

Russia misses Opec+ oil cuts target in April



Russia pumped more crude last month than agreed under the Opec+ deal, lagging behind Energy Minister Alexander Novak's pledge to comply with the pact. Russia produced 45.97mn tonnes of crude in April, according to preliminary data from the Energy Ministry's CDU-TEK unit. This equals 11.233mn bpd, or 185,000 barrels lower than the October daily baseline, according to Bloomberg calculations. Novak said that April would be the first month Russia would fully comply with its pledged production cut of 228,000 barrels a day, as part of the agreement with the Organization of Petroleum Exporting Countries and its allies. Despite missing the reduction target Russia has been accelerating the pace of cuts.

In March, the country's average daily output was 11.303mn barrels. Russia's average daily oil-output cut in April was 197,000 barrels a day, according to the government. The reduction, excluding projects operating under its production-sharing agreements, or PSAs, reached 213,000 barrels a day, the government said. By end-April the production cut had

increased to 223,000 barrels a day from the October baseline, the Energy Ministry said in a separate statement citing Novak. Excluding output from PSAs, the end-April cut was 229,000 barrels a day, the government said. The Energy Ministry first mentioned PSAs when assessing the nation's production cuts in March, without clarifying why the output target should be adjusted in this way.

Over the past few months, the Energy Ministry has published its own figures for average daily production cuts, which differ from Bloomberg calculations. This may be explained by a divergence in methodology, due to the government using a different conversion ratio from tonnes to barrels for each individual field. Bloomberg calculations are based on a ratio of 7.33 barrels per tonne. Russia's crude production data comes on the day that US waivers for buyers of Iranian oil expire. Saudi Arabia pledged to adjust its production to make sure that customers remain adequately supplied. Yet the kingdom said it will co-ordinate with its allies in the producer group and will not exceed its quota under the Opec+ deal. President Vladimir Putin said last week that Russia has "the colossal potential" to increase its oil output if needed in response to global demand. Yet he reiterated the country will keep output within pledges made to its partners in Opec+.

Australia iron ore exports rebound in April, but not enough



By Clyde Russell

LAUNCESTON, Australia, May 1 (Reuters) – Australia's iron ore exports rebounded in April after being hit by a cyclone the prior month, but the surge in shipments wasn't enough to offset declining volumes from Brazil in the wake of January's tailings dam disaster.

Australian exports were about 69.1 million tonnes in April, according to preliminary figures compiled by Refinitiv, based on vessel-tracking and port data.

This was up 20 percent from 57.5 million tonnes in March, when shipments were disrupted by Tropical Cyclone Veronica, which closed ports and impeded mining operations in Western Australia state.

Brazil's exports volumes have been slipping since top miner Vale was forced to close several mines in the wake of the collapse of a tailings dam at its Brumadinho mine in late January, which left more than 300 people dead or missing.

Brazilian shipments of the steel-making ingredient fell sharply to 24.9 million tonnes in February from 30.1 million tonnes in January, the last month unaffected by the dam burst.

Exports slipped again to 23.5 million tonnes in March, and fell another 20 percent to just 18.7 million tonnes in April, the lowest monthly total since Refinitiv starting compiling data in January 2015.

In the first four months of 2019, Brazilian exports were 97.2 million tonnes, down from 111.9 million in the same period in 2018.

For Australia, exports in the first four months were 259 million tonnes, down from 280 million for the same period a year earlier, hurt mainly by a 13.3 million tonne drop in March.

Taken together, the total drop from the world's top two shippers of iron ore in the first four months of 2019 is 35.7 million tonnes, a significant hit to global supply.

PRICE BOOM JUSTIFIED

It's therefore little wonder that spot iron ore prices have surged, and remained at elevated levels in recent weeks.

Ore with 62 percent iron content delivered to China MT-I0-QIN62=ARG, as assessed by Argus Media, was at \$94.85 a tonne on Tuesday, the last day of April.

The price has now posted gains for five straight months, but the big kick up came in late January/early February, after the Brazil dam disaster, when prices jumped 20 percent between Jan. 25, the day of the burst, and Feb. 11, when they closed at \$90.75 a tonne.

The Singapore Exchange futures curve has also shifted into a steeper backwardation since the Brazil dam collapse, with higher prices for prompt contracts indicating a tighter spot market.

As of the close on April 30, the front-month contract was

trading at a 5 percent premium to the third month, up from a 3 percent premium the day of the Brazil incident. Like many major commodities, iron ore usually trades in backwardation.

The data on export volumes from Australia and Brazil, coupled with the price action, speaks to a sudden tightening of the market for seaborne iron ore.

What it doesn't show is how likely this is to continue.

The rebound in Australian exports in April likely shows that the cyclone disruption is over, and shipments will at least return to the recent monthly average, if not improve slightly, if the major companies are able to run their operations harder to make up for some lost ground.

The bigger question mark is Brazil, where it seems less likely that it can recover the tonnes lost so far.

Vale said on March 28 it expects to sell 75 million tonnes less iron ore and pellets this year, down 20 percent from 2018.

Given there isn't much spare capacity in Australia, or in number three exporter South Africa, it's difficult to see where these lost tonnes can be made up, other than at the margins by smaller exporters such as India and Iran, and by the use of port inventories in China.

But there are also some question marks over the strength of demand, particularly in China, which buys about two-thirds of seaborne iron ore and produces about half of the world's steel.

China's manufacturing Purchasing Managers' Index (PMI) fell to 50.1 in April from March's reading of 50.5, confounding market expectations that it would hold at the prior level.

While still just above the 50-level that separates growth from contraction, the PMI doesn't provide confidence to hopes that

China's economy is starting to respond to Beijing's recent stimulus moves.

It still may be the case that the economy will pick up from now on, but there is also a risk that steel demand forecasts may be too optimistic, and that iron ore demand may also moderate.

US Steel set to invest \$1bn after pollution control lawsuit



US Steel Corp's plan to invest more than \$1bn at two of its Pennsylvania plants helps alleviate two key complaints against the once-dominant company: it had under-invested until recently in its facilities and done too little to mitigate its emissions. A new "sustainable" casting and rolling facility

will be built at the Edgar Thomson Plant and a co-generation facility at the Clairton Plant, the Pittsburgh-based company said on Thursday in a statement. The first investment will improve the "quality and attributes of its downstream products," while the second facility will be "equipped with state-of-the-art emissions control systems." The announcement was met with mixed reviews from analysts. The investment will result in "significantly" greater negative free cash flow than forecast from 2020-2021, Credit Suisse analysts including Curt Woodworth said in a note. The announcement "is proof positive that US Steel's competitive position has weakened over time" and therefore requires substantial reinvestment, the analysts said, noting that the Edgar Thomson plant was built in 1872. US Steel fell 5.8% to \$14.39 in regular trading on Thursday in New York, bringing its decline this year to 21%. On Monday, PennEnvironment Inc and the Clean Air Council filed a lawsuit alleging the steel company violated its Clean Air Act permit by not resuming use of pollution controls for sulphur dioxide and hydrogen sulphide following a December 24 fire at Clairton. The company said the same day it was reviewing the complaint. The announcement on Thursday "comes in the wake of the Clairton Coke disaster and offers a positive long-term solution to its SO2 emissions variability," Keybank Capital analyst Philip Gibbs said in a note. "The co-generation investment is expected to improve environmental efficiency, reduce energy consumption costs, and reduce its carbon footprint." US Steel is one of the American companies that saw significant profit gains after the tariffs on steel and aluminium imports were imposed last year, though the levies have shown mixed results for the industry as a whole. President Donald Trump took the company's announcement on Thursday as a vindication for his tariff policies, congratulating US Steel for its investment in "America's most INNOVATIVE steel mill."

Tesla to get up to \$2.7 bn from upsized offering



Reuters

Tesla Inc on Friday was set to raise up to \$2.7 billion in a record-setting capital raising for the electric carmaker, as investors scooped up a mix of new stock and convertible notes that will recharge the company's cash-depleted balance sheet.

The company said in a filing that it had raised its offer to 3.1 million shares, rising to 3.5 million including a tranche for underwriting banks, from an initially planned 2.7 million, priced at \$243 per share.

The filing also showed it would place convertible debt worth \$1.6 billion, up from an initial planned \$1.35 billion.

That all pointed to buoyant interest in the offering and shares in the company rose 1.5 percent in trading before the

bell.

The company did, however, set the coupon for the debt offering at 2.0 percent – the top of its indicated range – showing it had to concede ground to investors.

The conversion premium of 27.5 percent over the reference price for Tesla shares, at which the bonds can be converted to stock in future, was at the low end of an initial range of between 27.5 percent and 32.5 percent.

Tesla's launch of a capital raise was greeted with relief by Wall Street on Thursday after a tumultuous year which has seen analysts and investors cast doubt on its ability to produce, sell and deliver enough cars to make a sustainable profit.

The company faces expensive challenges, including launching production in China, overhauling its U.S. retail and service operations and developing new models, including the high-volume Model Y SUV and a Semi commercial truck.

Many analysts had calculated that without new cash Tesla – which burned through \$1.5 billion in the first quarter and has seen demand for its cars soften – would not be able to carry out its plans.

The company said that after all costs had been deducted it could now get up to \$2.7 billion in new capital from the offer. That compared to the \$2.2 billion in cash reserves the company held at the end of March.

Billionaire Musk, whose fortune centers around a 20 percent stake in the \$42-billion company, has also doubled his initial commitment for buying shares and will now buy stock worth up to \$25 million, the company said.

Including the option for underwriters to buy 15 percent in each offering, Tesla will sell about \$860 million in new shares and \$1.84 billion in debt.

Tesla had said on Thursday it would raise up to \$2.3 billion in new capital through shares and debt. That included an offering of 2.7 billion shares worth around \$650 million and \$1.35 billion in debt, before issues to underwriters.

Asia in charge of electric car battery production



Global production of batteries for electric cars is concentrated in Asia, with Chinese, Japanese and South Korean firms dominating the sector and building factories in Europe to conserve their supremacy.

However Europe is looking to strike back, with France and Germany saying on Thursday they would form an alliance to develop next-generation batteries in a bid to counteract Asia's dominance.

– Asia champions –

Lithium-ion batteries are a – if not the – crucial component of electric vehicles, but few companies have ventured into actually making them given the huge cost of setting up manufacturing facilities and the still limited demand.

Car manufacturers have preferred to have a choice of several

specialised suppliers, especially as battery technology is rapidly evolving.

China, where half of electric cars are currently being sold, requires car manufacturers to use locally-built batteries and is calling the shots in the industry with two-thirds of the world's production capacity of lithium-ion cells for batteries.

Only Asian firms appear in the top 10 of the industry: China's Contemporary Amperex Technology (CATL) accounted for 23 percent of global production last year, edging out Japan's Panasonic at 22 percent.

China's BYD followed at 13 percent and is the only car manufacturer to have prospered in making batteries.

South Korea's LG Chem came in at 10 percent while Samsung SDI had 5.5 percent, according to the US-based Center for Automotive Research (CAR).

Europe accounts for only one percent of global production.

The United States also remains marginal on a global scale despite the Gigafactory that Tesla developed with Panasonic.

– China controls raw materials –

Another key factor in China's supremacy: control over the raw materials needed to manufacture the batteries: lithium and cobalt.

According to Bloomberg, the Chinese firms Ganfeng and Tianqi control 17 and 12 percent respectively of the world production of lithium thanks to their investments in mines in Australia and South America.

Tianqi bought a 24 percent stake in Chilean miner SQM for \$4.1 billion in December. Together with the US firm Albemarle it also controls the huge Greenbushes mine in Australia.

Meanwhile, Chinese firms control at least half of the cobalt extracted in the Democratic Republic of Congo, where 70 percent of global output comes from, according to estimates cited by Bloomberg.

China Molybdenum bought a major site from the US firm Freeport-McMoran for \$2.65 billion in 2016.

China also has 80 percent of the world's capacity to produce refined cobalt using chemical processes.

Concerned over their access to supplies, several carmakers have concluded long-term deals with Chinese firms: Volkswagen announced at the beginning of April a 10-year deal with Ganfeng for lithium that it can provide to battery manufacturers of its choice.

– Asian assault on Europe –

According to the BCG consultancy, the global auto battery market could reach 45 billion euros in value in 2027, with Europe accounting for 20 to 30 percent, but Asian firms are expected to benefit most.

CATL is investing some 240 million euros to build a factory in the central German city of Erfurt that will supply BMW from 2022. The luxury carmaker has concluded a contract worth four billion euros with CATL, including 1.5 billion from the Erfurt site.

LG Chem has been manufacturing batteries for Daimler, Volvo, Audi and Renault from a site in Poland since last year.

Samsung SDI has a factory in Hungary, where fellow South Korean firm SK Innovation is investing \$1.5 billion into two factories that could end up serving Volkswagen.

– Swedish and Dutch pioneers –

One of the rare European specialists in batteries is Swedish

firm Northvolt. It is currently building what will be Europe's largest facility in Sweden together with Germany's Siemens.

Expected to cost at least 1.6 billion euros, the facility is to begin turning out batteries in 2020 and when it reaches capacity in 2023, it should be double the volume of CATL's German factory.

Founded by two former Tesla employees, Northvolt joined forces with Volkswagen in March to create a "European Battery Union" to promote research. Northvolt also collaborates with BMW.

Meanwhile the Dutch firm Lithium Werks, which has already built a massive factory in China, has been in talks to build a billion-euro facility in Poland.

Opec's collapse is likely, warns Iran oil minister



Bloomberg/ London

Iran's oil minister warned that Opec is in danger of collapse as some nations seek to undermine their fellow members, an apparent reference to Saudi Arabia's pledge to fill the supply gap created by US sanctions on Iranian exports.

"Iran is a member of Opec for its interests and any threat from member states won't go unanswered," Bijan Namdar Zanganeh said after a meeting with Opec secretary-general Mohammad Barkindo in Tehran on Thursday, according to the oil ministry's Shana news agency.

His comments come as US President Donald Trump tries to cut the Islamic Republic's oil exports to zero, backed by a promise from Saudi Arabia and its Gulf allies to increase production to ensure the squeeze doesn't create a supply shortage.

Those countries boosted production last year as the first round of American sanctions hit Iran, without splitting the Organisation of Petroleum Exporting Countries. This year, however, Iran is under even greater pressure, with fewer options to keep its economy afloat.

Zanganeh had already censured "two neighbouring states" for voicing readiness to fill the gap of Iranian barrels in the market. "I told Mr Barkindo that Opec is in danger by the unilateralism of some members and the organisation faces the risk of collapse," he said on Thursday, stopping short of naming names.

The lost barrels, along with supply disruptions in Venezuela and elsewhere, have raised the question of whether Opec's biggest producers have a big enough supply buffer to keep the market in balance. Zanganeh last month accused Saudi Arabia and the United Arab Emirates of exaggerating their surplus oil capacity.

Discord between Opec's Gulf members has shaken the organisation in the past year. Qatar announced its exit in December after more than five decades of membership after neighbour Saudi Arabia targeted the nation with an unjust

economic blockade.

“Qatar’s departure broke the seal. Iran’s would be much more serious, but no longer unthinkable,” said Derek Brower, an analyst at RS Energy Group. “Iran thinks two members are conspiring with the US against it – a good enough reason for Tehran to consider it’s position.”

Opec negotiations in December initially ran into difficulties because of disagreement between the Saudis and Iran, but in the end there was a deal. Yet setting aside Qatar’s departure, the group has held together for almost sixty years despite a range of political quarrels and conflicts, such as the Iran-Iraq war in the 1980s and Saddam Hussein’s invasion of Kuwait the following decade.

Shell asks UK govt for carbon storage subsidies



Oil major Royal Dutch Shell Plc has asked the UK government for taxpayer subsidies for the development of underground carbon

dioxide storage, the Sunday Times reported. The support for carbon capture and storage projects would be lower than incentives

previously granted to renewable technologies, the paper cited Maarten Wetselaar (pictured), head of integrated gas and new energies, as saying. Energy Minister Claire Perry announced a £35mn (\$45mn) pledge in November to support carbon capture technologies in the UK, the Sunday Times said last week.

Climate crisis is about to put humanity at risk, UN scientists warn



The world's leading scientists will warn the planet's life-support systems are approaching a danger zone for humanity when they release the results of the most comprehensive study of life on Earth ever undertaken.

Up to 1m species are at risk of annihilation, many within decades, according to a leaked draft of the global assessment report, which has been compiled over three years by the UN's leading research body on nature.

The 1,800-page study will show people living today, as well as wildlife and future generations, are at risk unless urgent action is taken to reverse the loss of plants, insects and other creatures on which humanity depends for food, pollination, clean water and a stable climate.

The final wording of the summary for policymakers is being finalised in Paris by a gathering of experts and government representatives before the launch on Monday, but the overall message is already clear, according to Robert Watson, the chair of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES).

"There is no question we are losing biodiversity at a truly unsustainable rate that will affect human wellbeing both for current and future generations," he said. "We are in trouble if we don't act, but there are a range of actions that can be taken to protect nature and meet human goals for health and development."

The authors hope the first global assessment of biodiversity in almost 15 years will push the nature crisis into the global spotlight in the same way climate breakdown has surged up the political agenda since the 1.5C report last year by the UN Intergovernmental Panel on Climate Change.

Like its predecessor, the report is a compilation of reams of academic studies, in this case on subjects ranging from ocean

plankton and subterranean bacteria to honey bees and Amazonian botany. Following previous findings on the decimation of wildlife, the overview of the state of the world's nature is expected to provide evidence that the world is facing a sixth wave of extinction. Unlike the past five, this one is human-driven.

Mike Barrett, WWF's executive director of conservation and science, said: "All of our ecosystems are in trouble. This is the most comprehensive report on the state of the environment. It irrefutably confirms that nature is in steep decline."

Barrett said this posed an environmental emergency for humanity, which is threatened by a triple challenge of climate, nature and food production. "There is no time to despair," he said. "We should be hopeful that we have a window of opportunity to do something about it over these two years."

The report will sketch out possible future scenarios that will vary depending on the decisions taken by governments, businesses and individuals. The next year and a half is likely to be crucial because world leaders will agree rescue plans for nature and the climate at two big conferences at the end of 2020.

That is when China will host the UN framework convention on biodiversity gathering in Kunming, which will establish new 20-year targets to replace those agreed in Aichi, Japan, in 2010. Soon after, the UN framework convention on climate change will revise Paris agreement commitments at a meeting in either the UK, Italy, Belgium or Turkey.

Watson, a British professor who has headed both of the UN's leading scientific panels, said the forthcoming report will delve more deeply than anything before into the causes of nature collapse, chief among which is the conversion of forests, wetlands and other wild landscapes into ploughed fields, dam reservoirs and concrete cities. Three-quarters of

the world's land surface has been severely altered, according to the leaked draft. Humanity is also decimating the living systems on which we depend by emitting carbon dioxide and spreading invasive species.

Watson said the authors have learned from attribution science, which has transformed the debate on the climate crisis by showing how much more likely hurricanes, droughts and floods have become as a result of global heating.

The goal is to persuade an audience beyond the usual green NGOs and government departments. "We need to appeal not just to environment ministers, but to those in charge of agriculture, transport and energy because they are the ones responsible for the drivers of biodiversity loss," he said.

A focus will be to move away from protection of individual species and areas, and to look at systemic drivers of change, including consumption and trade.

The political environment is changing in some countries due to overwhelming scientific evidence and increasing public concern about the twin crises of nature and climate, which have prompted more than 1 million students to strike from school and led to street protests by Extinction Rebellion activists in more than a dozen countries.

The UK parliament declared a climate emergency this week and the government's chief climate advisory body recommended an accelerated plan to cut carbon emissions to zero by 2050. Until now, however, the nature crisis has been treated as far less of a priority. "Where are the headlines? Where are the emergency meetings?" asked the school strike founder, Greta Thunberg, in a recent tweet on the subject.

Extinction Rebellion activists said protests that blocked several London streets last month were as much aimed at the defence of nature as stabilising the climate. "They are two sides of the same destructive coin," said

Farhana Yamin, a coordinator of the movement who is also an environmental lawyer and formerly a lead author of the IPCC report.

“The work of IPBES is as crucial as the work done by the IPCC on the 1.5-degree report. That is why Extinction Rebellion is demanding an end [to] biodiversity loss and a net-zero phaseout by 2020. We can’t save humanity by only tackling climate change or only caring about biodiversity.”

Shell pursuing \$1bn exit from Indonesia LNG project



LONDON: Royal Dutch Shell is moving to sell its stake in

Indonesia's \$15 billion Abadi liquefied natural gas (LNG) project, industry and banking sources said, following on from an asset disposal programme that has raised more than \$30 billion.

Shell, the world's largest buyer and seller of LNG, is raising cash to help pay for its \$54 billion purchase of BG Group in 2015 and hopes to raise around \$1 billion from the sale of its 35 percent stake in the project, the sources said.

Shell's decision to sell out of the Abadi project in the Masela block, operated by Japanese oil and gas firm Inpex Corp which holds the remaining stake, highlights the difficulty Southeast Asia's largest economy has in attracting energy investment.

Shell, Inpex and an official with Indonesia's Energy and Mineral Resources all declined to comment.

Construction was due to start in 2018, but in 2016 was delayed until at least 2020 after Indonesian authorities instructed a switch from an offshore to an onshore facility.

Inpex and Shell are now preparing a new Plan of Development for submission this year, Shell's annual report revealed.

The project is not expected to be operational until at least 2026, but Inpex has started preliminary front end engineering design for an LNG plant with an annual capacity of 9.5 million tonnes.

Dwi Soetjipto, chairman of Indonesian oil and gas task force SKK Migas, said in March that the government and the operators have not agreed on the cost for the project and the government has not approved the revised development plan.

LNG GROWTH

Shell sees LNG as a central pillar of the world's transition to lower carbon energy in the coming decades. The super-

chilled fuel allows easier transportation of natural gas, the least polluting fossil fuel, but is relatively expensive to develop.

The decision to sell out of Abadi comes weeks after the Anglo-Dutch company decided to exit a major Baltics LNG project led by Russian state gas giant Gazprom.

Shell last year gave the green light for the development of a \$31 billion LNG export terminal in Western Canada, known as LNG Canada.

Chief Financial Officer Jessica Uhl said on Thursday that overall Shell was happy with its LNG portfolio and was confident of its ability to grow it in line with the market.

A LEBANON FOR THE DIGITAL ERA



Jeremy Arbid

The years since unrest swept across the Arab world have shown that the response of partial reforms and economic measures

were not sufficient. Instead, new social contracts are required to develop economies and human capital, and to emphasize political participation of proactivity over favoritism. This decade has been marked by two shocks, the first being the unrest of populations that led to unrest, revolutions, conflict and civil war in some countries, and the second being the decline of oil prices. Similar to other economies in the region, but not in form, Lebanon's is rentier because the state largely ignores productive sectors and instead focuses its fiscal and regulatory policymaking to the benefit of the financial and real estate sectors. So while Lebanon's situation is certainly different from its neighbors in the region its question is the same: now is the time to develop a more peaceful and prosperous society, so what should that look like? Artificial intelligence and the Internet of Things will have a great impact on countries around the world, including Lebanon. However, Lebanon's current economic model is unfit for the digital era and not agile to adapt to economic innovation and rapid technological change. In the short term, Lebanon will need to invest in the economy by building and rehabilitating infrastructure and it will need to implement a reform agenda. By doing so, a more dynamic economy can be built.

The Current Situation

Lebanon's economic model is not sustainable. This has been understood for years now but has been allowed to keep operating, even though it has been known that the currency peg to the USD was not designed or engineered for the long term. According to the International Monetary Fund (IMF), public debt was estimated to reach \$85 billion in 2018 with GDP expected at \$57 billion, for a debt-to-GDP ratio of 150 percent. Meanwhile, economic growth has slowed from 8 percent in 2010 to 0.6 percent in 2017, as measured by the Central Administration of Statistics.

For 2018, the IMF has projected GDP growth at just 1 percent.

In the same period, 2010-2017, Lebanon's spending deficit (including interest payments on debt) averaged \$3.6 billion each year according to ministry of finance figures. The economic model relies on internal USD circulation, and depends on the financial and services sectors, tourism, foreign direct investment mainly in the form of real estate, and remittances.

In recent years, not enough dollars have been entering the economy to offset dollars exiting at an increasing rate. From 2000 to 2014, the average annual deficit of the current account – the flows of goods, services, primary income, and secondary income between residents and nonresidents – stood at \$5.1 billion each year. By 2015, \$9.1 billion more flowed out of Lebanon than in, and that figure has risen sharply since 2015. For 2018, the IMF projects a current account deficit of \$14.5 billion, and \$15.2 billion in 2019. For the foreseeable future, the lira-to-USD currency peg can be maintained, which the IMF recommends. This is thanks to large reserves held at Banque du Liban, Lebanon's central bank.

According to the IMF, official reserves – foreign currencies, other assets denominated in foreign currencies, and gold reserve – stood at \$36.7 billion in 2015 and rose to \$40.2 billion and \$40.6 billion in 2016 and 2017, respectively. The IMF calculated official reserves at \$36.4 billion in late 2018, and projects reserves to decline to \$31.1 billion in 2019. Public bank officials and commercial bankers insist Lebanon is not at risk of a forced devaluation because of the level of foreign currency reserves held by the central bank. The state plans for a course correction. With a new government in place Lebanon may now work toward restructuring the economy. The starting point for this was in April 2018 at the CEDRE for infrastructure investment.

In Paris, Lebanon presented donors and investors with a Capital Investment Plan (CIP) to develop the country's infrastructure and ease supply-side bottlenecks. According to state officials, the CIP was prepared to address specific

economic shortcomings: tremendous challenges in public finances, monetary policy that has exhausted all options to maintain stability, low growth rates, high unemployment, increasing levels of poverty, and the balance of payments problem. Lebanon needs 5 percent growth to stabilize the economy and maintain the economic model but has been reluctant to invest in the economy and the country's infrastructure is worn down because of years of low state investment and overstretched because of the large refugee population plus a growing national population.

To rehabilitate and expand the nation's infrastructure, the CIP would raise debt and called for an investment need of \$20.4 billion, plus land expropriation costs of \$2.6 billion for 250 projects that could generate some 178.3 million labor days over three phases each lasting about four years, from now until 2030.

At CEDRE, the CIP pitch was generally well received with donor countries and multilateral institutions pledging \$11.3 billion mostly in low-interest loans on the condition that Lebanon commit to reforms. The reforms promised by the state involve fiscal discipline measures – mainly through the reduction of the debt-to-GDP ratio by decreasing the deficit by one percentage point of GDP over the next five years and reducing the subsidy to the failing public electricity utility, Électricité du Liban (EdL), which averaged \$1.6 billion per year between 2010 and 2017 according to figures from the ministry of finance, and by shoring up revenue to the treasury by increasing the tax base.² In February 2019, Lebanon's Economic and Social Council – an advisory body to the government – issued a report on fiscal measures the state should adopt to address fiscal imbalances, including: elimination of the EdL deficit over the next three years; to reduce the cost of public debt servicing by at least 10 percent through a mechanism that the government, BdL, and commercial banks agree on; and, to reform public sector

pension systems and benefits, review public sector personnel and positions, and freeze hiring for the year. To spur economic productivity and enhance the private sector environment international organizations have advised Lebanon adopt an evolving list of structural and sectoral reforms and doing business measures.

The state commissioned management consulting firm McKinsey & Company to draft a vision for growing Lebanon's current productive sectors and enhance productivity and recommend what sectors Lebanon should focus on in the future. At its core, the vision aims to channel investments to industries and productive sectors that would have a multiplier effect, create jobs, and distribute income and wealth. The elements of the report include repetition of known analysis, assessment of reform needs and priorities, improvements of productive sector performance, and supervision mechanism for achieving deliverables for the productive sectors and projects. Components of this vision require individual assessments. Addressing and adopting the measures promised at CEDRE, advised by McKinsey, and recommended by international organizations will only be a starting point in correcting for nearly 2 decades of inactivity or nondecision making by the state.

However, implementing reforms and thinking toward the future is not so simple for Lebanon. On the one hand, politicians and officials have been repeating since before CEDRE that reforms are necessary and that reforms will be painful to the political elite. If this is so, then maybe we are witnessing an alignment of politics to reality, and the adjustment of culture to support or translate into action takes a long time. On the other hand, Lebanon's political economy of sectarianism means the political elite are only interested in maintaining the system of clientelism and patronage networks. How these reforms will serve the interests of the elite in this political economic system is unclear. Another problem is that

Lebanon's politicians and officials are thinking where the country needed to be 25 years ago. The challenge is the speed of innovation, and today when a highway or bridge is built it is not guaranteed they will be viable solutions as critical infrastructure. Why? Because of three factors: on the social side of self-reliance of urban environments and the ability of communities to produce what they need could grow exponentially, then the need to trade with neighbors and the paradigm of growth under capitalism may no longer be applicable; if global commerce continues then using non-road based technologies like information transmission to remote locations (such as 3D printers or drone transport) could actually make highways or bridges obsolete. At the current phase Lebanon is still betting on traditional transportation as our viable economic need for 20 or 30 years and beyond when we should have had them 20 or 30 years ago. Another example is the building of power plants with natural gas instead of coal. This fuel source is more efficient and less polluting, but it still exposes Lebanon to fossil fuels and commodity price increases and supply reliability.

However, this might not be the only solution to match electricity supply to need. Lebanon might find decentralized technologies (such as solar photovoltaic) and smaller scale centralized power generation as more efficient and cost productive.

Lebanon is committed to solutions that were conducive in 1999 and therefore there is too much opacity in developing and implementing solutions. There is uncertainty because no one knows what new technologies will come along; there is opacity because we do not know how diligent the CIP and other studies were conducted and whether they are or are not silo-esque; plus, the experts that have been hired to design these visions or plans are definitely not going to tell Lebanon to not buy their products. Beyond correcting the omissions of the last 20-25 years Lebanon must continuously evaluate and prioritize

economic and infrastructure needs and pursue solutions aligned with the emerging digital future sure to arrive within the next decades.

Lebanon's Socioeconomic Situation

Lebanon must be positioned for the digital era in addressing the top socio-economic challenges: that of the lack of gainful employment, rising inequality, and promoting inclusive political participation. The country has grim numbers on unemployment, poverty, income inequality and net worth. The economic bleeding that is visible at the national level in terms of almost a decade of economic stagnation pales in comparison to the situation of individuals. The downturn in Lebanon's economic output has pushed more people into unemployment or underemployment, increased poverty rates, with income and wealth becoming increasingly concentrated. According to an International Labour Organization (ILO) model, estimates of the total unemployment rate among Lebanese nationals at just under 7 percent in 2018. Unemployment for Lebanese youth is estimated at almost 18 percent. Total labor participation for Lebanese nationals older than 15 (the proportion that is economically active) stood at 47 percent, with the number of people in the labor force above 2.2 million in 2018.

Among the nearly 1 million UNHCR-registered Syrian refugees the ILO in 2017 projected the size of the Syrian labor force in Lebanon at 384,000 and estimated that 36 percent were unemployed.⁷ McKinsey says Lebanon's unemployment rate is between 15-25 percent, perhaps the consulting firm is attempting to include the informal labor market as part of its calculation. The first target of the UN Sustainable Development Goals for Lebanon is to reduce the poverty rate to zero by 2030. Lebanon is far from achieving this goal, though the available statistics are very outdated. 2008 poverty stats from a Ministry of Social Affairs and UNDP joint study showed back then that "28 per cent of the Lebanese population can be

considered poor and eight per cent can be considered extremely poor". That means that some 1 million individuals in 2008 were living on \$4 per day and another 300,000 were living on less than \$2.4 per day. According to a Ministry of Finance/UNDP study from 2017, income inequality in Lebanon is very high. The study analyzed tax declarations from 369,279 taxpayers who had a cumulative income of \$5.5 billion, and an average yearly income of \$14,846: "the top 2 percent income group accounts for a 17 percent share of total income, while the bottom 59 percent accounts for a 22 percent share".

Wealth in Lebanon is also unequal, according to investment bank Credit Suisse. The net worth per adult was estimated to \$33,726 in 2018.¹⁰ But a breakdown shows how little the majority of the population actually owns: 77% of Lebanese adults have a net wealth below \$10,000.¹¹ On the bright side, according to the World Bank, human capital constitutes the leading amount of wealth for Lebanon.¹² However, estimations and projections about the size and composition of the Lebanese labor market entail much that remains uncertain as far as data accuracy. Likewise, labor policy as well as estimations of future Lebanese labor realities, needs, and opportunities in context of the rapidly evolving global digitization of work, or digital transformation of economies, leaves much to be desired. This makes it crucial to develop our human capital and preparedness for labor uncertainties of coming decades.

Addressing Current Challenges to Join the Digital Era

1. To create employment

Determinants of current and future labor markets and historically important processes such as labor unionization, collective bargaining, regulation of admission to specific labor markets, evolution of social insurance in reflection of social and human conditions (such as increasing longevity) in the past and predictable future over the lifetimes of current workforces are in need of new assessment before embarking on

development of a new national labor policy. New policy, however, has to be devised and function as a cornerstone for a sustainable future of Lebanese labor if one takes into account that much of the regulatory framework governing Lebanon's labor-related social insurance system date back to the early days of the Republic, while the framework for the social security fund and other retirement benefits date to the 1960s, and thus, by the very logic of the importance of labor in human societies, are inadequate for managing today's radically different and rapidly changing role of human capital in our society.

To project unemployment we must know how many people reside in Lebanon. The World Bank estimated Lebanon's population at just over 6 million in 2017, counting citizens, refugees and others residing in country,¹³ but Lebanon must conduct its first population census since 1932.

Job creation in the near term is important, but the concern is that Lebanon's labor market will continue to be one where there is not much to apply to. The World Bank announced in 2018 \$400 million to create up to 52,000 jobs for Lebanese over the next 15 years.¹⁴ Lebanon will need to create more – not just 370,000 “incremental jobs” in the agriculture or construction sectors by 2025, as McKinsey recommends,¹⁵ but high-quality jobs in the digital economy because as automation rises robots can take the place of lower-cost labor. However, if Lebanon manages

to be an early adopter of digital business structures among other global communities of similar size and capacity, it could become a potent supplier and competitor of high native human capital and high native marketing potential, and the trade heritage of Lebanon could be translated into an economic force for the country. Another question for the future is how to define fair profit and to control for excesses of inequality. Lebanon is not alone in the necessity to remove economic distortion in the sense of injustice, where today a

huge amount of labor goes into unpaid or undervalued work (historically mostly from women), and to work that cannot or may not be desirable to automate in the future (e.g. child rearing or geriatric care). However, society would have to approve the value of “volunteer” labor and current economic paradigms do not have formulas to recognize this.

2. To relieve pressure of despondency and object poverty

To alleviate extreme poverty in the near term, Lebanon's National Poverty Targeting Program (NPTP) must be enhanced and broadened to support more qualifying beneficiaries. NPTP provides support to households living in extreme poverty through a humanitarian asset transfer to eligible recipients in the form of \$27 in cash/cash equivalent per household member per month and is partly funded by the World Bank, while the state must include funding to widen the program in the next state budget.

Combating inequality is secondary to the increasing or broadening of social and economic mobility. Lebanon has had provisions of social subsidies but has spent a lot of effort deciding on who gets them, and, unfortunately, has had a lot of experience with political clientelism.

Despite implementation challenges, Lebanon can stimulate economic mobility and redistribute wealth into broader social safety nets through such ideas as universal basic income (UBI), universal basic health (UBH), the expansion of basic provision for education and higher education and guarantees of survivability in times of difficulty. Whichever way this is done should not be discretionary or based on eligibility but universal and without a component of assessment on worthiness of aid.

According to the World Health Organization, Lebanon spent nearly 8 percent of GDP on healthcare in 2016.¹⁷ The moral hazard of UBH when the state guarantees payments is that there

is no incentive by companies to control pricing, but the state can promise to pay for wellness programs and preventative care plus basic healthcare so that higher costing medical care is less common. Inflation drivers of healthcare are not in the payment for healthcare workers, and the number of workers in Lebanon and their cost is not high when compared to the cost of imported medicines and imported technologies.

3. To minimize the excesses of inequality by redistributive measures and promote inclusive political participation

Before Lebanon can do any forward thinking, it must implement the reform promises of the new government and made at CEDRE and implement the performance enhancements compiled by McKinsey and international organizations. This is a starting point in correcting for almost 2 decades of inactivity or non-decision making by the state and implementing reforms will be a first step in reducing public debt.

The priority is to have accountability of public finance from the past and moving forward, to have public and transparent discussions over fiscal and taxation policy to prioritize stimulation of the economy and improve the internal distribution of wealth, and to have an annual budget and audit in line with the Constitution and public finance rules.¹⁹ To begin, the state must fully collect taxes that are already on the books by increasing tax compliance, and it must implement measures from the 2017 tax bill such as leveling fines on built-up property on state or public lands. According to the IMF, tax collection stood at only 50 percent of capacity in 2013.²⁰ Along with shoring up spending and revenue collection comes the need to reduce waste.

Everyone assumes corruption in Lebanon is a serious problem, but the Court of Accounts first needs to measure the problem and Parliament needs to decide what to do with the findings. The state has not conducted an audit of public accounts since at least 2003, and in reconstituting accounts from the 1990s

and the 12-year period where there was no state budget, the ministry of finance has said “enormous anomalies” were found.²¹ So if the state’s objective is to spend and collect to meet the people’s needs then there must be confidence that taxpayers are not being swindled.

Rather than proposing any sort of administrative decentralization, electoral redistricting, or changes to the political structure, Lebanon must exercise better management of public finances to foster political inclusiveness in two ways: first, to promote ownership by the taxpayer of state decision making; and second, to minimize the power of international markets through the instrument of debt which can be greater than the voting power of citizens.

So that Lebanon can create a situation for a consistent and sustainable economy in the digital era, it must heed the recent advice that the head of the IMF, Christine Lagarde, directed to the Arab world: “We need fiscal space for spending on health, education, social protection, and public investment.”²² Lebanon’s fiscal policy, therefore, must be focused on meeting people’s needs and enhancing the connection between fiscal policy and social safety for a higher certainty of entitlement as a taxpayer, and increasing a sense of justice and mutuality between tax contributions and long-term social benefits.

Recommendations

Lebanon must position itself for the digital era by building a sustainable economy for a more peaceful and prosperous society. This requires job creation in the near term by committing the reform promises made at CEDRE to unlock promises of donor financing for the CIP. Long term planning should consider the predictable future demands of the labor market, the reduction of inequality through job creation, increased economic mobility, the designation of social safety nets, and the redistribution of taxation. To promote ownership

of state decision making, and to enhance inclusivity in the political process, Lebanon must commit to sound management of the state treasury and accountability of past public finances.

Labor market and job creation

- Review the mandate of Lebanon's National Employment Office (NEO) to boost labor participation and reduce unemployment.
- Match available labor demand with projects in the CIP for work opportunities in the near term.
- Before embarking on the creation of a new national labor policy for the digital era, Lebanon must fully assess past and present labor market conditions and workforces by setting a statistical foundation, in the form of a population census and other statistical surveys. This would require auxiliary actions such as empowering the nation's public statistics body.
- Draft and adopt a new labor policy for the digital era by addressing such areas as: labor unionization; collective bargaining; regulation of admission to specific labor markets; health, safety and laborers' rights; and social insurance.

Social insurance and equality

- Develop and implement a poverty reduction strategy.
- Widen the reach of the National Poverty Targeting Program (NPTP) for those living in extreme poverty, and devise and enact viable safety net programs including direct payments for those below the poverty line. Allocate state funding for the NPTP and new programs.
- Review and update legal and regulatory frameworks of social insurance systems and safety nets.
- Review and consolidate current social insurance systems. Create new social safety nets with universal access to

stimulate economic mobility and redistribute wealth.

Promoting political inclusivity

- Review and adopt fiscal and state reforms and business enhancement measures promised at CEDRE, documented by McKinsey, and presented by the Economic and Social Council to reduce public spending and stimulate economic productivity.
- Implement a monitoring mechanism to oversee the deployment of CEDRE donor funds to CIP projects, and which contributes to the continuous evaluation and prioritization of economic and infrastructure needs.
- Increase tax compliance and fully collect taxes and fees already on the books to shore up state revenue. Review and commit to public discussions of taxation policies before any revision of the tax code.
- With an international auditor, audit finances from past years as per the 2005 budget law.
- Commit to an annual budget as per the Constitution and public accounting rules.
- Draft and align medium- and long-term fiscal policies to meet people's needs and enhance the connection with social safety and increase a sense of justice and mutuality between tax and fee contributions and public spending