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COVID-19 IN ITALY

An early estimate of the impact on the economy.

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The Macroeconomic Effects of Pandemics

Beyond the immediate and obvious health costs, pandemics have important macroeconomic effects through a potentially self-reinforcing combination of supply and demand shocks.

On the **supply side**, epidemics reduce (at least temporarily) the labour supply – due to many workers getting ill, some dying. Quarantines and measures of containment aimed at slowing the rate of contagion also affect the availability of labour in the short term and may lead to temporary shut-down of productive activity in some sectors. Measures such as school closures may also reduce working hours or labour productivity – as workers must combine their regular work with the need to take care of children during working hours. An epidemic outbreak in a country like China – even if it were contained within national borders – has the potential to indirectly affect the global economy through the disruption of global value chains. Wars and natural disasters are also examples of supply side shocks – but unlike pandemics, they normally entail significant damage tophysical infrastructure and typically lead to a surge in fixed capital formation post-crisis. The COVID-19 panddemic is unlikely to have the same effect, although it will certainly entail a surge in investment in national healthcare system that will be long-term or permanent.

The supply-side shock can amplify through the **demand side,** via income and consumption effects. Quarantines – either voluntary or legally enforced – lead to an immediate drop in social consumption (shopping malls, restaurants and bars, entertainment venues, sport and other events et c.). Uncertainty about duration of the shock as well as to the appropriateness of the policy response are likely to spur precautionary savings and hence a more generalised drop in consumption. Higher unemployment or reduced working hours may lower disposable income – especially for temporary workers or the self-employed, whose access to social safety nets and income compensation schemes is typically limited.

In this context, policies of aggregate demand management run the risk of being ineffective at re-activating consumption, not only because supply is disrupted but also because panic-like behavioural effects may become very relevant. Faced with lower demand and/or continued limitations to production, companies would soon face liquidity crises and the risk of bankruptcies would increase. Absent a

swift government action to prevent large scale bankruptcies, unemployment would then increase further throughout the economy and trigger second round negative demand and income effects. The increase in non-performing loans (NPLs) on the banks' balance sheets would push banks to cut back further on credit to the real economy, thus amplifying the downturn and and threatening financial stability.

Part of the pandemic-induced income loss may drag on in the long-term or even become permanent, due to potentially long-lingering psychological effects that may fundamentally change people's attitudes towards travel, tourism or social consumption. Psychological effects may also negatively affect trade for a prolonged period of time: as noted in a recent IMF blog, a ban imposed by the EU on exports of British beef lasted 10 years following identification of the mad cow disease outbreak in the UK, despite relatively low transmission to humans. While discrimination against Made in Italy exports is unlikely – in a context where almost all EU and non-EU countries are experiencing the similar outbreaks of COVID-19 – trade is unlikely to provide much respite to the Italian economy during the recovery. The reason for this relies in the timing of COVID-19 progression across Italy's trade partners. Most EU countries as well as the USA are about 1 to 2 weeks behind Italy in the progression of their domestic COVID-19 outbreak, meaning that most of these countries will still be in lockdown or slowly resuming activity by the time the Italian economy could go back to full capacity. Moreover, it is reasonable to expect some limitations to travel to persist for months, as countries try to avoid a resurgence of contagion while a vaccine or a definite cure are not yet available.

In this paper, we try to offer an early estimate of the impact of COVID-19 on the Italian economy and fiscal position. We start from sectoral estimates of economic activity that we build from a wide range of diversified indicators (from newsreports, to surveys, to real time indicators). We then envision 4 scenarios - from a baseline to a severe one - for the path of activity in the whole economy in 2020 and for the ensuing effect on the fiscal side. The estimated economic impact is dire - with the size of the drop in GDP (between -8% and -15%) ultimately depending on assumptions about the speed and extent of the lockdown lifting as well as on the likelihhod of structural loss in foreign demand. The fiscal impact is no less impressive, with a debt-to-GDP increasing by between 15 to 27 percentage points depending on the growth scenarios. After discounting years of weak economic performance, the post-COVID-19 world will doubtlessly be Italy's most difficult economic challenge in decades.

The Direct Impact on GDP

The first case of COVID-19 domestic transmission was reported in Italy on February 21st. Since then, the Italian government has implemented an increasingly stricter set of measures aimed at reducing the speed of contagion (See Table 1 below for a timeline).

We can distinguish three phases for the purpose of estimating the impact on COVID-19 on Italian GDP. A first phase, in the months of January and February, where we expect domestic activity to have been broadly normal – except for some sectors - possibly discounting the indirect global value chain effect of the supply shock in China.

A second phase, encompassing the first 3 weeks of March, featured progressively tighter lockdown measures imposed by the government, which are likely to have had a sizeable impact on GDP, although they were still limited in terms of the range of sectors affected. Finally, a third phase, starting on March 25th, when the government ordered the shutdown of all productive activity in sectors deemed 'non-essential' - which is likely to have had an even hardest impact on the economy.

Table 1· **Lockdown Timeline - Italy**

23/02	Following the discovery of the first case of local transmission in Codogno (Lombardy), the area surrounding the town is declared a "red zone", with entry and exit blocked.
25/02 - 01/03	Restrictions on school trips, sport competitions and other fairs/events, public meetings, bars and restaurants as well as incentive to smart working. Still limited to northern Italy.
04/03	School closures nationwide. Prohibition of large gatherings, introduction of social distancing policies (1 metre rule) for most other activities.
08/03	The entire region of Lombardy and 14 other northern provinces across the regions of Veneto, Piemonte, Emilia-Romagna are declared "red zone", with limitation of entry and exit. Gyms, pools, fitness centres and museums are closed. Ski resorts are closed, as well as cinemas, theatres, pubs. Shopping malls closed on weekends.
09/03	The above measures are extended to the whole country.
11/03	The whole country is put in lockdown, with closure of all commercial activities except essential businesses (like pharmacies and grocery stores). Factories remain open.
22/03	Factories closed in all non-essential sectors.
01/04	Extension of all measures till April 13th

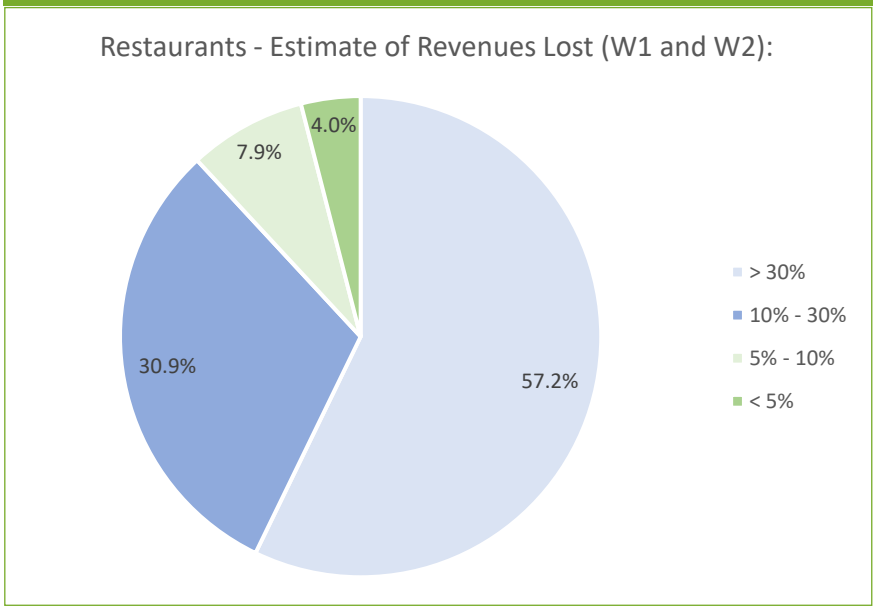
▶ Source: Legislative Acts from the Italian Presidency of the Council of Ministers

‘Mild’ Lockdown - March (Week 1 to 3)

Overall, the sectors that have been affected by COVID-19 in the first 3 weeks of March account for 40% of Italian real Gross Value Added (GVA). Here we try to offer an estimate of the impact on economic activity,

Hotels and restaurant services (SEC NACE I) are among the most heavily hit by the COVID-19 crisis. The hospitality sector has been under pressure since early 2020. In late November 2019, the touristic hotspot of Venice experienced the most severe high-tide episode in 50 years. As a consequence, hotel bookings for the first months of 2020 were already down 45% - including for yje month of February, when the Venice Carnival takes place, usually attracting visitor from all over the world. As the restaurant business in Venice is closely linked to the hospitality one, the drop certainly spilled over to the restaurant business. Veneto (the region where Venice is located) accounts for 10% of the Italian hospitality sector, so the effect is likely to have been felt nationwide. We assume an overall activity rate of 95% for hotels and restaurants in January and February.

FIGURE 1· **Restaurant sector - March 2020**



▶ SOURCE: Authors’ calculations based on: news reports; FIPE report “Impatto corona virus su attività di ristorazione” published between March 6th and March 19th (no exact date is indicated on the document)T

TABLE 2· **Hospitality sector - estimated activity level - March 2020**

	Weight in SEC	Week 1	Week 2	Week 3	Week 4
Restaurants	76%	65%	28%	0%	0%
Hotels	24%	30%	30%	30%	30%
Average		**56%**	**28%**	**7%**	**7%**

Following the discovery of COVID-19 domestic transmission in Italy, things deteriorated fast. Hotels were reporting cancellation rates around 70% already in the first and second weeks of March and the situation certainly not improved thereafter. The restaurant business (which accounts for 76% of the sector) started suffering already in the first week of March. In a survey run in the first 2 weeks of March by FIPE (Federazione Italiana Piccoli Esercizi), 57% of respondent estimated they had already incurred a loss of more than 30% of revenues due to corona virus, and 31% of respondent reported a loss of between 10% and 30% of revenues. Restaurants and bars were subsequently closed on March 12th – as part of the containment measures enacted by the government (Table 1). Combining all this data, we estimate economic activity in the hotel and restaurant services sector to have been down by 5% in January and February, by around 40% in the first of week of March, by around 70% in the second week, and by more than 90% in the third week of March.

Another sector that has been heavily affected by the COVID-19 domestic outbreak is that of **retail and wholesale trade** (NACE SEC G). Retail trade, which accounts for 45% of the sector, has undergone mixed developments. The food segment (42% of retail trade) has actually seen a spike in business – which the Italian sector association (Federdistribuzione) estimates in the order of +60/70% – due to people spending more time indoor and stocking durable food items provisioning for quarantine. The non-food segment (worth 58% of retail commerce) instead saw a slowdown in business in the early weeks of March – by 30% nationwide and by 50% in Lombardy. We can assume this decrease to have reached 50% nationwide after the Lombardy lockdown was extended to the whole country on March 12th. There is little information on the performance of wholesale trade, but this sector mostly operates in connection with the hospitality business, so we assume that it followed the same dynamics as hotels and restaurants in activity rates. Altogether, we estimate economic activity in this sector to have dropped by 30% in the first week of March and by almost 60% in the subsequent two weeks.

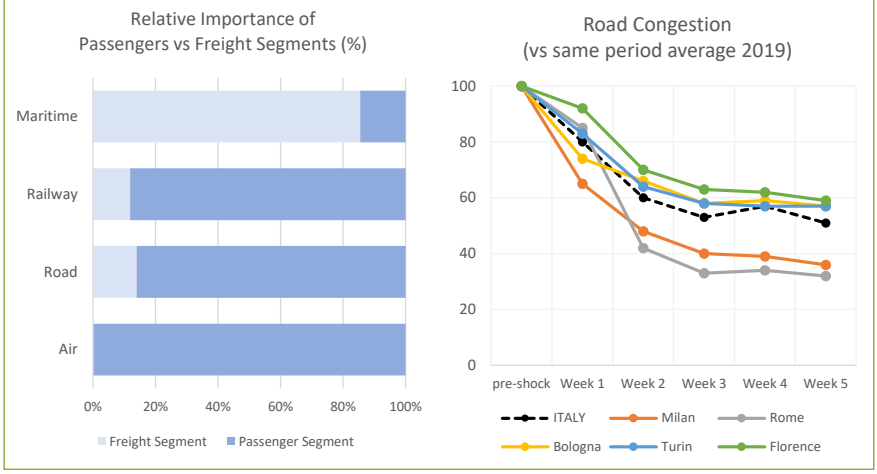
TABLE 3· **Retail & Wholesale Trade - estimated ctivity level - March 2020**

weight in SEC		Week 1	Week 2	Week 3
45%	**Retail:**	**108%**	**96%**	**96%**
	Food	160%	160%	160%
	Non-Food	50%	50%	50%
45%	**Wholesale**	**56%**	**28%**	**7%**
10%	**Auto Repair**	**100%**	**100%**	**100%**
	TOTAL	**71%**	**57%**	**57%**

▶ SOURCE: Authors' calculations based on: news reports; and Federdistribuzione

The **transport and storage sector** is exposed to the impact of Coronavirus both through its connection with the retail and wholesale trade sector and through its connection with tourism. Estimating the overall impact on the sector requires disentangling the effect on the freight and passenger segments. While movement of people has been significantly curtailed, in fact, no formal constraint has been imposed on freight transport – suggesting very different activity levels across the two segments. We start by estimating the relative weight of the passengers and freight segments across different means of transportation (Figure 2, left).

FIGURE 2· **Transport Sector Indicators - March 2020**



► SOURCE: Authors' calculations based on ISTAT/Eurostat; Conftrasporto; Ferrovie.info; Tom Tom; IATA

Note: based on Conftrasporto, the role of Air Transport for in overall freight transport is minimal, so we disregard it

For each mean of transportation, we assume 100% activity level in the freight segment. To estimate the decrease in activity in the passenger segment, we resort to a combination of new report and qualitative real-time data. Maritime transport – which is mostly freight-oriented – was the least affected, although all passenger ships were halted as of March 19th. Air passenger transport recorded a drop between 30% and 50% in the first weeks of March and most companies have suspended flights to and from Italy thereafter. Data on train circulation suggest that on average 45% of all trains (high speed, intercity, and regional) were running before March 25th and 36% thereafter. Road congestion in major Italian cities was down between 40% and 80% in March 2020 compared to the same period average of 2019, suggesting a sizeable decrease in circulation. Storage and transport supporting activity level is likely to be closely linked to activity in transports, so we construct it as the weighted average of the activity levels prevailing across the different means of transportation. Overall, our estimate suggests that economic activity in the transport and storage sector was down 14% in the first week of March, 32% in the second and almost 40% in the third week (Table 4).

Table 4· **Transport Sector - estimated activity level - March 2020**

	Weight in SEC	Week 1	Week 2	Week 3
Ground (rail & road) and inland waterways	53%	84%	64%	59%
Maritime	4%	100%	100%	85%
Air	2%	70%	50%	50%
Storage & support to transport	36%	85%	66%	60%
Postal services	4%	100%	100%	100%
Total		**86%**	**68%**	**62%**

▶ Source: Authors' calculations based on data from Confraspor-to; Ferrovie.info; Tom Tom; IATA

Coming to the **Manufacturing Sector** (NACE SEC C), we assume 100% activity rates in the pharmaceutical and food segments (which togeth-er account for about 15% of the gross value added produced in the manufacturing sector as a whole). For the rest of manufacturing, we estimate economic activity in the first three weeks of March based on the evolution of Sulfur Dioxide emissions (SO2) – which are typically associated with industrial activity – and electricity consumption. Total electricity consumption shows a significant decrease compared to the same period of last year, when matched by same day fof the week. Once we depurate from the increase in domestic consumption due to people staying more indoors and hence using appliances more inten-sively during the day, we estimate a decrease in electricity consump-tion by 13% in the second week of March, by 26% in the third week and by 31% in the fourth week. Following the shutdown of all non-essen-tial productive activities, consumption has stabilised around 70% of its 2019 level, at the beginning of April.

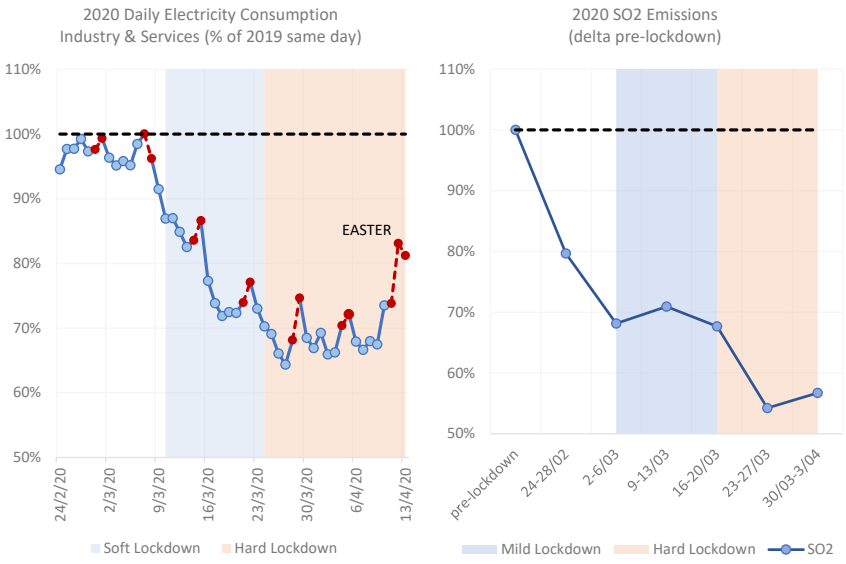
At the same time, we estimate SO2 emission in the first week of March to be 30% below their pre-lockdown level. After remaining constant around this level for the 2 weeks of mild lockdown, SO2 emissions have dropped further after the shutdown of non-essential productive activities on March 25th and are now hovering around 50% of their pre-lockdown level. Combining the signals from electricity consump-tion and emissions, we thus estimate the activity level for the man-ufacturing sector (including food and pharmaceuticals) to be 93% in the first week of March, 85% in the second week, and 76% in the third week.

Table 5· **Manufacturing Sector - estimated activity level - March 2020**

	Weight in SEC	Week 1	Week 2	Week 3
Food	11%	100%	100%	100%
Pharma	4%	100%	100%	100%
Other	86%	92%	82%	72%
Total		**93%**	**85%**	**76%**

▶ Source: Authors' calculations based on data from Terna, city-le-vel SO2 emissions, and Federdi-stribuzione

FIGURE 3· **Manufacturing Sector Indicators - March 2020**



▶ SOURCE: Authors' calculations based on data from Terna, city-level SO2 emissions.

Activity in a number of services sectors was also affected early on. As theatres, cinemas and museums were shut down nation-wide on March 8th, we expect the economic activity level in the **entertainment sector** (NACE SEC R) to have dropped to zero. **Administrative activities and support services** (NACE SEC N) yield a mixed picture. Based on a recent CERVED report we estimate a loss of activity in the range of 20/25% for the leasing segment and the activities having to do with personnel scouting and recruiting. For all those activities more directly related to tourism – tour operators and booking services – the drop in activity throughout March is higher (around 35%).

Other personal services (NACE SEC S) are accounted for mostly (78%) by services of personal care that have been shut down on March 12th (hairdressing, aesthetics and tattoo parlours, gym and fitness clubs, wedding and related event services et c.). The only active components of sector S after March 12th appear to have been laundry services (worth about 7% of the sector's GVA), various repair services (worth altogether another 7% of the sector GVA) and – sadly – funeral homes and connected services (worth around 6% of the sector's GVA). Overall, we estimate the level of economic activity to have dropped from 100% before mid-March to 17% .

Professional, scientific and technical activities (NACE SEC M) – including lawyers, accountants, engineers, architects, R&D activities as well as marketing and advertisement – are instead likely to have continued normally. This is the case also for a number of other activities – mostly in the services sectors – for which we do not expect to see (or cannot confirm) any sizable effect on activity level (Table 6 below).

Table 6· **Estimated activity level - March 2020 W1-W3**

Activity Level	Sector (NACE)
100%	Agriculture & Fishing (A) Mining & Quarrying (B) Electricity, gas, steam AC supply (D) Water supply, sewage, waste disposal (E) Construction (F) Information & Communication Services (J) Finance & Insurance (K) Real Estate Services (L) Professional, Scientific & Technical Services (M) Public Administration, Defebce, Social Security (O) Education (P) Healthcare (Q) Other Domestic Services (T)

▶ Source: Authors' calculations based on news reports and legislative acts

'Hard' Lockdown - March (Week 4) to May 3rd

Starting on March 25th, all non-essential productive activity has been shut down by executive Decree. Compared to the phase of mild lockdown, this gives us a much cleaner and clear-cut perimeter of the allowed economic activity. Following the shutdown, the Italian Institutes for Statistics (ISTAT) estimated for each sector the share of revenues produced by the firms operating in those segments that were classified as essential activities and allowed to carry on production.

This effectively gives us a rough estimate of **potential economic activity** under the hard lock down regime . We use ISTAT's estimate as a proxy for the rate of economic activity in each sector after March 25th. For almost all sectors, the hard-lockdown rate is lower than the one we estimated for the first three weeks of March – consistently with lockdown measures being milder during that period than thereafter. However, for three sectors – hotels and restaurants; transport and storage; other personal services – our mild lockdown estimate is already lower than the potential activity rate estimated by ISTAT, so for those three sectors we use our own estimate (they are indicated in red, in Table 7 below).

This misalignment is easily explained by keeping in mind that the ISTAT estimates are effectively potential activity rates, whereas our mild-lockdown estimates are for actual activity rates. One example can serve to clarify the difference: hotels (which account for about 25% of the Gross Value Added (GVA) produced in the hotels and restaurant services sector) are allowed to operate, even after March 25th; the ISTAT estimate therefore considers that companies representing 30% of the sector's revenues can be active. Yet, hotels have no business – so the actual rate of economic activity in the sector is realistically closer to zero than to 30%.

Both the ISTAT estimate and our assumptions for the hard-lockdown phase do not cater for the possibility of **smart working,** which can continue - where possible - even in the sectors that have been shut down under the lockdown regime. It is mpossible to accurately measure the economic incidence of smart working, but anecdotic evidence suggests that smart working iss significantly less common in Italy than in other EU countries. A 2019 survey by Confindustria shows that only 9% of firms responding were offering some form of smart working options to their employees. Based on this data, we do not think that disregarding smart working is going to make a significant difference for our estimates - particularly because smart working is more common in services sectors, which already have higher estimated potential activity rates.

Table 7· Estimated activity level - March 2020 W1-W3

Sector:	% active
A: Agricolture, forestry and fishing	95%
B: Mining and Quarrying	86%
C: Manufacturing	41%
D: Electricity, gas; steam;. AC supply	100%
E: Water supply, sewage, waste management	100%
F: Construction	42%
G: Retail and Wholesale Trade	55%
H: Transport and Storage	61%
I: Hotels and Restaurants	7%
J: Information and Communication services	100%
K: Finance and Insurance services	100%
L: Real Estate Activities	0%
M: Professional, scientific, technical activities	89%
N: Administrative activities, travel agencies, support services	59%
O: Public Administration, defence	100%
P: Education	100%
Q: Healthcare and Social Security	100%
R: Arts, Entertainment and Recreation	0%
S: Other Services	17%
Overall Activity Loss	**ca. 40%**

▶ Source: Authors' calculations based on ISTAT - Esame del disegno di legge A.S. 1766. Conversione in legge del decreto-legge 17 marzo 2020

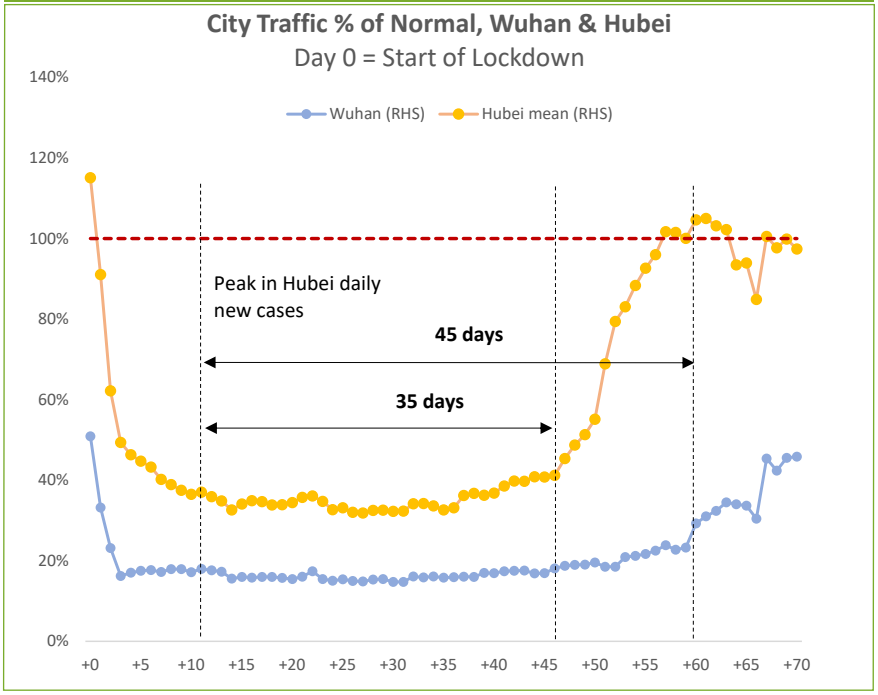
▶ Note A loss in economic activity of 40% may seem very large, but it is entirely consistent with what other countries's statistical institutes are estimating (e.g. INSEE estimates a 35% drop in activity for France, which has a milder lockdown regime - see Point the Conjoncture 26 Mars 2020).

This hard lockdown regime is very demanding on the economy: compared to the normal situation, it implies a loss of about 40% in potential economic activity. **How long can it be sustained for? Is the date of May 3rd, recently announced by the government as the possible beginning of normalisation, reasonable or excessively cautious?**

China offers a useful counterfactual to try and answer these qeustions. The Chinese province of **Hubei** – heavily affected by the COVID-19 outbreak – has a population of ca. 60 million people, very close in

size to the population of Italy as a whole. Hubei went in lockdown on January 23rd and reached a peak in daily new cases around February 4th - for a spike in daily new cases that was reported on February 13th and was due to a change in the diagnostic methodology. It took Hubei 35 days since that peak before seeing any acceleration in economic activity, and 45 days before activity went back to its pre-lockdown levels (as proxied by traffic, see Figure 4 below). The city of **Wuhan** – the epicentre of the Chinese outbreak – has a population of about 10 million people, comparable to Lombardy, the epicentre of the Italian outbreak. In Wuhan, the resumption of economic activity has progressed more slowly than in the rest of the Hubei province (Figure 4).

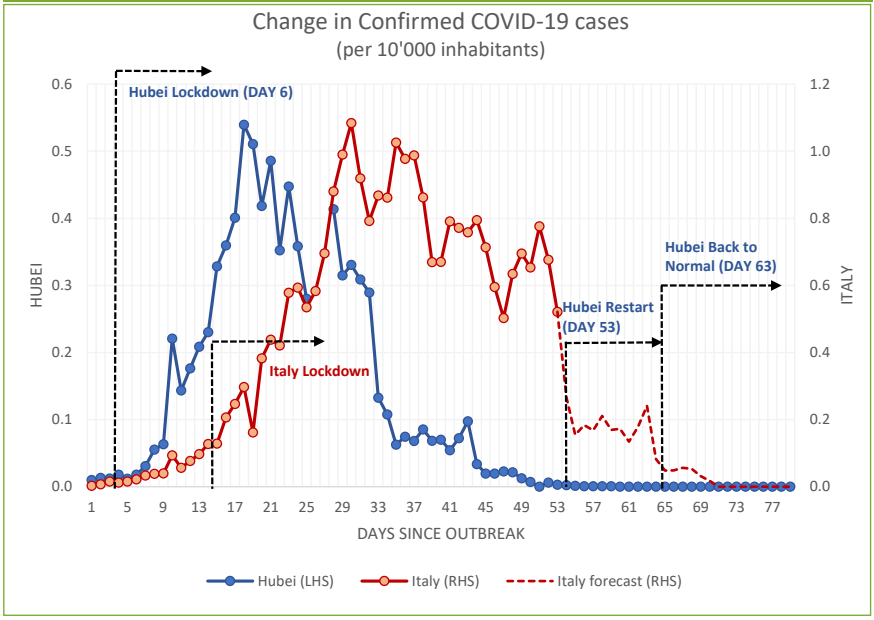
FIGURE 4· **Normalisation in China**



▶ SOURCE: calculations based on BAIDU data

To translate these numbers into a plausible scenario for Italy, we compare the distribution of daily new COVID-19 cases in Hubei with our forecasted distribution of daily new cases in Italy (Figure 5). Hubei started re-opening its economy when daily new cases reached zero - which happened on day 53 since the start of the outbreak (45 days since the lockdown was introduced). Italy is taking longer to reach the target of zero new daily cases. According to our forecast, this should happen around day 70 since the start of the outbreak (around 53 days after the lockdown introduction) - i.e. around the end of April. Considering that May 1st is a bank holiday in Italy, the date of May 3rd that is currently set as the target for the first unwinding of lockdown measures looks very much consistent with what our forecast would suggest.

FIGURE 5· **Normalisation in China versus Italy**



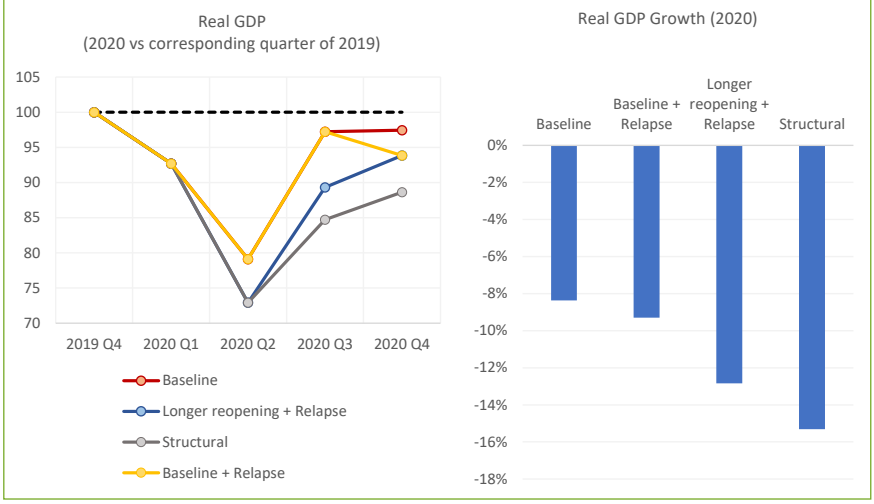
▶ SOURCE: calculations based on data from Italian Health Ministry and Chinese CDC. Forecast for Italy is based on the intra-day growth rates in new cases observed in Hubei. We define the start of the outbreak as the day before the one in which we start seeing a structurally faster acceleration in cases per 10'000 inhabitants.

GDP Scenarios

For our **baseline scenario**, we assume that Italy remains in hard lockdown untill the end of April and resumes activity in the first week of May 2020 - with Lombardy delaying the re-opening by one more week (in line with the slower ormalisation that we have seen in the Chinese epicentre). We then assume that the re-opening happens gradually over the course of 4 weeks, and follows the same pattern seen in closures - but in reverse. This implies that the economy will start moving first from hard lockdown to mild lockdown, and then progressively further towards full capacity. In some sectors, however, we believe that economic activity is unlikely to go back to normal levels this year. This is particularly the case for the hotels and restaurant services sector, whose business typically peaks in summer but that will continue to suffer from persisting international travel disruption throughout the rest of the year. About 50% of Italian tourism is domestic which - in normal times - should make the sector more resilient to international shock. In the case of the COVID-19 shock, however, we expect little respite from this channel - due to continued social distancing measures (although milder than the current ones) and/or psychological effects that may induce even Italian tourists to be extra cautious and delay their holiday plans.Similar considerations apply to the entertainment sector – which we assume to remain below capacity throughout the year – as well as to sectors connected to the hotel and restaurant ones, such as transport and wholesale trade. **This scenario yields an annual real GDP growth rate of -8.4%, for 2020.**

This baseline could be derailed in the later part of the year if we were to see a **relapse** into a second wave of infections in Q4, as the winter season comes back. This would not be an uncommon scenario - the 1918 Spanish Flu or example came in 2 waves. While we will probably be better equipped to face the virus next fall, following the current experience, some forms of mild lockdown and social distancing might still be necessary, in the absence of a vaccine or a definitive treatment for against COVID-19. **A relapse would take annual real GDP growth down to -9.3%, assuming the mild lockdown is reinstated during the month of December only.**

FIGURE 6· **Real GDP Growth in 2020 - Scenarios**



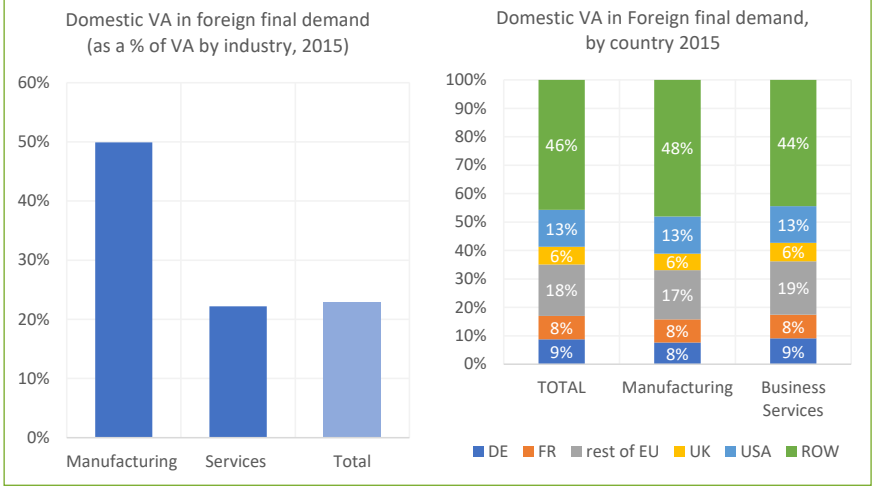
▶ SOURCE: Authors' calculations based on data presented in the previous sections

In a more **negative scenario** we envision a slower reopening process, stretched out throughout the entire Q2 and Q3, and followed by a second wave of infections and mild lockdown in December. Such scenario may be justified by concerns on the side of the government that reopening too quickly may lead to an immediate relapse of contagion and hence the need to reinstate hard lockdown measures. **This more sluggish reopening would take the annual real GDP growth rate to -12.8% for 2020.**.

Finally, a **severe scenario** would occur in case the hard lockdown drives a loss of potential output compared to pre-COVID levels – either for a sufficiently prolonged period of time or permanently. Data out of China today suggest that while a quick recovery is possible, the post-lockdown economy seems to be hovering at around 80%/90% of its potential. In a highly integrated global economy, this is linked to the drop in foreign demand from COVID-19 spreading to the rest of the world. Similarly, Italy may face a loss in foreign demand mostly through two channels. In the short-term, the country will be negative-

ly impacted by the fact that the Italian lockdown is tighter compared to the measures enacted by most of its neighbours. While Italy has suspended almost all non-essential productive activity untill May 3rd, France and Germany - two key trading partners - have not gone as far. In a recent letter to their Italian suppliers, the German association of industrialists (BDI) has stressed the degree of mutual dependence of Italy and Germany in some sectors (particularly auto-making) and expressed hope for a resumption of economic activity in Italy. Italian firms that are not allowed to produce and fulfill orders hence risk losing permanently at least some of their international clients, if the latters were to decide to switch their supply chain away from Italy to ensure continuity in production.

FIGURE 7· **GTrade in Value Added**



▶ SOURCE: Authors' calculations based on OECD data on trade in value added

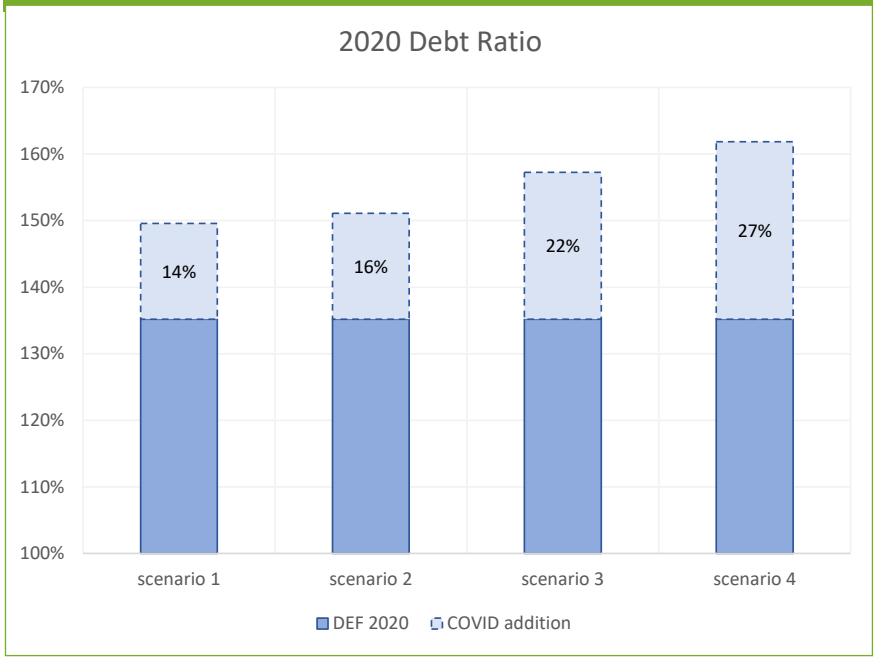
The longer the lockdown and the higher this risk. The impact on activity and on the likelihood of bankruptcies may be sizeable: trade in value added data show that about 50% of domestic value added produced in the Italian manufacturing sector is ultimately driven by consumption abroad (Figure 7). While the fiscal measures decided so far can help with lockdown-related liquidity issues, they would do little to make up for lost foreign demand. A second more long-term reason why some sectors may undergo a structural loss in foreign demand has to do with the weaknesses of the integrated global value chain system ID-19 has highlighted by COVID-19. Once the emergency is over, firms may be willing to re-onshore part of their supply chain, so as to avoid widespread disruptions in the future (especially if a vaccine cannot be found in a relatively short time). Our severe scenario thus assumes that in several sectors (including manufacturing) activity may not return to its pre-COVID level. **This assumption inflicts a hard blow to the economy, as annual real GDP growth could fall as far as to -15% for 2020.**

The Fiscal Impact

On March 16th, the Government approved a stimulus package of 25 bn euro (with the Decree "Cura Italia"), The package features an emergency financing of the national health system and civil protection system for about 3.2 bn, a number of employment and income support measures worth about 10.3 bn, tax deferrals and utility bills postponement for about 6.4 bn, and measures to support credit supply (including gurantees to the state development bank (CDP) for about 5.6 bn.

The measures decided so far - while useful to prevent a surge in bankruptcies and unemployment - will do little to cushion the effect of effectively 'freezing' the economy for months. Altogether, the 25 bn committed so far should increase the expected headline deficit to between -3.9% and -4.2% (depending on the drop in GDP from the scenarios that we have described in the previous section and Figure 8).

FIGURE 8· **COVID-19 Debt Effect**



▶ SOURCE: Authors' calculations based on data presented in the previous sections

We assume for simplicity that interest costs as a share of GDP are in line with what the government pencilled in in the 2020 budget (around 3.3%). The combination of a bigger headline deficit with constant interest costs (as a share of GDP) would lower the Italian primary balance into negative territory (between -0.6% and -0.9%) for the first time in more than a decade - as opposed to an expected primary surplus of about 1.1% of GDP in the 2020 budget. We also assume that inflation

will be in line with the growth in the GDP deflator assumed in the 2020 budget - i.e. 1.3% in 2020. This may prove optimistic ex post, as the ultimate outcome in 2020 will depend on whether the inflationary supply shock or the deflationary demand shock will prevail. Assuming also that the stock-flow adjustment remains in line with the government expectations in the 2020 budget (i.e. between 0.1% in 2019 and -0.1% in 2020), we are able to derive a very simple estimate of the effect of the COVID-19 shock on the Italian debt GDP ratio (Figure 8).

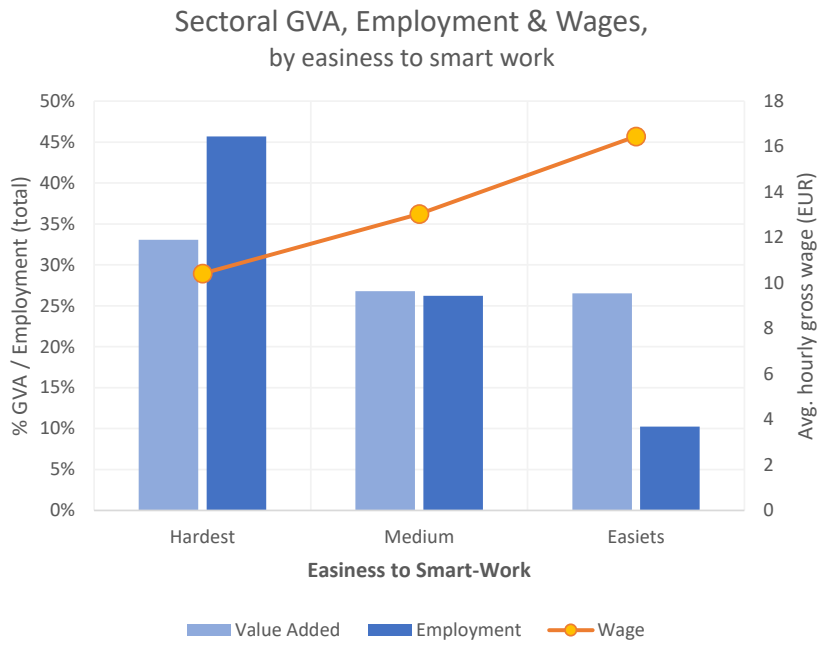
Starting from arounf 135% at the end of 2019, the debt ratio would climb to 149% in our baseline scenario for 2020 and to as high as 161% in our severe scenario. An increase in the debt ratio in the order of 14 to 27 percentage points is clearly problematic for a high-debt country like Italy. While the EU Stability and Growth Pact (SGP) is currently suspended, and hence Italy does not risk an immediate opening of Excessive Deficit Procedure (EDP), it is plausible that the SGP will be turned back on after the emergency is over. At that point, it would be even harder for Italy to comply with the EU's debt reduction rule (which prescribes a yearly reduction by one-twentieth of the difference between the existing levels and the target of 60% of GDP).

The COVID-related increase in the public debt ratio could trigger rating pressure - especially if the realised growth outcome were to end up closer to our severe scenario, featuring a structural activity loss. For all these reasons, any initiative at EU level that contributes to either share the cost of funding the recovery or at least lock in a lower cost of debt for a longer period of time would be beneficial to Italy. While the ECB's newly announced Pandemic Emergency Purchase Programme (PEPP) would certainly help considerably in this respect, the outcome of the ongoing discussions on a possible EU Recovery Fund backed by a limited joint issuance would be the real game-changer.

The Great Equalizer?

COVID-19 is a global exogenous shock hitting all countries in a similar fashion, yet it is far from being a "great equalizer", as some commentators have portrayed it. While it may be true that the probability to catch the virus and die from it is not necessarily correlated with income (at least for countries like Italy, with universal healthcare systems), the economic fallout is likely to exacerbate - rather than ease - already existing clevages around inequality of income and opportunities. As we have discussed in the previous sections, the re-opening of the economy will be gradual, in the post-COVID-19 world. Workers in sectors where it is possible to smart-work will be in a more secure position - as they will be able to keep working and their employer will face lower risk of bankruptcies.

FIGURE 8· **COVID-19 Debt Effect**



► SOURCE: Authors' calculations based on data from ISTAT and INAPP. 'Hardest' include those sectors ranking in the bottom third of the INAPP Easiness of Smart Working Index (NACE P, R, S, Q, F, G, I); 'Easiest' are sectors in the upper third of the ranking (NACE M, K, L, D); 'Medium' is all the other sectors in between these two extremes (B, N, E, C, H)

We can measure the 'easiness to smart-work' across different sectors with an index recently constructed by Italian Institute for Public Policy Analysis (INAPP). The index combines measures of the incidence of digital versus manual activity performed at a computer work as opposed to manually; the extent to which face-to-face discussions are prevalent; the importance of personal interactions with clients or the public in general; an index of physical contact and a measure of the time each worker spends standing (rather than sitting).

The result is a ranking of economic activities according to the easiness of performing them in a way that minimizes personal contacts. At the top, we find services jobs such as scientifica and technical professional services, finance and insurance, real estate activities. At the bottom, we find hospitality, retail and wholesale trade, construction, healtcare and other personal service. Figure 8 shows the share of Italian value added is distributed fairly equally across sectors with different feasibility of smart working, but the distribution of employment is much more uneven. About 45% of employment is accounted for by sectors in the bottom third of the INAPP ranking - i.e. sectors where transitioning to smart working would be very hard. These sectors - which include hospitality, construction and a wide range of personal services - are likely to be the last to re-open, and he first to shut doen again in case we were to see a relapse in COVID-19 infections. It is also the sector that on average pay lower hourly median wages. On the opposite extreme, the sectors where smart-working is the easiest - such as finance, real easte activities, and various scientific and technical professions - account for just 10% of employment but pay higher median hourly wages on average.

This very simple data suggest that - far from being a great equalizer - the COVID-19 shock would tend to exacerbate (rather than ease) existing inequalities across societies, because it will hit disproportionately more those sectors where smart-working is less feasible, which account for a significant share of employment overall but are also characterised on average by lower paying jobs. While liquidity and credit guarantee measures can temporarily help to prevent bankruptcies in these sectors during the lockdown, they could do little against the structural changes in the economy that may follow this shock in the longer term. As such, we believe that the question of how to deal with the social repercussions of this economic shock will soon need to come front and centre in the policy debate.

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