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Timely and appropriately targeted credit allocation to enterprises is limiting the impact of the Covid-19 crisis

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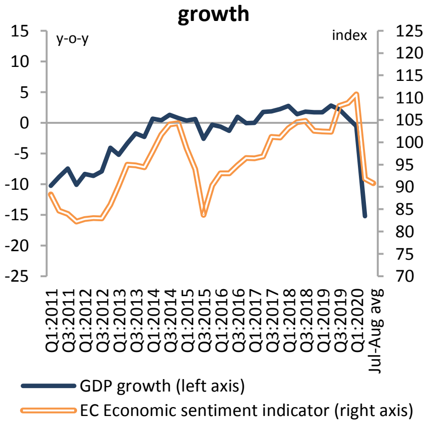
- The already large impact of the Covid-19 shock could be further amplified by a tightening in financial conditions arising from disruptions in liquidity and credit flows to enterprises in the presence of high uncertainty and balance sheet constraints (so-called "financial frictions").
- The analysis uses an innovative approach to link GDP growth developments with a detailed analysis of the adjustment process by private sector businesses to their operations. This framework permits the endogenous determination of financing needs due to the Covid-19 shock and the subsequent feedback loop back to the economy, if firms remain liquidity constrained. A comprehensive dataset of 30,000 enterprises (corresponding to about ⅔ of economy-wide sales and more than ½ of GDP covering 11 sectors of economic activity) is utilized to construct a consolidated "Business Sector Balance Sheet" that lies at the core of the analysis.
- Under the assumption that the Covid-19 pandemic in Greece will remain broadly under control for the rest of 2020, GDP is envisaged to contract by 7½% y-o-y in FY:2020 and we expect a drop in enterprises' sales of 19% (corresponding to €50 bn). According to our "Business Sector Balance Sheet" model, business sector adjustments to operations will reduce the initial funding gap to €33 bn, following the implementation of cost control actions by individual firms.
- Prompt government measures, along with the banks' moratoria, will cover a large part of this gap (i.e. €12 bn), while the use of ½ of the companies' available cash buffer (i.e. €6 bn) will further reduce the funding gap to €15.5 bn. The residual funding gap can be closed through bank lending associated with the government sponsored programmes (TEPIX and the guarantee scheme) of c. €9 bn, along with the use of already approved bank credit lines and new lending, including to cover expiring credits. Of course, the measures and the restricted capacity for lending must be applied in a timely fashion and to the appropriate firms. Inefficient use would lead to a credit gap, with subsequent declines in activity and employment. Pre-Covid loss-making firms are unlikely to access credit, but account for only 5% of activity, albeit 8% of employment (and approximately €3 bn of the above mentioned funding gap).
- With the availability of the above-described funding, business labor compensation will decline by 20.3% (with 60% offset by government support programmes, and employment declining by 4.0% y-o-y by year-end) and business profitability by 14.5% y-o-y, with the non-business sector more resilient to Covid-19 (e.g. public sector, agriculture).

Timely and appropriately targeted credit allocation to enterprises is limiting the impact of the Covid-19 crisis

GDP contracted by 15.2% y-o-y in Q2:2020 when the impact of the lockdown had peaked

Economic sentiment & real GDP growth



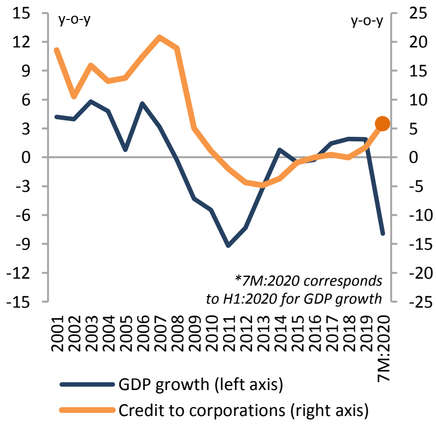
The sudden stop in activity, due to heightened uncertainty and the enforcement of restrictive measures to contain the spread of Covid-19, has led to an unprecedented shrinkage in economic activity in most sectors during the March-May period. GDP contracted by 15.2% y-o-y in Q2:2020 following a decrease of 0.5% y-o-y in Q1:2020.

The initial shock could be further amplified by a tightening in financial conditions, arising from disruptions in liquidity and credit flows in the presence of high uncertainty and balance sheet constraints (so-called "financial frictions"). This is a manifestation of the "credit channel" of transmission of macroeconomic shocks.

To this end, bank lending is crucial, in order to prevent an acute liquidity squeeze from morphing into a fully-fledged credit crunch, which – compounded by sluggish demand – will diminish the business sector's capacity to recover rapidly. The international experience suggests that transitory liquidity shocks can take a lasting toll on economic conditions if not timely addressed, leading to bankruptcies of the more vulnerable (or severely affected) entities and permanent losses of employment positions.

The impact of the Covid-19 shock could be further amplified by "financial frictions". However, so far, there are encouraging signs of a countercyclical response of bank credit

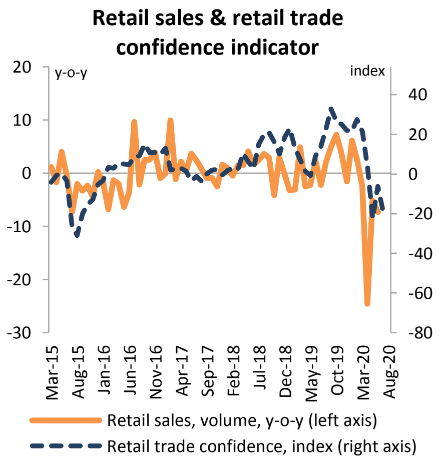
GDP & corporate credit



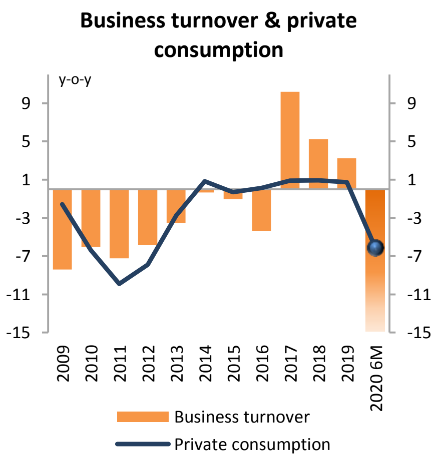
The Greek government launched an ambitious €17 bn package of fiscal support and loan guarantee measures to cushion the drop in economic activity and support liquidity, many aimed at employment support, as well as liquidity relief for enterprises. The fiscal easing in 2020 is estimated to exceed 7.5% of 2019 GDP (of which about €12 bn correspond to the new fiscal measures implemented in 2020 and the remainder to the impact of automatic stabilizers on government revenue), while another 3.0% of GDP corresponds to short-term loans and guarantees for bank lending.

The framework presented in this note uses an innovative approach to link GDP growth developments with a detailed analysis of the adjustment by private sector businesses to their operations, so as to endogenously determine their financing needs due to the Covid-19 shock and the subsequent feedback loop back to the economy if they remain credit liquidity constrained. A comprehensive dataset of 30,000 enterprises is utilized (corresponding to about ⅔ of economy-wide sales and more than 50% of GDP, covering 11 sectors of economic activity) to construct a consolidated "Business Sector Balance Sheet" that lies at the core of the analysis. Thus, this framework permits a

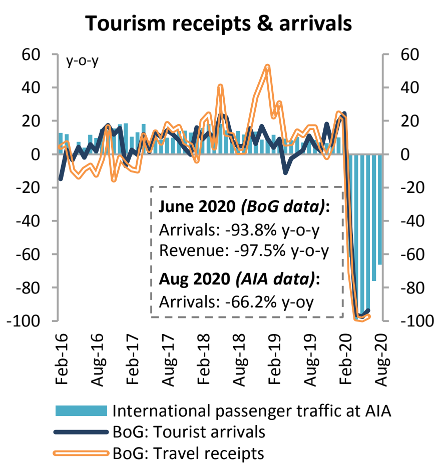
High uncertainty and containment measures took their toll on domestic spending in Q2:2020…



…leading to an unprecedented decrease in business turnover, which is the main transmission channel of the shock



International tourist arrivals dropped to virtually zero in Q2:2020, picking up modestly in July-August



detailed examination of the impact of businesses' operational adjustments to the compensation of production factors that form GDP from the income side (e.g. wages and profits) and enables the identification of financing needs for the entire business sector, as well as for specific sectors, according to size and financial health criteria.

The impact of Covid-19 is projected to lead to a large reduction in GDP by 7½% y-o-y in 2020, with business sales declining by 19% y-o-y. The "business component" of the economy-wide activity is expected to decrease by 12% y-o-y – with the commensurate compensation down by 8.2% (-20% excluding government support measures) and their operational profitability by 14.5% – nevertheless creating liquidity needs of €33 bn – which, if they are not filled, will lead to negative feedback loops and a larger decline in GDP. By using government measures, banks' moratoria on amortization payments and limited use of enterprises' existing cash buffer, we estimate residual liquidity demand of €15.5 bn – with bank financing closing the bulk of this gap, as the analysis indicates that most firms are eligible in the sense of their being "bankable" (e.g. acceptable leverage ratio and pre-Covid profitability). Thus the system has the adequate funding, so as not to create negative feedback loops.

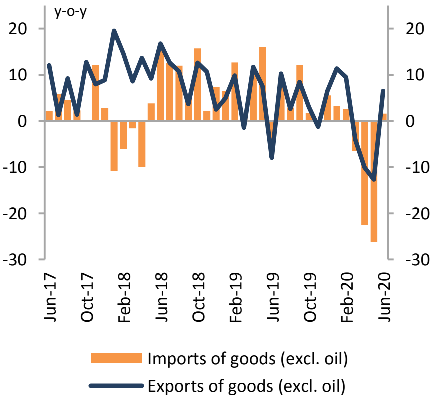
Output decline of 7½% in 2020, despite large fiscal support, arising from high uncertainty

High uncertainty and Covid-19 containment measures have led to an unprecedented drop in private consumption (as indicated by the 14.9% y-o-y average decline in the retail trade volume in April-May 2020), mostly concentrated in services (decline in the turnover of the accommodation and food services sectors of 94.3% y-o-y and 59.0% y-o-y, respectively, in Q2:2020)

Indeed, private consumption contracted by 11.6% y-o-y in Q2:2020 from -0.7% y-o-y in Q1:2020 (at constant prices), following 3 years with an average annual increase of 0.8% y-o-y, which accounted for around ⅓ of GDP growth during this period. This contraction in consumption was not only related to a drop in disposable income, since government measures offset a large part of the near-term pressure on the labor market, protecting disposable income and limiting layoffs. It reflects a sharp increase in the saving rate, subtracting more than €3.0 bn from final spending as suggested by the extraordinary increase in bank deposits. In fact, household deposits increased by €3.6 bn in 7M:2020 despite the suspension of labor contracts, the non-occurrence of

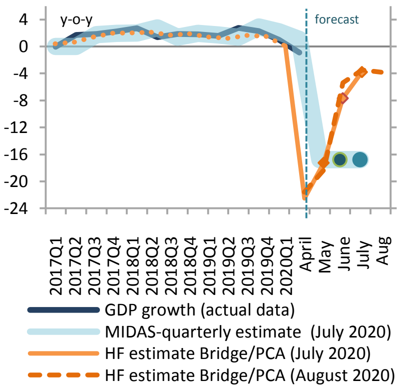
Goods exports dropped sharply in March-May, whereas imports remain a significant shock absorber, due to the high import dependency of the economy

Goods imports & exports
(excluding oil)



NBG estimates of Greek GDP in high frequency suggest that activity started to gain strength in July-August

NBG: GDP growth estimates based on high frequency data



Fiscal and liquidity measures for 2020

	bn euro
Fiscal measures	**10,8**
Economic support to wage earners and the self-employed (incl. social security)	4,4
Suspension of tax payments (CIT,PIT, indirect taxes)	1,25
Reduction in the advance payment of CIT for 2019 (estimate)	1,30
Subsidization of interest payments on performing loans of SMEs	0,7
Deferal of payments of social security contributions	0,6
Extension of the regular and long-term unemployment benefit	0,4
Support to the healthcare system	0,2
Support to the primary sector	0,15
Other fiscal measures	1,8
State loans & Guarantees	**6,4**
Repayable advance scheme	**3,6**
Tepix II (fiscal cost)	0,8
Guarantees through the Development bank	2,0
Total	**17,2**

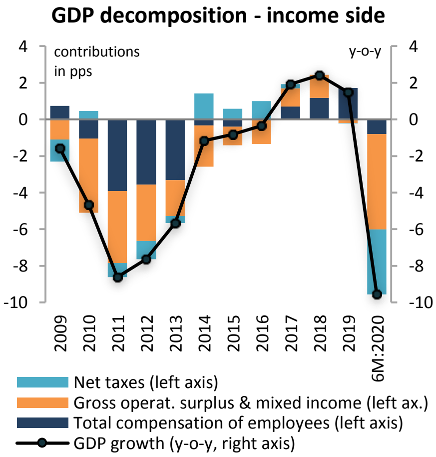
seasonal hiring in accommodation and food service sectors (a hiring gap of about 240K seasonal employment positions compared with 6M:2019) and decreased incomes from self-employment.

Looking forward to the rest of the year, private consumption is expected to remain muted in H2:2020, albeit recovering on a quarterly basis by 3.1% q-o-q, s.a., on average, in Q3 and Q4:2020. This decline is expected to mainly reflect the net decline in disposable income related to tourism, since Government support will be unable to fully compensate for the decline in average working hours or a potential adjustment in wages to this most affected sector. Moreover, residual uncertainty is likely to keep the household saving rate above its long-term (20-year) average. For the year as a whole, private consumption is expected to contract by 7.0% y-o-y, the largest annual drop since 2012.

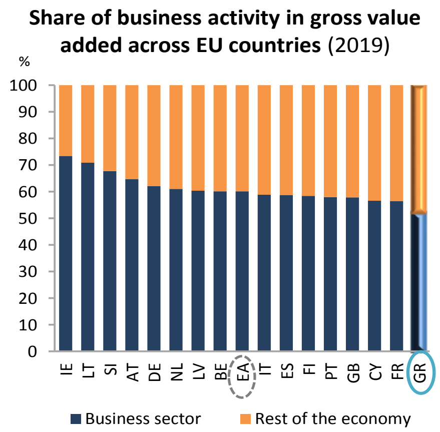
Similarly, exports of goods and services, which have remained on a steady upward trend for the past decade, contributing 2.2 pps to annual GDP growth in the period 2017-19, declined at an unprecedented pace in Q2:2020. Goods exports decreased by 15.4% y-o-y in Q2 (from +4.0% y-o-y in Q1:2020, in constant prices) and exports of travel services plummeted by 98.2% y-o-y in Q2:2020 (in current price terms), with international tourist arrivals dropping to virtually zero in Q2:2020. A slight improvement has been recorded in July and August with international arrivals in the Athens international airport (AIA) declining by 76.1% y-o-y and 66.2% y-o-y, respectively, from -93.4% y-o-y in June. Total services exports declined by 25.0% y-o-y in H1:2020 (-49.4% y-o-y in Q2), with resilient shipping activity partly compensating for the collapse in tourism activity. In the second half of 2020, goods exports are expected to pick up (+0.9% y-o-y, on average) as external demand will bottom out, but the tourism activity will remain subdued (a decline in total services exports of about 40% y-o-y in H2:2020), despite the encouraging response to the gradual opening up of the economy to tourism from June 15th.

Imports will remain a significant shock absorber, showing a strong positive correlation with domestic demand due to the high import dependency of the economy. Goods imports have declined rapidly (by 15.3% y-o-y in Q2, at constant prices from -1.2% y-o-y in Q1:2020), with import categories related to production inputs, capital goods and consumer durables recording the largest drops. This trend largely reflects declines in production, deferrals of investment spending by the

Activity can also be expressed as the incomes earned by the factors of production



Only half of Greece's GDP is produced by the country's business sector compared with more than 60% in the euro area



private business sector, as well as the disruption of global supply chains. In H2:2020, imports are expected to contract by c. 12% y-o-y, offsetting more than 70% of the drag from the decline in private consumption and investment in this period. On an annual basis, imports of goods and services are projected to decline by 12.9% y-o-y and total gross fixed capital formation by 10.5% y-o-y, despite increased disbursements from the public investment budget. Finally, public consumption along with public investment are expected to increase by 15% y-o-y, on average, adding almost 3.0 pps to GDP growth in FY:2020, with the primary deficit of general government expected to exceed 4.0% of GDP compared with a primary surplus of 3.5% of GDP in 2019.

All in all, the above-described developments translate into a decline in GDP of 7.5% y-o-y in FY:2020 with downside risks relating to the possibility of more adverse epidemiological scenarios or more persistent damage to the accommodation and food services sector.

The decline in demand-side GDP is reflected in commensurate drops in economy-wide labor consumption and operational profitability

Activity can also be expressed as the income earned by the factors of production, i.e. wages corresponding to labor and profits and rents corresponding to capital and real estate. Analysis of GDP from the income side provides a useful link to the corporate balance sheet and the drivers of corporate profitability. To facilitate the analysis, income-side GDP is split into private sector business activity and a broad/heterogeneous group of activities classified as "rest of the economy" related to self-employment, public sector, health, education and financial sector activity, which are, for the most part, more resilient to the crisis (at least the first-round effects).

A noteworthy idiosyncratic characteristic of the Greek economy is the fact that only around ½ of its GDP is produced by the country's business sector (compared with almost ⅔ in the EU countries, on average). Nevertheless, the "business component" of the Greek GDP is clearly the driving force of the economy, and it is the part where the Covid-19 shock will have the largest impact.

More specifically, private sector business activity comprises: i) labor compensation of around 55% of economy wide employment; and ii) its corresponding business profits which account for almost ⅔ of economy wide gross operating surplus & mixed income. Net production taxes – corresponding to the difference between taxes on production, import

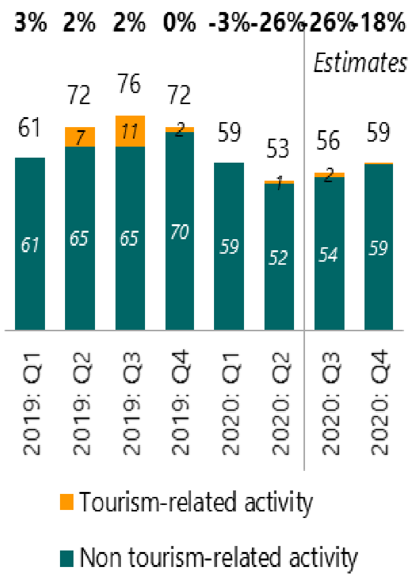
Deriving a "Greece's Business Sector Balance Sheet" and aligning business sector with national accounts data

Business Sector's main variables 2019

(in € bn)	Balance sheet data	National accounts data
Sales		
Sales	261,8	
Sales (adjusted)	173,7	
Cost		
Raw Materials	86,7	
Labor	36,5	37,4
Profit (GOS)	50,5	52,8
GDP	87,0 **	90,2
Other		
Assets	341,0	
Debt	88,7	92,1
Domestic banks		65,9
Other credit		26,2
Equity	130,1	

** The company's sector sales have been adjusted to be in line with the national accounts' definition, and avoiding double-counting intra-sectoral transactions*
***Business GDP*

Covid-19 shock leads to a sharp shrinkage in business turnover



taxes and subsidies paid to producers – are also added to the production factor incomes to calculate GDP from the income side.

The Covid-19 impact necessitates significant adjustments to the operations of the business sector, as well as increased funding needs

To gauge the impact of Covid-19 on the cost structure of the business sector, as depicted in the financial statements of the country's enterprises, we utilized a dataset of 30,000 enterprises (covering ⅔ of total business sales) and rescaled it to the economy's size (through stratified analysis of 22 segments: 11 sectors and 2 sizes). According to our estimates for the structure of "Greece's Business Sector Balance Sheet", variable costs, on average, account for about 57% of sales and labor costs are 14% of sales.

Specifically, we (i) adjusted the level of total business sales so as not to include intra-sectoral transactions (e.g. from one retailer to another), and (ii) linked variable cost to intermediate consumption and labor cost to employee compensation, thus mapping Balance Sheet items onto their National Accounts counterparts. Indeed, the aggregate business sector balance sheet for 2019 comprises of sales of €174 bn[1], variable costs of €87 bn, wages of €36.5 bn (corresponding to 1.9mn employees) and operating profits of around €50.5 bn[2] for 2019 (see table).

The main source of the Covid-19 shock to our "Greece's Business Sector Balance Sheet" arises from the reduction in business turnover for 2020. It should be noted that there is a direct correlation between domestic demand and economy-wide turnover, with the former measuring the value of final sales in the economy and the latter the whole value of transactions across the production-distribution chain. Based on the estimate for the decline in private-sector consumption described above and Elstat data for business turnover at a sectoral level for the first 6 months of 2020, we have estimated a quarterly path for the year consistent with the decline in FY GDP of -7.5%, which assumes that the Covid-19 pandemic in Greece will remain under control during H2:2020. Under this baseline scenario, we have estimated business turnover for the last 6 months of 2020 for two distinct components – tourism-related and non-tourism related with the turnover of the former expected to decline by 80% in 2020 and the latter suffering a drop in turnover of around 15% (see diagram).

[1] The company's sector sales have been adjusted to be in line with the national accounts' definition (i.e. no double-counting intra-sectoral transactions).
[2] Excluding taxes

The initial liquidity gap created by the Covid shock

	TOTAL BUSINESS SECTOR			*Liquidity-squeezed enterprises*		
	2019	2020	Δ%	2019	2020	Δ%
SALES	**261,8**	**211,9**	*(19,1%)*	**221,1**	**186,5**	*(15,6%)*
Variable cost	(149,9)	(118,1)	(21,2%)	(136,1)	(107,3)	(21,2%)
Labor cost	(36,5)	(33,5)	(8,2%)	(33,2)	(30,8)	(7,2%)
Other operating costs/income*	(50,4)	(55,1)	9,3%	(44,0)	(48,6)	10,5%
EBITDA	**25,0**	**5,2**	*(79,2%)*	**7,8**	**(0,2)**	-
Taxes	(3,7)	(3,7)	0,0%	(3,1)	(3,1)	0,0%
Interest payments	(5,5)	(5,5)	0,0%	(4,9)	(4,9)	0,0%
NET PROFIT / (LOSSES)**	**15,8**	**(4,0)**	-	**(0,2)**	**(8,1)**	-
Cash conversion cycle		(5,3)			(4,7)	
Debt amortization***		(5,7)			(5,2)	
CapEx		(6,9)			(6,2)	
Max month adjustment****		(9,0)			(9,0)	
INITIAL LIQUIDITY SURPLUS / (GAP)		**(30,9)**			**(33,2)**	

* Cost minus income (note that income's drop exceeds cost's drop for 2020)
** Excl. depreciation
*** Assumption that NPEs are not paying
**** Taking into account the max-month cumulative level of working capital needs (after stretching as far as possible payments' delay)

Identifying four segments in the Greek business sector: Main variables (2020)

	SALES (€bn)	EMPLOYMENT ('000)	EBITDA (€bn)	DEBT (€bn)
1. Covid-affected healthy	**123**	**1.247**	**6**	**25**
Liquidity-squeezed	107	1.154	2	23
Building cash buffer	16	93	3	2
2. Other healthy	**58**	**334**	**7**	**19**
Liquidity-squeezed	50	293	5	14
Building cash buffer	7	41	2	5
3. Loss-making	**11**	**152**	**(2)**	**11**
Liquidity-squeezed	11	152	(2)	11
Building cash buffer	0	0	0	0
4. Other distressed	**21**	**167**	**0**	**33**
Liquidity-squeezed	19	151	(0)	33
Building cash buffer	3	17	1	0

Under these conditions, business sector turnover is expected to decrease by 19% in 2020, equivalent to €50 bn. Note that as the most affected sectors are labor-intensive (such as tourism and trade), the pressure on the labor market is significant (corresponding to c. 700k positions, potentially affected until Q3:2020), with a large part of this pressure being absorbed through wage adjustment and employment support programmes.

In order to estimate the gap of the liquidity-squeezed enterprises, we have divided the Greek business sector in 4 categories of enterprises (based on (i) the strength of covid-impact blow and (ii) their pre-covid financial health):

- ✓ 1. Covid-affected but healthy enterprises
- ✓ 2. Other healthy companies
- ✓ 3. Pre-covid consistently loss-making companies
- ✓ 4. Pre-covid distressed companies

Each category is further divided into two sub-categories: (a) liquidity-squeezed enterprises and (b) enterprises building cash buffer. More specifically, while most enterprises are expected to see their cash reserves decreasing through 2020, a small share of enterprises (approximately 16% of the business sector in terms of 2019 sales), while taking a hit on their turnover (corresponding to €15 bn), will remain profitable enough to see their cash reserves increasing in 2020.

In the analysis that follows, we focus on the liquidity-squeezed enterprises (with a drop in turnover of €35 bn). These enterprises will be able to absorb a large part of the sales drop through adjustments in variable costs, albeit partly offset by a deterioration in the payments cycle[3]. Specifically, the business adjustment process of the liquidity-squeezed enterprises involves the following aspects:

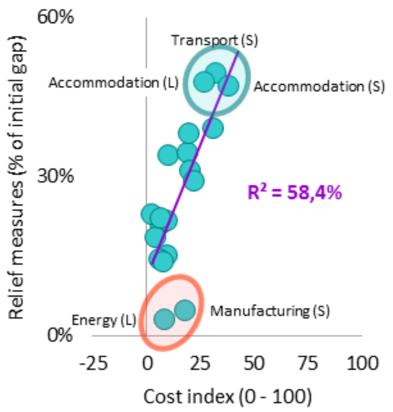
- A reduction in (non-labor) costs, comprising mostly production inputs and accounting for over 80% of sales, by 13%, on an annual basis, equivalent to €24 bn
- A decline in labor costs, (comprising 15% of sales), equivalent to €2.4 bn, comprising layoffs and wage declines, (with, however, a Government-sponsored labor subsidy scheme

[3] Payments (or cash conversion) cycle is a metric that expresses the time it takes for a company to convert its investments in inventory and other resources into cash flows from sales.

The relief measures initiated by the State and the banks narrow the liquidity gap

	TOTAL BUSINESS SECTOR	*A. Liquidity-squeezed*	*B.Building cash buffer*
INITIAL LIQUIDITY SURPLUS / (GAP)	**(30,9)**	**(33,2)**	**2,3**
STATE MEASURES	10,3	9,3	1,0
Employment support programmes	*4,4*	*4,0*	*0,5*
Corporate income tax relief	*1,5*	*1,4*	*0,1*
Repayable advances	*3,6*	*3,3*	*0,4*
Interest rate subsidy	*0,8*	*0,7*	*0,1*
BANKS' MORATORIA	2,6	2,3	0,3
CASH BUFFER	6,1	6,1	0,0
POST-MEASURES LIQUIDITY SURPLUS / (GAP)	**(11,9)**	**(15,5)**	**3,6**

Determining the extent of relief measures per sector



Cost index represents the share of labor cost over the total cost of sector
Small enterprises (S): Sales below €5 mn
Medium & Large enterprises (L): Sales above €5 mn

offering an additional €4.0 bn support on labor cost, resulting in an effective decline of €6.4 bn or 19%). (see below)

- A deterioration in the cycle "accounts payable-inventories-accounts receivable" by €4.7 bn, as international suppliers tighten credit standards (with net trade cycle days increasing in 2020 by approximately 30 days, on average)
- The annual CapEx for fixed asset maintenance and replacement costs will remain at the level of annual depreciation of 2019 (approximately €6 bn)
- Due to the extremely sharp demand drop, we estimate that the maximum cumulative level of working capital needs of each segment reached at some point during the course of 2020 exceeds by €9bn the year-end level

Therefore, the initial liquidity gap is estimated to be approximately €33 bn – of which €17 bn refers to SMEs and €16 bn to Large enterprises. Note that the sectors with the largest liquidity gap are retail trade, industry and wholesale trade (€5.4 bn, €4.5 bn and €5.7 bn, respectively).

However, the cash flow pressures will be reduced by a plethora of measures taken by the Government to support the corporate sector, amounting to €9.3 bn for the liquidity-squeezed companies which, inter alia, include:

- Repayable advances from the State amounting to €3.3 bn
- Corporate income tax relief measures (lower tax estimated CIT payments and the return to the corporates of their 2020 tax advances) – amounting to €1.4 bn
- Employment support programmes of a total amount of €4.0 bn
- Rent relief programme introduced by the Government for the months March to August
- Interest rate subsidy by Government equivalent to €0.7 bn

Cash flow relief also arises from the banks' implementation of a moratorium on amortization payments[4] to Covid-19 impacted sectors, which provides additional relief of €2.3 bn.

It is important to note that the effect of the relief measures differs between sectors as, according to the Government legislation, they are

[4] It should be noted that NPEs are excluded from banks' moratoria.

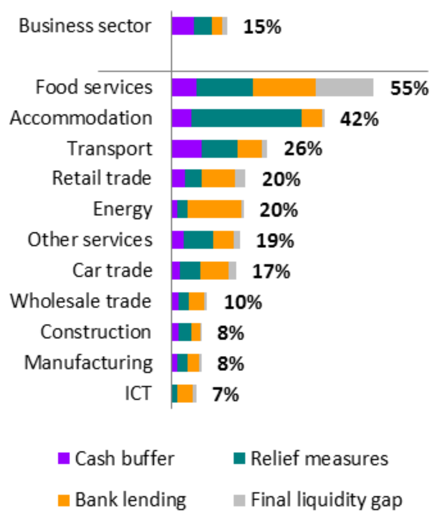
The role of bank lending in closing the liquidity gap

	TOTAL BUSINESS SECTOR	*A.Liquidity-squeezed*	*B.Building cash buffer*
POST-MEASURES LIQUIDITY SURPLUS / (GAP)	**(11,9)**	**(15,5)**	**3,6**
Government lending programme	9,0	9,0	0,0
New lending	0,2	0,2	0,0
Refinancing	3,2	2,9	0,3
POST-LENDING LIQUIDITY SURPLUS / (GAP)	**0,5**	**(3,4)**	**3,9**

Liquidity gaps per segment

	INITIAL	POST-MEASURES	POST-LENDING
BUSINESS SECTOR	**33,2**	**15,5**	**3,4**
1.Covid-affected healthy	**18,6**	**7,4**	**0,0**
2.Other healthy	**7,3**	**3,1**	**0,0**
3.Loss-making	**4,2**	**3,4**	**3,4**
4.Other distressed	**3,2**	**1,6**	**0,0**

Determining the liquidity gap per sector (as % of sales)



distributed based on (i) the extent of sales decline, and (ii) the size of the wage bill. Thus, in highly exposed and labor-intensive sectors (e.g. accommodation), the relief measures cover up to 50% of the initial working capital needs, while in less exposed and more capital-intensive sectors (e.g. energy), the relief measures cover just 10-30% of the initial working capital needs.

By maximizing the use of their existing cash reserves (assumed to decline to the lower quartile of the cash-to-sales ratio of the respective sector and the firm's size, and assuming that enterprises will be willing to use half of it in 2020 and the other half in 2021), another €6.1 bn of the liquidity gap is covered, leaving a residual of about €15.5 bn.

Certain firms will not be considered "bankable", and thus will not be able to close their residual liquidity gap, putting their operations at risk, and thus impacting both activity and employment. According to our analysis, such firms account for 5% of turnover, about 150,000 job positions and circa €13 bn of bank debt. Bankability has been defined as firms that were consistently loss-making in the pre-Covid-19 period. Such firms account for about €3.4 bn of the total residual liquidity gap of €15.5 bn.

The analysis was undertaken at a firm level basis, thus permitting a sectoral breakdown of that residual liquidity gap. Trade and industry have the highest level of working capital needs (reflecting the relatively large size of these sectors) – €7.8 bn (€2.8 bn retail and €3.1 bn wholesale) and €1.9 bn, respectively. The hard-hit tourism sector, proxied by accommodation and food services sectors, is estimated to have working capital needs of about €2.1 bn - with food services having particularly large working capital needs (30% of their turnover, i.e. €1.8 bn). Regarding working capital needs of large corporates versus SMEs (defined as enterprises with sales below €5 mn), the residual liquidity gap is divided almost equally between the two segments, €6.4 bn for the SMEs and €9.1 bn for the large corporates.

The two Government lending programs (TEPIX and the guarantee scheme) are expected to unlock more than €9 bn of bank lending. The use of existing credit lines with banks and new lending, including disbursements to cover current year amortization, is expected to be sufficient to close the residual business sector funding gap.

Thus, the analysis suggests that the totality of measures – own cuts to operational cost, use of government programmes, and bank measures and credits – can cover the financing gap of firms caused by the Covid-induced reduction in turnover, and limit further impact on activity from

The impact of Covid-19 on the financial statement of the business sector and link with GDP for 2020

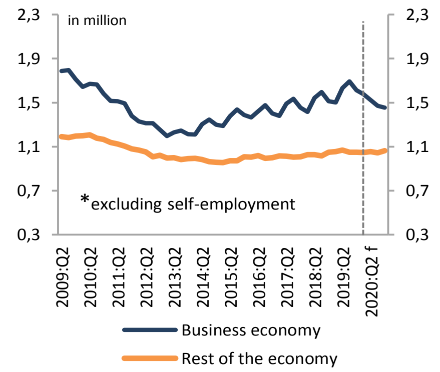
Business sector's main variables 2020

	in € bn	Annual growth rates				
Sales	**Year**	**Q1**	**Q2**	**Q3**	**Q4**	
Sales	211,9	-19%	-3%	-26%	-27%	-18%
Sales (adjusted)	140,5	-19%				
Cost						
Raw Materials	68,2	-21%	-5%	-27%	-29%	-22%
Labor	29,1	-20%	4%	-30%	-30%	-21%
Profit (GOS)	43,2	-15%	-5%	-23%	-20%	-9%
Business GDP	**76,7**	-12%	-1%	-19%	-17%	-9%
GDP (constant prices)	**179,5**	-8%	-1%	-15%	-10%	-5%

** The company's sector sales have been adjusted to be in line with the national accounts' definition*

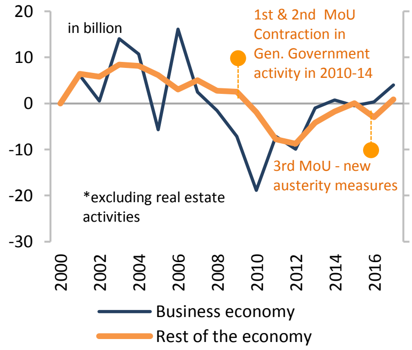
Employment in the "rest of the economy" exhibits relatively low sensitivity to the economic cycle

Employees in business economy and in the rest of the economy*



Gross operating surplus and mixed income generation in the "rest of the economy" is less volatile than in the business sector

Gross operating surplus & mixed income*
(business sector vs rest of economy)



the credit channel. Of course, the measures and the restricted capacity for lending have to be applied in a timely fashion and to the appropriate firms. Inefficient use will lead to a credit gap, with subsequent declines in activity and employment.

If firms manage to borrow the above funds, the "business sector" of GDP (comprising both liquidity-squeezed and building cash buffer enterprises) is expected to fall by 12% in 2020 (with the drop approaching €10 bn) broken down as follows:

- Operating profits will decline by 14.5% y-o-y (i.e. around €7 bn), with 60% of the drop occurring in the small enterprises' segment, and around ½ of the drop corresponding to retail trade, accommodation and wholesale trade sectors.
- Labor costs will decline by 20.3% y-o-y (i.e. around €7 bn), with the drop materializing through a combination of wage decreases (11%) and layoffs (9%). From an employee view, the government labor subsidy program is estimated to supplement their wages by c. €4.4 bn, leading to a reduction of employee compensation by only 8.2%.

Linking back to the total economy: Employment and wages in the "non-business" economy will fare better, with employment on an economy wide basis declining by 4.0% y-o-y in FY:2020

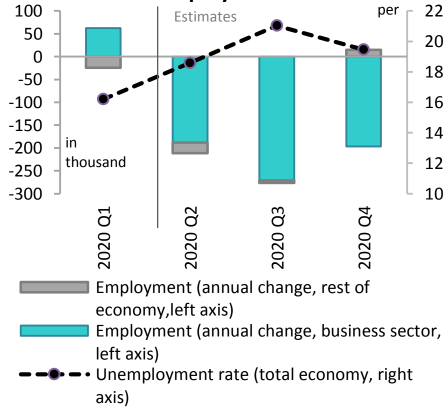
Indeed, labor compensation in the financial, education, health and agricultural sectors is assumed to decline by c. 1.5% y-o-y, on average, in line with its trend in Q1:2020. Specifically, it is estimated that employment in the "rest of the economy" will remain broadly constant at its 2019 level (-0.4% y-o-y).

Indeed, it is expected that a small increase in employment in the public sector (mainly due to crisis related hiring), as well as in healthcare and in specialized activities of the self-employed, will broadly offset a slight reduction in employment in agriculture due to Covid-19 related constraints in seasonal employment of non-residents. Moreover, as experienced during the Greek crisis, it is estimated that the active population will decline by 50k to 100k through retirements and a temporary withdrawal of a part of the labor force in the absence of acceptable employment positions. Labor force survey data for 6M:2020 are indicative of this trend with the annual decline in active population exceeding 140K persons in 6M 2020.

In addition, average wages in the "rest of the economy" will record a marginal decline (c. -1.0% y-o-y) with both national account and labor

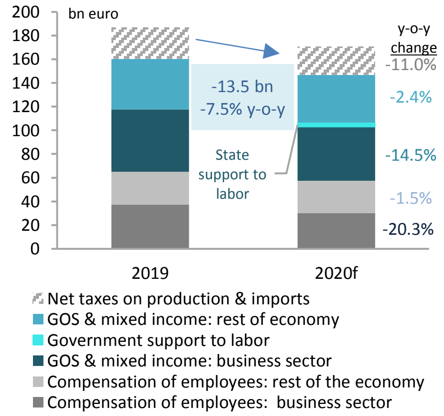
Employment losses will peak in Q3:2020 with the unemployment rate reaching 21%

Annual change in employment & unemployment rate

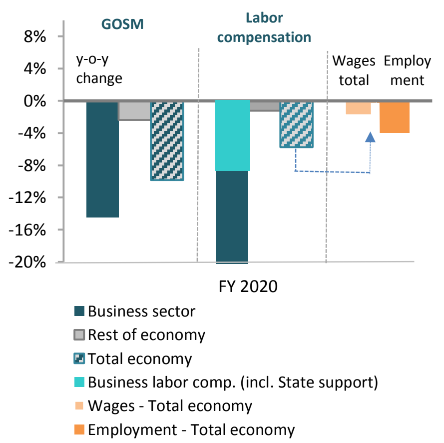


The combined impact of the adjustment in the business sector and the "rest of the economy" points to a recession of -7.5% y-o-y in FY:2020

Income decomposition of GDP
(levels in bn euro)



Income decomposition of GDP



force survey data in 6M:2020 and historical (short-term) elasticities, vis-à-vis changes in employment in the business sector, being supportive of this estimate.

As discussed above, the decline in business sector employment, working hours and wages, will be more pronounced in the sectors mostly affected by Covid-19 (such as tourism and trade), which are also characterized by a higher use of flexible employment forms which will facilitate labor cost adjustment.

Combining the information on the labor cost adjustment in the business sector with estimates of labor income trends in the rest of the economy, we estimate that the total labor compensation in the economy will decline by 12.2% y-o-y. This figure comes down to 5.8% y-o-y when government measures of about €4.4 bn are taken into account – mainly in the form of a special allowance paid to the affected employees and the self-employed and the subsidization by the State of wages and social security contributions.

Overall, the analysis suggests that the decline in economy-wide employment will accelerate to c. 7.0% y-o-y in Q3:2020 – corresponding to approximately c. 285K employment positions, of which 160K are seasonal – and by 4.0% y-o-y, on average, in FY:2020 . Accordingly, the unemployment rate peaks at c. 21% in Q3:2020 and declines to below 20.0% in Q4:2020.

Economy-wide gross operating surplus and mixed income declines by 9.8% y-o-y

Similarly, the input of the business analysis on gross operating profits is combined with estimates of gross operating surplus and mixed income (GOSM) in the rest of the economy to project GOSM at an economy level. Again, most components of non-business GOSM are exhibiting low sensitivity to the economic cycle – especially the operating surpluses of public administration, public utilities and the part of mixed income related to imputed rents from homeownership. Combined with the projected decline in business profits of 14.5% y-o-y (as derived in the previous section), the total GOSM in the economy is estimated to shrink by 9.8% y-o-y in FY:2020.

Overall, the above-described decreases in labor compensation and the GOSM, at an economy level, in conjunction with an estimated adjustment in net taxes on production (1.4% of GDP lower than in 2019), lead to a decline of 12.0% in activity in the business sector and of -1.6% in the rest of the economy, being in line with the baseline scenario for a GDP contraction of 7½% y-o-y in FY 2020.

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The analysis is based on data up to September 14, 2020, unless otherwise indicated