ 14/4/2021 : 18 month horizon, 2021-2022 forecast

  ▶ 15/10/2021 : back to normal

L'analyse incrémentale de la pandémie et de son enjeu économique

Une équipe

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Under the hood : refactoring tools and methods

- Usually:
  - use of macro econometrics models, National Accounts data
  - completed by real time information about the business cycle,
  - policy analysis involving more structural reasonning,
  - and more and more some microsimualtion tools to answer to questions like inequality prospects
- Replaced by:
  - Demand side analysis, of « impeached » consumption due to lockdown and prophilactic measures
  - Equally for investment and production, especially for the first lockdown as a lot of workers were not able to access the workplace, plus absenteeism plus lack of protection material
  - Sectoral analysis (17 branches to the least),
- World Input-Output Database (WIOD) 12 zones 17 branches for aggregating the recession shock trade chanel
- Real time indicators
  - Electrivity use
  - Oxford indicator for restriction, Google mobility
- Mixed model for demand/supply constraints
  - Based on Leontiev model, with supply constrained and demand driven sectors
- Firm "microsimulation"
  - Cash flows during the crisis, forecast of failure rate

Institutional/sectoral accounts

- Institutional sector are representing economic agent, with a strong representative bias
  - To get to that ones need a "simplified" modelization of the economy
    - Identify sources of income and relate that to production account (wages, taxes, profits, value added)
    - Forecast main taxes (changes in tax bases, no change in tax rates)
    - Input transfers implied by policies (activité partielle, fonds de solidarité, etc…)
    - Insure equilibrium, on the sense that all incomes have to be distributed and all losses have to be tracked
    - Insure coherence with production and consumption analysis
      - Stock building is a major difficulty
      - Prices evolutions have been neglected
      - Some convention (public sector) are debatable
- The result:

		SNF-SF	EI	Ménages	APU	ISBLSM	$I - S$	RDM	Total
En %	Valeur ajoutée	-9	-8	0	2	-3	*-8*		**-6.2**
En pts de PIB annuel (en contribution)	Valeur ajoutée	-5.5	-0.5	0.0	0.3	0.0	*-0.4*		-6.2
En Mds	Revenu Disp. Brut	-69		16	-102	0			-154
Contribution (en pts de %)	**Revenu Disp. Brut**	**45**		**-10**	**66**	**0**			**100**
En Mds	**Epargne**			**95**					
En % du RDB	Taux d'épargne			6.4					
En pts de % annuel	**Taux de marge**	**-3.9**							
En %	FBCF	-8		-11	-9	-7			**-9**
En % du PIB	**CF (+) / BF (-)**	**-2.2**		**5.0**	**-4.4**	**0.2**		**1.4**	**0.0**

I/O analysis

- Sectoral « chock » in countries
  - demand,
  - Supply
  - Induced by supply chain dependancy
- Linked trhu international trade and international specialization
- Plus tourism and transport

- Not able to take in account supply chain « local » failure with global consequences
  - Such as protection material production and stockpiling in the begining of pandemic
  - Lack of key compoments coming from very few sources
  - Hindering of certain processes (evergreen kind)
    - Mlay be critical now in some sector (semi conductors)

I/O analysis

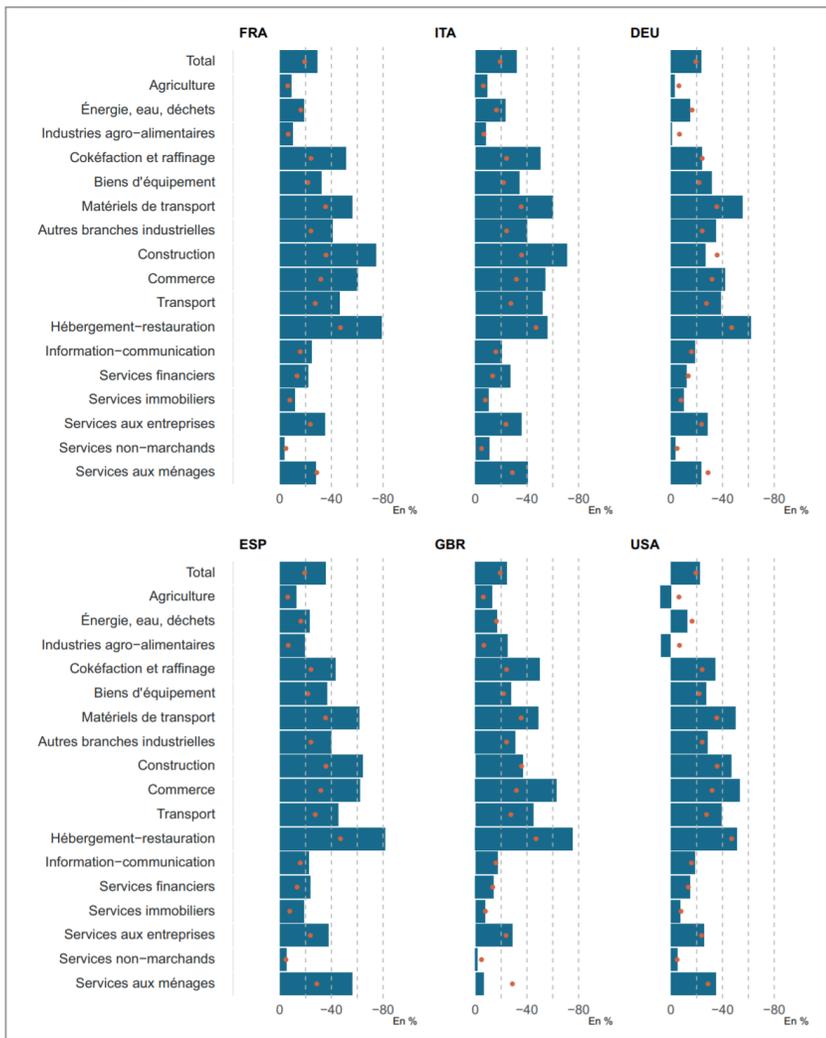Graphique AI. **Variation du commerce extérieur de biens finaux par pays**

En % des importations (*resp. exportations*) du couple produit-pays

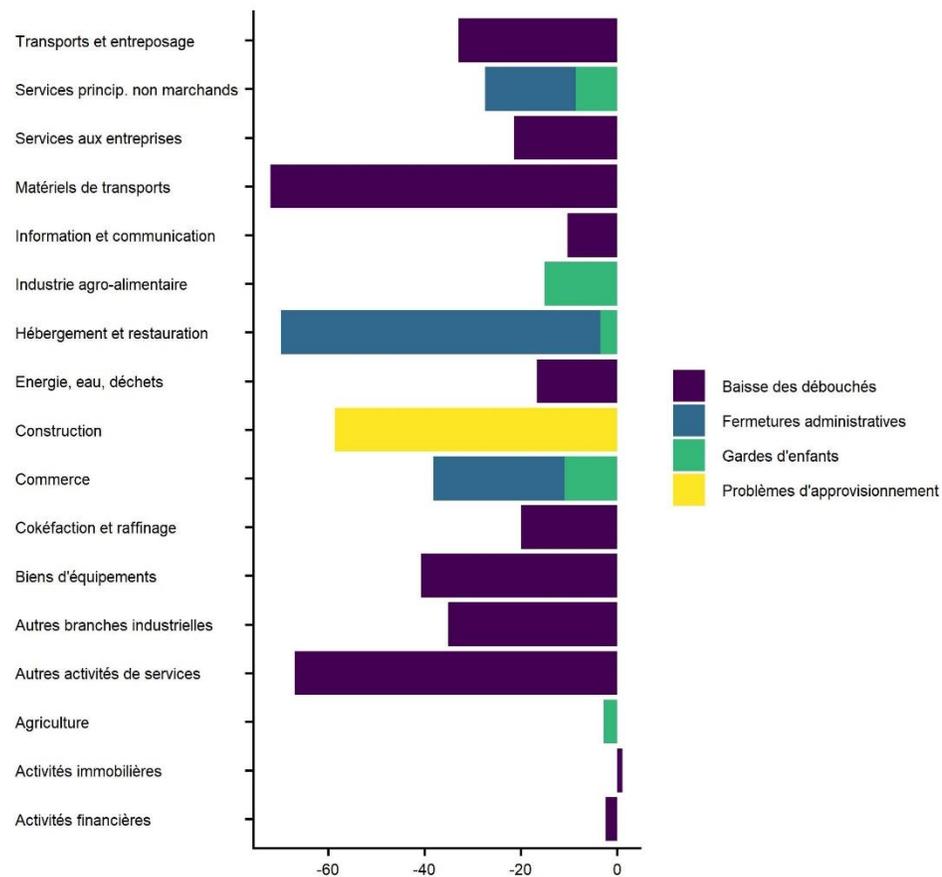Graphique AII. **Perte de VA sectorielle par pays**

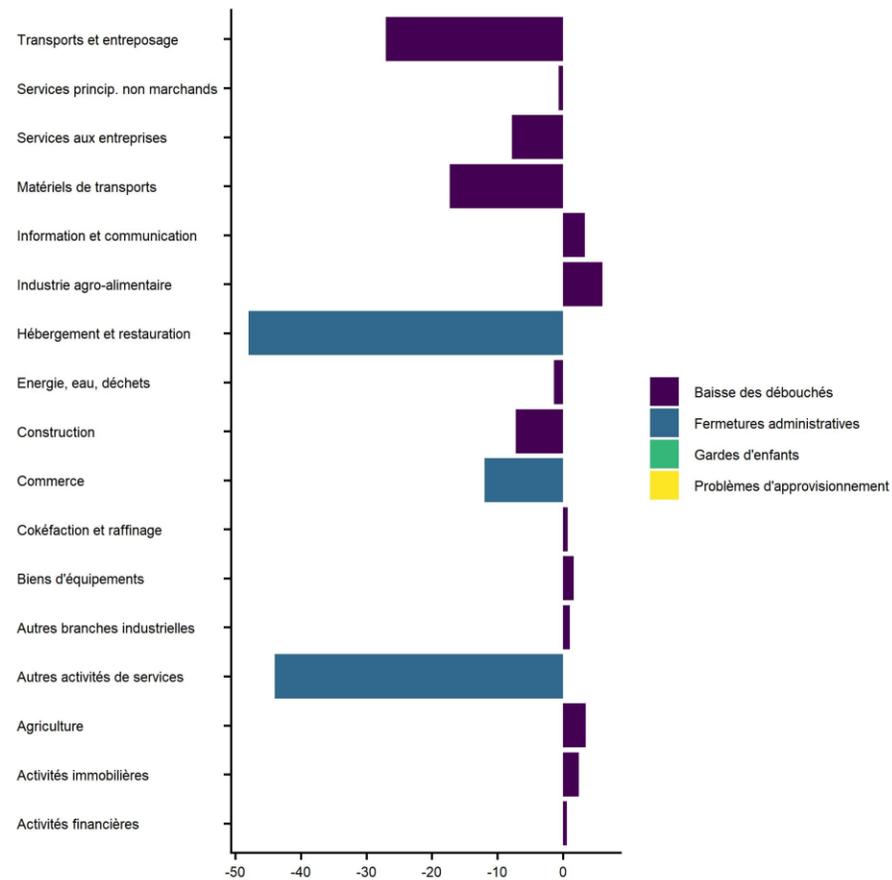En % de la VA nationale

Hybrid model for the COVID crisis

▶ Dauvin&Sampognaro (2021) have put the theorical framework

  ▶ Building on a matrixial Leontieff kind model and introducing supply constraints in some branches

    ▶ Some branches are constrained, some other not, production should respect the I/O matrix and some demands are going to be constrained, written in the matrix framework of the Leontieff model.

    ▶ Based on a « representative firm per branch » hypothesis (or firms in a branch serve equally demand)

    ▶ Production in a branch is either limited by supply or by demand

    ▶ No changes in technical coefficients/nço substitution, no price effect in the present version

  ▶ Can be used for

    ▶ Forecast, searching constraints on demand or supply to build up total production feasible

    ▶ Ex post to identify what was the dominant constraint afterward, knowing production per branch

    ▶ Identification is undetermined (17×4 shocks 17 observations) and completed by more information (partial activity, leaves for child care, etc…)

  ▶ Distinguish 4 types of shocks

    ▶ administrative closing

    ▶ child care leave

    ▶ other supply shocks

    ▶ demand shocks

result: expost analysis of lockdowns

▶ April 2020

▶ November 2020

Lessons from a pandemic for forecast

- Forecast is impossible but necessary
  - Mission impossible
- A simple doctrine
  - Close and compensate
    - Close to reduce pandemic
      - Minimizing economic cost
    - Compensate in order to
      - Make acceptable administrative closing and freedom, intercation and movement limitations
      - maximize the rebound potential
- Order of magnitude are keys
  - Cognitive scaling of the crisis
  - accept the unbelievable
  - refactor priorities, deploy policies
- Needs for public policy are to know
  - What are the consequences
  - Who to compensate

Standard national accounting have proven to be (very) robust

- National accounting provides a framework
  - Easy to work on aggregates, with coherence
    - Easy to « feed » with external data
  - Relatively easy to break down in finer granularity
    - Temporal
    - Sectoral
    - Categories of agents
- Able to deliver message for public policy
  - The loop is short from initial recommandation to « evaluation » to amended recommendation

There are some blind spots

- High frequency and real time in national account is not a priority
  - Annual account, exhaustive approach are long processes
- Income distribution is not well known in real time
  - Bank account information can be used for that,
    - Measure income, spending, high resolution
    - Some hurdles: identifying bank accounts, flows, joining households/banks accounts, consolidation, identification of households characteristics
- Informal economy is hard to grasp in a time of crisis
- Non market economy has been treated differently ampong countries
  - Eurostat rule was not fully followed, may be not fully correct
  - Output gap for non-market economy is a strange concept
- I/O, critical route