IMF Country Report No. 22/51

UNITED ARAB EMIRATES

SELECTED ISSUES

February 2022

This Selected Issues paper on United Arab Emirates was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with United Arab Emirates. It is based on the information available at the time it was completed on November 8, 2021.

Copies of this report are available to the public from

International Monetary Fund • Publication Services
PO Box 92780 • Washington, D.C. 20090
Telephone: (202) 623-7430 • Fax: (202) 623-7201
E-mail: publications@imf.org Web: http://www.imf.org
Price: $18.00 per printed copy

International Monetary Fund
Washington, D.C.

INTERNATIONAL MONETARY FUND

UNITED ARAB EMIRATES

SELECTED ISSUES

November 8, 2021

Approved By
Middle East and Central Asia Department

Prepared by Hatim Bukhari, Yevgeniya Korniyenko, and Marcello Miccoli.

CONTENTS

FIGURES

TABLE

FOSTERING UAE PRODUCTIVITY GROWTH AFTER COVID[1]

Since the GFC, the marginal productivity of investment in the UAE has declined along with total factor productivity (TFP) and employment growth. The COVID-19 crisis reinforced these constraints to growth and adversely impacted diversification efforts, including by creating risks of long-lasting effects in key non-oil sectors. Nevertheless, the crisis has also underscored opportunities to lift growth, including by accelerating digitalization, the opening of the economy, and structural reforms. However, recent progressive reform efforts will need to be prioritized and strengthened to reverse the negative growth and productivity trends, facilitate adjustment to a low-carbon future, and deliver a knowledge-based economy with higher long-term growth outcomes.

A. Introduction

1. **The COVID-19 crisis has amplified pre-crisis constraints to growth and created new challenges.** Domestic economic activity was adversely impacted by the crisis with non-oil GDP contracting by 6.2 percent in 2020. Small and medium-size enterprises (SMEs), which are vastly present in high-contact and job-rich sectors (construction, tourism, hospitality, and trade), were particularly hard-hit. The UAE authorities swiftly enacted health and economic measures to mitigate the pandemic's impact on the economy and avoid long-lasting effects. Nevertheless, the recovery is projected to be gradual and pre-crisis headwinds to growth from slowing productivity and employment growth underscore risks to medium term growth.

2. **The crisis has also underscored the importance of pursuing economic diversification objectives and offered some lessons and opportunities**. Despite ongoing efforts to boost private sector development, progress on economic diversification was slow prior to the COVID-19 crisis, with both non-oil exports in total exports and non-oil GDP as a share of total GDP remaining largely unchanged. The UAE's ambitious 50-year reform agenda, however, holds considerable promise to deliver higher levels of future diversified and sustainable economic growth through its focus on further investment in human capital and advanced technology (including green technology), a further opening of the economy to foreign capital and trade integration, and broader use of digital infrastructure and fintech.

B. Potential Growth and Productivity in the UAE

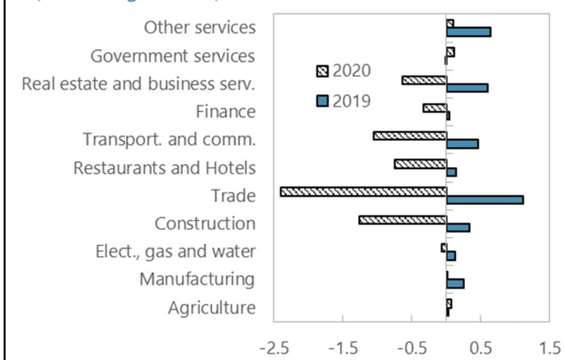
3. **The pandemic in 2020 resulted in large GDP losses and increased risks of long-lasting effects on growth.[2]** Possible lasting damage to UAE potential growth could materialize through multiple channels that affect productivity, labor, and capital:

[1] Prepared by Yevgeniya Korniyenko.

[2] Long-lasting effects are defined as prolong period of economic performance below pre-crisis projections.

- *TFP losses and spillovers.* The accommodation and food service activities, wholesale and retail trade, and construction sectors all saw double-digit growth declines in 2020. These are also the sectors that employ a large share of private sector employees. Spillover effects from these hard-hit sectors could hurt productivity in connected firms, while the exit of firms that are no longer viable could lead to the loss of "know-how," resource misallocation, and a decline in competition. Balance sheet weaknesses would also significantly hinder firms' ability to invest in R&D and innovation.

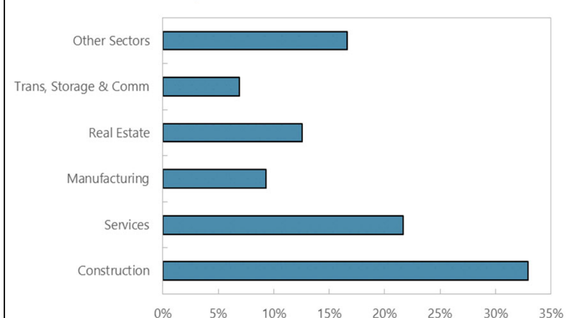
Real Non-Oil GDP Growth by Industry
(Percentage Points)



Sources: Country authorities and IMF staff calculations.

- *Loss of human capital and labor force.* The crisis has had uneven effects on labor markets. Employment declines have been significant among lower-skilled workers. The pandemic has also likely had a long-lasting effect on future economic opportunities for women and youth, risking inferior reemployment prospects and a persistent drop in income. In addition, the UAE's population decreased by 2.3 percent in 2020 (the first decline in 20 years), with anecdotal evidence pointing to the departure of many expatriates. The combined effects of accelerated automation, the growing "double shift", and other labor market dynamics, such as occupational segregation, could also add strains to the labor market.[3]

Private Sector Employment by Industry, 2019
(Share of total, in percent)



Sources: Country authorities and IMF staff calculations.

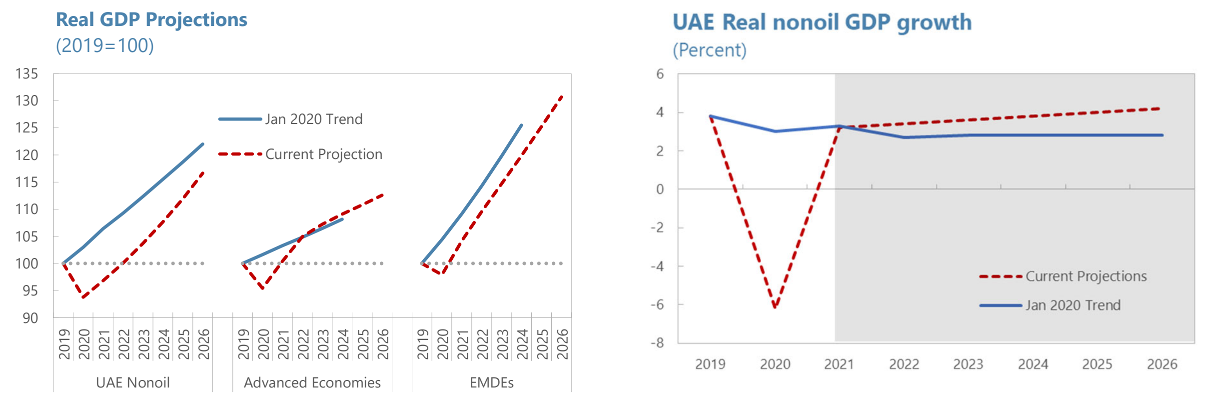
- *Weak investment and resource misallocation.* Long-lasting effects through the physical capital channel could occur if a persistent shrinkage of high-contact sectors results in sector-specific capital being stranded, while the increase in corporate leverage could hamper future investments.

4. **The UAE's macroeconomic policy support and relatively high level of digitalization are helping to mitigate some risks of long-lasting crisis effects, including relative to other Emerging Markets and Developing Economies (EMDEs).** Macroeconomic stimulus measures in 2020-21 to hard-hit sectors and structural reforms under the UAE 2050 Strategy will help to alleviate some of the medium-term output and employment losses, while a transformation of the workplace through further digitalization, fintech, and e-commerce are likely helping to offset some of the

[3] The COVID-19 crisis has accelerated automation and digitalization, speeding up labor market disruption (WEF 2020). Data points to significant challenges for gender parity in the future of jobs due to increasing occupational gender-segregation. Only two of the eight tracked "jobs of tomorrow" clusters (People & Culture and Content Production) have reached gender parity, while most show a severe underrepresentation of women. Gender gaps are more likely in sectors that require disruptive technical skills. For example, in Cloud Computing, women make up 14 percent of the workforce; in Engineering, 20 percent; and in Data and Artificial Intelligence (AI), 32 percent.

adverse productivity shocks (Figure1). However, achieving higher medium-term growth hinges on sustained reform efforts. Non-oil growth is expected to accelerate, boosted by Expo 2020 and reform momentum, and to improve further over the medium-term with increased foreign investment and the benefit of announced structural reforms. Nevertheless, uncertainty about the outlook remains, which could make it difficult to attract sufficient foreign labor, particularly in high-skilled areas, to meet future economic needs despite recent significant government efforts to modernize visa and work permits regulations.

Figure 1. UAE: GDP Levels and Growth Rates Post-Pandemic



Sources: IMF World Economic Outlook (WEO) April 2021 and IMF staff calculations.
Note: As discused in Chapter 2 of the April 2021 WEO, world output in the medium-term is expected to be about 3 percent lower in 2024 than pre-pandemic projections. EMDEs are expected to have larger output losses than advanced economies, unlike what happened during the global financial crisis. This divergence is explained by varying economic structures and the size of countries' fiscal policy responses. Countries that are more reliant on tourism or have a larger share of high-contact sectors are expected to experience more persistent losses. Many of the EMDEs also have more limited policy space and capacity to mount major health responses or support livelihoods. The UAE authorities vaccination efforts and swift policy response have helped to mitigate some of the pandemic headwinds, nonetheless a high relience on both tourism and high-contact sectors underscores vulnerabilities to future global waves of the virus.

5. **A detailed analysis of factors of production point to significant challenges to future productivity growth in the UAE.** Potential non-oil growth in the UAE has been on a downward trend over the past twenty years (Figure 2). This has largely been driven by declining contribution of TFP in the run-up to the Global Financial Crisis, followed by increasingly lower contributions from labor in the subsequent years. The UAE's capital stock has also exhibited a steady decline over the entire period.

- **TFP.** Both aggregate and firm-level analyses confirm a long-running decline in TFP growth among UAE companies. A comparison of aggregate TFP growth with other countries shows that UAE TFP growth declined by more relative to Germany, Singapore, or USA.[4] The decline is widespread (Figure 3): TFP growth either decreased in all companies or remained unchanged for the last 10 years. Despite continuous substantial government support, UAE government related enterprises (GREs)[5] seem to be only as productive as private sector companies. There is some differentiation in TFP

[4] Germany and US are major hosts to frontier technology companies in manufacturing and the information technology industry, while Singapore is a regional financial hub in Asia and Pacific.

[5] GREs are enterprises with government ownership share of more than 50 percent. Staff analysis is based on information available in S&P Capital IQ and BvD Orbis databases. This does not include many GREs for which data are not publicly available. Lack of comprehensive data on GREs limits broader policy considerations.

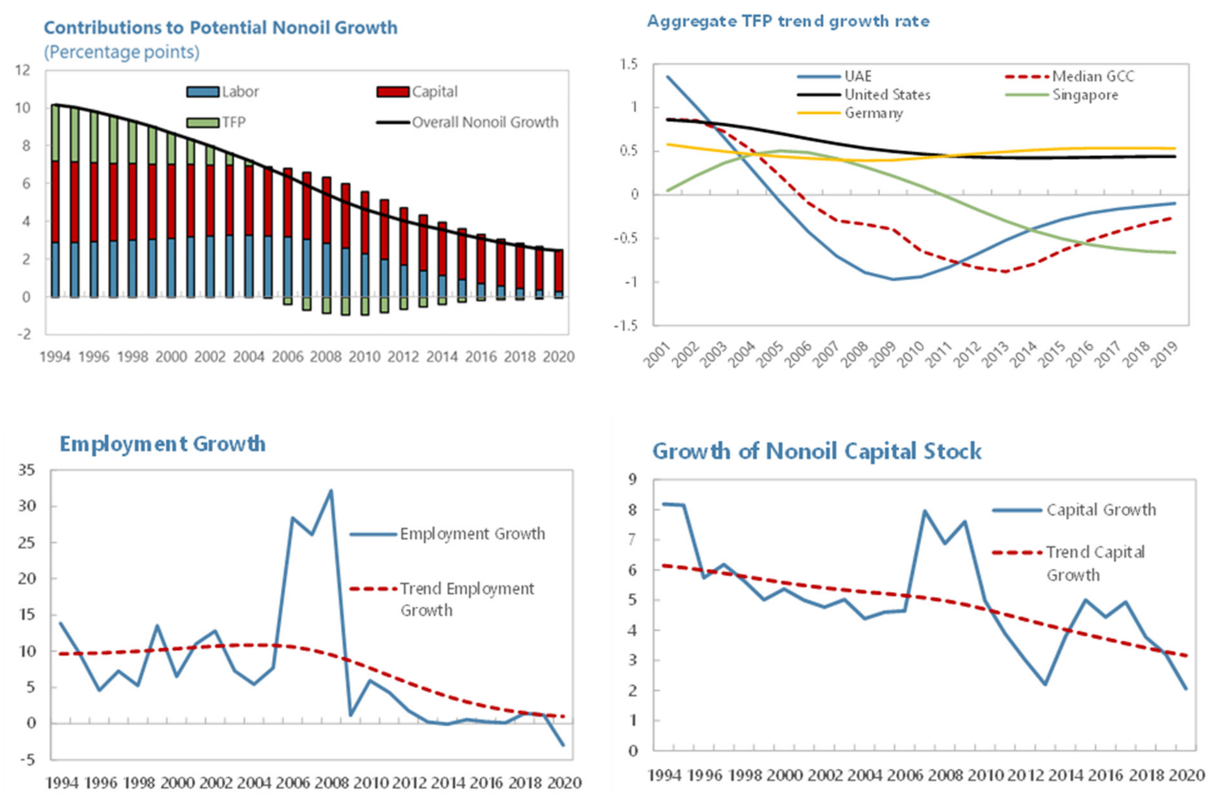
growth by Emirate, with Dubai hosting more productive firms, whereas Northern Emirates have a higher density of lower productive firms. This difference in productivity may be explained by the higher proportion of marketable services firms in Dubai. In terms of TFP by sector, marketable services seem to have more productive firms, followed by the manufacturing and energy sectors. Companies in non-marketable services, are least productive. Empirical results show that larger investments in intangible capital are correlated with higher TFP growth, while higher leverage is associated with lower TFP.[6]

Figure 2. UAE: Non-oil GDP Potential Growth

(Percent, unless otherwise indicated)

UAE: Factors of production contribution to potential growth (constant labor share of 0.3)

UAE Productivity Growth vs Other Countries

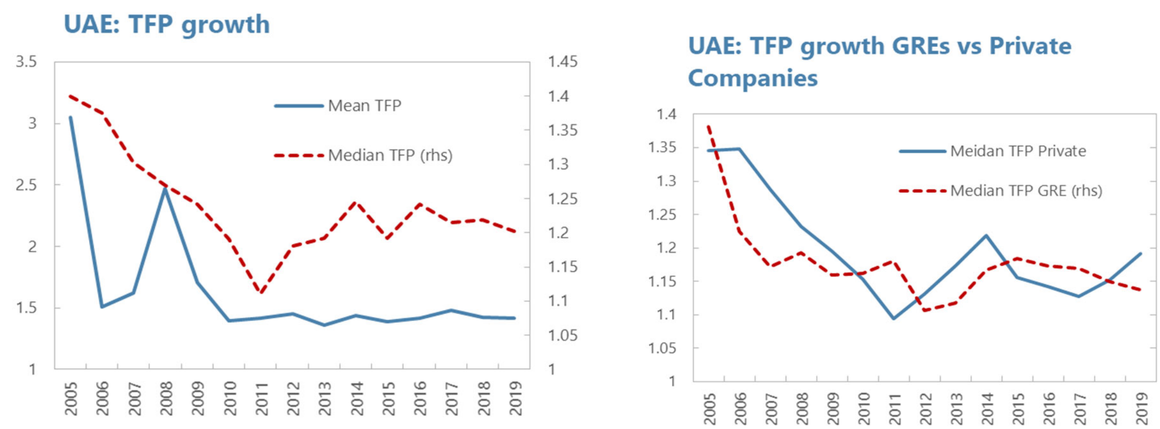


Source: Penn World Table 10.0 and IMF staff calculations.

Note: A Cobb-Douglas production function with constant labor share is used to decompose GDP into labor, capital and TFP. A standard Hodrick-Prescott filter (with a lambda of 300) is applied to estimate trend growth of labor, capital and TFP.

[6] This result is also corroborated by Corrado et al. (2005, 2009, and 2016) who find that intangible asset investment is an increasingly important driver of economic growth in advanced economies. Ahn at al. (2020) find a powerful stabilizing role of the intangible investment channel during 2008 global financial crisis, and its complementarity with pro-competition product market deregulation.

Figure 3. UAE: Firm Level TFP Growth
(Percent)

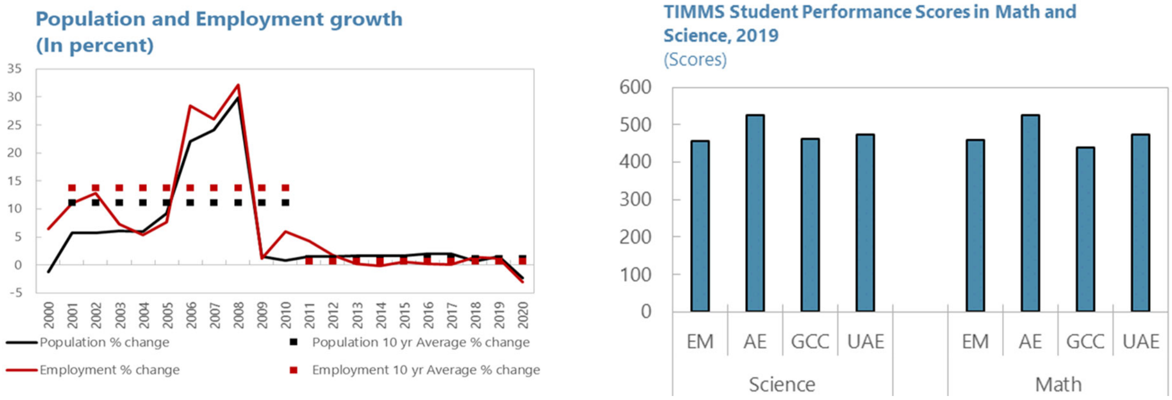


Source: IMF staff estimates based on S&P Capital IQ database.
Note: The TFP is calculated by estimating production functions using intermediate inputs to control for unobservable productivity shocks. The methodology is described in Levinsohn and Petrin (2003) and Petrin, Poi, and Levinsohn (2004). All variables are assumed to be in logarithms.

- **Labor and skills.** UAE population and employment growth largely stagnated after the GFC, with the slowdown in construction and oil sector activity. The private sector relies heavily on low-skilled foreign labor, with approximately 50 percent of males and 40 percent of females being employed in elementary occupations, and as craft and related trades workers, plant and machine operators and assemblers. The UAE has the 7th highest net migration rate in the world at over 12 percent, as well as the highest gender imbalance in the world with a male/female ratio of 2.2 (or 2.75 for the 15-65 age group).[7] According to the WEF's 2021 "Global Gender Gap Report," the UAE is moving fastest on closing its gender gap. However, the UAE still ranks low on the Economic Participation and Opportunity for women and female employment rate remains low. The UAE compares favorably to regional peers in terms of human capital (measured as TIMMS student performance scores in math and science), but lags behind Advance Economies (AEs). Despite recent progress in education and Emiratisation campaign, the youth unemployment remains high.

[7] The gender ratio for the entire world population is 100 males to 100 females (2021 estimate).

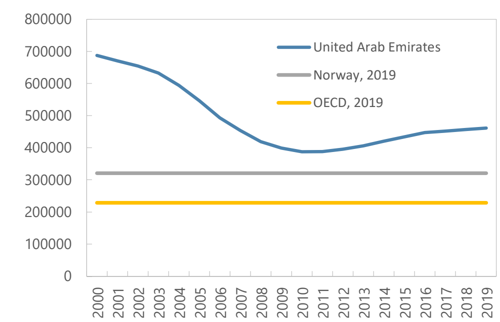
Figure 4. UAE: Labor and Skills



Sources: IMF World Economic Outlook, TIMMS (2019), and IMF staff calculations.

- **Capital, savings, and investments.** Overall, the UAE's total capital stock per capita (in purchasing power parity (PPP) terms) decreased significantly since the 2000s, recovering only gradually after the GFC. Although the UAE's level of capital remains significantly above the OECD average or Norway's level,[8] the UAE capital stock is constrained by sustainability concerns. In particular, the global pandemic and necessary fiscal support to mitigate crisis impacts had additional negative impacts on the overall stock of capital and savings for future generations and investment. The UAE's national saving rate decreased after the GFC, while the investment rate has been fluctuating at around 22 percent of GDP for the last 20 years (see Figure 5). The main reason for stagnant investment rate is decreasing private sector investment after the GFC. Private sector investment dropped from around 16 percent of GDP in 2009 to just over 8 percent of GDP in 2019 and remains well below the OECD average of 20 percent. Public investment has been on an upward trend since 2000, hovering around 12 percent of GDP over the last five years. By comparison, the average level of public investment in OECD countries is around 3 percent of GDP. In terms of sectoral composition of investments, the majority of investments after the GFC were directed to services and manufacturing. Nevertheless, investment in these sectors remains lower than in AEs, and has stagnated recently due to lower marketable services investment (i.e., investments in transportation and storage, and trade).

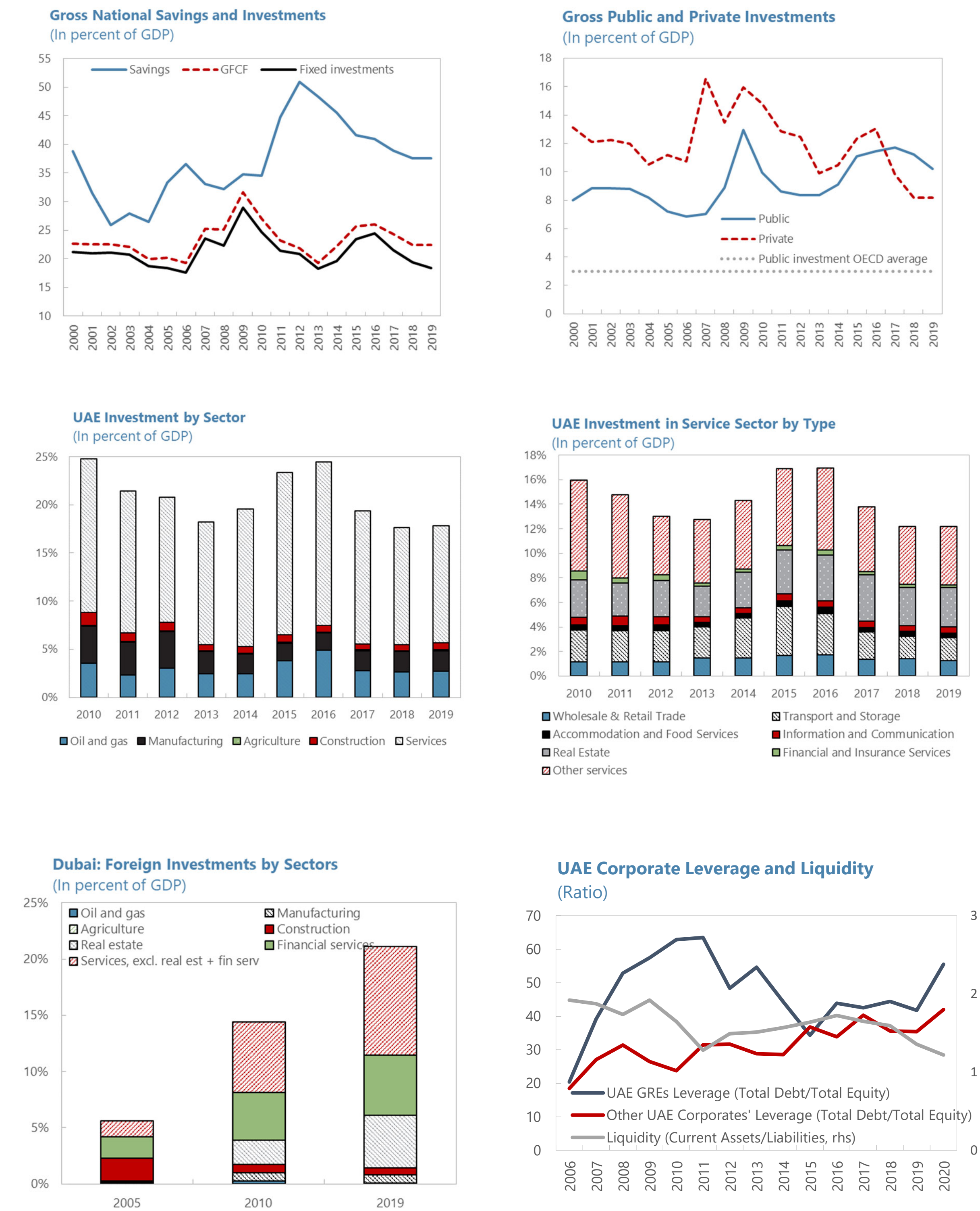
UAE: Total Capital Stock
(In PPP 2017 current $ per capita)



Source: Penn World Table 10.0 and IMF staff calculations.

[8] Norway is used as a comparator given its similarities with the UAE as an oil exporter with large sovereign wealth fund assets.

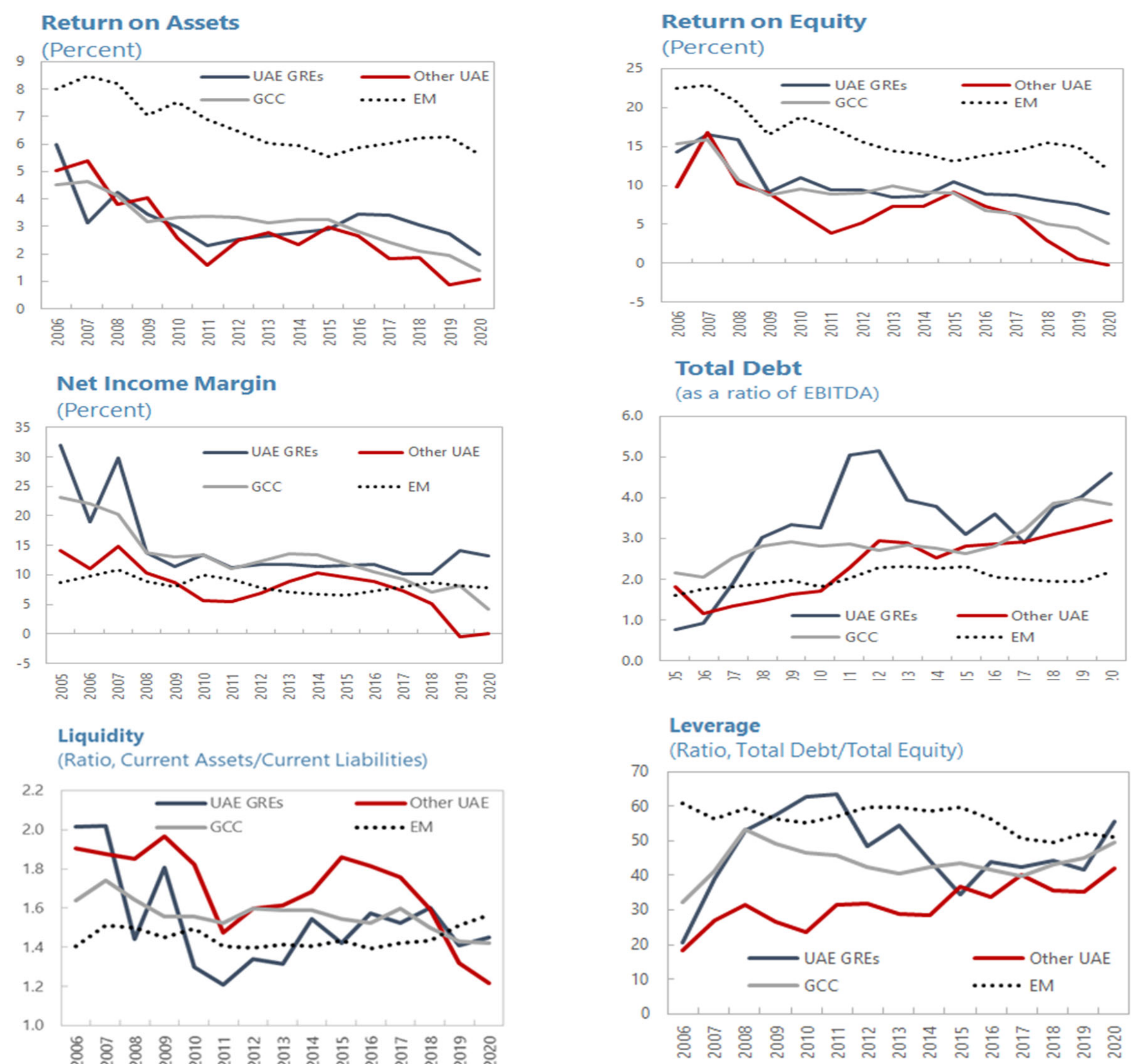
Figure 5. UAE: Capital, Investments, and Savings



Sources: Country authorities, IMF staff calculations, and IMF staff estimations based on S&P Capital IQ database.

6. UAE GREs account for a large share of economic activity and domestic investment, reinforcing the downward trend in TFP. GREs represent a large share of the UAE economy (nonbank GREs assets amount to 112 percent of GDP in 2020 in the sample) and are present in a large number of sectors, including financial services, real estate, utilities, transportation, tourism, and health and education, among others. UAE GREs' financial health remains relatively better than the median for UAE and GCC nonfinancial corporates, but lower than the median for Emerging Markets (EMs) (Figure 6). UAE GREs have operated with higher return on assets and equity compared to other UAE and GCC corporates, and higher margins than EMs. However, GRE debt has increased at a faster rate, with their median debt-to-EBITDA ratio rising from 3 percent in 2015-2017 to 4.4 percent in 2020 (it increased by 0.3 percent for other UAE corporates, 0.8 percent for GCC corporates, and 0.06 percent for EM corporates). While UAE GREs have better liquidity than other UAE corporates, they also have the highest leverage among the four comparator groups. Overall, however, the analysis highlights that GREs have relatively low TFP growth, carry large contingent risks from high and increasing leverage, and have comparatively low and declining liquidity and profitability.

Figure 6. UAE: GREs' Performance Relative to the UAE and GCC Median: Selected Indicators



Source: IMF staff estimates based on S&P Capital IQ database.

C. Structural Reforms and Prioritization Framework to Ensure Higher Productivity and Potential Growth

7. To boost growth and productivity, government structural reform efforts should be sustained, and their implementation accelerated. The UAE's ambitious 50-year reform agenda (including the announced first 13 projects of the UAE Projects of the 50) holds considerable promise to deliver higher levels of future diversified and inclusive economic growth, and to lift medium-term potential. This reform agenda (see Annex I for details on announced reforms) comes at an important moment for the UAE as it celebrates its Golden Jubilee and looks to leverage its talent, knowledge base, and vision for a sustainable future. Nevertheless, additional efforts will be needed to ensure these outcomes and overcome pre-crisis headwinds to potential growth.

Increasing Productivity

- *Continue improving the business environment and competitiveness.* The UAE has one of the most favorable business environments in the region and has undertaken substantial reforms to support SME development and their access to finance.[9] Recently announced reforms to promote private sector growth and development—including allowing full foreign ownership of onshore companies,[10] expanding residency permits, attracting talent, supporting private sector employment of nationals, increasing scope for personal choices, and encouraging growth of start-ups—should be fully implemented. Further progress can be achieved to reduce the costs to open a business, reduce further regressive government fees, and encourage business dynamism and start-ups. Amendments to the UAE Bankruptcy Law, offering distressed debtors with some level of leniency at times of difficulty caused by circumstances outside of their control, should be fully deployed to address nonviable firms quickly and transparently.[11]

- *Ensure a level playing field for all companies.* Policies to foster the reallocation of resources to more productive sectors and firms that could drive future engines of growth (logistics, e-commerce, agri-tech, and clean-tech), would strengthen the recovery and lift medium-term potential. In line with the authorities' reforms to boost diversification, competitiveness, and vibrant private sector growth, consideration should be given to commercializing nonstrategic GREs and bringing them within the scope of competition laws and regulations. Further ahead, fiscal costs from expansive incentives and tax exemptions (including in Special Economic Zones) should be re-assessed within upgraded fiscal frameworks to ensure their sustainability.

[9] See 2018 UAE Article IV Report, Annex VII and IMF (2019) Financial Inclusion of SMEs in the Middle East and Central Asia, as well as OECD 2016 and 2018 Reports.

[10] A foreign investment law in 2018 allowed foreigners to own up to 100 percent of some businesses. Similarly, foreigners could own up to 100 percent of businesses registered in free zones.

[11] Andrews et al. (2017) and Diez (2021) discuss reforms to insolvency regimes which reduce barriers to corporate restructuring and the personal cost associated with entrepreneurial failure and lead to gains in productivity. These gains are partly realized via the restructuring of weak firms, which in turn spurs the reallocation of capital to more productive firms.

- *Harness digital solutions and fintech*. Both public and private sectors benefitted from digital solutions and Fintech during the pandemic. Investments in broadening the digital infrastructure will need to continue, particularly to ensure access is available equally across Emirates and income levels. The continued adoption of new advanced technologies (including, cloud computing, Big Data and ML/AI, and 5G) and further SMEs digitalization could enhance economic resilience, access to finance, and economic adaptability.[12] Recent adoption of the UAE Data Law will support the move to higher digitalization by protecting the privacy of individuals and institutions and limiting entities' use of personal data for profit. Fintech will continue playing a catalytic role, particularly for SMEs. The UAE should continue its efforts to develop the fintech sector, including the regulatory framework addressing risks arising from Fintech. Regulation and supervision of Fintech will need to continue to balance risks and opportunities.

- *Advance technology creation and adoption*. Consideration should be given to welfare-improving government subsidies and funding of research and development in cutting edge technologies and to encourage higher growth of ICT industries. To this end, the government's launch of the Fourth Industrial Revolution Network project,[13] Tech Drive program, and "Project 5Bn", to promote the adoption of advanced technologies in the national industrial sector and entrepreneurship and innovation, are welcome and their implementation should be closely monitored to ensure efficiency.[14]

Modernizing the Labor Market

- *Ensure more flexible and equitable labor markets*. More efficient and inclusive investments in education and training in emerging fields would further enhance human capital and facilitate more opportunities for the youth. Modernization of visa and work permits will contribute to market flexibility and adaptability and help "up-skill" the labor force to meet future growth needs. Government initiatives to incentivize national employment in the private sector should help reduce fragmentation between national and expatriate labor markets. But further efforts are needed to reduce the size of the civil service, better align public and private wages, and incentivize active labor market policies (upskilling, training/re-training programs to assist the transition of workers between jobs and reduce hiring costs for firms), including for expatriate workers.

- *Adopt gender-positive recovery policies and practices*. Despite recent efforts in promoting female employment, including in wage equality and representation on publicly listed company boards,

[12] For details on digitalization impact on SMEs and productivity see Borowiecki (2021), OECD (2019, 2021).

[13] The project aims to establish and grow 500 national companies equipped with the technologies of the Fourth Industrial Revolution and technologically advanced workforce.

[14] An independent body or commission with a mandate to regularly assess the effectiveness and phase out of failed industrial policies is important (Beason et al., 1996; Ohashi, 2005).

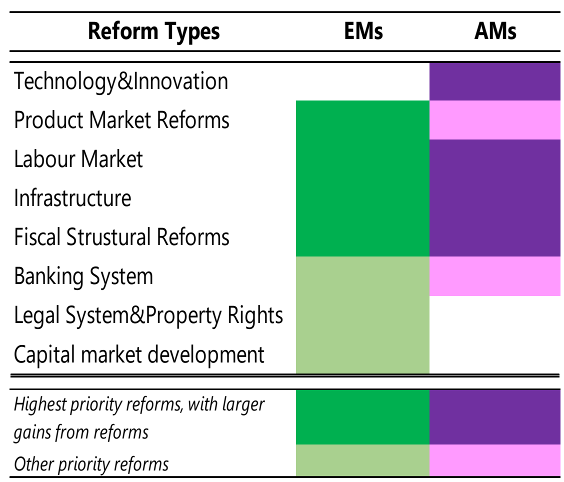
among others,[15] female labor force participation declined by 5 ppts to 47 percent in 2020. Policies, including more progress through gender budgeting, are needed to address crisis impacts on female employment and gender balance, in line with the UAE's progress under the Sustainable Development Goals (SDGs).

Investing in Green Energy and Future Infrastructure

- *Sustainable and green infrastructure.* Progress under the UAE Green Agenda 2030, UAE Energy Strategy 2050 and SDGs relating to both clean energy and climate is welcome (See 2021 UAE Article IV). But there is a need to speed up planned mitigation measures and actionable adaptation plans to reach all the announced targets in carbon emission and clean energy. In addition, strengthening climate-risk disclosure frameworks is needed to ensure that institutions are well-positioned to manage transition risks that lie ahead. There is also a need to build further adaptive capacity across public and private sectors to enhance climate resilience, especially in sectors like utilities, construction, and transportation.

- *Scaling up public and private capital for sustainable investments.* The UAE 2050 Energy Strategy calls for additional investment of AED 600 billion by 2050 to meet the growing energy demand and ensure a sustainable growth for the country's economy. The investment target of 25 percent of GDP set out in the UAE strategy seems appropriate given the UAE's development level, structural characteristics, and external environment.[16] Nevertheless, public sector involvement should have an announced timeframe and a clear exit plan. Large scale investments could further crowd-out private sector investors and foreign direct investments (FDI).

Structural Reforms with the Highest Productivity Payoffs for EMs and AEs



Note: for details on reforms prioritization see IMF Staff Note (2016).

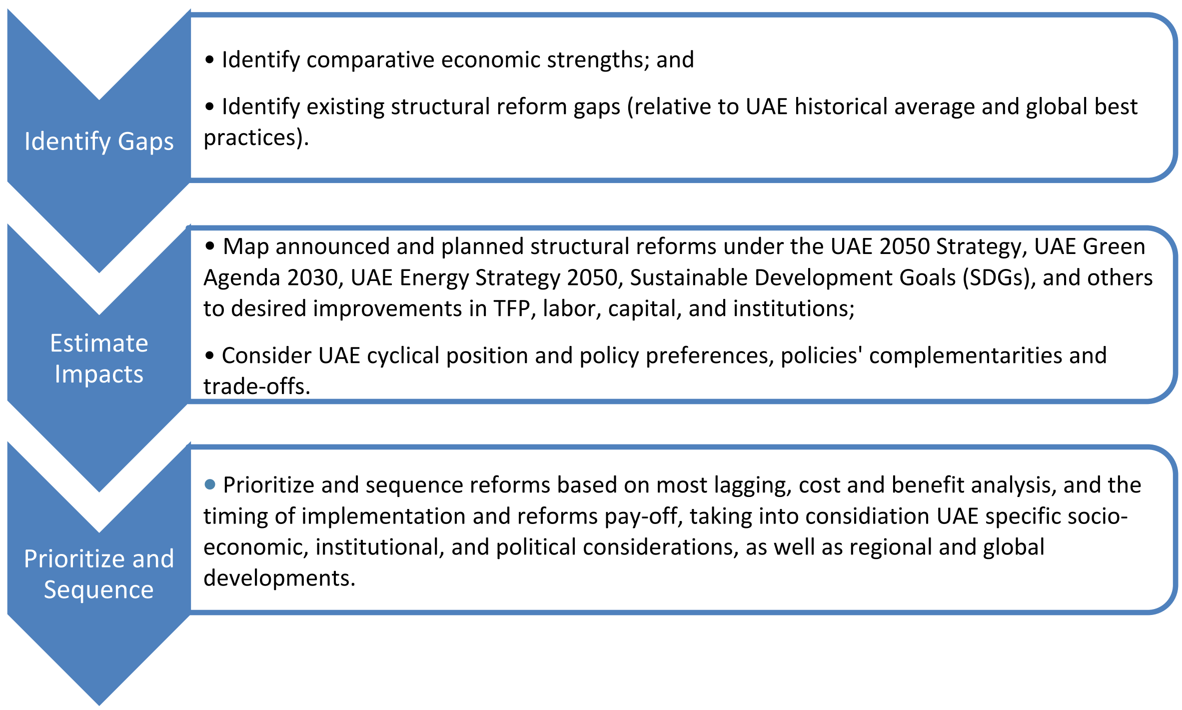
8. Structural reforms will need to be prioritized, sequenced, and better coordinated across emirates and different level of

[15] All legal restrictions on women's work have been removed, and gender wage equality for the public and private sectors is ensured under a 2019 cabinet resolution. In 2020, the UAE became the first Arab country to implement parental leave in both public and private sectors (with 3 paid months, and 5 paid days, respectively). A gender quota was imposed on Federal National Council seats in 2020, and women representation 's presence on publicly listed company boards has been required since 2021. The UAE ranked 18th under the UNDP Gender Inequality Index and 120th under the Global Gender Gap Index from the World Economic Forum, leading the MENA region.

[16] The current benchmark is below the historical for ADs, indicating that a higher level of optimal investment could also be feasible. The "historical benchmark" provides a proxy for a sustainable path for investment rate during the transition to a steady state, which does not require any assumptions about the social rate of time preference and the position of the country on the saddle-path. However, it assumes similarity in economic structures of UAE with advanced peers, which may not capture UAE's own specific structural characteristics.

government to facilitate near-term growth and lift potential. Recent research on structural reforms and productivity suggests differential payoffs of various reforms to growth, capital, and employment in the short- and long-term. The IMF framework for structural reforms prioritization (IMF 2016) suggests that product and labor markets' reforms, investments in R&D and infrastructure, as well as fiscal structural reforms[17] should be prioritized to tackle the UAE's low productivity in the medium- to long-term. Additionally, reforms to trade and FDI openness and improvement of government effectiveness have the largest short-term benefits for multifactor productivity of 0.5 to 1 percent (see Annex II). Joint efforts on these reforms could potentially add up to 30 percent to the long-term growth and up to 5 ppt to employment growth.[18] This process will require effective policy coordination across emirates and at the federal level to find a productive balance between competition and collaboration. The broad principles for reforms prioritization and sequencing could be described as follows (Figure 7)[19].

Figure 7. Guiding Framework for Structural Reforms' Prioritization



Source: IMF Staff Background Paper for the G20 Surveillance Note - Priorities for Structural Reforms in G20 Countries, 2016.

[17] Fiscal structural reforms encompass: (i) fiscal institutions and budgetary frameworks, (ii) changes in the tax base and policy driven by longer-term considerations, and (iii) changes in pensions, health and social security systems driven by demographic developments.

[18] The economy's response to such reforms will depend on the structure of the economy, the country's position in the economic cycle, the accompanied fiscal or monetary policy responses, and country's preferences and trade-offs. Interactions across these different reforms and their complementarity will also play an important role.

[19] Theoretical studies suggest that outcomes might be better if reforms were sequenced, with product market reforms preceding labor market reforms (Blanchard and Giavazzi, 2003).

D. Estimating Potential Gains from Reforms

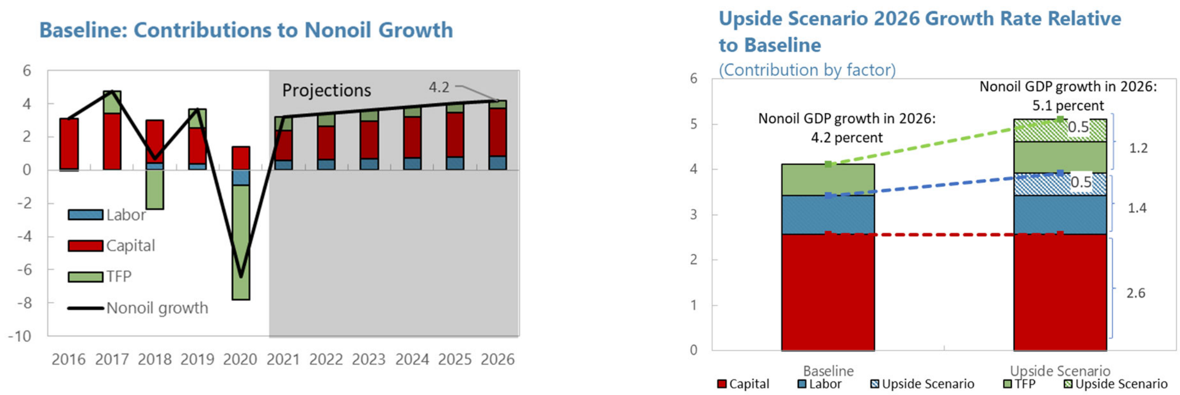
9. Two illustrative scenarios assess potential impacts of the announced and planned structural reforms on the UAE medium-term non-oil growth (Figure 8).[20]

- *A baseline scenario* assumes TFP growth to average 0.5 percent in 2022-2026 (the authorities' current target based on reforms described in Annex I). This would increase non-oil GDP growth to reach 3.6 percent in 2026 (from current level of 3.2 percent in 2021). Higher capital accumulation of 0.3 ppts each year starting in 2022 could add another 0.6 ppts to growth of non-oil GDP by 2026, bringing it to above 4 percent in 2026. The additional capital accumulation could be financed through expected FDI of $12 billion each year under the UAE's 2050 strategy and increased government project financing.[21] This baseline scenario assumes average labor growth of 2.5 over 2022-2026, in line with October 2021 WEO projections.

- *An upside scenario* assumes higher TFP growth (at the current level of advanced economies) and a higher labor growth rate (to the historical pre-GFC average) relative to the baseline scenario. This will require frontloading structural reforms to boost productivity and further modernize the labor market. In this upside scenario, non-oil GDP growth increases to above 5 percent of GDP by 2026.

Figure 8. UAE: Productivity Growth: Illustrative Scenarios

(Percentage points)



Source: Penn World Table 10.0 and IMF staff calculations.

Conclusions

10. Prioritizing and sequencing the ambitious structural reform agenda would help lift productivity and potential growth. Extending reform efforts to further improve the business environment, ensure a level playing field for all companies, and harness the benefits of digital

[20] These are illustrative scenarios of the future non-oil GDP growth using Cobb-Douglas production function estimates and parameters for the 2000-2019 period.

[21] The UAE government aims to invest AED 600 billion by 2050 to meet the growing energy demand and ensure a sustainable growth for the country's economy and plans to launch 50 new economic initiatives, of which 13 have been announced in September 2021 (see Annex I). These projects aim to attract $150 billion in FDI in the next 10 years.

solutions and fintech, would help to attract high skilled talents and investment. The UAE's move to further open its economy to trade and investment is highly welcome against the global retreat in globalization. Increased efforts to modernize labor markets will be needed, including to further boosting female labor participation and deliver more efficient educational outcomes, particularly in science and technology. Policies should also foster the reallocation of resources to more productive sectors and firms. Achieving these outcomes will require enhanced integration of strategies and policies at different levels of government and collaboration across the individual emirates. Ensuring timely collection and dissemination of economic data will buttress these efforts.

References

Ahn JaeBin, Romain Duval and Can Sever. 2020. "Macroeconomic Policy, Product Market Competition, and Growth: The Intangible Investment Channel", IMF Working Paper No. 20/25.

Andrews Dan, Muge Adalet McGowan and Valentine Millot. 2017. "Confronting the zombies: Policies for productivity revival", OECD Economic Policy Papers, No. 21, OECD Publishing, Paris, https://doi.org/10.1787/f14fd801-en.

Borowiecki Martin, Jon Pareliussen, Daniela Glocker, Eun Jung Kim, Michael Polder, and Iryna Rud. 2021. "The impact of digitalization on productivity: Firm-level evidence from the Netherlands". OECD Economics Department working paper No. 1680, OECD Publishing.

Bouis Romain, and Romain Duval. 2011. "Raising Potential Growth after the Crisis: A Quantitative Assessment of the Potential Gains from Various Structural Reforms in the OECD Area and Beyond." OECD Economics Department Working Paper No. 835, OECD Publishing.

Bouis Romain, Orsetta Causa, Lilas Demmou, Duval R, and Alexandra Zdzienicka . 2012. "The short-term effects of structural reforms: an empirical analysis". OECD Economics Department working paper No. 949, OECD Publishing.

Demmou Lilas, Guido Franco and Irina Stefanescu. 2021. "Productivity and Finance: The Intangible Assets Channel - A Firm Level Analysis", OECD Economics Department Working Papers, No. 1596, OECD Publishing.

Égert Balázs, and Peter N. Gal. 2018. "The Quantification of Structural Reforms in OECD Countries: A New Framework OECD" CESifo Working Paper Series, No, 6420.

Égert Balázs. 2017. "Regulation, institutions, and productivity: New macroeconomic evidence from OECD countries", OECD Economics Department Working Paper No. 1393, OECD Publishing.

Cette Gilbert, Jimmy Lopez and Jacques Mairesse. (2013), "Upstream product market regulations, ICT, R&D and productivity", NBER Working Papers No. 19488.

Corrado Carol, Jonathan Haskel, Cecilia Jona-Lasinio and Massimiliano Iommi. 2016. "Intangible Investment in the EU and US Before and Since the Great Recession and its Contribution to Productivity Growth." EIB Working Paper No. 2016/08.

Corrado Carol, Charles Hulten and Daniel Sichel. 2005. Measuring Capital and Technology: An Expanded Framework. In J. Haltiwanger, C. Corrado and D. Sichel (eds), Measuring Capital in New Economy, Chicago, IL: University of Chicago Press: 114-146.

Corrado Carol, Charles Hulten and Daniel Sichel. 2009. "Intangible Capital and U.S. Economic Wealth." Review of Income and Wealth, 55(3): 661-685.

De Haan Jakob and Jante Parlevliet. 2018. "Structural Reforms: Moving the Economy Forward". Springer International Publishing AG, part of Springer Nature 2018. 10.1007/978-3-319-74400-1.pdf (springer.com)

De Serres Alain, Naomitsu Yashiro and Hervé Boulhol. 2014. "An International Perspective on the New Zealand Productivity Paradox", New Zealand Productivity Commission Working Paper 2014/01.

Diez Federico J, Romain A Duval, Jiayue Fan, José Garrido, Sebnem Kalemli-Ozcan, Chiara Maggi, Maria Soledad Martinez Peria, Nicola Pierri. 2021. "Insolvency Prospects Among Small-and-Medium-Sized Enterprises in Advanced Economies: Assessment and Policy Options", Staff Discussion Notes No. 2021/002, April 02, 2021.

IMF Staff Note for G20- A guiding framework for structural reforms, 2016, https://www.imf.org/external/np/pp/eng/2016/033116.pdf

Martins Pedro Miguel Gaspar. 2019. "Structural Change Rediscovered: The Role of Human and Physical Capital." World Bank Research and Policy Briefs, July 2019, Washington, DC.

OECD (2015), Structural reforms in Italy: impact on growth and employment. structural-reforms-in-italy-impact-on-growth-and-employment.pdf (oecd.org)

OECD (2016), Entrepreneurship, SMEs and Local Development in Abu Dhabi.

OECD (2018), SME Policy Index, The Mediterranean Middle East and North Africa.

OECD (2019), Digitalisation and productivity: a story of complementarities, OECD Economic Outlook, Volume 2019, Issue 1. Digitalisation and productivity - OECD

OECD (2020), Sustainability and Competition, OECD Competition Committee Discussion Paper, http://www.oecd.org/daf/competition/sustainability-and-competition-2020.pdf

OECD (2021), The Digital Transformation of SMEs, OECD Studies on SMEs and Entrepreneurship, OECD Publishing, Paris, https://doi.org/10.1787/bdb9256a-en.

Rodriguez-Pose Andres, and Tobias Ketterer. 2019. "Institutional Change and The Development of Lagging Regions in Europe". Regional Studies: 1-13.

Sanches Aida Caldera, Alain de Serres, and Naomitsu Yashiro. 2016. "Reforming in a difficult macroeconomic context: A review of the issues and recent literature", OECD Economic Department Working Papers No. 1292, OECD Publishing.

Varga, Janos, Werner Roeger and Jan in't Veld, 2013. "Growth effects of structural reforms in Greece, Italy, Portugal and Spain", European Commission, Economics Papers 511.

WEF. 2020. "The Future of Jobs Report 2020", October 2020: http://www3.weforum.org/docs/WEF_Future_of_Jobs_2020.pdf

WEF. 2021. "Global Gender Gap Report 2021", Insights Report, March 2021. http://www3.weforum.org/docs/WEF_GGGR_2021.pdf

World Bank, Forthcoming, Structural Reforms to Set the Growth Ambition. New Growth Agenda. Prepared by Natasha Rovo. https://thedocs.worldbank.org/en/doc/838731576648204153-0080022019/original/SRBCEMStructuralReforms.pdf

Wolfgang Lutz, Jesus Crespo Cuaresma, and Warren Sanderson. 2008. "The Demography of Education Attainment and Economic Growth." Science 319 (5866): 1047–48.

Annex I. Key Structural Reforms Implemented and Announced During 2020–2021

Date of Announcement	Structural Reform
September 2020	The UAE loosens Islamic laws on personal behavior.
December 2020	The UAE expands golden residency program.
March 2020	The UAE adopts remote work visa and multiple-entry tourist visa.
June 1, 2021	The UAE allows full foreign ownership of on-shore commercial companies.
June, 2021	Abu Dhabi plans to invest $6bn in cultural and creative industries (after already committing $2.3bn).
June, 2021	Dubai cut procedures for doing business by 30 percent.
July, 2021	Abu Dhabi reduced business setup fees by 94 percent.
September 5, 2021	First 13 Projects of the UAE "Projects of the 50": • **Green Visa:** expands self-residency options to investors, entrepreneurs, highly-skilled individuals, etc; • **Freelancers Visa**: will allow self-employed workers to sponsor themselves. • **Economic partnerships**: aims to increase trade volume with 8 key global markets by AED 40bn a year and double the size of the national economy from Dh1.4 trillion to Dh3 trillion over the next decade. • **UAE Data Law**: aims to protect individuals' privacy and limit the commercial use of personal data for profit. • **100 Coders Every Day**: aims to attract 3,000 coders every month, to facilitate the establishment of programming companies in the UAE through a set of incentives and benefits. • **PyCon Summit**: in H2 2022, the UAE will host PyCon Summit. The event is set to help develop digital talent and expertise, inspire innovative technology projects, and connect programmers with firms. • **4th Industrial Revolution Network**: 500 national technology companies will be set up and promoted. • **10x10**: this program aims to achieve a 10 percent annual increase in the country's exports in 10 key markets: China, the UK, the Netherlands, Italy, Russia, Poland, Luxembourg, Australia, New Zealand and Indonesia. • **Invest.ae**: a new electronic portal that will act as an umbrella for all investment-related local entities and 14 state economic entities. • **Emirates Investment Summit**: the UAE will host the Emirates Investment Summit, with aim is to attract AED 550 bn in foreign direct investment over the next nine years. • **National In-Country Value Program**: aims to redirecting more than 42 percent of procurement of the fed. gov. and major UAE firms to local products and services by 2025. • **Project 5bn**: the allocation of AED 5 bn to support Emirati projects in priority sectors. • **Tech Drive**: AED 5 bn program, jointly with the EDB, will support advanced technology adoption in the industrial sector.
September 12, 2021	Reforms to support an employment of nationals in the private sector: • an investment of AED 24bn had been allocated to create 75,000 new private sector jobs for nationals; • an AED 1bn fund will grant loans to fresh graduates and university students to start their own businesses; • UAE nationals employed in the private sector have the option to retire early in order to start their own businesses. Early retirees will be given financial incentive to pursue their entrepreneurial dreams; • the UAE has announced temporary financial aids for Emiratis who lose their jobs in the private sector due to circumstances beyond their control. They will be supported for six months as they search for a job; • firms have also been given Emiratization targets–2 percent per annum for 5 years–to reach 10 percent; • announced a retirement fund for Emiratis in the private sector; • monthly allowances will be given to Emirati parents in the private sector to raise their children. They will get AED 800 per child per month, with a maximum of AED 3,200; • Emiratis in specialized private sector fields will get paid an additional AED 5,000 per month for 5 years; • Minister of Cabinet Affairs said the government will bear the cost of training Emiratis for the private sector. During this period, university graduates will be paid Dh8,000 per month. After the training, they will be given Dh5,000 per month in addition to their salaries; • The scheme—called Nafis—designed to boost the employment of nationals in the private sector.

Sources: Country authorities and news outlets.

Annex II. Literature Survey: Structural Reforms and Their Short- and Long-Term Impacts

Examples of Selected Structural Reforms from the Literature	Short-term effect on demand	Impact on supply side components:			Total effect on GDP[1] (in %)	Source
		Multifactor Productivity (in %)	Labor (L/N) (in ppt)	Capital (K/Y) (in %)		
Reduction in regulatory barriers to competition in network industries[2], or implementing the best practices in competition regulation	Increase	0.53 - 6.5	0.10	0.07	0.72 - 2.09	Sanchez (2016), Égert (2017, 2018), Cette (2013), OECD (2015), Bouis (2011, 2012)
Reduction in regulatory barriers to entry in professional services and retail trade. Reducing intermediate firms' entry barriers	Increase No effect or negative		0.2 - 1.9[3]		3.7 - 7.9[3]	Sanchez (2016), Rono (2020), De Haan (2018), Varga (2013)
Shift in tax composition from direct to indirect sources	Small increase		1.3 - 4.7[3]		1 - 4.5[3]	Sanchez (2016), Varga (2013)
Reform of collective wage bargaining arrangement and minimum wages	Small increase		0.06 - 0.32		0.09 - 0.70	Sanchez (2016), Égert (2018)
Easing of employment protection legislation on regular contract	No effect or small increase		0.07	0.24	0.22 - 1.83	Sanchez (2016), Égert (2018), Bouis (2011, 2012)
Reform of unemployment benefits	Increase		0.21		0.31 - 0.6	Sanchez (2016), Égert (2018), De Haan (2018), Bouis (2011, 2012)
Strengthening of job search assistance, training and wage subsidy programs	Increase	0.09	0.25		0.46 - 0.85	Sanchez (2016), Égert (2018), Bouis (2011, 2012)
Reforms of pension systems: Increasing retirement ages Reducing benefits or raising contributions	Increase		0.06		0.10 - 0.14	Sanchez (2016), Égert (2018), Bouis (2011, 2012)
Raising infrastructure investment or incentives for investment in knowledge-based capital, including through infrastructure spending	Increase	0.36 - 1.2		0.57-0.9	0.28 to ~1.7	Sanchez (2016), Égert (2018), Rono (2020)
Openness, FDI, technology spillovers	Increase	0.47 - 0.79			0.2 - 2.40	Égert (2017, 2018), Rono (2020)
R&D expenditures investment in ICT and intangible capital, R&D subsidy	No effect or small increase	0.09	-0.2		0.09 - 0.46 0-1.4[3]	Égert (2017, 2018), De Serres (2014), Demmou (2021), Varga (2013), Cette (2013)
Family benefits in kind	Increase		0.11		0.17 - 0.24	Égert (2018)
Maternity leave weeks			0.28		0.42 - 0.61	Égert (2018)
Government effectiveness, public administration and judicial system reform	Increase	~1 0.6 - 0.9			1 to ~3.5 0.6 - 0.9	Rovo (2020), Rodriguez-Pose (2019), OECD (2015), Égert (2017)
Investment in human capital, decreasing a share of low-skilled workers	Increase		1.2 -11.3[3]		1.3 to ~2.3 3.9 - 28.4[3]	Rovo (2020), Martins (2019), Lutz (2008), Varga (2013)
Labor market reforms	Increase	0.1	0.5 - 1.3		0.6 - 1.2	OECD (2015), De Haan (2018)

[1] GDP is measured as GDP per capita, real GDP in constant prices, or GDP growth. The impact ranges depending on the measure used in the research paper or on the time-horizon considered.

[2] For example, measured by OECD's Energy, Transport and Communication Regulation (ETCR) indicator.

[3] Percent deviations from baseline.

NEW DIRHAM MONETARY FRAMEWORK[1]

The development of capital markets in the UAE goes hand in hand with a well-developed monetary framework. The CBUAE introduced a new monetary framework in 2020 to strengthen monetary policy transmission and support the growth of capital markets. The framework consists of several new key features, including the issuance of new assets – M-Bills – to absorb excess liquidity and enhance efficiency in banks' liquidity management. Implementation thus far has been smooth and well received by market participants, with money market rates more tightly aligned to the monetary policy rate. Online publication of the framework will increase transparency and trust. Going forward, continued attention to factors that could endanger monetary conditions will be required, as well as support to the expansion of the M-Bills secondary market.

A. Introduction

1. In 2020, the CBUAE endorsed the new Dirham Monetary Framework (DMF) to strengthen monetary policy transmission. While the previous monetary framework had served the country well, there was a need to upgrade the liquidity management framework, along with further steps to develop domestic money and debt markets. First, in past experiences volatility in oil prices resulted in unstable deposits in the banking system, creating challenges in liquidity management for banks and hindering monetary policy transmission. Second, the introduction of the Basel-III liquidity regulation created stronger incentives for banks to actively manage liquidity, as well as impacted banks' demand for central bank instruments and balances at the CBUAE. This called for a coordinated approach to reforming the operational framework and the regulatory approach. The new DMF represents a significant upgrade of the previous framework, providing a concrete step toward strengthening the implementation of monetary policy.

2. The DMF facilitates better management of liquidity and supports debt market development. In particular, the DMF aims to: (i) align the overnight money market rate with the policy rate, set at a level consistent with the currency peg, (ii) enhance CBUAE's liquidity provision and management, as well as allow banks to pro-actively manage their liquidity, and (iii) foster capital market development through the creation of a local currency short-term yield curve. The framework, with planned implementation in steps until the first quarter of 2022, takes into account recommendations from two technical assistance missions by the IMF in 2017 and 2018, and benefited as well from technical assistance in 2021 to build a liquidity forecasting framework to calibrate open market operations' allotment and the reserve requirement, among other topics. This Selected Issues Paper briefly presents the framework, discusses initial phases of its introduction, and highlights future considerations as it is fully implemented.

[1] Prepared by Hatim Bukhari and Marcello Miccoli.

B. Key Features of the New DMF

3. The new DMF is a floor-rate corridor system, with several key operational features. The UAE banking sector experiences large and volatile inflows, mostly due to oil revenues. To improve control of money market rates in the presence of volatility in central bank autonomous factors (such as net foreign assets), the new DMF is set up as floor-rate corridor system, which provides a clear anchor for market interest rates. Key pillars of the DMF:

- **The monetary policy stance under the new DMF is signaled by the rate on the Overnight Deposit Facility (ODF), the Base Rate**. The ODF was instituted to deposit banks' overnight excess liquidity. The rate on the ODF is anchored to the US Federal Reserve's Interest on Reserve Balances (IORB),[2] replacing the 1-week CD rate as the Base rate. The ODF also provides the effective interest rate floor for overnight money market rates.[3] The Intraday Lending Facility (ILF) and the Marginal Lending Facility (MLF) / Collateralized Mubarah Facility (CMF) instead provide loans, intraday and overnight, respectively, to requiring banks to smooth temporary idiosyncratic liquidity imbalances. The loans are collateralized. The rate on the MLF/CMF provides the interest rate ceiling for overnight money markets. Access to the ILF, instead, is provided at a zero-interest rate, given the intraday only nature.

- **Banks can average Reserve Requirements (RR) over the reserve maintenance period.** The RR ratio is set at 1 percent for time deposits (maturity from 7 days onward), and at 14 percent for demand and saving deposits, though the latter was reduced to 7 percent as part of the TESS program in April 2020. The same RR applies to both local and foreign currency deposits, and the fulfillment is done in Dirham in both cases. Reserves held for the fulfillment of the RR are not remunerated. The RR ratio will need to be maintained on average during the Reserve Maintenance Period, which has been extended from 7 to 14 days under the new DMF. A penalty rate of Base rate plus 400 bps is applied on any shortfall in required reserves.

- **The CBUAE conducts open market operations through structural and fine-tuning operations.** As the CBUAE operates in a monetary regime of permanent excess liquidity, the structural operations are aimed at draining the liquidity surplus through regular, calendarized, market interventions. The fine-tuning operations are instead ad-hoc interventions to manage the liquidity situation and smooth possible effects of system-wide liquidity imbalances on interest rates. Structural liquidity absorbing operations are conducted through the issuance of Monetary Bills (M-Bills), at several tenors, with maximum maturity of one year.[4] M-Bills are

[2] The Base rate was initially anchored to the US Federal Reserve's Interest on Excess Reserves (IOER), then anchored to the IORB as the Federal Reserve replaced the interest on required reserves rate and the IOER with the single interest on reserve balances (IORB) rate on July 29, 2021.

[3] In the previous framework, reserve balances at the CBUAE were not remunerated, thus there was no floor on overnight money market rate.

[4] In the previous framework, the CBUAE issued Certificate of Deposits (CD). These are currently being phased out. The CBUAE is still issuing Islamic CDs, for financial institutions that carry their activities in accordance with the provisions of the Shariah, but is working on creating Shariah-compliant M-Bills.

allotted with a variable rate auction for primary dealers, in which the CBUAE can set the maximum yield on the M-Bills offered. Once issued, M-Bills can also be traded on secondary markets. Additionally, reverse transactions are possible, where CBUAE conducts lending operations against M-Bills as collateral. Fine-tuning operations are instead conducted through ad-hoc collateralized operations, and through FX transactions and swaps, conducted exclusively in USD.

- **Liquidity insurance facilities are being implemented.** The Contingent liquidity insurance facility, a back-stop liquidity facility, is being implemented. This will allow the CBUAE to provide to single institutions, or market-wide, ample liquidity at term during exceptional periods of stress, against a broader range of eligible collateral than other facilities. Access to this facility, as well as the lending rate, is at the discretion of the CBUAE.

4. The new monetary framework promises to generate significant efficiency gains in the implementation of monetary policy. The framework provides a comprehensive setup of monetary policy tools and facilities, on par with modern monetary implementation practices. Some efficiency gains could be expected. For instance, the tighter control on money market will allow for lower volatility in rates and quantities, simplifying price discovery in interbank transactions. The possibility to average RR over the reserve maintenance period will allow banks to tap into required reserve to smooth out liquidity shocks, without the need to access at a cost the money market, or the MLF/CMF.

Table 1. UAE: Targeted Implementation Dates of the DMF

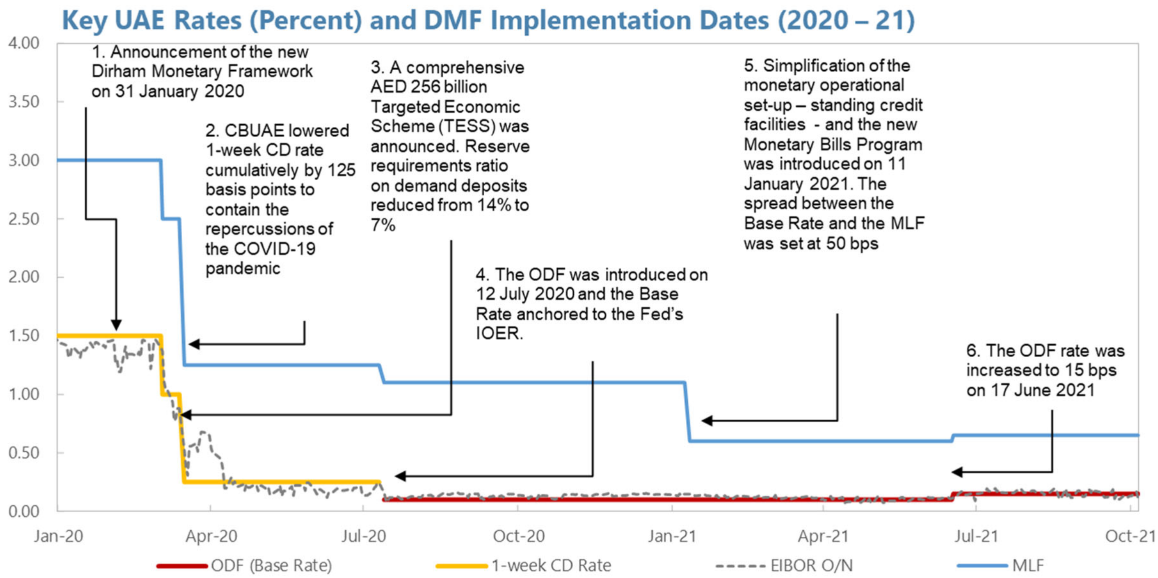
Key Milestones	Targeted Completion
Endorsement of the New Framework & Announcement of its Implementation Timetable to the Market	2020Q2
Introduce the Overnight Deposit Facility –ODF	2020Q3
Develop a Liquidity Forecasting Function	2021Q4
Inauguration of the M-Bills Program	2020Q4
Introduce the Intraday Lending Facility –ILF	2021Q1
Restructure the Standing Credit Facilities –MLF/CMF	2021Q3
Introduce the Contingent Liquidity Insurance Facility –CLIF	2021Q3
Introduce Fine-tuning Open Market Operations	2021Q4
Establish New Indices to Support the Dirham Monetary Framework	2022Q1

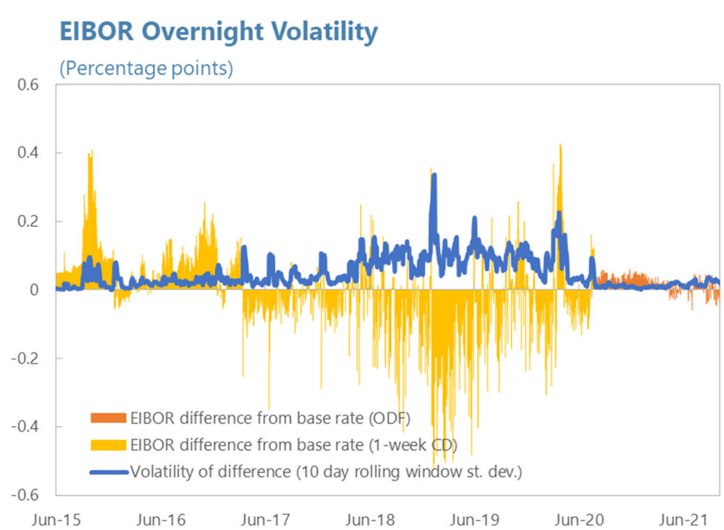
Source: CBUAE

C. New DMF in Practice

5. **The transition to the new operational framework has been smooth and well received by market participants.** Banks have welcomed the new monetary framework and did not encounter major difficulties during the initial transition to the new standing facilities and M-Bills issuance aspects of the new DMF. A thorough implementation plan had been prepared by the Monetary Management Department of the CBUAE in consultation with key external stakeholders.

Figure 1. UAE: Policy and Market Rates





Sources: Haver Analytics, Bloomberg LP, country authorities, and IMF staff calculations.

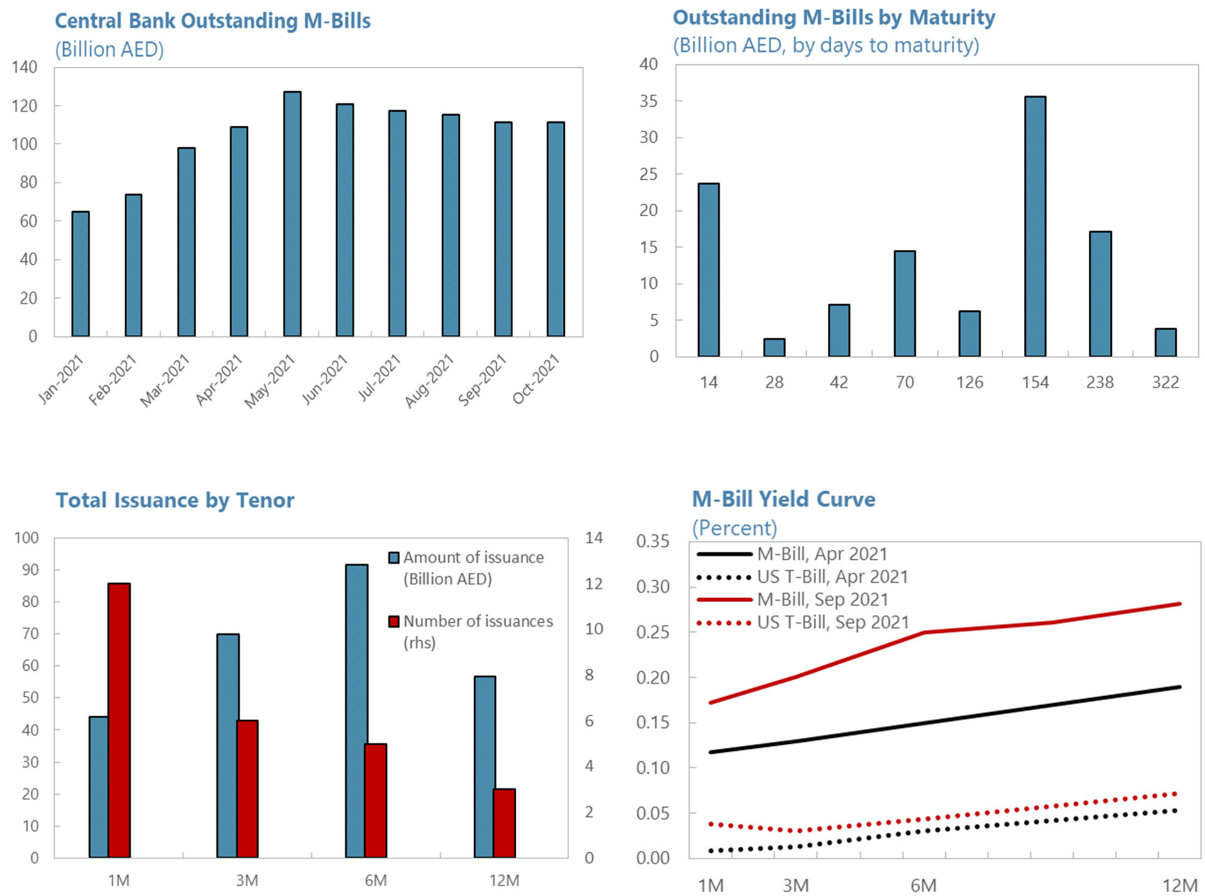
6. Money market rates remained calm during the implementation period. Before the introduction of the ODF, the CBUAE lowered the policy rate cumulatively by 125 bps and introduced the TESS support package as a response to the COVID-19 pandemic crisis. The ample provision of liquidity, through the lowering of the RR, helped ensure smooth conditions in money markets. The introduction of the ODF provided a tighter floor on overnight interbank rates, than the 1-week CD rate. Since the introduction of the ODF, overnight rates have remained close to the Base rate (Figure 1). The same behavior was observed when the CBUAE increased the Base rate by 5 bps on June 17, 2021, to align it with increase in the US IOER. Volatility of the Emirates Interbank Offered Rate (EIBOR) overnight also has decreased since the introduction of the ODF. The CBUAE decreased the size of the interest rate corridor from 100 to 50 bps on January 11, 2021 (setting the rate on the MLF to the Base rate plus 50 bps), as it judged the initial width of the corridor unnecessarily ample. The EIBOR overnight kept slight closer to the MLF after the corridor reduction.

7. New money market indices are being introduced to support the new DMF. The CBUAE is planning to transition from the EIBOR to the Dirham Overnight Index Average (DONIA) as a benchmark for overnight money market rates. The DONIA is a volume-weighted average rate based on actual overnight transactions and will be published daily. Computation of the DONIA already started, but its role as benchmark will be phased in gradually, to avoid market disruptions. In addition, the CBUAE is planning to introduce a new Cost of Fund Index, a composite money market rate. Activities for its implementation are ongoing.

8. M-Bills issuance has recorded significant volumes thus far. On January 11, 2021 M-Bills were first issued. Activity in the market has been robust since, with strong issuance by the CBUAE in initial months to facilitate the gradual phasing out of CDs. As of end-September 2021, the cumulative amount of M-Bills issued reached 260 bn AED, of which 150 bn AED have already matured, leaving about 110bn AED of outstanding M-Bills. M-Bills at 1, 3, 6 and 12-month tenor were issued, with 6-month being that with the largest issued amount (Figure 2). Transactions in the secondary market remain infrequent, but this is expected to become more frequent as the market is still developing.

9. The M-bills rates indicate contained risk and term premia, and shifted in line with evolving monetary policy. Rates at issuance on the 1-month M-Bills stayed close to Base Rate, indicating a very contained 1-month risk and term premia. The risk premium, computed as the difference with the 1-month US T-Bill, amounts to around 10 bps. The 1-month rate shifted by 5 bps as the Base rate was increased by the same amount, highlighting the tight connection between the monetary stance and monetary conditions. The slope of the yield curve, as expressed by the difference between the 12- and 1-month rate, is contained. This likely indicates no expectations of a change in the monetary stance in the short term, as well as the ample liquidity available to banks. The pass through of the monetary stance to the 12-month rate has also been strong. On-the-run and off-the-run effects seem to be absent in the M-Bills market, probably due to the presence of tap issuances for outstanding bills by the CBUAE and the still relatively underdeveloped market

Figure 2. UAE: M-Bills Developments
(As of October 6, unless otherwise noted)



Sources: Haver Analytics, Bloomberg LP, country authorities, and IMF staff calculations.

D. The New DMF and Capital Market Development

10. The issuance of M-Bills will promote the development of a secondary markets in UAE Dirham securities. M-Bills are auctioned and traded through Bloomberg and Euroclear, which has resulted in increased transparency of liquidity conditions and monetary policy transmission. Moreover M-Bills rates will provide the risk-free rate for short-term assets. The presence of a reference risk-free rate will increase information availability and facilitate price discovery in capital markets, and could further stimulate market issuance of similarly denominated securities.

11. The planned issuance of local market federal debt will complete the creation of the yield curve but requires a clear framework of coordination with the government. The federal government is planning to issue local currency debt with maturities longer than one year, thus complementing M-Bills in the maturity structure, and leading to the creation of the longer-term yield curve. Still, coordination between the CBUAE and the federal government will be needed to mitigate monetary repercussions. The CBUAE will be the issuing agent of federal debt, and proceeds from the issuance will be initially deposited in the government account at the CBUAE, impacting the balance sheet of the central bank, the estimation of autonomous factors, and thus issuance of M-Bills and money market conditions. Moreover, the choice of remuneration rate of the government account is also consequential, as remuneration at a rate lower than the ODF rate decreases the efficacy of the Base rate in providing a floor to money market rates. A clear framework defining rates on the government account, as well as communication procedures for significant flows in and out of the account, should be set up. This framework should apply also to emirates' government accounts.

12. Going forward, attention to liquidity estimation and M-Bills secondary market development will be needed. While conditions in the money market stayed calm after the implementation of the DMF, continued attention will be needed to ensure they will stay so in the face of shocks. This will imply, among other actions, market surveillance, with intraday control of money market activity, robust estimation of liquidity forecasts, and readiness to employ all available tools if needed. Moreover, development of the M-Bills secondary market is instrumental to reap the benefits of the creation of a local capital market. Authorities should follow attentively liquidity and trading in the market, ensuring over time that incentives are right for its development.

E. Conclusions

13. The new DMF is a modern and flexible framework, which will strengthen the conduct of monetary policy. The framework, when fully implemented, will contribute to efficiency gains in liquidity management by banks and the CBUAE. It provides a concrete step toward strengthening the conduct of monetary policy, including under different monetary policy objectives, were they to be considered in the future. Planned online publication by the authorities of the description of the new DMF, together with key data on its standing facilities, open market operations, and rates will enhance transparency, communication, and thus trust, in the framework.