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AN INQUIRY INTO MANUFACTURING CAPACITY IN ITALY AFTER THE DOUBLE-DIP RECESSION

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1. Introduction

Between 2008 and 2013 the Italian economy was hit by two consecutive recessions, losing 9.0% of GDP from peak to trough, making this the biggest shock to Italy's economy, in peacetime, since 1861.[3] Most of the fall was concentrated in the manufacturing sector, where production fell by 23.5%. In response to these developments, capital and labor demand have contracted by sizable amounts: investment is now more than one fourth below the peak of 2007 and in the same period around one million of people lost their jobs.

In this paper we assess the combined effect of the double-dip recession on the potential output of the manufacturing sector, using three methods, based on a production function approach, on surveys among industrial firms and on statistical filters. In Sections 2 to 4 we also assess, using each method in turn, the extent to which the result for the whole manufacturing sector hinges on developments in specific subsectors.

The three methods do not identify the same definition of potential. The survey-based method, dealt with in Section 2, in line with Malgarini and Paradiso (2010) utilizes a concept close to the 'full capacity' of firms' productive physical capital. The statistical filtering approach (Section 3) captures the long-run properties of the time series of industrial production, deriving potential output by assuming that over long periods

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[3] See Baffigi (2011)

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the manufacturing sector operates, on average, close to potential. Finally, the production function approach, described in Section 4, is closer to an economic definition of potential output, and rests on the assumption that production capacity which is technically feasible takes place when economically convenient.

With these caveats, we find that the peak-to-trough (2007-13) loss of productive capacity in the Italian manufacturing sector amounts to about 11% according to the lowest estimates and reaches 17% according to the highest. The overall contraction of potential output in the manufacturing sector conceals, regardless of the chosen approach, non-trivial heterogeneity among subsectors. Large losses of potential capacity are recorded in the rubber, plastic and non-metallic mineral sector, as well as in the wood and in the basic metals and fabricated metal products sectors. On the other hand, capacity increased in the pharmaceutical sector and was broadly stationary in the food, beverages and tobacco sector.

This quantification of the loss of potential production allows us to identify the remaining slack in each of the segments of the manufacturing sector which, in turn, is likely to affect both the speed of the (recently started) economic recovery and the strength of demand-driven inflationary pressures.

Given that in many manufacturing sectors production was on a declining trend well before the crisis, the 2007-13 loss in potential output may provide an inaccurate estimate of the loss of capacity due to the crisis. In order to identify the role of the crisis with more precision we conduct a simple counterfactual exercise, in which actual developments in potential production are compared with an evolution of capacity in 2008-13 in line with pre-crisis historical trends.

In a few cases the findings from the counterfactual exercise differ considerably from those based on the historical data. For example, in the textiles, wearing apparel and leather sector, according to the counterfactual analysis there was no sharp acceleration in the fall of potential output during the crisis, contrary to what a simple comparison of potential in 2007 and 2013 would suggest. In other cases, such as the basic

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and fabricated metal products sector and the machinery and equipment sector, the downturn in capacity during the crisis was relatively large. Finally, in some sectors, such as food, which withstood the double-dip recession well, the actual decline in potential output from 2007 to 2013 was modest overall but the fall versus the counterfactual scenario was instead substantial.

2. Survey based methods

In this section we follow the survey-based methodology used for the whole manufacturing sector by Malgarini and Paradiso (2010) and De Nardis (2013), to gauge both the overall loss of capacity output and the contribution of its subsectors.

Potential production (PP) is computed as the ratio between the Manufacturing Production Index (MPI) and the Capacity Utilization rate (CU), obtained from survey data:[4]

$$PP = MPI / CU * 100 \qquad (1)$$

A bottom-up approach, in which the loss in potential manufacturing output is measured by first computing the loss attributable to each NACE rev.2 activity sector and then aggregating the results, shows that from 2007 to 2013 the reduction in potential manufacturing production amounted to 16.5%; using a top-down approach (i.e., directly applying eq. (1) to the overall manufacturing sector), the loss is roughly the same (16.7%; Table 1 and Chart B1).

[4] The series of CU are those obtained by Istat when manufacturing firms answer the question ‘During the quarter your current rate of capacity utilization with respect to the maximum was … (in percentage)?’. The questionnaire with the exact wording of the question in Italian is available here: http://ec.europa.eu/economy_finance/db_indicators/surveys/questionnaires/index_en.htm.
The resulting potential production refers to a ‘technical’ concept of potential output, related to the production possibility frontier, and disregards the incentives for economic activity.

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Table 1

Capacity changes by activity sector
(percentages)

Capacity changes by activity sector and MIGs (2007-13)	*Survey based method*		*HP Filter*		*CF Filter*	
	Baseline	Cfactual	Baseline	Cfactual	Baseline	Cfactual
CA Manufacture of food, beverages and tobacco products	-1.8	-9.4	-1.4	-11.8	-1.6	-4.5
CB Manufacture of textiles, wearing apparel and leather	-18.2	-8.0	-16.3	-9.1	-17.2	-9.8
CC Manufacture of wood, paper products and printing	-23.3	-27.8	-24.8	-28.9	-27.3	-31.5
CD Manufacture of coke and refined petroleum products	-18.1	-21.6	-22.0	-19.0	-24.2	-20.4
CE Manufacture of chemicals	-12.9	-25.6	-12.7	-18.9	-15.9	-21.1
CF Manufacture of pharmaceutical products	10.1	5.6	5.8	1.7	6.1	1.8
CG Manufacture of rubber, plastic and non-metallic mineral products	-24.0	-24.9	-25.4	-27.3	-27.8	-30.0
CH Manufacture of basic metals and fabricated metal products	-21.7	-30.6	-19.0	-25.9	-22.3	-28.6
CI Manufacture of computer, electronic and optical products	-17.3	3.4	-17.3	-0.1	-18.5	0.3
CJ Manufacture of electrical equipment	-28.7	-22.6	-27.9	-24.0	-31.3	-27.3
CK Manufacture of machinery and equipment n.e.c.	-20.8	-30.0	-15.7	-23.3	-18.2	-25.0
CL Manufacture of transport vehicles	-18.6	-17.7	-20.5	-25.5	-26.6	-29.6
CM Other manufacturing	-9.5	-10.0	-10.8	-15.9	-11.9	-17.6
TOTAL MANUFACTURING (1)	**-16.7**	**-19.4**	**-15.4**	**-17.9**	**-17.9**	**-20.1**
Consumer durables	-27.0	-24.4	-28.8	-29.7	-31.4	-32.7
Consumer non-durables	-5.9	-6.2	-5.6	-7.6	-6.6	-8.6
Consumer TOTAL	-9.7	-9.2	-9.9	-11.4	-11.3	-12.9
Energy	-5.3	-15.6	-14.0	-22.2	-16.0	-23.8
Intermediate goods	-22.7	-26.0	-21.8	-24.1	-24.6	-26.6
Capital goods	-16.5	-20.9	-12.9	-18.7	-16.2	-21.0

Source: own calculations based on Istat data; percentage points.
Notes: (1) direct estimates

Excluding the manufacture of pharmaceutical products (in which potential output rose), all activity sectors and all Main Industrial Groupings (MIGs) show a fall in production capacity ranging from -1.8% in the food, beverages and tobacco sector to -28.7% in the electrical equipment sector (Chart B2). Based on 2010 weights, the main culprits of the reduction in manufacturing potential are: the basic metals and fabricated metal products sector (3.5pp); the machinery and equipment not elsewhere classified (n.e.c.) sector (2.8pp); the manufacture of rubber, plastic and non-metallic mineral products (2.3pp). These sectors, together accounting for slightly less than 40% of total manufacturing production, explain more than 50% of the potential loss (Table B2).

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In interpreting these developments we should consider that potential output in some sectors was already contracting before 2008 (see Chart B2).[5] We therefore conduct a counterfactual exercise, in which for each manufacturing sector we assume a rate of growth in 2008-13 in line with the respective average growth rates over 1999-2007; we further assume that, without the crisis, the survey based measure CU would have converged to the average recorded in the pre-crisis period, 1999-2007. The resulting simulated capacity in 2013 can be interpreted as an estimate of the potential output that could have been achieved in each sector, had the Italian economy not been stricken by the double-dip recession.[6] According to this counterfactual exercise (Table B2, column 2), the total loss amounted to 19.4%. While the overall figure is not very different from that of the peak-to-trough comparison, the assessment of the role of individual sectors may deviate considerably from the one above. The contribution to the overall fall in manufacturing capacity by sectors that were already shrinking before the crisis is drastically downsized (textiles and computer production, and the electrical equipment sector); on the contrary, for the pharmaceutical, food industry, and machinery and equipment sectors, which had experienced an expansion of capacity in the run-up to the crisis, the impact of the latter is magnified by counterfactual analysis. Overall, the sectoral breakdown of the total manufacturing loss appears more polarized on the basis of counterfactual analysis: the basic metals and fabricated metal products, and the machinery and equipment n.e.c. sectors (whose weight in the MPI amounts to less than 30%) account for about 46% of the loss of capacity (37.1% if one looks at the decline from 2007 to 2013).

As a sensitivity exercise, the counterfactual analysis was repeated by attributing to each sector, for the 2008-13 period, the same average growth as in 1992-2007. In this case the total loss for the manufacturing sector reaches almost 23% (Chart 4).

[5] See Accetturo et al. (2013).

[6] Note that by 2013 the simulated CU reached the average 1992-2007 rate, therefore most of the change is attributable to the MPI dynamics.

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2.1 A validation of the capacity utilization data

In order to validate the results of the survey based method, we make use of the microdata of the Bank of Italy's *Survey of Industrial and Service Firms* (Invind) and of a new measure based on electricity consumption. Invind is a sample survey of industrial and service firms with 20 or more workers conducted each year in spring; while the survey has been carried out since 1972, microdata are available only since the mid-nineties.

Manufacturing firms are asked to report their rate of capacity utilization, turnover and the average annual percentage change in the selling prices of their own goods and services. The answers are used to derive a measure of each individual firm's actual output and, by aggregating across firms, (a proxy of) the MPI series. Equation (1) can then be computed using the latter aggregate figure, combined with the CU rate, in order to recover series of potential output for both the manufacturing sector and its subsectors.[7] Chart B3 compares the Istat and the Bank of Italy survey measures of CU. The dynamics are very similar in most sectors; higher CU in Invind data reflects sample selection, as this survey mostly includes large firms. In some sectors, however, the possibility of using Invind data as a comparison with Istat is hampered by the small number of observations. Chart 1 (left panel) plots the average growth rate of real output derived from Invind data against the one derived from official Istat MPI data. Given the clear upward bias in Invind, we correct its growth rate by subtracting the difference between the average growth rate of Invind and that of the Istat series from 1992-2007 and we use this corrected series to compute the potential output, plotted in Chart 1 (right panel), together with the estimates derived from Istat data. Invind data are only available up to 2012; in that year, the cumulated loss with

[7] More details on the sample and the weights structure are in Banca d'Italia (2013). In our calculations we build the output series by recovering the real growth rate in output at the firm level (considering only the firms present in year T and year T-1) and aggregating them weighting by the firm average employment in year T.

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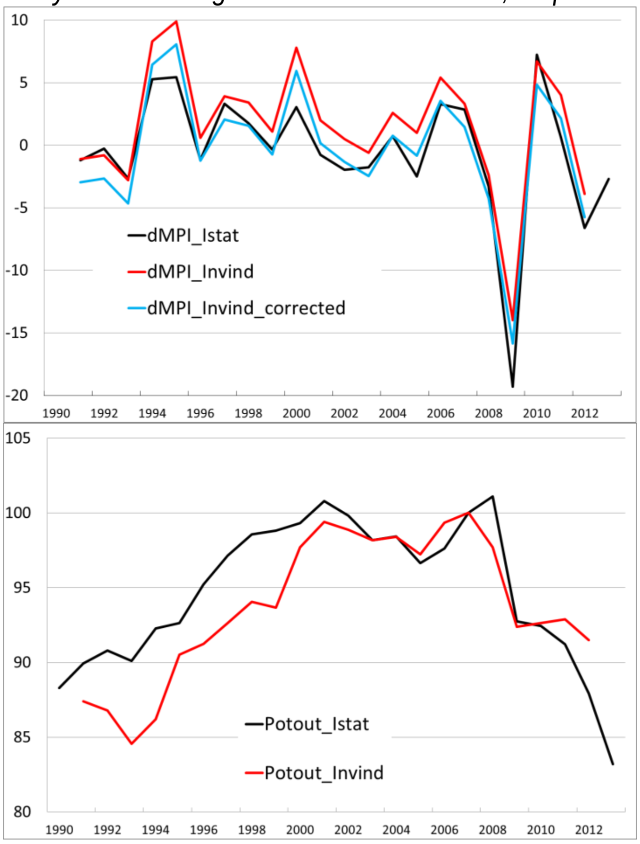
respect to 2007 amounted to 8.5%, vs. 12.1% according to the Istat data for the same period; the dynamics are remarkably similar.

Chart 1

Growth in output and level of potential output

(Yearly rate of change and index 2007 = 100, respectively)



Source: Own calculations based on Istat and Invind data

Following Burnside et al., (1995), we also construct an index of unutilized capacity based on the ratio between electricity consumption and the stock of capital. We combine data on electricity consumption in the manufacturing industry (provided by Terna, the Italian electricity transmission grid operator) and on the stock of net capital (by Istat). The ratio is rescaled to equal the Istat CU rate in 1991. The bottom of Chart B3 shows that this electricity based measure tracks the changes of the Istat series well, but contracted more sharply during the recession.

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3. Statistical filters methods

A second approach to estimate potential output rests on statistical filters. Specifically, we apply the Hodrick-Prescott filter (HP) and the Band-Pass Christiano-Fitzgerald filter (CF) to the quarterly series of industrial production. The overall loss thus obtained is in line with those estimated with the survey based method: the average of the two filters indicates that total manufacturing capacity loss during the crisis amounted to 16.6% (15.4% with HP; 17.9% with CF), which is basically the same estimate as with the survey based approach.

Looking at the sectoral breakdown, there is only one sector for which the discrepancy between the statistical filter estimate and the survey based one is larger than 3 pp in absolute value (machinery and equipment n.e.c.); only in two other sectors does it exceed 1.5 pp; overall, the mean absolute discrepancy is 1.0 pp, pointing to fairly consistent findings with these two methods (Table B2).

The counterfactual experiment leads to similar conclusions.[8] The total loss amounts to 19.0% in the average of the two filters (17.9% for HP and 20.1% for CF). At a sectoral level, the mean absolute discrepancy with respect to the survey-based measure is somewhat larger (1.6 pp, with four sectors differing more than 4 pp).

4. Production function approach

The estimates of the dynamics of production capacity based on surveys and statistical filters are very much in line with the dynamics of output itself. Those methods ignore the economic motivations underlying production choices and the demand for production factors. The production function (PF) approach overcomes these limitations, by allowing an explicit role for economic considerations in determining production and factor demand.

[8] As in section 2, the counterfactual values are computed projecting from 2008Q1 onwards the pre-crisis growth trend.

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Consider a standard Cobb-Douglas function:

$$Y = TFP \cdot L^{\alpha} \cdot (U_k \cdot K)^{(1-\alpha)} \qquad (2)$$

The level of production (Y) is the result of the contribution of employment (L), the stock of capital (K) and multi-factor productivity (TFP). The overall contribution of capital depends on K itself, as well as on a measure of capital utilization (U_k).

In this framework, potential output is the production that can be attained if labour, capital, U_k and the TFP are at their respective equilibrium levels. Potential employment (L*) is derived according to the following relation:

$$L^* = LF^* \cdot (1\text{-}NAIRU) \qquad (3)$$

where LF* is the trend labour force participation and NAIRU is the Not Accelerating Inflation Rate of Unemployment.

This representation of potential output relies on a number of crucial assumptions. The choice of the simple standard Cobb-Douglas in equations (2) and (3) implicitly amounts also to assuming: a) malleability of capital and fixed elasticity of substitution between factors; b) constant returns to scale; c) the existence of an equilibrium rate of unemployment (NAIRU). The equilibrium values of the various factors are at least to some extent obtained with statistical filters: in our case, the estimates of the equilibrium values of *LF** and TFP are extracted by means of a Christiano-Fitzgerald filter, applied to actual data.

One advantage of the PF approach is that it allows us to quantify the contribution to potential output of each production factor. In our case, this advantage also has a drawback: since we are interested in the potential production of one sector of the economy, the labour input should in principle be appropriately defined at a sectoral level too. In this paper, the NAIRU for the whole Italian economy is used for the manufacturing industry and all its subsectors.[9]

[9] The perfect homogeneity of the NAIRU across sectors implicitly relies on the hypothesis of perfect mobility of labour across sectors.

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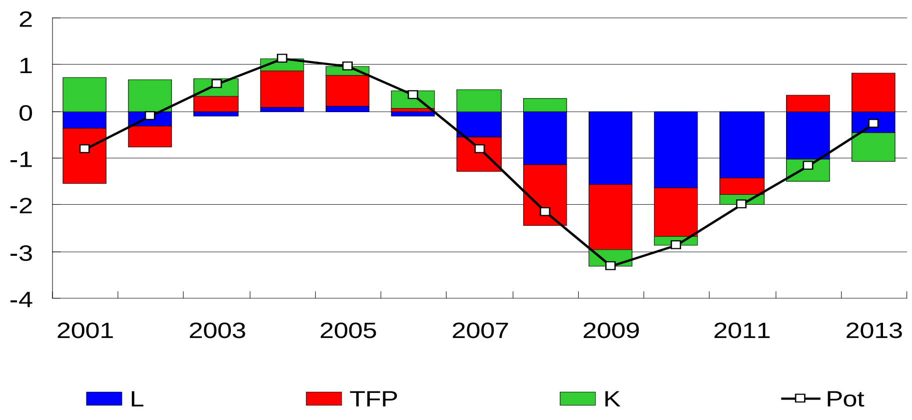
We estimate potential output for the various sectors (NACE rev.2) and for manufacturing as a whole (see Appendix A for a description of the data). In Chart B4 we compare the series of the estimated potential output, with and without the U_k correction. In the standard estimates, which do not correct for U_k, the 2013 potential in the manufacturing industry was 11.3% lower than in 2007. This estimate is considerably smaller than the one obtained with the previous two approaches (Table 3). These findings were to be expected: the PF approach hinges on computing the potential output that is consistent with the long-run equilibrium levels of the determinants of production; therefore, the resulting potential output series tends to be relatively less volatile. Despite that difference, the PF approach leads to conclusions that are qualitatively similar to the ones reached above: the size of the recent shock was unprecedented by historical comparison. Indeed, in the last six years the potential of the manufacturing sector recorded the largest fall since the start of the series in 1970; in 2013 it was back to the level of about twenty years earlier.

Chart 2

Contribution to potential output growth

(Yearly rate of change)



Source: Own calculations based on Istat and Terna data. L: contribution of labour; K: contribution of capital; TFP: contribution of the TFP ; Pot: annual rate of change of the potential output

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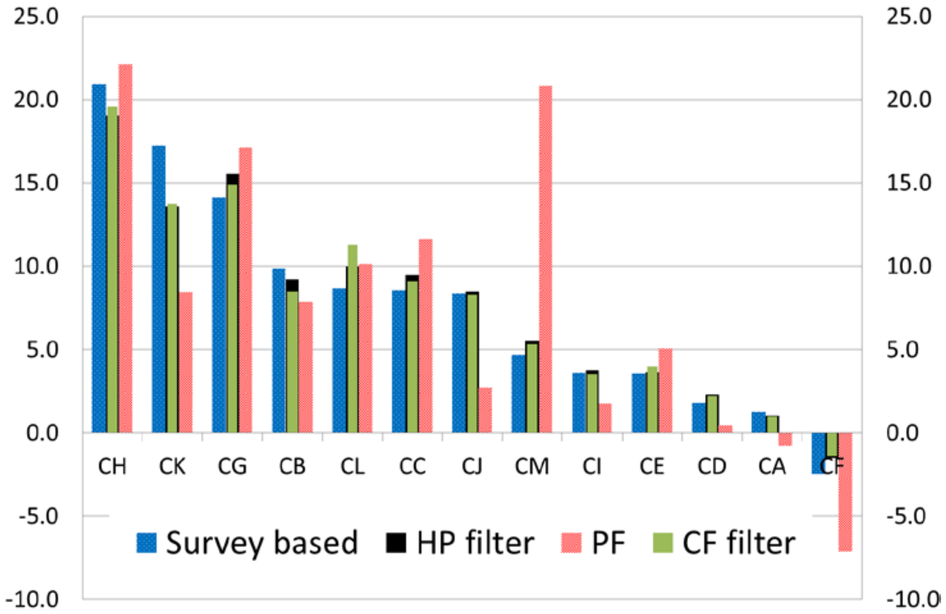
In terms of factor determinants, about 60% of the cumulated drop of potential output in 2007-13 came from labour, while around 25% was attributable to the TFP (Chart 2). The reason why the contribution of capital is comparatively small is twofold: first, the industrial sector is characterized by a large wage share (close to 70%), therefore the contribution of K in the production function is limited; second, capital is a highly persistent variable and the fall in investments recorded during the two recessions, even if remarkably large, has not (so far) resulted in a dramatic drop of the capital stock.

Chart 3

Baseline contributions to capacity loss by activity sector

(Shares by sector of activity; percentage points)



Source: Own calculations based on Istat data; sectoral shares in percentage points; negative numbers indicate that the sector shows an increase in potential. The sum of the sectoral shares is equal to 100 for each method. For PF method, National accounts value added weights

In the baseline PF-based estimates, a large drop of potential output is estimated for firms producing rubber and plastics products (-19.4%) and transport equipment (-18.4%), similar to the results found following the other approaches (Table 1); a

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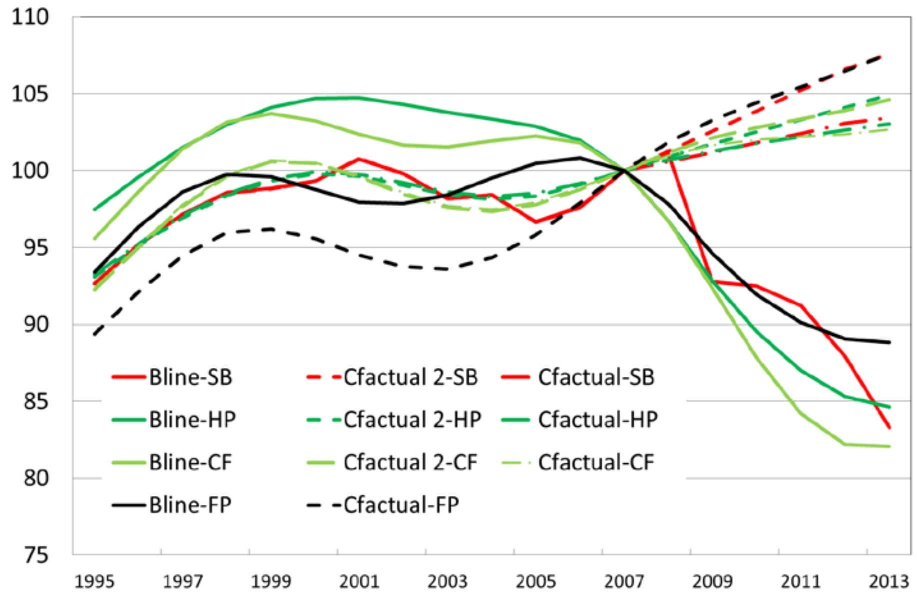
sharp decline is also estimated for other manufacturing (-23.7%) and the wood, furniture, paper and printing sector (-19.6%). Potential was broadly stable for producers of food, beverages and tobacco and increased sharply in the pharmaceuticals sector (22.4%).

Chart 3 maps the actual contributions of each sector to aggregate manufacturing capacity loss, according to the three methods. Large differences are evident in the manufacture of pharmaceutical products (CF) and in the other manufacturing sector (CM); sizeable discrepancies are also found for the Manufacture of machinery and equipment n.e.c (CK) and in the electrical equipment production (CJ).[10]

Chart 4

Potential output in the manufacturing sector: actual and counterfactual values according to all methods

(Index 2007=100)



Source: Own calculations based on Istat data.
Notes: Bline: baseline computation for survey-based method (SB), Hodrick-Prescott filter (HP), Christiano-Fitzgerald filter (CF) and production function method (FP); Cfactual: counterfactual computation on the 1999-2007 period; Cfactual 2: counterfactual computation on the 1992-2007 period

[10] Some of the discrepancies are due to the different sectoral weights on total manufacturing production and on total manufacturing value added

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Chart 4 and Table B1 show the potential output estimates for the manufacturing industry obtained with a counterfactual approach, as in Sections 2 and 3. In the counterfactual scenario, potential output would have been 7.6% higher in 2013 than in 2007, thanks to the larger increase of TFP (explaining more than half of the increase) and capital (accounting for about 40%). The large contribution of capital is due to its yearly 1.7% increase before 2008, against a slight actual decline during the crisis. In the counterfactual exercise, the TFP keeps growing by slightly less than 1% each year.

In 2013 the baseline level of potential output in the manufacturing sector was 17.6% lower than the level in the counterfactual scenario. This estimate is smaller but not far from those computed with the survey based and filtering approaches. More than one third of the difference with respect to the counterfactual results are due to the labour input and TFP.

Table B1 shows the fall of potential output between 2007 and 2013 in the actual and counterfactual scenarios: in line with the analyses of Sections 2 and 3, the sectors most affected by the crisis are the ones producing metals, rubber and plastic and machinery and equipment.

5. Conclusions

In this work we assess the loss of capacity in the Italian manufacturing industry between 2008 and 2013, when Italy was hit by two unprecedented recessions. We use an array of different approaches, based on surveys, statistical filters and a production function approach. All methods point to a sizeable fall in the level of production capacity: about 11% with the production function approach and around 17% with the other two. This is a large shock in historical terms; it implies that potential output fell back to the levels of the first half of the nineties.

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In comparing the results obtained with the different approaches one should consider that survey based methods and the statistical approaches are relatively more affected by the current changes in activity; the production function method is the least affected by the actual evolution of production, as potential output is a function of the equilibrium level of the factors.

In order to disentangle the effect of the crisis from that due to previously ongoing sectoral trends, the loss of potential was also assessed with respect to a counterfactual scenario, in which the data replicate e pre-crisis dynamics; the resulting loss estimated amounts to almost 20%, with large differences across sectors. Firms producing basic metals, fabricated metal products and machinery and equipment are found to be the ones that were most penalized by the crisis of the last six years; by contrast, sectors that were already shrinking before 2008, such as the manufacture of textiles, appear not to have performed significantly worse during the double-dip recessions than they had in the early 2000s.

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Appendix A: data

In this section we list and briefly describe the data sources we employed for the estimation of production capacity at both the aggregate and the sectoral level:

Survey based methods: IP series (monthly) are NWDA and NSA; CU series (quarterly) are NWDA and NSA. In charts and computations we used four quarters moving averages of the quarterly series, to control for seasonality in capacity utilization.

Statistical filters methods: IP series (monthly) are WDSA. Series, originally 1990.1 to 2013.12 are made quarterly and projected forward (up to 2017Q4) with an AR4 process. Series are then filtered with HP (lambda = 1600).

Production function analysis: we use National Accounts annual data which are available since 1970. Y is the value added at factor cost; LF is derived from the National Accounts measure of employment, rescaled for the inverse of the employment rate; the NAIRU is estimated as in Bassanetti et al. (2006), using an unobserved component method; for K we use the stock of net capital as baseline but also the

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stock of gross capital and a third measure that simulates the faster depreciation recently estimated in Tartaglia Polcini (2013). When we apply the U_k correction we use our electricity consumption based measure described in Section 2.1 in order to avoid using the same information as in Section 2.

Sectors (NACE rev.2)

C MANUFACTURING

CA Manufacture of food, beverages and tobacco products

CB Manufacture of textiles, wearing apparel and leather

CC Manufacture of wood, paper products and printing

CD Manufacture of coke and refined petroleum products

CE Manufacture of chemicals

CF Manufacture of pharmaceutical products

CG Manufacture of rubber, plastic and non-metallic mineral products

CH Manufacture of basic metals and fabricated metal products

CI Manufacture of computer, electronic and optical products

CJ Manufacture of electrical equipment

CK Manufacture of machinery and equipment n.e.c.

CL Manufacture of transport vehicles

CM Other manufacturing

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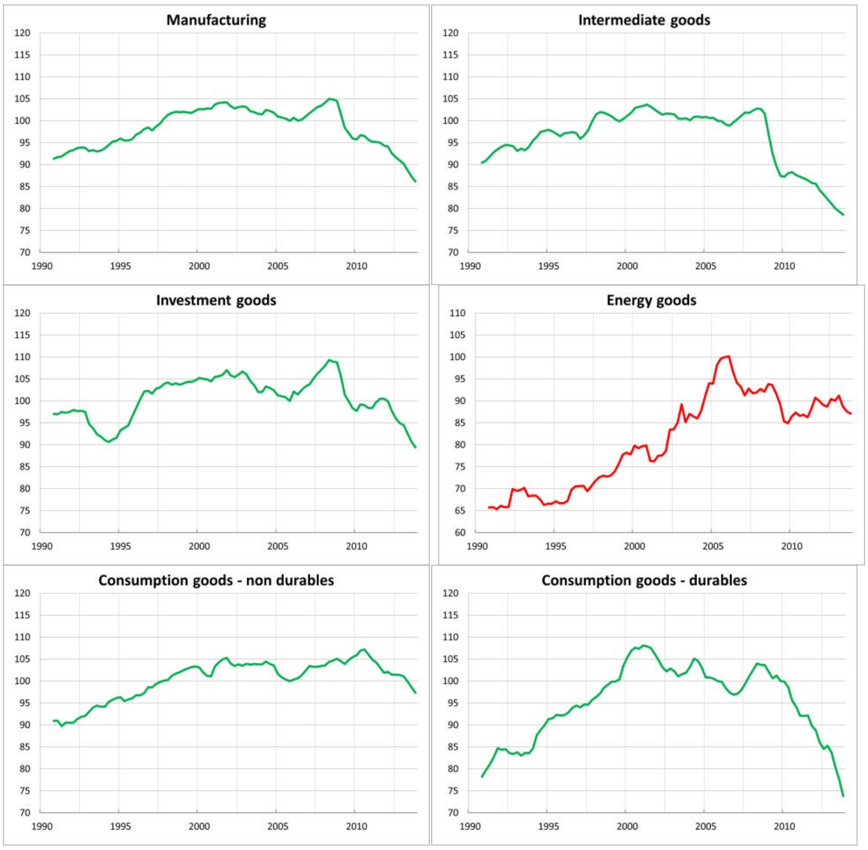
Appendix B: additional charts and tables

Chart B1

Potential production for Manufacturing and Main Industrial Groupings (MIGs)
(2005 = 100)



Source: Own calculations based on Istat data. Green line for 70-120 scale; different colours are associated with other scales

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Chart B2

Potential production for Manufacturing and Sectors of activity
(2005 = 100)

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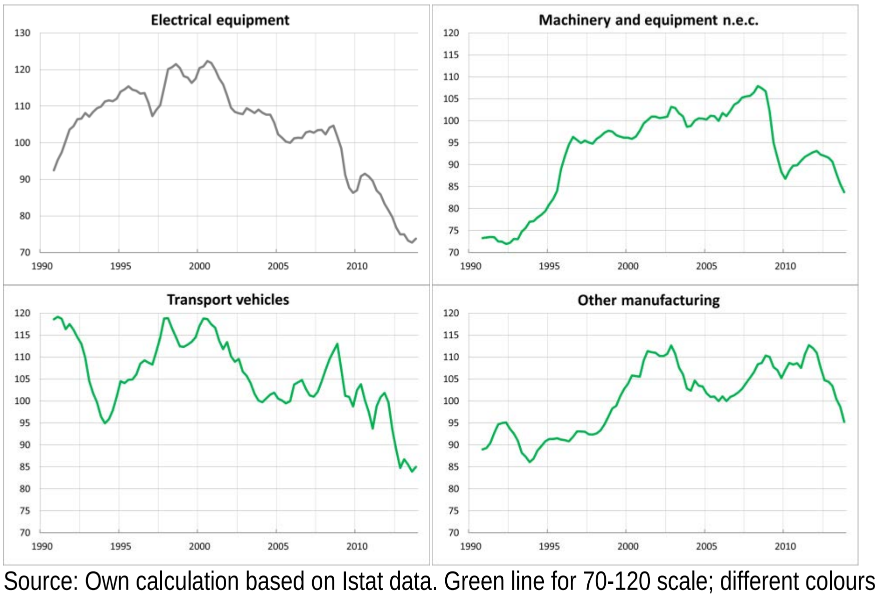

Source: Own calculation based on Istat data. Green line for 70-120 scale; different colours are associated with other scales

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Chart B3

Rate of capacity utilization, by activity sector, according to Istat,
the Bank of Italy *Survey on industrial and service firms* and Terna
(percentages)

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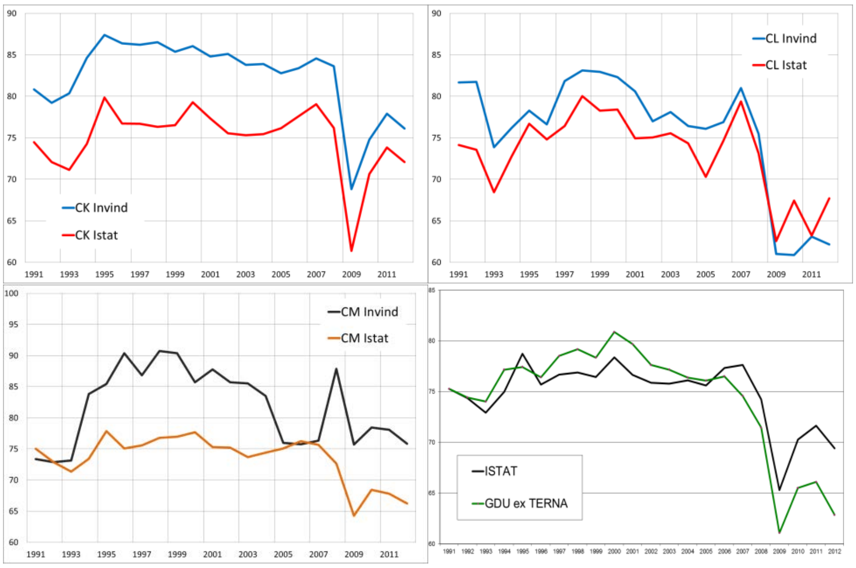

Source: Own calculations based on Istat, the Bank of Italy's *Survey on industrial and service firms* and Terna data. The blue and red lines are associated with 30pp scales; different colours are associated with larger or smaller scales

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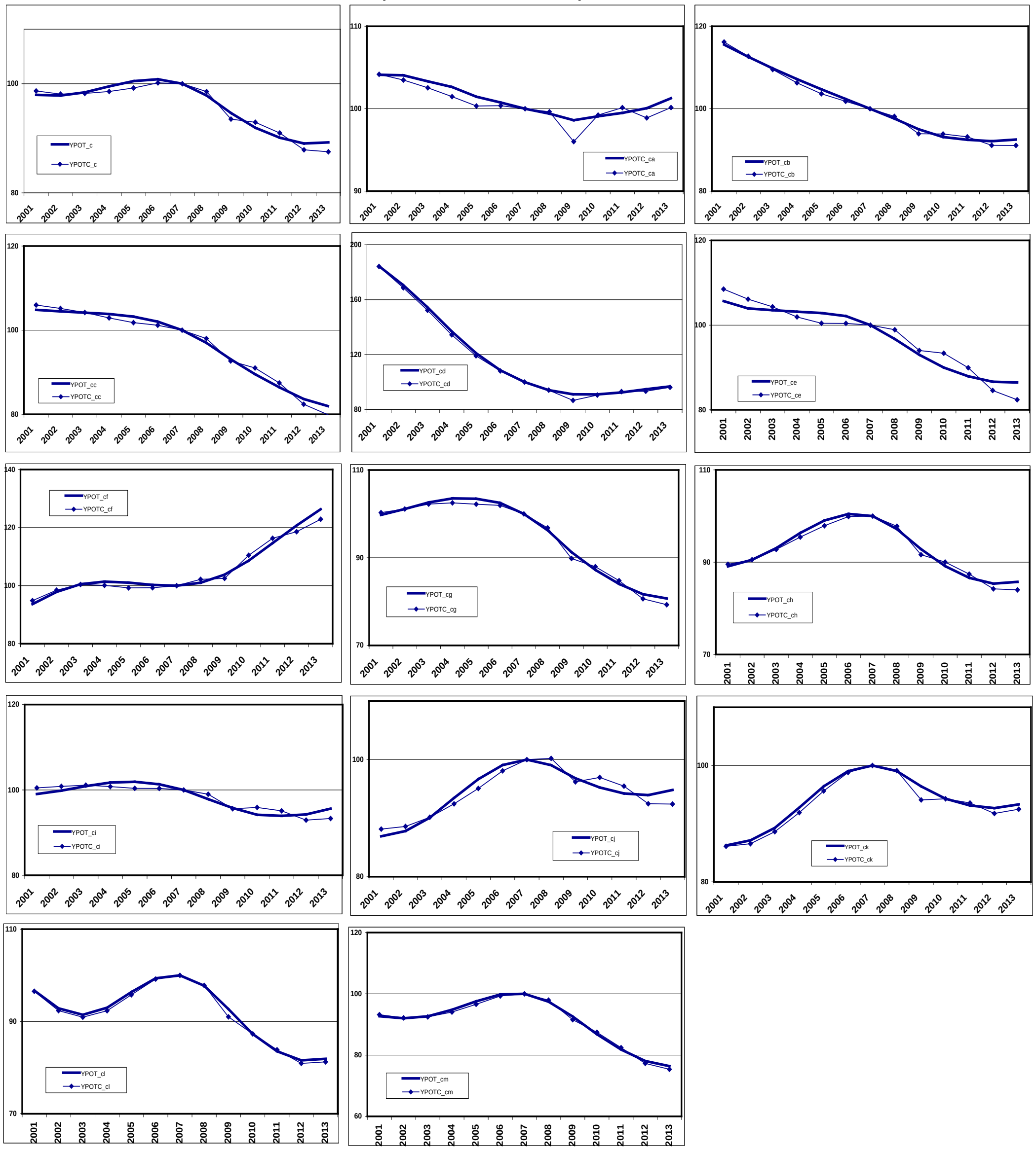
Chart B4

Potential output estimates, Production Function approach

(index, 2007=100)



Source: Own calculations based on Istat and Terna data. YPOT_XX:estimates of potential output; YPOTC_XX: estimates of potential output with correction for the capacity utilization; suffix _XX stands for the ATECO 2007 NACE rev. 2 sectors (see Appendix A)

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Table B1

Capacity changes by activity sector
(percentages)

Capacity changes by activity sector and MIGs (2007-13)	***Production Function*** Actual	Counterfactual
CA Manufacture of food, beverages and tobacco products	0.7	-2.4
CB Manufacture of textiles, wearing apparel and leather	-8.0	-0.9
CC Manufacture of wood, paper products and printing	-19.6	-22.5
CD Manufacture of coke and refined petroleum products	-24.2	4.4
CE Manufacture of chemicals	-15.3	-12.2
CF Manufacture of pharmaceutical products	22.4	2.8
CG Manufacture of rubber, plastic and non-metallic mineral products	-19.4	-25.1
CH Manufacture of basic metals and fabricated metal products	-16.0	-27.8
CI Manufacture of computer, electronic and optical products	-5.1	-16.2
CJ Manufacture of electrical equipment	-6.2	-17.9
CK Manufacture of machinery and equipment n.e.c.	-6.6	-22.4
CL Manufacture of transport vehicles	-18.4	-23.5
CM Other manufacturing	-23.7	-32.3
TOTAL MANUFACTURING	**-11.3**	**-17.6**

Source: Own calculations based on Istat and Terna data; percentage points

Table B2

Contributions to capacity loss by activity sector
(percentage changes of the potential =100)

% Contributions to capacity loss by activity sector (2007-13)	*Survey based method*		*HP Filter*		*CF Filter*		*Production function**	
	Baseline	Cfactual	Baseline	Cfactual	Baseline	Cfactual	Baseline	Cfactual
CA Manufacture of food, beverages and tobacco products	1.2	5.5	1.0	6.9	1.0	2.5	-0.6	1.4
CB Manufacture of textiles, wearing apparel and leather	9.8	3.7	9.2	4.2	8.5	4.3	7.4	0.5
CC Manufacture of wood, paper products and printing	8.5	8.7	9.5	9.0	9.1	9.3	11.7	8.5
CD Manufacture of coke and refined petroleum products	1.8	1.8	2.3	1.6	2.2	1.6	2.8	-0.3
CE Manufacture of chemicals	3.5	6.0	3.6	4.4	4.0	4.7	5.2	2.7
CF Manufacture of pharmaceutical products	-2.5	-1.2	-1.5	-0.4	-1.4	-0.4	-5.9	-0.5
CG Manufacture of rubber, plastic and non-metallic mineral products	14.1	12.5	15.5	13.7	14.9	14.3	15.9	13.2
CH Manufacture of basic metals and fabricated metal products	20.9	25.3	19.1	21.3	19.6	22.3	22.8	25.2
CI Manufacture of computer, electronic and optical products	3.6	-0.6	3.8	0.0	3.5	0.0	1.7	3.5
CJ Manufacture of electrical equipment	8.3	5.6	8.4	5.9	8.3	6.4	2.8	5.2
CK Manufacture of machinery and equipment n.e.c.	17.2	21.3	13.6	16.5	13.8	16.8	7.4	15.9
CL Manufacture of transport vehicles	8.7	7.1	10.0	10.1	11.3	11.2	9.4	7.7
CM Other manufacturing	4.7	4.2	5.5	6.7	5.3	7.0	19.4	16.9
TOTAL MANUFACTURING (sum of the sectoral shares)	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Capacity loss for total manufacturing 2007-13	***-16.7***	***-19.4***	***-15.4***	***-17.9***	***-17.9***	***-20.1***	***-11.3***	***-17.6***

Sources: Own calculations based on Istat data; sectoral shares in percentage points; negative numbers indicate that the sector shows an increase in potential. The sum of the sectoral shares is equal to 100 for each method. (*) National accounts value added weights

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