SELECTED READINGS

Focus on: Flash estimation and nowcasting

December 2012
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1.47. Giannone Domenico, Reichlin Lucrezia and Small David, 2008. “Nowcasting: The real-time informational content of macroeconomic data”.

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1.56. MOUCHART Michel and ROMBOUTS Jeroen, 2003. “Clustered panel data models: an efficient approach for nowcasting from poor data”. Université catholique de Louvain, Center for Operations Research and Econometrics (CORE), CORE Discussion Papers No. 2003090. .................................38


INTRODUCTION

Flash estimates are seen as an important tool in monitoring the phases of the economic cycle and in helping public authorities and businesses to adapt their policies and measures to economic phases. A flash estimate is an early estimate produced and published as soon as possible after the end of the reference period, using a more incomplete set of information than the set used for traditional estimates. It is normally calculated on the basis of a statistical or econometric model. The flash estimate should have a release date appreciably earlier than the first release date of the actual data for that variable. There are two main methods widely used in the production of flash estimates. The first is to use regression techniques to identify the relationship between the target variable and the auxiliary indicators. The second is to use static or dynamic factor methods to identify underlying or latent variables that are assumed to be a guide to movements in the target variable.

Eurostat regularly produces flash estimates of European aggregates for Gross Domestic Product (GDP) and the Monetary Union Index of Consumer Prices (MUICP). The flash estimate of GDP is produced at 45 days after the end of the reference quarter. A flash estimate of MUICP is produced at the end of the reference month. Both indicators have been developed in the framework of the Principal European Economic Indicators (PEEIs), aiming to provide euro-area key short-term indicators according to well defined targets, notably in terms of timeliness. Both estimates rely on the same temporal disaggregation technique.

Nowcasting is the prediction of the present, the very near future and the very recent past. Crucial in this process is to use timely monthly information in order to nowcast key economic variables, such as for example GDP, that are typically collected at low frequency and published with long delays. The nowcasting process goes beyond the simple production of an early estimate as it essentially requires the assessment of the impact of new data on the subsequent forecast revisions for the target variable.

What follows is a non-exhaustive collection of articles and papers on flash estimation and nowcasting.
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1. WORKING PAPERS AND ARTICLES


Governments and central banks need to have an accurate and timely assessment of indicators for the current month, as this is essential for providing a reliable and early analysis of the current economic situation. The index of industrial production (IIP) is probably the most important and widely analyzed monthly indicator, given the relevance of the manufacturing activity as a driver of the whole business cycle. This paper presents a series of models conceived to forecast the current French monthly IIP, based on regression models and dynamic factor models. The combination of these two approaches allows selecting economically relevant explanatory variables among a large data set. In addition, a rolling forecast study is carried out to assess the forecasting performance of the estimated models, using predictive ability and model confidence set tests. This latter allows getting several models displaying equivalent forecasting performance and therefore gives robustness to the forecasting exercise rather than to base the forecasting analysis only on one model.

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This article finds that asset prices on Oslo Stock Exchange is the single most important block of data to improve estimates of current quarter GDP in Norway. We use an approximate dynamic factor model that is able to handle new information as it is released, thus the marginal impact on mean square nowcasting error can be studied for a large number of variables. We use a panel of 148 non-synchronous variables. The high informational content in asset prices is explained by reference to the small size of companies on Oslo Stock Exchange and the small and open nature of the Norwegian economy.
Full text available at: http://download.springer.com/static/pdf/793/art%253A10.1007%252Fs00181-010-0429-9.pdf?auth66=1355481223_1aace1f693734bd013995e100b1ba454andext=.pdf


Reliable and timely information about current economic conditions is crucial for policy makers and expectations formation. This paper demonstrates the efficacy of the Survey of Professional Forecasters (SPF) and the Purchasing Manager Indices (PMI) in anticipating US real economic activity. We conduct a fully-fledged real-time out-of sample forecasting exercise linking these surveys to US GDP and industrial production growth over a long sample period. We find that both indicators convey valuable information for assessing current economic conditions. The SPF clearly outperforms the PMI in forecasting GDP growth, while it performs quite poorly in anticipating industrial production growth. Combining the information included in both surveys further improves the accuracy of both, the PMI and the SPF-based forecast.


Governments and central banks need to have an accurate and timely assessment of Gross Domestic Product's (GDP) growth rate for the current quarter, as this is essential for providing a reliable and early analysis of the current economic situation. This paper presents a series of models conceived to forecast the current German GDP's quarterly growth rate. These models are designed to be used on a monthly basis by integrating monthly economic information through bridge models, thus allowing for the economic interpretation of the data. We do also forecast German GDP by dynamic factor models. The combination of these two approaches allows selecting economically relevant explanatory variables among a large data set of hard and soft data. In addition, a rolling forecast study is carried out to assess the forecasting performance of the estimated models. To this end, publication lags are
taken into account in order to run pseudo out-of-sample forecasts. We show that it is possible to get reasonably good estimates of current quarterly GDP growth in anticipation of the official release, especially from bridge models.

Full text available at:


This study evaluates forecasting performance of a large-scale factor model developed in Siliverstovs and Kholodilin (2012) in a genuine ex ante forecasting exercise. We perform our forecast of GDP growth in Switzerland in real time using real-time data vintages collected at weekly frequency. This allows us to monitor how newly released economic and financial data influence our forecasts and hence capture prevailing tendencies in current course of economic development.

Full text available at:


While the usefulness of factor models has been acknowledged over recent years, little attention has been devoted to the forecasting power of these models for the Japanese economy. In this paper, we aim at assessing the relative performance of factor models over different samples, including the recent financial crisis. To do so, we construct factor models to forecast Japanese GDP and its subcomponents, using 38 data series (including daily, monthly and quarterly variables) over the period 1991 to 2010. Overall, we find that factor models perform well at tracking GDP movements and anticipating turning points. For most of the components, we report that factor models yield lower forecasting errors than a simple AR process or an indicator model based on Purchasing Managers' Indicators (PMIs). In line with previous studies, we conclude that the largest improvements in terms of forecasting accuracy are found for more volatile periods, such as the recent financial crisis. However, unlike previous studies, we do not find evident links between the volatility of the components and the relative advantage of using factor models. Finally, we show that adding the PMI index
as an independent explanatory variable improves the forecasting properties of the factor models.

Full text available at:


This paper develops a method for producing current-quarter forecasts of GDP growth with a (possibly large) range of available within-the-quarter monthly observations of economic indicators, such as employment and industrial production, and financial indicators, such as stock prices and interest rates. In light of existing evidence of time variation in the variances of shocks to GDP, we consider versions of the model with both constant variances and stochastic volatility. We also evaluate models with either constant or time-varying regression coefficients. We use Bayesian methods to estimate the model, in order to facilitate providing shrinkage on the (possibly large) set of model parameters and conveniently generate predictive densities. We provide results on the accuracy of nowcasts of real-time GDP growth in the U.S. from 1985 through 2011. In terms of point forecasts, our proposal is comparable to alternative econometric methods and survey forecasts. In addition, it provides reliable density forecasts, for which the stochastic volatility specification is quite useful, while parameter time-variation does not seem to matter.

Full text available at:


This paper applies the factor model proposed by Giannone, Reichlin, and Small (2005) on a large data set to nowcast (i.e. current-quarter forecast) the annual growth rate of China’s quarterly GDP. The data set contains 189 indicator series of several categories, such as prices, industrial production, fixed asset investment, external sector, money market and financial market. This paper also applies Bai and Ng’s criteria (2002) to determine the number of common factors in the factor model. The identified model generates out-of-sample nowcasts for China's GDP with smaller
mean squared forecast errors than those of the Random Walk benchmark. Moreover, using the factor model, we find that interest rate data is the single most important block in estimating current-quarter GDP in China. Other important blocks are consumer and retail prices data and fixed asset investment indicators.

Full text available at:


This paper proposes a methodology to nowcast and forecast inflation using data with sampling frequency higher than monthly. The nowcasting literature has been focused on GDP, typically using monthly indicators in order to produce an accurate estimate for the current and next quarter. This paper exploits data with weekly and daily frequency in order to produce more accurate estimates of inflation for the current and followings months. In particular, this paper uses the Weekly Oil Bulletin Price Statistics for the euro area, the Weekly Retail Gasoline and Diesel Prices for the US and daily World Market Prices of Raw Materials. The data are modelled as a trading day frequency factor model with missing observations in a state space representation. For the estimation we adopt the methodology exposed in Banbura and Modugno (2010). In contrast to other existing approaches, the methodology used in this paper has the advantage of modelling all data within a unified single framework that, nevertheless, allows one to produce forecasts of all variables involved. This offers the advantage of disentangling a model-based measure of "news" from each data release and subsequently to assess its impact on the forecast revision. The paper provides an illustrative example of this procedure. Overall, the results show that these data improve forecast accuracy over models that exploit data available only at monthly frequency for both countries.

Full text available at:

In this paper we examine the quality of the initial estimates of the components of both real and nominal U.S. GDP. We introduce a number of new statistics for measuring the magnitude of changes in the components from the initial estimates available one month after the end of the quarter to the estimates available 3 months after the end of the quarter. We further specifically investigate the potential role of changes in the state of the economy for these changes. Our analysis shows that the early data generally reflected the composition of the changes in GDP that was observed in the later data. Thus, under most circumstances, an analyst could use the early data to obtain a realistic picture of what had happened in the economy in the previous quarter. However, the differences in the composition of the vectors of the two vintages were larger during recessions than in expansions. Unfortunately, it is in those periods when accurate information is most vital for forecasting.

Full text available at:
http://www.gwu.edu/~iiep/assets/docs/papers/Sinclair_IIEPWP2011-5.pdf


In this paper we examine the quality of the initial estimates of headline GDP and 10 major components of both real and nominal U.S. GDP. We ask a number of questions about various characteristics of the differences between the initial estimates available one month after the end of the quarter to the estimates available three months after the end of the quarter. Do the first estimates have the same directional signs as the later numbers? Are the original numbers unbiased estimates of the later figures? Are any observed biases related to the state of the economy? Finally, we determine whether there is a significant difference between the vector of the 30 day estimates of the 10 major components and the vector of the 90 day estimates of the same components. We conclude that, despite the existence of some bias, under most circumstances, an analyst could use the early data to obtain a realistic picture of what had happened in the economy in the previous quarter.

Nowcasting has been a challenge in the recent economic crisis. We introduce the Toll Index, a new monthly indicator for business cycle forecasting and demonstrate its relevance using German data. The index measures the monthly transportation activity performed by heavy transport vehicles across the country and has highly desirable availability properties (insignificant revisions, short publication lags) as a result of the innovative technology underlying its data collection. It is coincident with production activity due to the prevalence of just-in-time delivery. The Toll Index is a good early indicator of production as measured for instance by the German Production Index, provided by the German Statistical Office, which is a well-known leading indicator of the Gross National Product. The proposed new index is an excellent example of technological, innovation-driven economic telemetry, which we suggest should be established more around the world.

Full text available at:


This paper performs a fully real-time nowcasting (forecasting) exercise of US real gross domestic product (GDP) growth using Giannone, Reichlin and Small (2008) factor model framework which enables one to handle unbalanced datasets as available in real-time. To this end, we have constructed a novel real-time database of vintages from October 2000 to June 2010 for a panel of US variables, and can hence reproduce, for any given day in that range, the exact information that was available to a real-time forecaster. We track the daily evolution throughout the current and next quarter of the model nowcasting performance. Similarly to Giannone et al. pseudo real-time results, we find that the precision of the nowcasts increases with information releases. Moreover, the Survey of Professional Forecasters (SPF) does not carry additional information with respect to the model best specification, suggesting that the often cited superiority of the SPF, attributable to judgment, is weak over our sample.
Then, as one moves forward along the real-time data flow, the continuous updating of the model provides a more precise estimate of current quarter GDP growth and the SPF becomes stale compared to all the model specifications. These results are robust to the recent recession period.


In this paper we use U.S. real-time vintage data and produce combined density nowcasts for quarterly GDP growth from a system of three commonly used model classes. The density nowcasts are combined in two steps. First, a wide selection of individual models within each model class is combined separately. Then, the nowcasts from the three model classes are combined into a single predictive density. We update the density nowcast for every new data release throughout the quarter, and highlight the importance of new information for the evaluation period 1990Q2-2010Q3. Our results show that the logarithmic score of the predictive densities for U.S. GDP increase almost monotonically as new information arrives during the quarter. While the best performing model class is changing during the quarter, the density nowcasts from our combination framework is always performing well both in terms of logarithmic scores and calibration tests. The density combination approach is superior to a simple model selection strategy and also performs better in terms of point forecast evaluation than standard point forecast combinations.


We study the role of the well-known monthly diffusion indices produced by the Institute or Supply Management in nowcasting current quarter US GDP growth. We investigate their marginal impact on these nowcasts when large unbalanced (jagged
edge) macroeconomic data sets are used in real time to generate them. We find some evidence that these ISM indices can be helpful in improving the nowcasts in the beginning of the month when new ISM information becomes available ahead of other monthly indicators.


Tracking growth in the Indian economy would be best performed using a measure like GDP. Unfortunately official estimates of this indicator are released with quarterly frequency and with considerable delay. This paper compares different approaches to the short term forecasting (nowcasting) of real GDP growth in India and evaluates methods to optimally gauge the current state of the economy. Univariate quarterly models are compared with bridge models that exploit the available monthly indicators containing information on current quarter developments. In the forecasting exercise we perform a pseudo real-time simulation: by properly taking into account the actual publication lags of the series, we replicate the information set available to the policymaker at each point of time. We find that bridge models perform satisfactorily in predicting current quarter GDP growth. This result follows from the actual estimation technique used to construct the official quarterly national accounts, still largely dependent on a narrow information set. Our analysis also suggests mixed evidences about the additional predictive power of Indian survey data with respect to the hard data already used in the national accounts.


In this paper we present a dynamic factor model that produces nowcasts and backcasts of Irish quarterly GDP using timely data from a panel dataset of 35 indicators. We apply a recently developed methodology, whereby numerous potentially useful indicator series for Irish GDP can be availed of in a parsimonious manner and the
unsynchronized nature of the release calendar for a wide range of higher frequency indicators can be handled. The nowcasts in this paper are generated by using dynamic factor analysis to extract common factors from the panel dataset. Bridge equations are then used to relate these factors to quarterly GDP estimates. We conduct an out-of-sample forecasting simulation exercise, where the performance of the factor model is compared with that of a standard benchmark model.

Full text available at:
http://mpra.ub.uni-muenchen.de/32941/1/MPRA_paper_32941.pdf


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Business cycles are usually defined at a national level. The implicit assumption being that it affects all regions similarly. This is combined with a lack of timely information on regional economic development as annual values of the gross regional product (GRP) are often published with up to two years lag. The present paper evaluates a method of obtaining values of the GRP as soon as monthly and quarterly business cycle indicators become available. Building on earlier work on using bridge equations to obtaining quarterly values of GDP growth, a method is proposed were annual GRP growth is estimated using a large number of business cycle indicators. The procedure is applied to data for the Northern regions of Sweden. With the present method it is possible to continuously refine GRP growth values throughout the year. By utilizing the information content in available business cycle indicators, a nowcast of the GRP is obtained as opposed to a pure forecast based solely on past information. Nowcasts will then provide valuable information on how current highs or lows are affecting different regions.

Full text available at:

We present the operationalized Toll Index, which is a new type of early indicator for the German business cycle. We present the basic idea and document the power of the indicator for the purpose of nowcasting. The data will be regularly available at the IDSC, the data bank center of IZA and will be accessible there through the homepage. We further emphasize several policy recommendations regarding data.


In the number 108 of the OFCE review, nowcasting factor models of French growth were proposed and assessed in pseudo real time over the period 2001-2007. The financial crisis has reduced their accuracy. The new basis of the French quarterly accounts published mid-May 2011 modifies also the results noticeably because it concerns GDP growth over the whole estimation period. Thus, it is the opportunity to reassess these models presented in Charpin (2009). It is also the occasion to confront them to other models by comparing their performance in pseudo real time over the period 2001Q1-2011Q1.

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An empirical forecast accuracy comparison of the non-parametric method, known as multivariate Nearest Neighbor method, with parametric VAR modelling is conducted on the euro area GDP. Using both methods for nowcasting and forecasting the GDP, through the estimation of economic indicators plugged in the bridge equations, we get more accurate forecasts when using nearest neighbour method. We prove also the asymptotic normality of the multivariate k-nearest neighbour regression estimator for dependent time series, providing confidence intervals for point forecast in time series.

We introduce easy to implement regression-based methods for predicting quarterly real economic activity that use daily financial data and rely on forecast combinations of MIDAS regressions. Our analysis is designed to elucidate the value of daily information and provide real-time forecast updates of the current (nowcasting) and future quarters. Our findings show that while on average the predictive ability of all models worsens substantially following the financial crisis, the models we propose suffer relatively less losses than the traditional ones. Moreover, these predictive gains are primarily driven by the classes of government securities, equities, and especially corporate risk.


The aim of this paper is to introduce a new methodology to forecast the monthly economic indicators used in the Gross Domestic Product (GDP) modelling in order to improve the forecasting accuracy. Our approach is based on multivariate k-nearest neighbours method and radial basis function method for which we provide new theoretical results. We apply these two methods to compute the quarter GDP on the Euro-zone, comparing our approach, with GDP obtained when we estimate the monthly indicators with a linear model, which is often used as a benchmark.

Full text available at: http://halshs.archives-ouvertes.fr/docs/00/46/04/72/PDF/WP_guegan-rakotomarolahy.pdf

The main objective of this work is to produce up to date and frequent figures of the demand and supply sides of the tourism sector. Demand here refers to tourism consumption or expenditure, while supply refers to the output from tourism related industries. This is carried out to address one of the weaknesses of the Tourism Satellite Account (TSA), which is based on data from the System of National Accounts (SNA) which is published two years after the reference date. The requirement for timely and frequent figures for tourism demand and supply has emerged from all the main actors in the UK tourism sector: the national tourism boards, for example Visit England; Department for Culture, Media, and Sport (DCMS); and the nine regional development agencies (RDA).


Forecasts of global economic activity and inflation are important inputs when conducting monetary policy in small open economies such as Canada. As part of the Bank of Canada's broad agenda to augment its short-term forecasting tools, the author constructs simple mixed-frequency forecasting equations for quarterly global output, imports, and inflation using the monthly global Purchasing Managers Index (PMI). When compared against two benchmark models, the results show that the PMIs are useful for forecasting developments in the global economy. As the forecasts are updated throughout the quarter with the monthly release of the PMI, forecasting performance generally improves. An analysis of the forecasts over the period of the Great Recession (in particular, 2008Q4 to 2009Q2) shows that, while models that include the "soft" PMI indicators did not fully capture the sharp deterioration in the global economy, they nevertheless improved the forecasts relative to the benchmark models. This finding highlights the usefulness of such indicators for short-term forecasting.

DSGE models are useful tools for evaluating the impact of policy changes but their use for (short-term) forecasting is still at an infant stage. Besides theory based restrictions, the timeliness of data is an important issue. Since DSGE models are based on quarterly data, they are vulnerable to a publication lag of quarterly national accounts. In this paper we propose a framework for a short-term forecasting of GDP based on a medium-scale DSGE model for a small open economy within a currency area that utilizes the timely information available in monthly conjunctural indicators. To this end we adopt a methodology proposed by Giannone, Monti and Reichlin (2009). Using Austrian data we find that the forecasting performance of the DSGE model can be improved considerably by conjunctural indicators while still maintaining the story-telling capability of the model.

Full text available at:


Given a need for nowcasting, we consider how nowcasts can best be achieved, the use and timing of information, including disaggregation over variables and common features, and the role of automatic model selection for nowcasting missing disaggregates. We focus on the impact of location shifts on nowcast failure and nowcasting during breaks, using impulse saturation, its relation to intercept correction, and to robust methods to avoid systematic nowcast failure. We propose a nowcasting strategy, building models of all N disaggregate series by automatic methods, forecasting every variable each period, then testing for shifts in available measures, switching to robust forecasts of missing series when breaks are detected.
We define nowcasting as the prediction of the present, the very near future and the very recent past. Key in this process is to use timely monthly information in order to nowcast quarterly variables that are published with long delays. We argue that the nowcasting process goes beyond the simple production of an early estimate and it consists in the analysis of the link between the news in consecutive data releases and the resulting forecast revisions for the target variable. We describe an econometric framework that allows us to mimic, via a coherent statistical model, the judgemental process of nowcasting traditionally conducted in policy institutions and used, alongside the judgemental procedures, in many central banks. To illustrate our ideas, we study the nowcast of euro area GDP in the fourth quarter of 2008.

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We build a small-scale factor model for the GDP of one of the hardest hit economies during the latest recession to study the exact dynamic versus static factor model performance along a business cycle, with an emphasis placing on nowcasting performance during a pronounced switch of business cycle phases due to the latest recession. We compare the factor models’ nowcasting performance to a random walk, autoregressive and the best-performing nowcasting models at our hands, which are vector autoregressive (VAR) models. It is shown that a small-scale static factor-augmented VAR (FAVAR) model tends to improve upon the nowcasting performance of the VAR models when the model span and the nowcasting period stretch beyond a single business cycle phase, while exact dynamic factor models tend to fail to detect the timing and depth of the recession regardless of ARMA specifications. As regards
the case when the model span and the nowcasting period are contained within a single business cycle phase, static and dynamic factor models appear to show similar performance with potentially slight superiority of dynamic factor models if the factor-forming set of variables and factor dynamics are carefully selected.

Full text available at:
http://mpra.ub.uni-muenchen.de/22147/1/MPRA_paper_22147.pdf


The sharp decline in economic activity registered in Spain over 2008 and 2009 has no precedents in recent history. After ten prosperous years with an average GDP growth of 3.7%, the current recession places non-judgemental forecasting models under stress. This paper evaluates the Spanish GDP nowcasting performance of combinations of small and medium-sized linear dynamic regressions with priors originating in the Bayesian VAR literature. Our forecasting procedure can be considered a timely and simple approximation to the mix of accounting tools, models and judgement used by the statistical agencies to construct aggregate GDP figures. The real time forecast evaluation conducted over the most severe phase of the recession shows that our method yields reliable real GDP growth predictions almost one and a half months before the official figures are published.

Full text available at:
http://www.bde.es/f/webbde/SES/Secciones/Publicaciones/PublicacionesSerias/DocumentosTrabajo/10/Fic/dt1037e.pdf


This paper explores the performance of the combination of forecasts to produce flash estimates of the Euro area GDP. According to a bridge equation approach, we build up a flash estimation based on real time information available within 30 days from the reference quarter. Firstly, we estimate different single equation models for GDP together with the one-step ahead forecasts; then, we combine the forecasts according to four weighting schemes. In particular a new method that utilizes directional
forecasts is proposed and compared with the naive scheme that assigns equal weights to all models and two others methods already known in the literature.

A simulation experiment shows that for series with low frequency trends our method outperforms the others.

These findings are confirmed by the real-data application. Moreover, in terms of accuracy, the proposed Flash estimates presents better results respect to the single equations approach for the period 2005q1-2007q4.

Full text available at:


The experience accumulated from the development and production of a flash estimate of GDP as an official statistic at Statistics South Africa (Stats SA) is presented and discussed. This experience could inform national statistical organisations operating under similar statistical production constraints in other newly industrialised countries or elsewhere. The use of the flash estimate as an early indicator of business cycle slowdowns and upturns is also presented to demonstrate one possible by-product use of the flash estimate.

Full text available at:
http://mpra.ub.uni-muenchen.de/39215/1/MPRA_paper_39215.pdf


The qualitative responses that firms give to business survey questions regarding changes in their own output provide a real-time signal of official output changes. The most commonly used method to produce an aggregate quantitative indicator from business survey responses-the net balance or diffusion index-has changed little in 40 years. This paper investigates whether an improved real-time signal of official output data changes can be derived from a recently advanced method on the aggregation of survey data from panel responses. We find, in a New Zealand application, that
exploiting the panel dimension to qualitative survey data gives a better in-sample signal about official data than traditional methods. Out-of-sample, it is less clear that it matters how survey data are quantified, with simpler and more parsimonious methods hard to improve. It is clear, nevertheless, that survey data, exploited in some form, help to explain revisions to official data.

Full text available at: http://onlinelibrary.wiley.com/doi/10.1002/for.1127/abstract?systemMessage=Wiley+Online+Library+will+be+disrupted+on+15+December+from+10%3A00-12%3A00+GMT+%2805%3A00-07%3A00+EST%29+for+essential+maintenance


Combined density nowcasts for quarterly Euro-area GDP growth are produced based on the real-time performance of component models. Components are distinguished by their use of “hard” and “soft” indicators. We consider the accuracy of the density nowcasts as within-quarter information on the monthly indicators accumulates. We focus on their ability to anticipate the recent recession probabilistically. We find that the relative utility of “soft” data increased suddenly during the recession. But as this instability was hard to detect in real-time it helps, when producing nowcasts knowing only one month’s “hard” data, to weight the different indicators equally. As more monthly “hard” data arrive, better calibrated densities are obtained by giving a higher weight in the combination to these “hard” indicators.

Full text available at: http://www.niesr.ac.uk/pdf/091110_150503.pdf


In this article, we merge two strands from the recent econometric literature. First, factor models based on large sets of macroeconomic variables for forecasting, which have generally proven useful for forecasting. However, there is some disagreement in the literature as to the appropriate method. Second, forecast methods based on mixed-
frequency data sampling (MIDAS). This regression technique can take into account unbalanced datasets that emerge from publication lags of high- and low-frequency indicators, a problem practitioner have to cope with in real time. In this article, we introduce Factor MIDAS, an approach for nowcasting and forecasting low-frequency variables like gross domestic product (GDP) exploiting information in a large set of higher-frequency indicators. We consider three alternative MIDAS approaches (basic, smoothed and unrestricted) that provide harmonized projection methods that allow for a comparison of the alternative factor estimation methods with respect to nowcasting and forecasting. Common to all the factor estimation methods employed here is that they can handle unbalanced datasets, as typically faced in real-time forecast applications owing to publication lags. In particular, we focus on variants of static and dynamic principal components as well as Kalman filter estimates in state-space factor models. As an empirical illustration of the technique, we use a large monthly dataset of the German economy to nowcast and forecast quarterly GDP growth. We find that the factor estimation methods do not differ substantially, whereas the most parsimonious MIDAS projection performs best overall. Finally, quarterly models are in general outperformed by the Factor MIDAS model, which confirms the usefulness of the mixed-frequency techniques that can exploit timely information from business cycle indicators.

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http://onlinelibrary.wiley.com/doi/10.1111/j.1468-0084.2010.00591.x/abstract;jsessionid=4D99DF91F9BCEEC2BD0F7282287EB6A2.d03t01?systemMessage=Wiley+Online+Library+will+be+disrupted+on+15+December+from+10%3A00-12%3A00+GMT+%2805%3A00-07%3A00+EST%29+for+essential+maintenance


The early releases of the euro area and European Union quarterly GDP growth and of the Monetary Union Index of Consumer Prices (MUICP) are successful examples of flash estimates of key short-term European indicators. Both indicators have been developed in the framework of the Principal European Economic Indicators (PEEIs) approach, aiming to provide euro-area key short-term indicators according to well
defined targets, notably in terms of timeliness. The monthly MUICP and the quarterly GDP flash estimates, released respectively at 0 and 45 days after the end of the reference period, successfully met these targets.

The methodology for the compilation of these flash estimates, the continuous monitoring of their quality, the coordination with the releases of the corresponding indicators at national level, a continuously enhanced policy for improvement, the coordinated actions towards the harmonisation at European level and a well targeted communication policy are the key factors that contributed to the performances and the credibility of these indicators.

This paper, beyond reporting the technical assumptions and features of the compilation of the flash estimates of quarterly GDP and MUICP, explores the above mentioned related aspects underlining the relevance of the co-ordination process at European level.

The analysis is complemented by some considerations on the availability of flash estimates and future developments.


This paper discusses pooling versus model selection for now- and forecasting in the presence of model uncertainty with large, unbalanced datasets. Empirically, unbalanced data is pervasive in economics and typically due to different sampling frequencies and publication delays. Two model classes suited in this context are factor models based on large datasets and mixed-data sampling (MIDAS) regressions with few predictors. The specification of these models requires several choices related to, amongst others, the factor estimation method and the number of factors, lag length and indicator selection. Thus, there are many sources of mis-specification when selecting a particular model and an alternative could be pooling over a large set of models with different specifications. We evaluate the relative performance of pooling and model selection for now- and forecasting quarterly German GDP, a key macroeconomic indicator for the largest country in the euro area, with a large set of
about one hundred monthly indicators. Our empirical findings provide strong support for pooling over many specifications rather than selecting a specific model.

*Full text available at:*


Policymakers need timely and reliable information on the current state of the economy as macroeconomic forecasts and policy decisions are strongly affected by the quality and completeness of this assessment. Therefore, forecasters are always in search of new indicators that are related with the macroeconomic variable of interest and available earlier. This paper proposes the use of the ATM/POS data as an indicator to estimate private consumption. An application for Portugal is presented as a case study, where the out of sample performance of this indicator is evaluated against some benchmark naïve models and other alternative bridge models. The results clearly support the use of this information to nowcast non durables private consumption.

*Full text available at:*


In December 2008, jointly with the Bank for International Settlements, the Reserve Bank hosted a workshop entitled “Nowcasting with Model Combination”. This workshop was an opportunity for central bank practitioners and local and offshore academics to discuss recent technical advances in how to combine models for ‘nowcasting’ – the forecasting of current or near-term economic conditions. This note provides an overview of some themes that emerged from the workshop.

*Full text available at:*

In this article, the reliability of first (flash) quarterly national account data estimates compiled and released by the National Statistical Service of Greece is examined. The reliability of the flash quarterly estimates is assessed through a set of standard statistics measuring the size, direction and volatility of the revisions. The evaluation of the revisions encompasses all the demand components. The results provide evidence that the first quarterly estimate of total GDP (both the year-on-year and the quarter-on-quarter estimates) is barely revised in prospective NSSG releases, while higher revisions are observed for GDP components.

Full text available at:


Flash estimates are early or advance estimates of statistics, usually based exclusively or partly on forecasts. They are demanded by policy-makers and analysts who have to make decisions in real time and before enough information is collected to publish the data conventionally. As such there is a trade off between timeliness and accuracy. This article outlines the approach taken by the Office for National Statistics (ONS) to produce flash estimates of European labour costs, as part of a wider Eurostat led project on flash estimates in Europe. A general-to-specific methodology is used to select the best combination of indicators to use in a forecast model. Flash estimates are presented for the groups of Euro-Zone 15 and European Union 27 countries.

Full text available at:


This paper formalizes the process of forecasting unbalanced monthly data sets in order to obtain robust nowcasts and forecasts of quarterly GDP growth rate through a
semi-parametric modelling. This innovative approach lies on the use on non-parametric methods, based on nearest neighbours and on radial basis function approaches, it forecast the monthly variables involved in the parametric modelling of GDP using bridge equations. A real-time experience is carried out on Euro area vintage data in order to anticipate, with an advance ranging from six to one months, the GDP flash estimate for the whole zone.

Full text available at:
http://halshs.archives-ouvertes.fr/docs/00/43/73/17/PDF/B08082-2.pdf


This paper assesses the role of surveys for the early estimates of GDP in the euro area in a model-based automated procedures which exploits the timeliness of their release. The analysis is conducted using both an historical evaluation and a real time case study on the current conjuncture.

Access to the full text is available by clicking twice at: https://dipot.ulb.ac.be/dspace/bitstream/2013/54137/1/RePEc_eca_wpaper_2009_021.pdf


This paper compares the mixed-data sampling (MIDAS) and mixed-frequency VAR (MF-VAR) approaches to model specification in the presence of mixed-frequency data, e.g., monthly and quarterly series. MIDAS leads to parsimonious models based on exponential lag polynomials for the coefficients, whereas MF-VAR does not restrict the dynamics and therefore can suffer from the curse of dimensionality. But if the restrictions imposed by MIDAS are too stringent, the MF-VAR can perform better. Hence, it is difficult to rank MIDAS and MF-VAR a priori, and their relative ranking is better evaluated empirically. In this paper, we compare their performance in a relevant case for policy making, i.e., nowcasting and forecasting quarterly GDP growth in the euro area, on a monthly basis and using a set of 20 monthly indicators. It turns out that the two approaches are more complementary than substitutes, since
MF-VAR tends to perform better for longer horizons, whereas MIDAS for shorter horizons.

Full text available at:
http://cadmus.eui.eu/bitstream/handle/1814/12382/ECO2009_32.pdf;jsessionid=2698EA0D34B09B28692D37BEFC835BA1?sequence=1


A canonical model is described which reflects the real time informational context of decision-making. Comparisons are drawn with ‘conventional’ models that incorrectly omit market-informed insights on future macroeconomic conditions and inappropriately incorporate information that was not available at the time. It is argued that conventional models are misspecified and misinterpret news. However, neither diagnostic tests applied to the conventional models nor typical impulse response analysis will be able to expose these deficiencies clearly. This is demonstrated through an analysis of quarterly US data 1968q4-2006q1. However, estimated real time models considerably improve out-of-sample forecasting performance, provide more accurate ‘nowcasts’ of the current state of the macroeconomy and provide more timely indicators of the business cycle. The point is illustrated through an analysis of the US recessions of 1990q3—1991q2 and 2001q1—2001q4.

Full text available at:
http://www.le.ac.uk/economics/research/RePEc/lec/leecon/dp08-17.pdf


A formal method is developed for evaluating the marginal impact that intra-monthly data releases have on current-quarter forecasts (nowcasts) of real gross domestic product (GDP) growth. The method can track the real-time flow of the type of information monitored by central banks because it can handle large data sets with staggered data-release dates. Each time new data are released, the nowcasts are updated on the basis of progressively larger data sets that, reflecting the
unsynchronized data-release dates, have a "jagged edge" across the most recent months.

Full text for ScienceDirect subscribers only:


Non-parametric methods have been empirically proved to be of great interest in the statistical literature in order to forecast stationary time series, but very few applications have been proposed in the econometrics literature. In this paper, our aim is to test whether non-parametric statistical procedures based on a Kernel method can improve classical linear models in order to nowcast the Euro area manufacturing industrial production index (IPI) by using business surveys released by the European Commission. Moreover, we consider the methodology based on bootstrap replications to estimate the confidence interval of the nowcasts.

Full text available at:
http://halshs.archives-ouvertes.fr/docs/00/27/57/69/PDF/B08033.pdf


This paper proposes new bridge equations for the short-term French GDP forecasting. This tool allows to nowcast the quarterly GDP growth in France for the current quarter, based on the monthly business surveys in the industrial and services sectors. We use an automatic model selection procedure which brings a robust, clear and systematic framework for selecting variables. The forecasting performance for the different selected models is evaluated and we show that taking into account the business surveys in the services sector can be useful for nowcasting GDP growth rate.

Full text available at:

The paper estimates a large-scale mixed-frequency dynamic factor model for the euro area, using monthly series along with Gross Domestic Product (GDP) and its main components, obtained from the quarterly national accounts. The latter define broad measures of real economic activity (such as GDP and its decomposition by expenditure type and by branch of activity) that we are willing to include in the factor model, in order to improve its coverage of the economy and thus the representativeness of the factors. The main problem with their inclusion is not one of model consistency, but rather of data availability and timeliness, as the national accounts series are quarterly and are available with a large publication lag. Our model is a traditional dynamic factor model formulated at the monthly frequency in terms of the stationary representation of the variables, which however becomes nonlinear when the observational constraints are taken into account. These are of two kinds: nonlinear temporal aggregation constraints, due to the fact that the model is formulated in terms of the unobserved monthly logarithmic changes, but we observe only the sum of the monthly levels within a quarter, and nonlinear cross-sectional constraints, since GDP and its main components are linked by the national accounts identities, but the series are expressed in chained volumes. The paper provides an exact treatment of the observational constraints and proposes iterative algorithms for estimating the parameters of the factor model and for signal extraction, thereby producing nowcasts of monthly gross domestic product and its main components, as well as measures of their reliability.

Full text available at:
http://mpra.ub.uni-muenchen.de/6860/1/MPRA_paper_6860.pdf


This paper consists of an empirical study comparing a dynamic factor model approach to estimate the current quarter aggregate GDP with the alternative approach of aggregating the forecasts obtained from specific dynamic factor models for each
The early availability of reliable macroeconomic data is becoming more important for companies as well as for economic policy makers. In order to fulfil this need, WIFO, on request of the Federal Ministry of Finance, publishes an estimate for the economic growth no later than 45 days after the end of a quarter. 25 days later the regular GDP calculations will be published as usual. At the same time the European Commission reports the flash estimates for economic growth in the Euro area and in the EU, which will take the national results into account. In order to guarantee the simultaneous publication of all the results of the member states and the Commission, the publication dates are set by Eurostat. The publication dates for the year 2006 are available on the Internet pages of WIFO, the Oesterreichische Nationalbank and Statistics Austria.

Full text available in German at:
http://www.wifo.ac.at/wwa/downloadController/displayDbDoc.htm?item=MB_2006_01_04_SCHNELLSCHAETZUNGS.PDF

Due to the rising demand for quickly available economic data, the Austrian Federal Ministry of Finance requested the Austrian Institute of Economic Research to calculate rapid in-advance estimates of national quarterly GDP. Based on this, flash estimates on national accounts data have been published since summer 2005. This article describes the methods used, the estimated variables and publication policy issues.

Full text available at:
http://www.wifo.ac.at/wwa/downloadController/displayDbDoc.htm?item=QU_2006_02_02_FLASH_ESTIMATES.PDF


This paper presents an extension of the Stock and Watson coincident indicator model that allows one to include variables available at different frequencies while taking care of missing observations at any time period. The proposed procedure provides estimates of the unobserved common coincident component, of the unobserved monthly series underlying any included quarterly indicator, and of any missing values in the series. An application to a coincident indicator model for the Portuguese economy is presented. We use monthly indicators from business surveys whose results are published with a very short delay. By using the available data for the monthly indicators and for quarterly real GDP, it becomes possible to produce simultaneously a monthly composite index of coincident indicators and an estimate of the latest quarter real GDP growth well ahead of the release of the first official figures.

Full text available at: http://onlinelibrary.wiley.com/doi/10.1002/for.969/abstract?systemMessage=Wiley+Online+Library+will+be+disrupted+on+15+December+from+10%3A00-12%3A00+GMT+%2805%3A00-07%3A00+EST%29+for+essential+maintenance


This paper formalizes the process of updating the nowcast and forecast on output and inflation as new releases of data become available. The marginal contribution of a particular release for the value of the signal and its precision is evaluated by computing 'news' on the basis of an evolving conditioning information set. The marginal contribution is then split into what is due to timeliness of information and what is due to economic content. We find that the Federal Reserve Bank of Philadelphia surveys have a large marginal impact on the nowcast of both inflation variables and real variables and this effect is larger than that of the Employment Report. When we control for timeliness of the releases, the effect of hard data becomes sizeable. Prices and quantities affect the precision of the estimates of GDP while inflation is only affected by nominal variables and asset prices.

Nowcasting regards the inference on the present realization of random variables, on the basis of information available until a recent past. This paper proposes a modelling strategy aimed at a best use of the data for nowcasting based on panel data with severe deficiencies, namely short times series and many missing data. The basic idea consists of introducing a clustering approach into the usual panel data model specification. A case study in the field of RandD variables illustrates the proposed modelling strategy.

Full text available at:


The authors present an algorithm for making flash estimate of quarterly change in gross domestic product at constant prices in the conditions of the Czech Republic. This algorithm is based on monthly/quarterly statistics on the output of individual branches, i.e. on data measuring trends in structured domestic supply. Estimates produced by the Czech Statistical Office and covering six preceding quarters make up the part of history, which the flash estimate is built on. It depends therefore on both the stability of methodology used for compiling quarterly national accounts and the perfection of its application. The authors assume that the innovated algorithm should be accessible to experts as well as the general public, and that it can serve them to arrive at well-founded rough information on total quarter-on-quarter change in GDP at constant prices a month or so before Czech Statistical Office official estimate is released.

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No abstract is available for this item.

*Full text available at:*  


This paper looks at the short-term forecasting of EU industrial production after seasonal adjustment. Short-term interest rates and three business surveys are used as indicator variables. A range of regression models is studied. The models are estimated recursively and their performance is assessed out of sample. With seasonally-adjusted data the models using indicators generally perform worse than autoregressive models. These would give a reasonably accurate picture if used to ‘complete the quarter’ by forecasting the third month of a three-month data period.

*Full text available at:*  


This paper describes a short-term projection model for French economic activity, OPTIM, the aim of which is twofold. First it gives an early estimate of real GDP growth for the previous quarter, when no figure has yet been released by Insee, the French National Statistical Institute, along with flash estimates for main GDP components (consumption, investment, inventories and external trade) together with a breakdown by sectors (services, manufacturing, construction, equipment, agri-food). This appears particularly useful for the short-run analysis. In this respect OPTIM may be considered as a traditional bridge equation model since it links a particular indicator available generally ahead of the release of the quarterly national accounts with a quarterly aggregate like GDP, consumption…. Second, this tool supplies also estimates for GDP growth and its main components for the current quarter and for the next quarter (i.e. two and three quarters respectively following the latest reference
period of Insee's GDP data release). A pool of (mainly) monthly variables is used, which are, sometimes, directly introduced in the specification but, more often, summarised by the implementation of a principal component analysis (PCA). The largest part of the set of indicators comprises survey data together with monthly traditional indicators (industrial production, consumption in manufactured goods…). But other data (in particular financial data) are also introduced. The outcomes of OPTIM rely on a relatively complex procedure involving about twenty equations and mixing two alternative approaches: a supply approach consisting in a direct modelling of GDP and a demand approach where GDP is the sum of consumption, investment, changes in stocks and net trade (exports minus imports). The discrepancy between these two estimates is distributed according to an original method, yielding a unique GDP estimation. The paper is organised as follows. Section 1 presents the main features of OPTIM. Section 2 deals with data description while section 3 addresses the data assessment's issue. In section 4, the main equations are described. Section 5 presents a general assessment of OPTIM in terms of forecasting record. Finally section 6 concludes and proposes some avenues for further developments.

Full text available at:


The total monthly change of the GDP in constant prices is estimated with the aid of the sectorial turnover indices in constant prices (Ii, T), lagged sectorial indices of the gross value added/turnover ratios (Ii, k), sectorial gross value added structure (wi) and corrective coefficient (kr, t-1). The presented model can be used even by non-statisticians, rendering the flash estimates at the same moment, when the latest sectorial turnover index is being published. The procedure applied for the Czech economy in the period April 1999 to July 2000 is illustrated both by Tables and Figures, where the comparison with the official quarterly estimates, which are published approximately four-five weeks later, is shown.

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This paper examines the Department of Commerce's "flash" estimate of real GNP growth. Differences between the flash and the final real GNP figures are often large, but the flash is shown to provide an unbiased forecast of the final GNP figure. Other preliminary estimates of GNP are also released by the Department of Commerce, and these are shown to provide unbiased, but inefficient, forecasts of the final real GNP growth rate.

*Full text available at:*