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Central Bank of Trinidad and Tobago

Monetary Policy Report

MAY 2022

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The Central Bank of Trinidad and Tobago conducts monetary policy geared towards the promotion of low inflation and a stable foreign exchange market that is conductive to sustained growth in output and employment. This Report provides an account of how monetary policy actions support this objective, in light of recent economic developments.

Preface

The Central Bank of Trinidad and Tobago's monetary policy framework is guided by the objectives of maintaining low and stable inflation in an environment conducive to economic growth and financial system development. The Central Bank employs a range of instruments (direct and indirect) to effect monetary policy. Prior to the 1990s, the Central Bank utilised direct policy tools such as reserve requirements and direct credit controls. However, the onset of trade and financial liberalisation in the 1990s brought about a greater emphasis on market-based instruments such as open market operations. Since mid-2002, the Central Bank's monetary policy framework was revised to include the use of a Repurchase ('Repo') rate as a key policy tool. The Bank utilises the Repo rate to signal to the banking system the direction in which it wishes short-term interest rates, and ultimately, the structure of interest rates, to move. Open market operations involve the purchase and sale of Government securities by the Central Bank to impact the level of liquidity in the domestic financial system.

The Monetary Policy Committee (MPC) develops and communicates the Bank's overall monetary policy stance. The MPC currently comprises members of the Bank's Senior Management and is chaired by the Governor. The Committee issues quarterly Monetary Policy Announcements (MPA) which provide insights into the MPC's deliberations, and oversees the preparation of the semi-annual Monetary Policy Report (MPR). The MPC is assisted by the Monetary Policy Secretariat (MPS), made up of staff from various Departments, which undertakes ongoing economic and financial analysis. The Central Bank utilises the MPR to communicate to the public its views on economic and financial developments and the main factors that influence the Bank's monetary policy decisions.

TABLE OF CONTENTS

TABLE OF CONTENTS

CHARTS

TABLE OF CONTENTS

CHARTS CONT'D

TABLES

KEY MESSAGES

- The global economic recovery is likely to slow in 2022, owing to high food and energy prices on account of the Russian/ Ukraine crisis and supply shortages stemming from the COVID-19 pandemic, which have added to inflationary pressures across many economies.

- Rising inflationary expectations have prompted monetary policy rate normalisation in the United States and elsewhere, sparking concerns of a further deceleration in growth over the medium term.

- Domestically, higher crude oil and petrochemical production spearheaded a return to positive growth in energy sector activity during the fourth quarter of 2021.

- The rollback of COVID-19 restrictions boosted business operations in some non-energy sectors while inflation, though rising, remains relatively contained.

- Bank financing has supported private sector business activity, as evidenced by the pickup in business lending. Sluggish employment conditions may have adversely impacted consumer lending, which continued to decline.

- The Central Bank maintained an accommodative policy stance, in the context of relatively low, supply-side inflation impulses and an incipient economic recovery.

- Recent high international energy prices have boosted the public finances and external accounts, creating a welcome space for financing further adjustment to the lingering effects of the pandemic.

- In the very uncertain global setting care must be taken to not consider this 'windfall' as permanent, and to continue much needed structural reforms to strengthen Trinidad and Tobago's competitiveness.

MONETARY POLICY OVERVIEW AND OUTLOOK

Overview

The global economy began 2022 in recovery mode alongside rising inflation. The surge in energy and other commodity prices related to the war in Ukraine are already impacting real incomes and consumption across the world. The war has also resulted in renewed supply shortages, including for wheat, vegetable oils, certain metals, and electronic components. Meanwhile there has been tremendous volatility in capital markets, with stock prices oscillating on news surrounding the war, the anticipated path of interest rates, and fears that monetary overtightening could lead to recessions. At the same time, rising COVID-19 inflections and associated lockdowns in China and elsewhere not only threaten to add to existing supply constraints but provide a sobering indication that the pandemic has not yet run its full course.

Many central banks have been tightening policy in 2022 to address rising inflation. In March, the US Federal Reserve (Fed) raised its policy interest rate for the first time since December 2018 by 25 basis points, which was followed by a more aggressive 50 basis points increase in May. The Fed has signalled further rate increases throughout 2022. Monetary authorities in several other economies, including those in the Latin American and Caribbean region, have adopted similar policy actions to curb rising inflation. Japan's central bank has not followed suit, indicating that Japanese inflation is still low and the priority is to foster conditions for a post-pandemic recovery.

Domestically, signs of a fairly broad-based economic recovery became more evident during the fourth quarter of 2021. Production data point to an uptick in energy sector activity in the final months of 2021. In addition, the continued rollback of restrictions on movement led to a gradual resumption in output in many non-energy sector businesses, including distribution, manufacturing and construction.

However, supply-side factors are contributing to increases in inflation. The surge in international prices for food staples such as sugar, wheat and vegetable oils, higher shipping costs, transportation delays, and adverse weather conditions led to marked increases in food inflation. Core inflation (which excludes the food component) also rose with the lowering of the subsidy on domestic gasoline prices, and the pass-through of increases in global costs of construction materials, such as cement, to domestic consumers.

Financial system liquidity declined but remained adequate, while interest rate differentials narrowed. Excess liquidity, as measured by commercial banks' reserves held at the Central Bank in excess of the required levels, declined from $7.7 billion in November 2021 to $3.9 billion in April 2022. A rebound in business lending in October 2021, and a continued rise in real estate mortgage lending, contributed to the increase in consolidated system credit. However, consumer lending remains stymied. Credit conditions allowed for a small reduction in bank's lending rates, from 7.04 per cent to 6.93 per cent on average between September 2021 and March 2022.

External monetary policy tigthening has resulted in the TT/US short-term interest rate differential moving from 27 basis points to -42 basis points below from November 2021 to April 2022; the differentials on the longer term end moved from 356 to 209 basis points.

In this context, the Central Bank of Trinidad and Tobago kept its monetary policy stance unchanged. The Bank kept the short-term rate on its overnight collateralised financing to commercial banks, the Repo rate, at 3.50 per cent following its Monetary Policy Committee (MPC) meetings in December 2021 and March 2022. The MPC focussed on the early signs of domestic economic recovery, boosted by modest business credit expansion and relatively contained cost-push inflation. Nonetheless, the MPC took note of the rising importance of foreign inflationary influences and the fact that higher interest rates abroad could lead to some incentive to capital outflows.

Outlook

Global economic prospects have worsened in early 2022. The International Monetary Fund (IMF), in its April 2022 World Economic Outlook (WEO), has notably scaled down economic projections from its January 2022 WEO Update. The projected softening of conditions is largely on account of Russia's invasion of Ukraine resulting in a major humanitarian crisis in Eastern Europe, substantial sanctions imposed on Russia and adverse global spillover effects. Prior to the invasion, the global economy was displaying signs of robust recovery, although with significant disparities between advanced and Emerging Market and Developing Economies (EMDEs). However, there is growing concern that monetary policy tightening in the US (and other advanced economies) may lead to recessions. Additionally, China's increasing emphasis on mitigating the effects of asset bubbles to safeguard financial stability, and the re-imposition of widespread lockdowns as part of the zero-COVID strategy could see China's economy slowing more than anticipated, escalating global supply chain bottlenecks.

Energy prices are expected to remain elevated over 2022. As several economies continue to recover from the economic effects of COVID-19, demand conditions will keep energy commodity prices relatively firm over the short- to medium-term. At its meeting on May 5, 2022, the Organization of Petroleum Exporting Countries and associated entities (OPEC+) raised its quota for crude oil production by 432 thousand barrels per day from June to September 2022, which should aid in closing the gap between demand and supply. But the group's ability to fully realise its planned production increase will likely be met with challenges stemming from recent years of underinvestment in energy assets and inadequate infrastructure maintenance, which affected oil supply from several producers since the COVID-19 pandemic.

Rising fertiliser prices will also lead to higher costs of imported food. The war in Ukraine has disrupted the supply of agricultural factor inputs such as potash fertiliser. Reduced fertiliser application may result in lower crop yields which can elicit export restrictions from major food-exporting nations. The supply-side stimulus to both food and core inflation in Trinidad and Tobago is anticipated to persist to the end of 2022.

Domestic economic activity in the non-energy sector will continue to recover as the full effect of the reopening takes root. This is expected to lead to a gradual increase in employment opportunities; at the same time, job content and the requirement for physical presence on work sites are expected to be permanently affected by the pandemic-induced switch to greater virtual transactions. Comfortable liquidity levels will continue to provide space for business financing, particularly as the Government's possible need for lower domestic funding reduces the likelihood of crowding out.

Recent high international energy prices have boosted the public finances and external accounts, creating a welcome space for financing further adjustment to the lingering effects of the pandemic. In the very uncertain global setting however, the situation can change rapidly and care must therefore be taken to avoid considering this 'windfall' as permanent. Much needed structural reforms should also be accelerated to reduce bureaucracy and strengthen Trinidad and Tobago's dynamism and attractiveness in tourism, financial and other service markets.

1. THE INTERNATIONAL ECONOMIC CONTEXT

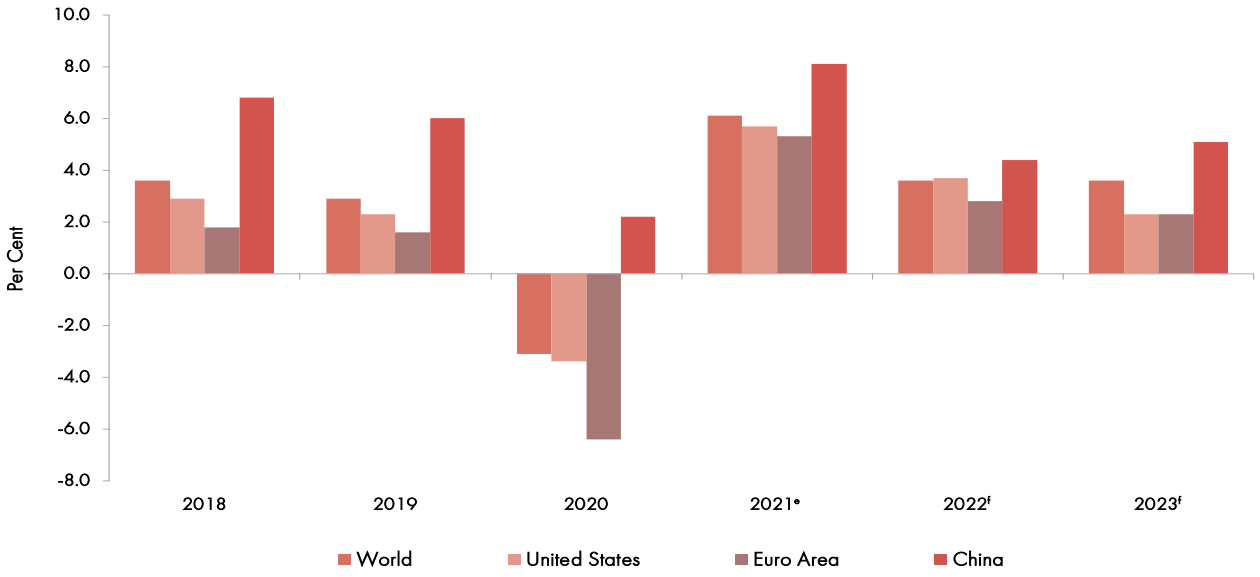
Central banks across the globe have been tightening monetary policy to curb inflation. Global inflation rates increased further in 2022 as Russia's invasion of Ukraine resulted in a surge in commodity prices for crude oil, natural gas and wheat. This has added to inflationary pressures stemming from supply chain issues, labour shortages and the recovery in aggregate demand from the COVID-19 pandemic. In May 2022, the United States (US) Federal Reserve (Fed) increased its policy rate range and shrunk its balance sheet in response to rising inflation in the US economy. The Fed moving towards monetary policy normalisation is expected to result in tighter global financial conditions. Consequently, this tightening trend can weigh significantly on EMDEs as higher interest rates can heighten foreign currency refinancing risk and hasten capital outflows.

Recent Economic Developments and Outlook

Global economic activity rebounded in 2021, but the resurgence in COVID-19 cases weighed on activity in the second half of the year. In its April 2022 WEO, the IMF estimated the global economy expanded by 6.1 per cent in 2021 **(Chart 1.1)**. Swift and effective rollouts of vaccination programmes among the advanced economies (AEs) were vital in encouraging the rollback of mobility restrictions and promoting economic activity. In contrast, sluggish progress in vaccine rollouts within some EMDEs weighed on the recovery performance.

CHART 1.1

Global Growth: Annual Real GDP Growth



Source: International Monetary Fund, World Economic Outlook, April 2022

e estimate
f forecast

Economic growth in the United States is moderating, and the Euro Area is continuing to recover, but a property market downturn challenges China's growth

Despite a slowdown thus far in 2022, the US economy expanded moderately and the Euro Area continued to recover. Tempered by slowdowns in exports, gross private domestic investment and government spending, economic activity in the US recorded growth of 3.6 per cent (year-on-year) in the first quarter of 2022, a reduction from 5.5 per cent in the previous quarter. The unemployment rate dipped to 3.6 per cent in April and March 2022, from a rate of 3.8 per cent in February 2022, supported by a pickup in economic activity and vibrant labour demand. However, supply-chain issues and soaring inflation have adversely impacted US economic performance since the start of 2022. Amid robust domestic demand underpinned by private consumption, real GDP within the Euro area grew 5.1 per cent (year-on-year) over the three months to March 2022, an accelerated pace from 4.7 per cent in the earlier quarter. Economic activity modestly improved in China, driven by manufacturing activity and exports. Real GDP growth was 4.8 per cent (year-on-year) in the first quarter of 2022, a modest increase from the 4.0 per cent recorded in the fourth quarter of 2021. Growth was boosted by multiple factors, namely increased industrial output and fixed asset investments and robust external demand, which supported the manufacturing sector. However, infrastructure and property investment slowed since the second half of 2021 due to significant fiscal policy tightening and property and financial market downturns.

The performance of other economies was generally positive

Real GDP in the Latin American (LA) region recorded positive outturns during the fourth quarter of 2021, mainly due to the gradual removal of domestic restrictions and increased demand for goods and services. Moreover, economic growth rebounded in 2021 due in part to higher commodity prices. Commodity prices remained elevated in early 2022 and are likely to adversely affect growth in regional import-dependent economies compared to commodity exporters.

The global recovery is expected to continue in 2022 but at a slower speed, while inflation is expected to rise. However, recent developments are likely add to these challenges in 2022. Forecasts by the IMF in its April 2022 WEO point to a slower pace of global recovery of 3.6 per cent for 2022 and 2023 **(Chart 1.1)**. The latest forecasts represent a 0.8 and 0.2 percentage points downward revision for 2022 and 2023, respectively, from the Fund's January 2022 WEO Update. The revisions primarily reflect the direct impact of the Russia-Ukraine war and spillovers on the global economy.

On February 24, 2022, long-standing geopolitical tensions between Russia and Ukraine came to a tipping point when Russian military forces invaded Ukraine. The US[1] crafted a large-scale sanctions package, which includes a shut-down of access to key technology required by the Russian military and industrial sectors. Also, European leaders approved international sanctions[2],[3], including restrictions on the use of global financial services and prohibitions on the use of foreign-held reserve assets by the Central Bank of Russia. This fluid situation is unfolding at a delicate time when the world economy is progressing from the socio-economic challenges brought on by the COVID-19 pandemic and threatens to exacerbate pre-existing financial and economic scars.

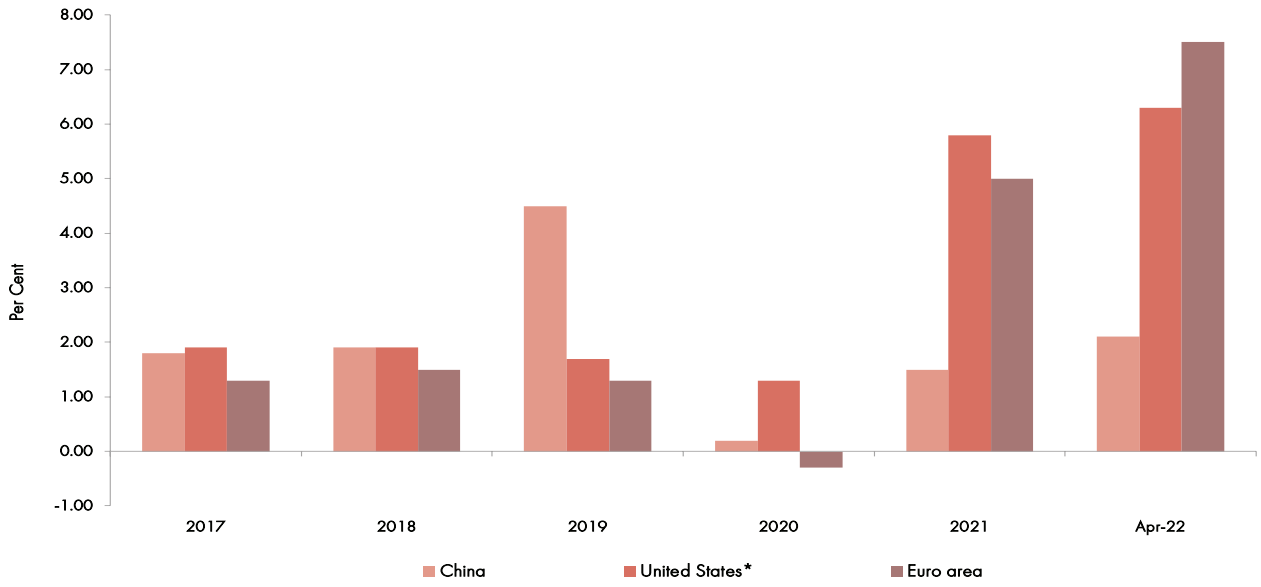
Global inflation is on the rise

In the US, inflation, as measured by the Personal Consumption Expenditure (PCE) price index, was recorded at 6.3 per cent (year-on-year) in April 2022, pushed by higher energy and food prices (Chart 1.2).

CHART 1.2

Selected Economies: Headline Inflation

(Year-on-Year Per Cent Change)



Source: Bloomberg
* PCE Price Index

1 CNN politics. 2022. How significant are the US sanctions on Russia? [Accessed February 25, 2022] https://edition.cnn.com/2022/02/24/politics/joe-biden-ukraine-russia-sanctions/index.html

2 European Commission. 2022. Press statement by President von der Leyen on Russia's aggression against Ukraine. [Accessed February 24, 2022] https://ec.europa.eu/commission/presscorner/detail/en/STATEMENT_22_1322

3 Baczynska, Gabriela, Siebold, Sabine. 2022. EU imposes sanctions on Putin as Ukraine pleads for tougher action. Reuters. [Accessed February 25, 2022] https://www.reuters.com/business/finance/eu-says-sanctions-target-70-russian-banking-market-2022-02-25/.

Similarly, in the Euro Area, inflation soared to 7.4 per cent (year-on-year) in April 2022, largely driven by high energy and food prices and supply bottlenecks and the normalisation of demand as economies reopen. Higher consumer prices in the LA region, particularly for food and energy products, were attributed to higher import costs from ongoing supply chain challenges and the pass-through of currency depreciation. Additionally, the spillover effects from the Russia-Ukraine conflict are anticipated to result in further inflationary pressures in the LA region, leading to continued monetary policy tightening. Brazil recorded its eighth consecutive month of double-digit inflation, which climbed to 12.1 per cent (year-on-year) in April 2022 as prices accelerated for transport and healthcare.

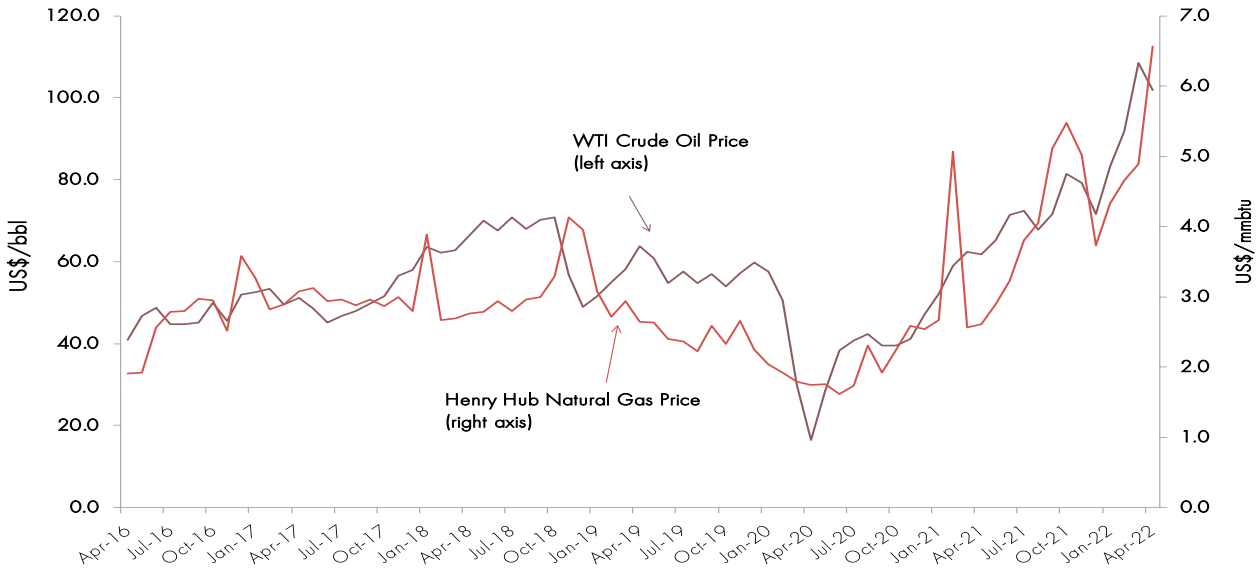
In the Caribbean, inflation in Barbados accelerated by 9.3 per cent (year-on-year) in March 2022 due to a faster rate of price increases in the categories of 'Food and Non-Alcoholic Beverages', 'Transport', 'Restaurants and Hotels,' and 'Housing, Water, Electricity and Gas'. Jamaica's inflation rate was recorded at 11.8 per cent (year-on-year) in April 2022 - the highest since 2010, on faster price increases in 'Food and Non-Alcoholic Beverages,' 'Housing, Water, Electricity, Gas and Other Fuels' and 'Transport'. The above-target inflation reflected higher international commodity prices, increased freight costs and higher pass-through of foreign prices to domestic prices.

Energy prices surged since the Russian invasion of Ukraine

Crude oil prices surged in the first four months of 2022 on the heels of increased demand, driven by the reopening of several economies, coupled with the geopolitical eruption between Ukraine and Russia. West Texas Intermediate (WTI) crude oil prices averaged US$96.28 per barrel over the period, representing a 63.7 per cent increase when compared to the corresponding period of the previous year **(Chart 1.3)**. Meanwhile, Brent crude prices increased 64.0 per cent to an average of US$101.37 per barrel. Following the Russian invasion of Ukraine on February 24, 2022 spot crude oil prices jumped significantly, reaching above US$120.00 per barrel, before slowly easing toward the end of April. In response to the increased prices, the International Energy Agency (IEA), on March 1, 2022 agreed to release 60 million barrels of oil from their emergency stockpiles. Additional supplies also came from OPEC+, which maintained its supply increase schedule of 400 thousand barrels per day (b/d) each month. The group, which includes Russia, asserted that no oil supply shortage exists despite the Ukraine crisis having placed considerable upward pressure on prices.

CHART 1.3

Natural Gas and Crude Oil Prices



Source: Bloomberg

The US Henry Hub natural gas price averaged US$5.11 per million British Thermal Units (mmbtu) over the same period, representing a 58.3 per cent increase (year-on-year). Natural gas prices were supported by high demand for US-produced liquefied natural gas to facilitate power generation, given the surge in crude oil prices amid the ongoing tensions in Eastern Europe. Colder than average winter conditions also increased US domestic demand for heating purposes. This facilitated a drawdown on stockpiles which helped to place further upward pressure on prices. The increased natural gas prices were transmitted to other commodity prices, notably ammonia (237.1 per cent), urea (127.8 per cent) and methanol (21.7 per cent). Ammonia and urea prices were also supported by tight global supply, given the tensions between major producers, Russia and Ukraine. Russia is a major supplier of fertilisers globally, with much of its products shipped from the Ukrainian port of Odessa. The ongoing conflict has resulted in the closure of Russian pipelines leading to the port. The tightening of supply has placed upward pressure on fertiliser prices. Furthermore, Russia banned exporting selected ammonia products until May 2022. This measure has further tightened supply as Russia is the second-largest exporter of ammonia globally.

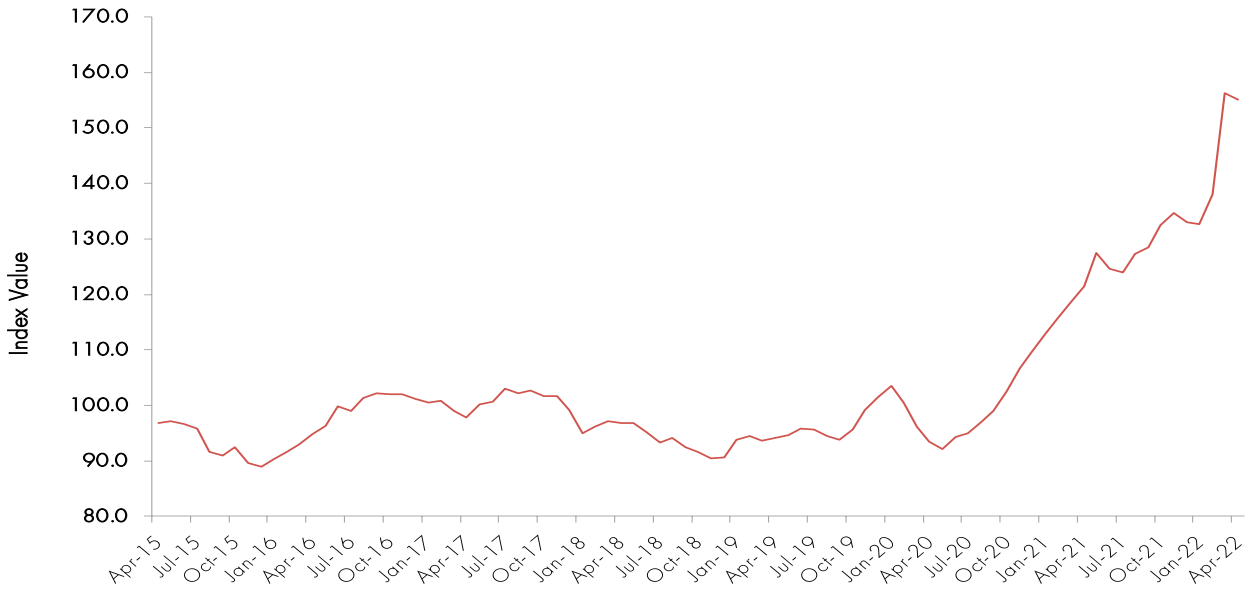
Global food prices retreated slightly in April 2022 after hitting a record monthly high in March amid the Ukraine war

The FAO Food Price Index (FPI) averaged 155.0 points in April 2022, down 0.8 per cent from March 2022, but 27.7 per cent higher than the corresponding month last year (Chart 1.4). This was the FPI's highest monthly level since its inception in 1990. The

recent monthly decline reflects a significant downturn in vegetable oils and a slight fall in cereal prices. Meanwhile, meat, sugar and dairy products prices continued to record significant increases. The FPI increased at an average of 23.9 per cent over the six months ending April 2022.

CHART 1.4

FAO Real Monthly Food Price Index



Source: Food and Agriculture Organisation
Note: 2014-2016=100

Global Financial Conditions

Financial markets faced the effects of monetary tightening and challenges from volatility in the commodity markets

Amid improving economic conditions and inflation well above its average 2.0 per cent target, the US Fed began unwinding its accommodative monetary policy stance. The federal funds target range was increased to 0.75 to 1.00 per cent (from 0.25 to 0.50 per cent) in May 2022, the second rate hike since 2018. The Fed also announced that effective June 1, 2022 it will begin reducing its holdings of Treasury securities and agency mortgage-backed securities in response to movements in its key objectives for inflation and the labour market. The Fed indicated that it will shrink its holdings of Treasury securities by US$30 billion and mortgage-backed securities by US$17.5 billion per month from June to August. From September, the reduction in asset holdings will increase to US$60 billion and US$35 billion for treasury securities and mortgage-backed securities, respectively. Central banks in other major economies pursued similar policy actions of raising interest rates to curb rising inflationary pressures, but not by the same amount as the Fed.

Despite elevated inflation, the European Central Bank (ECB) kept its benchmark interest rate on the main refinancing operations unchanged at 0.0 per cent in April 2022. The ECB indicated that the increases in inflation placed the Bank on course for the first rise in interest rates in ten years sometime during the third quarter of 2022. Further, based on an updated assessment, the ECB indicated that asset purchases under its Assets Purchases Programme (APP) should also be concluded in the third quarter of 2022[4].

In contrast, the Bank of Japan (BoJ) continued its Quantitative and Qualitative Monetary Easing (QQE) programme to support the economy and achieve the price stability target of 2.0 per cent. In that context, the BoJ maintained its key short-term interest rate at -0.1 per cent at its April 2022 meeting. The BoJ reiterated that it will introduce extra easing measures if needed to achieve its target. Also, the People's Bank of China (PBoC) loosened monetary policy[5]. After holding its key policy rates for most of 2021, the PBoC loosened monetary policy to support economic activity and ease financial stress triggered by the liquidity crunch among some highly indebted real estate companies. In its first adjustment to the benchmark interest rate since April 2020, the PBoC reduced its one-year loan prime rate (LPR) by five basis points to 3.80 per cent in December 2021 and lowered the Reserve Requirement Ratio (RRR) by 50 basis points to a weighted average of 8.4 per cent for financial institutions. Subsequently, in January 2022, the PBoC lowered both the one-year and five-year LPRs by 10 basis points and 5 basis points to 3.70 per cent and 4.60 per cent, respectively. At the March and April 2022 meetings, the positions were maintained, with the PBoC reaffirming its commitment to remain accommodative to support the economy.

Several LA central banks continued to tighten their monetary policy stance during the first five months of 2022 to rein in above-target inflation. Against the backdrop of increased economic activity, concerns over rising inflation, global supply disruptions, and expectations of US monetary policy tightening, the Central Banks of Mexico, Chile and Peru raised their benchmark interest rates in consecutive meetings during the period January to May 2022[6].

Financial vulnerabilities continue to impact macro-financial conditions, as highlighted in the IMF's April 2022 Global Financial Stability Report (GFSR). The war and international sanctions against Russia can adversely affect the robustness of the global financial system via several transmission channels such as direct and indirect exposures of the banking and non-banking sectors, market disruptions, funding and liquidity stresses, heightened use of crypto assets and cyber risks. The GFSR also recommended that policymakers design a framework that fosters more effective oversight of financial

4 In March 2022, the ECB indicated that monthly net purchases under the APP would amount to €40 billion (US$44 billion) in April, €30 billion (US$33 billion) in May and €20 billion (US$22 billion) in June.

5 Central Bank inflation target rates and ranges for selected emerging market and developing economies: China (3.0 per cent), Brazil (4.0 +/-1.5 per cent), and Russia (4.0 per cent).

6 More specifically, in March 2022 the Bank of Mexico raised its benchmark interest rate by 50 basis points to 6.5 per cent for the second time this year, bringing borrowing costs to its highest since March 2020. Meanwhile, the Central Bank of Chile raised its interest rate by 150 basis points to 7.0 per cent in March 2022, representing the second straight interest rate hike in 2022 for the central bank. More recently, in April 2022, the Central Banks of Peru and Colombia also increased their policy interest rates by 50 basis points and 100 basis points, to 4.5 per cent and 6.0 per cent, respectively.

technology (fintech) firms as poor regulation can drive an escalation of risky businesses that can threaten financial stability. There are also rising concerns regarding energy security and possible delays to climate transition plans, given the high dependency on Russian energy exports, especially among European markets. Furthermore, debt sustainability concerns were underscored since global government debt is projected at 94.4 per cent of world Gross Domestic Product (GDP) in 2022. Although debt is lower compared to 2021, levels are still 10.8 per cent higher compared to pre-pandemic levels in 2019.

Advanced economy equity markets face downside risks due to inflationary challenges and monetary policy reversals

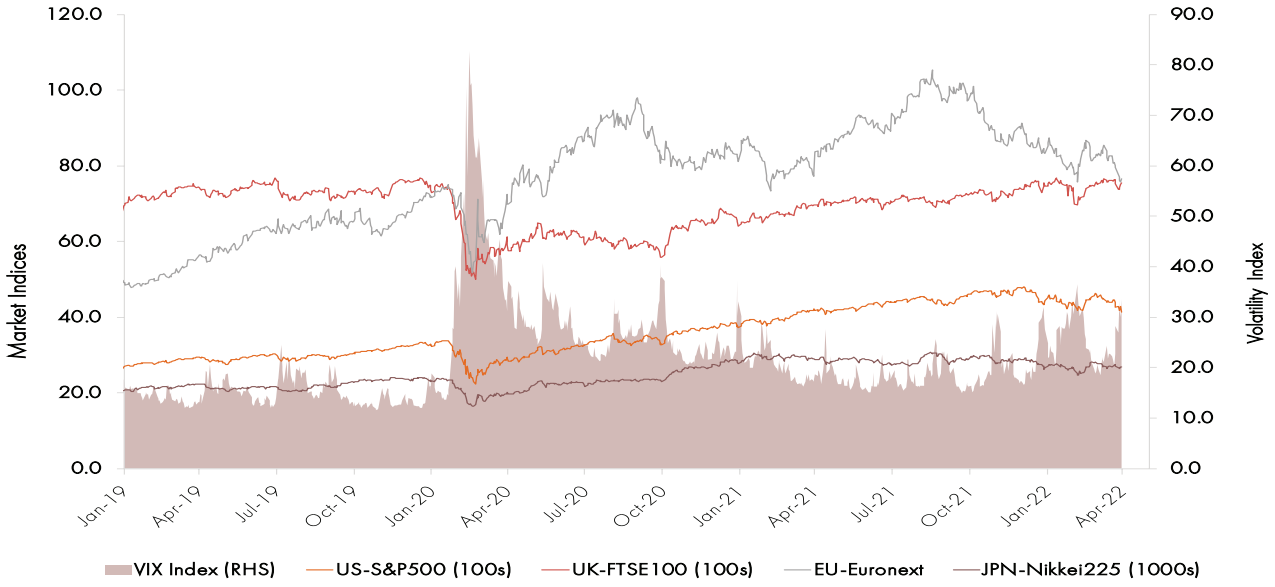
In 2021, monetary policy accommodation fuelled bull market activity, allowing the S&P 500 index to jump by 26.9 per cent, while the UK FTSE 100 index gained 14.3 per cent and the VIX[7] index averaged under the high volatility threshold. Since late 2021 and early 2022 global inflationary pressures encouraged major AEs to begin unwinding accommodative monetary policy positions. A slowdown in global growth alongside surging inflation, prompting fears of stagflation and a possible recession, would challenge AE central banks to balance the task of tightening policy to slow inflation while avoiding worsening downside risks to growth. Although equity returns are generally considered a potential hedge against inflation, over the first four months of 2022, global economic and inflationary challenges resulted in the S&P 500 falling by 13.3 per cent, while the European Euronext and Nikkei 225 declined by 16.0 per cent and 6.8 per cent, respectively **(Chart 1.5).** The downturn in market conditions thus far in 2022 resulted in the VIX index trending back above the high volatility threshold, averaging 25.1 over the first four months of the year.

The market declines reflect investor sentiment that growth in the AEs will likely slow over the near- to medium-term as high inflation weighs heavily on income levels, and as monetary authorities are forced to tighten monetary conditions to combat inflation. Tighter monetary policy in the AEs will continue to push up government bond yields in most developed markets, placing further downside pressures on equity returns and profit margins. Additionally, slowing economic growth and rising labour costs will likely cause corporate profits to be lower than anticipated, placing further downside pressures on AE equity markets.

7 The Chicago Board Options Exchange (CBOE) VIX Volatility Index is a benchmark index used to measure the markets expectation of future volatility. The index is based on option trading of the S&P 500 and is considered a main gauge of US equity market volatility. A level above 20 is considered to be high volatility.

CHART 1.5

Advanced Economies Equity Market Indices



Source: Bloomberg

2. DOMESTIC ECONOMIC ACTIVITY AND PRICES

Pandemic-related undercurrents showed signs of abating following an uptick in energy sector activity during the fourth quarter of 2021, alongside the reopening of many non-energy sector entities. Inflation remained relatively anchored, but several supply-side factors such as high and rising international food prices and international transport delays had notable pass-through to domestic prices. Elevated energy prices and increased external demand set the tone for improved exports.

Recent Economic Developments and Outlook

While domestic economic activity remained constrained, signs of a revival emerged

Signs of a revival in real economic activity were evident. Preliminary estimates suggest that an uptick in energy sector activity during the fourth quarter of 2021 alongside the reopening of many non-energy sector entities offered positive sentiments for the short-term economic outlook. Activity in the energy sector ramped up by 4.6 per cent (year-on-year) during the fourth quarter of 2021. The Central Bank's economic activity estimates suggest that production in the Mining and Quarrying sector improved by 2.7 per cent in the fourth quarter of 2021, mainly on account of better crude oil production (8.8 per cent) alongside marginal improvements in natural gas (0.9 per cent) output. Despite the relative stability of natural gas production over the period, the sector was buoyed by the start-up of bpTT's Matapal project in September 2021. In the Refining sector, activity fell by 0.8 per cent, a notable difference from average declines of 37.6 per cent over the previous three quarters. The slowdown largely reflected a base effect as output from Atlantic LNG Train 1 was significantly reduced in the fourth quarter of 2020 leading up to its ultimate closure at the end of December 2020. Production of liquefied natural gas (LNG) declined 5.1 per cent over the period, while the output of natural gas liquids (NGLs) improved 11.4 per cent. The Petrochemicals sub-sector grew 11.5 per cent (year-on-year) in the fourth quarter of 2021, led by a 24.7 per cent improvement in methanol production over the period. This recent outturn for the Petrochemical sub-sector partially reflected a base effect, as the Atlas methanol facility underwent a six-week planned maintenance programme in the fourth quarter of 2020. Further, output was bolstered by production from the new Caribbean Gas Chemicals Limited (CGCL) facility, which commenced operations in December 2020. Meanwhile, ammonia production improved by 2.4 per cent, while urea production marginally declined (0.5 per cent).

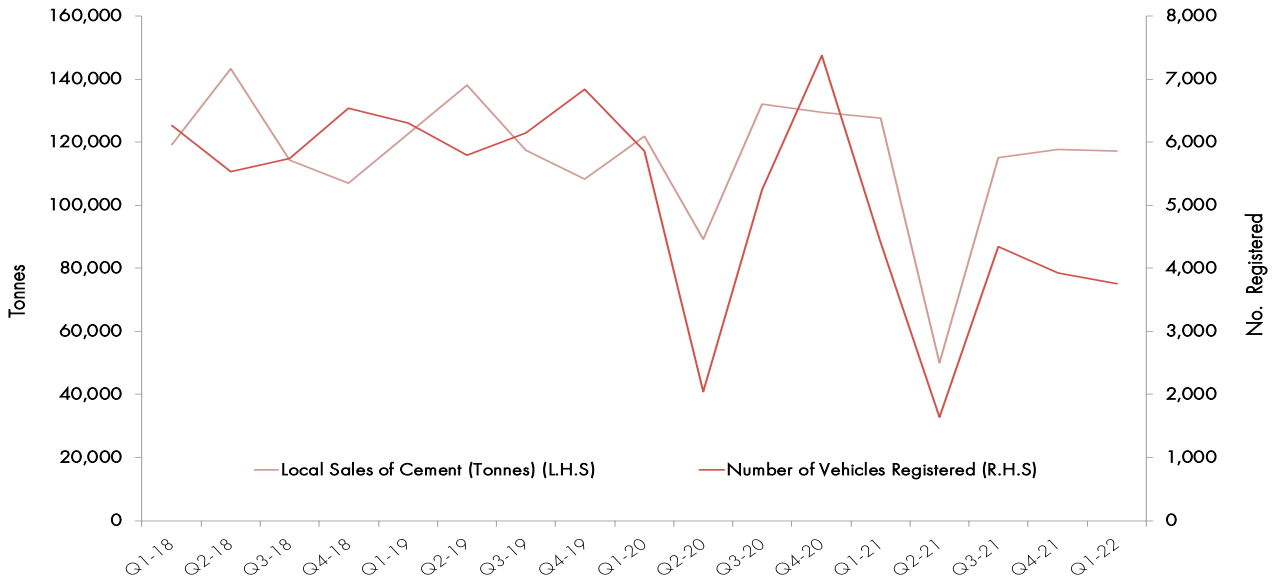
The positive sentiments from the energy sector spilled over into early 2022, with natural gas production in January 2022 measuring 2,877 million standard cubic feet per day (mmscf/d), rising above the average rate achieved in the fourth quarter of 2021. Crude oil production also remained stable, averaging 61,678 barrels per day in January 2022.

Available indicators for the fourth quarter of 2021 point to a non-energy sector that is slowly emerging from the fallout of the COVID-19 pandemic. Though still in decline, the depth of the decreases for many indicators

has become more shallow. Initial estimates, based on the Central Statistical Office's (CSO) Index of Retail Sales, suggest a 7.2 per cent falloff in retail sales activity in the fourth quarter of 2021, led by declines in the Supermarkets and Groceries (16.0 per cent); Motor Vehicles and Parts (12.3 per cent); Textiles and Wearing Apparel (4.4 per cent); and Dry Goods Store (3.4 per cent) sub-indices. The overall decline was tempered by growth in the Construction Materials and Hardware (4.7 per cent) and Household Appliances, Furniture and other Furnishings (2.2 per cent) sub-indices. Meanwhile, local sales of cement, which is used as an indicator of Construction activity, declined 9.0 per cent (year-on-year) in the fourth quarter of 2021 **(Chart 2.1).** Activity in the Financial and Insurance Activities sector contracted on account of a decline in the insurance sub-sector, given a falloff in new premiums.

CHART 2.1

Non-Energy Indicators (Cement Sales, Vehicle Registrations)



Source: Central Bank of Trinidad and Tobago

The favourable performance in some sectors helped to temper the decline in activity in other sectors. The Transportation and Storage sector continued to show signs of recovery in the fourth quarter of 2021, with indicators pointing to an increase in activity. Activity in the sector reflected an increase in international travel as the country's borders were reopened in July 2021. Manufacturing (excluding refining and petrochemicals) improved, while activity in the Electricity and Water (Excluding Gas) sector is estimated to have risen slightly over the period. An increase in food production drove activity in the Manufacturing sub-sector. Capacity utilisation rates increased to 66.3 per cent

in the Manufacturing sector in the fourth quarter of 2021 compared to 60.7 per cent in the previous quarter. Meanwhile, activity expanded marginally in the Real Estate sector in the fourth quarter of 2021 compared to the corresponding period of 2020.

Domestic energy sector performance may improve over 2022, given the expectations for commodity prices to remain elevated over the year. However, in terms of the non-energy sector, inflation has the potential to cut into the value of real incomes, adversely affecting consumption activity. Furthermore, aggregate demand may remain tempered owing to a 'hysteresis[8]' effect related to sluggish employment conditions following the pandemic.

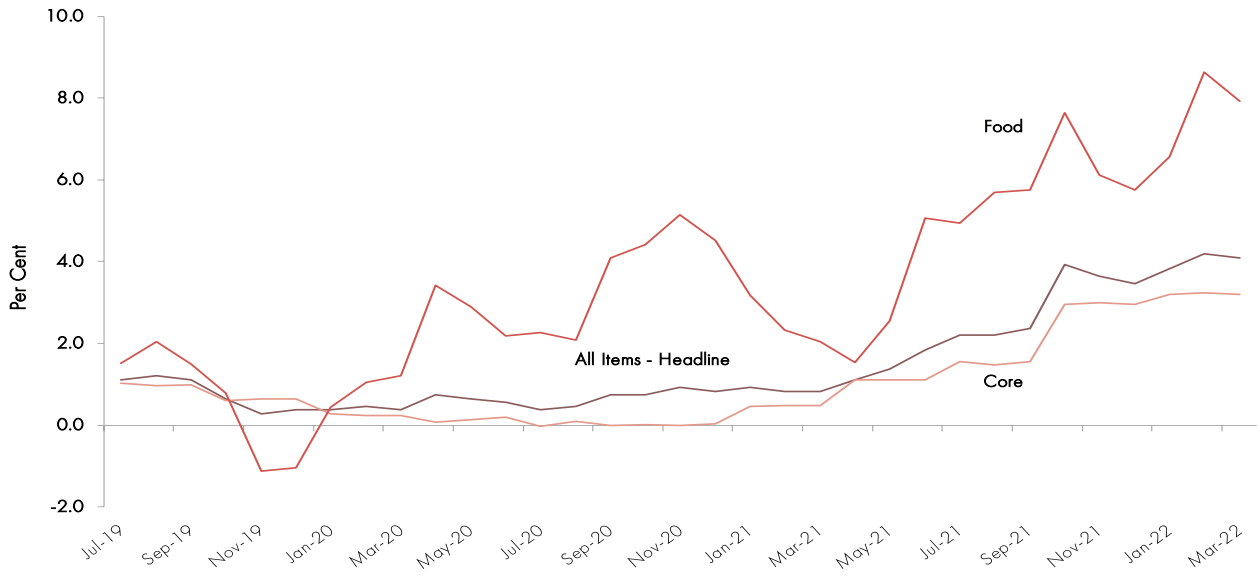
Inflation remained relatively anchored, but several supply-side factors are presenting upside risks

Inflation remained relatively anchored over October 2021 to March 2022 due to relatively muted economic activity. However, supply-side factors such as an acceleration in international food prices, higher shipping costs and logistical delays had notable pass-through to the domestic price environment. Data from the CSO showed that headline inflation edged upwards over the period, moving from 3.9 per cent (year-on-year) in October 2021 to 4.1 per cent in March 2022. Core inflation, which omits the volatile food component, increased slightly over the period moving from 2.9 per cent in October 2021 to 3.2 per cent in March 2022. Meanwhile, food inflation showed some volatility over the period. Food inflation moved from 7.6 per cent in October 2021 to 5.7 per cent in December following the removal of VAT on several essential products, but regained momentum in early 2022 measuring 7.9 per cent in March **(Chart 2.2)**.

CHART 2.2

Retail Price Index

(Year-on-Year Per Cent Change)



Source: Central Statistical Office

8 In economics, the term hysteresis is usually applied to describe the situation where employment does not fully revert to its previous level after a disturbance. It thus describes the 'permanent' losses to capacity following deep or prolonged shocks to employment.

Core inflation remained relatively stable over the six-month period, averaging 3.1 per cent, as faster price increases in some categories were tempered by slower growth in others. Faster price increases were recorded in the clothing, housing, furnishings, communication and the restaurants and hotels sub-indices. The accelerated prices in the communication sub-index (3.1 per cent in March 2022) were driven by price increases for telephone and internet services. This followed an increase in rates announced by Digicel in the second half of 2021. Meanwhile, higher food and drink costs facilitated faster price rises in the restaurants and hotels sub-index (2.2 per cent in March 2022), while the higher imputed rental cost of homeownership facilitated faster growth in the housing sub-index[9] (6.7 per cent in March 2022). The clothing and footwear sub-index registered its first price rise in almost five years (0.7 per cent in March), driven by increases in the cost of ready-made men's clothing. Acceleration in these sub-indices was tempered by a slower price increase in the transport sub-index (2.2 per cent in March 2022) due to a moderation of price rises for foreign-used vehicles, as well as a decline in the recreation and culture sub-index (-2.6 per cent in March 2022) on account of reductions in the price of tours and foreign vacations.

Domestic food inflation averaged 7.1 per cent over the period, declining from 7.6 per cent in October 2021 to 5.7 per cent in December before peaking at 8.6 per cent in February 2022 and settling at 7.9 per cent in March 2022. Higher prices largely reflected influences from the external environment, such as higher international food prices, logistical delays and higher shipping costs. Price movements reflected faster price increases in March 2022 in the bread and cereals (7.2 per cent); meat (12.4 per cent); fish (6.3 per cent); milk, cheese and eggs (5.9 per cent); and fruit (13.3 per cent) sub-indices compared to October 2021. Conversely, slower price increases were recorded for the butter, margarine and edible oils (8.3 per cent); vegetables (10.1 per cent); food products N.E.C.[10] (4.7 per cent); and sugar, jam and other confectionery (4.8 per cent) sub-indices. Despite pressures from the external environment, further acceleration in prices were somewhat tempered by the removal of Value Added Tax (VAT) on several essential food items effective November 2021.

As measured by the CSO's Producer Price Index (PPI), producer prices remained relatively muted in the third quarter of 2021, measuring 0.7 per cent (year-on-year), compared to 0.6 per cent in the previous quarter. This suggested that producer prices had little influence on retail prices. The PPI highlighted that prices in the assembly-type and related industries sub-index accelerated 0.2 per cent in the third quarter of 2021 compared with remaining flat in the previous quarter. The uptick in prices reflected growth in the metal building materials sub-index. Price movements in all other sub-indices mirrored that of the previous quarter. Price changes in the food processing sub-index held steady at 0.1 per cent, while drink and tobacco price increases remained unchanged at 2.8 per cent.

The Index of Retail Prices of Building Materials slowed to 11.9 per cent (year-on-year) during the first quarter of 2022,

9 Housing, Water, Electricity, Gas and Other Fuels.
10 Not elsewhere classified.

compared to 13.7 per cent during the previous quarter. Movements in the index continue to reflect elevated steel prices, which have persisted throughout the pandemic. International prices for billets increased 18.3 per cent in the first quarter of 2022, while wire rod prices increased 21.1 per cent. Slower price increases were noted in most sub-indices compared to the previous quarter, notably walls and roof (13.3 per cent), electrical installation and fixtures (13.4 per cent), and plumbing and plumbing fixtures (9.1 per cent). Meanwhile, faster price increases were noted in the site preparation, structure and concrete frame (10.1 per cent) and finishing, joinery units, painting and external works (12.7 per cent) sub-indices. Price movements in the windows, door and balustrading sub-index held steady compared to the previous quarter (5.6 per cent).

Elevated energy prices and increased external demand boosted the country's exports[11], but fuel imports also rose

Export earnings are estimated to have more than doubled, rising by 101.0 per cent (year-on-year) to US$3,384.4 million over the final quarter of 2021, mainly reflecting higher energy exports. Buoyed by climbing energy commodity prices, energy exports increased by US$1,723.7 million to US$2,839.1 million **(Chart 2.3)**. In particular, crude oil prices averaged US$77.34 per barrel over the last three months of 2021, compared to US$42.56 per barrel in the comparative period of 2020[12]. On a year-on-year basis, increases were recorded across all energy commodity exports – petrochemicals (199.5 per cent), gas (140.8 per cent), and petroleum crude and refined products (98.6 per cent). Concurrently, non-energy exports registered a modest decrease of 4.1 per cent (year-on-year) to reach US$545.3 million. Notably, the lower non-energy export earnings corresponded to a decline in machinery and transport equipment exports.

At the same time, total imports grew by 20.8 per cent (year-on-year) to US$1,700.6 million, in line with elevated international commodity prices and the reopening of particular sectors in the domestic economy through the implementation of the 'TT Safe Zones' initiative, which included restaurants, bars, casinos and cinemas, among others[13]. The value of fuel imports grew by 85.5 per cent (year-on-year) to US$377.6 million, largely owing to the upward trajectory in fuel prices. Non-energy imports were marginally higher (9.8 per cent) at US$1,323.0 million as domestic demand recovered at a measured pace. Trinidad and Tobago's main trading partner, the US, remained the main source market for imports, followed by China and the European Union – other traditional import markets.

11 Exports and imports are reported on a FOB (Free on Board) basis. Energy exports include exports of petroleum, petroleum products and related materials and petrochemicals exports.

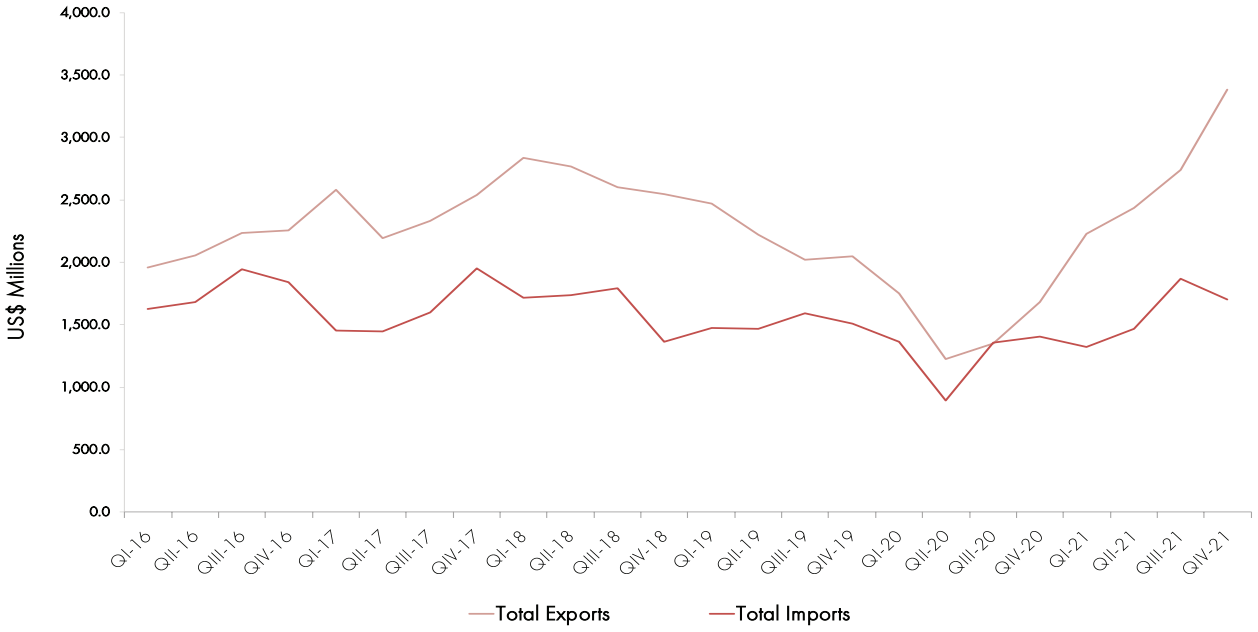
12 Similarly, natural gas prices recorded an uptick from an average of US$2.46 per mmbtu over the period October to December 2020 to an average of US$4.74 per mmbtu over the comparative period of 2021.

13 See Figure 1 COVID-19 Public Health Measures (August – December 2021) in the Economic Bulletin January 2022.

Over the first quarter of 2022 exports and imports will likely rise, albeit at an uneven pace. Export earnings are anticipated to inch up in the first quarter of 2022 on account of a pickup in domestic energy production and higher international commodity prices. Similarly, imports are projected to increase, albeit lower than the growth in export receipts, due to the reopening of the domestic economy, which is expected to add buoyance to import demand.

CHART 2.3

Trends in Exports and Imports



Source: Central Bank of Trinidad and Tobago
* Energy goods data comprise estimates by the Central Bank of Trinidad and Tobago.

3. DOMESTIC FINANCIAL CONDITIONS

Despite a decline in excess liquidity and the occurrence of some interbank and Repo market activity, overall liquidity remained ample, ensuring an uninterrupted supply of credit to the economy. Consolidated private sector credit improved, driven by renewed growth in business credit and stable growth in real estate mortgage lending. However, consumer credit continued to drag as labour market conditions remained relatively weak. Within the foreign exchange market, the supply of foreign currency observed a notable increase, driven by higher energy sector conversions. The longer-term yields on the Government yield curve continued to be influenced upwards by sovereign fundamentals and higher inflation expectations, while the decline in excess liquidity placed upward pressures on short-term yields. Influenced primarily by US monetary policy, the US/TT 91-day Treasury bill interest rate differential turned negative in March 2022, and the 10-year differential narrowed significantly.

Liquidity Conditions and Interest Rates

Financial system liquidity remained supportive

Liquidity levels in the financial system decreased from November 2021 to April 2022. Fiscal operations, usually the main driver of excess liquidity, resulted in net withdrawals of $2,042.9 million over November 2021 to April 2022 compared to withdrawals of $1,312.6 million in the same period one year earlier. After a long period of neutrality in 2021, Open Market Operations (OMOs) resulted in net redemptions of $228.0 million over November 2021 to April 2022. OMOs remained neutral over the same period one year earlier. Also, the Bank's foreign exchange sales to authorised dealers indirectly removed $4,009.5 million from the system, compared to $4,246.4 million in the same period a year earlier. Thus, daily average excess liquidity declined to $3,905.1 million by April 2022, compared to $7,729.7 million in November 2021 **(Chart 3.1)**.

Daily interbank borrowing averaged $43.3 million over November 2021 to April 2022, compared to $5.6 million over the same period a year prior. Commercial banks accessed the Central Bank's Repurchase Facility for a daily average of $3.3 million over November 2021 to April 2022, though this activity was clustered around late December 2021 and early January 2022. There was no Repo activity in the same period a year prior.

Short-term interest rates edged upward in late 2021 into early 2022. Concurrent with declining liquidity over the period, the TT 91-day OMO Treasury Bill rate increased by 11 basis points to 0.43 per cent over November 2021 to April 2022. Policy tightening in the US resulted in increased yields on US short-term instruments. The US 91-day short-term benchmark yield reached 0.85 per cent by the end of April 2022, from 0.05 per cent in November 2021. As a result, the TT-US 91-day differential deteriorated to -42 basis points in April 2022 compared with 27 basis points in November 2021 **(Chart 3.2).** The TT 1-year Treasury rate increased by 31 basis points over the reference period, settling at 0.71 per cent in April 2022. The US 1-year Treasury rate rose by 186 basis points over November

2021 to April 2022 to reach 2.1 per cent. The movements resulted in a TT-US 1-year differential of -139 basis points in April 2022, from 16 basis points in November 2021.

The US 10-year Treasury rate trended upward over November 2021 to April 2022, gaining 146 basis points to reach 2.89 per cent. This movement in the rate mainly reflected increasing concerns about inflationary conditions and tightening monetary policy. The TT 10-year Treasury rate declined by 1 basis point over the period to reach 4.98 per cent, resulting in a narrowing of the 10-year yield differential by 147 basis points to 209 basis points over the period.

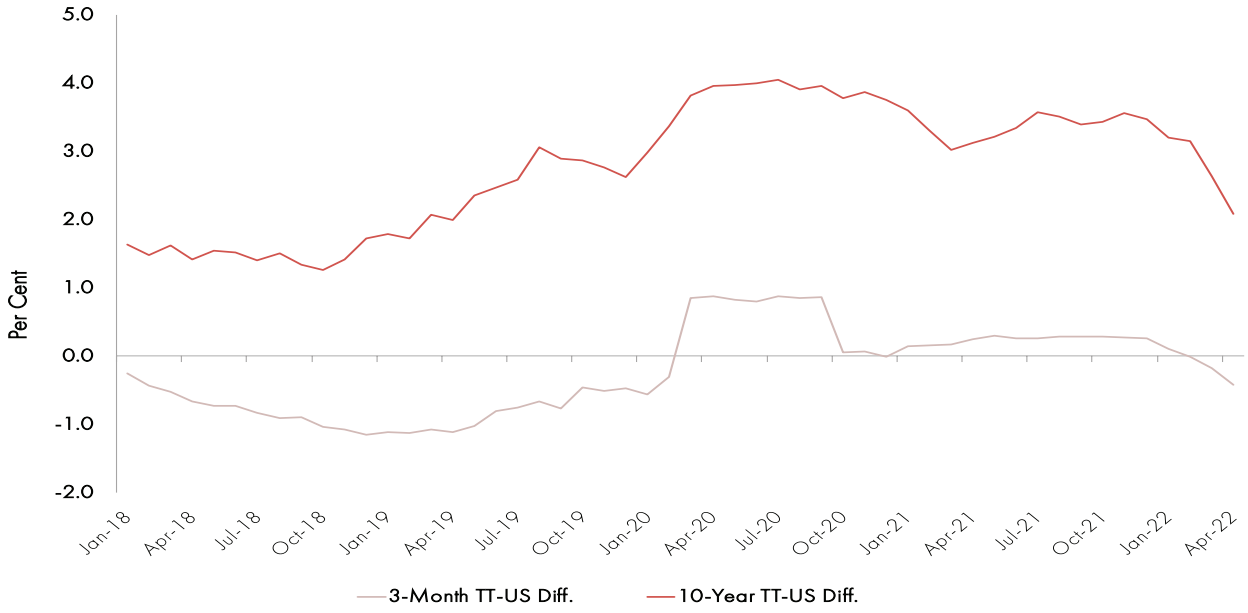
CHART 3.1

Commercial Banks - Excess Reserves

Source: Central Bank of Trinidad and Tobago

CHART 3.2

3-Month and 10-Year TT-US Differentials



Source: Central Bank of Trinidad and Tobago

Commercial banks' interest rates and associated interest spreads declined further in early 2022. The commercial banks' weighted average lending rate (WALR) reached 6.93 per cent in March 2022, 11 basis points lower than in September 2021. Liquidity remained ample despite a declining trajectory, and the resultant lowered lending rates may have contributed to a nascent recovery of private sector credit. The weighted average deposit rate tends to be sticky, and remained at 0.58 per cent over the same period. As a result, the banking interest rate spread decreased by 11 basis points over September 2021 to March 2022 to reach 6.35 per cent. With respect to other measures of profitability, return on assets for commercial banks increased from 1.8 per cent to 2.2 per cent between September 2021 and March 2022. Return on equity increased from 15.0 per cent to 17.2 per cent over the period, whereas interest margins-to-gross income decreased from 66.2 per cent to 63.9 per cent. Over September 2021 to March 2022, non-interest income-to-gross income of commercial banks increased from 33.8 per cent to 36.1 per cent. The commercial banks' median prime lending rate declined from 9.25 per cent in February 2020 to 7.50 per cent in March 2020 after policy measures to address COVID-19 were implemented and has since remained at this level. Thus far, over the reference period, the interbank borrowing rate remained unchanged at 0.50 per cent.

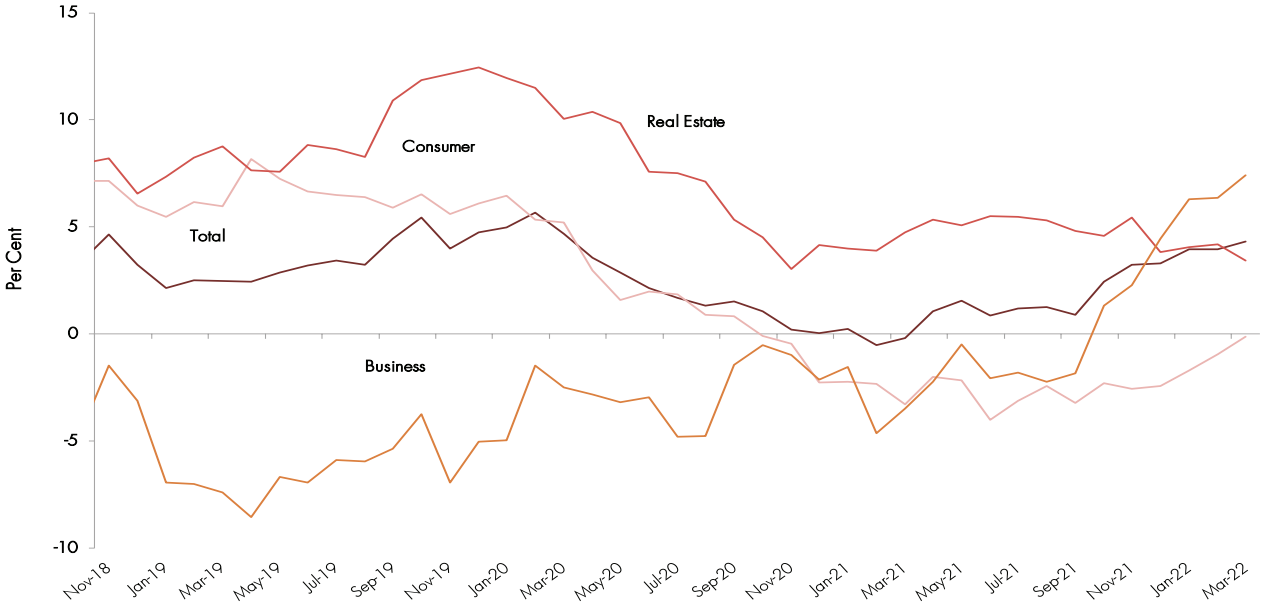
Private Sector Credit

Private sector credit shows signs of recovery

Bright spots in the domestic credit market emerged when COVID-19 related limitations loosened toward the end of 2021. Consolidated system credit increased by 4.3 per cent (year-on-year) in March 2022, compared to a decline of 0.2 per cent one-year prior **(Chart 3.3).** A rebound in business lending in October 2021, and an ongoing rise in real estate mortgage lending, contributed to the increase in consolidated system credit, but consumer lending continued to drag.

CHART 3.3

Private Sector Credit



Source: Central Bank of Trinidad and Tobago

As pandemic conditions relaxed and business activity re-emerged, business credit recovered further after rebounding in October 2021. On a year-on-year basis, lending to firms increased by 7.4 per cent in March 2022, compared to a fall of 3.5 per cent the previous year. Despite tempered construction activity, loans to the construction industry, which have been growing since the third quarter of 2020, expanded by 17.5 per cent in March 2022. Following four consecutive quarters of contraction, loans to the 'other services[14]' sector increased by 10.5 per cent and 10.9 per cent (year-on-year) in December 2021 and March 2022, respectively, as the economy reopened in the fourth quarter of 2021. Credit to the manufacturing sector expanded by 12.3 per cent in March 2022,

14 Includes personal services, transport services, storage & communication services, hotels and guesthouses services.

after declining throughout 2021, the rise was mainly due to increased lending to the food, drink and tobacco sub-sector. On the other hand, lending to the wholesale and retail trade sectors shrank by 6.9 per cent in March 2022 and, lending to the finance, insurance and real estate slipped into negative territory in December 2021 (1.5 per cent year-on-year) before a rebound in March 2022 (0.2 per cent year-on-year).

Real estate mortgage lending continued to shore up credit growth. On a year-on-year basis, real estate mortgage lending inched up by 3.4 per cent in March 2022 compared to 4.8 per cent one year earlier. Lending for new and existing houses along with land purchase expanded by 1.5 per cent, 6.4 per cent and 1.8 per cent, respectively, in March 2022, compared to 4.6 per cent 6.1 per cent and a decline of 3.1 per cent in March 2021. On the other hand, loans for renovation declined in March 2022 (3.1 per cent).

Conversely, the protracted impact of the pandemic continued to weigh on consumers despite the economy's reopening in the fourth quarter of 2021. On a year-on-year basis, lending to consumers contracted by 0.1 per cent in March 2022, compared to a decline of 3.3 per cent one year earlier. Pandemic-related undercurrents continued to influence consumers' desire and capacity to incur debt, with lending to key loan categories declining year-on-year. Lending for the purchase of motor vehicles, a major loan category accounting for 22.4 per cent of total loans in March 2022, declined by 9.3 per cent. Regulatory forbearance allowed commercial banks to accommodate the restructuring of consumer loan obligations, easing the financial burden on some consumers. As a result, lending for debt consolidation contracted (2.4 per cent).

Additionally, lending for bridging finance and home improvement/renovation rebounded in March 2022 by 4.8 per cent and 1.7 per cent, respectively. On a year-on-year basis, credit card loans expanded by 0.8 per cent in March 2022 following declines throughout 2021. Lending for refinancing - which gives the option for the consumer to access additional funding - and lending for the purchase of land and real estate expanded by 16.9 per cent and 3.2 per cent, respectively.

Foreign currency credit[15] remained weak in 2020 and in early 2021 before turning positive in late 2021, but foreign currency deposits rebounded in early 2021 and strengthened toward the end of the year. The decline in foreign currency credit, which began in 2020 with the advent of the pandemic, persisted into 2021 but turned positive in late 2021. On a year-on-year basis, foreign currency credit expanded by 12.9 per cent in March 2022 compared to a decline of 1.8 per cent one year prior. While credit extended by banks expanded by 15.5 per cent, lending from non-banks contracted by 47.3 per cent. Following consistent declines in early 2021, foreign currency business loans turned around in December 2021 and continued this upward trajectory into 2022. On a year-on-year basis, foreign currency business loans expanded by 12.2 per cent in March 2022 compared to 0.3 per cent

15 Includes loans and investments to resident individuals and businesses.

one year earlier. Businesses and consumers continued to build up deposits resulting in an expansion of foreign currency deposits by 13.5 per cent in March 2022 compared to 0.3 per cent one year earlier. The increase in foreign currency deposits was mainly attributed to an acceleration in business sector deposits, which expanded by 22.1 per cent in March 2022. Economic uncertainty, which may have delayed investment decisions and somewhat improved foreign currency inflows in the latter half of 2021, may have contributed to the build-up of deposits by businesses. Consumer deposits grew by 2.2 per cent in March 2022 compared to 1.1 per cent one year earlier.

The rise in the monetary aggregates observed in 2021 narrowed in 2022. On a year-on-year basis, M1-A, which comprises currency in active circulation plus demand deposits, declined by 2.2 per cent in March 2022 compared to growth of 16.3 per cent one year earlier. Demand deposits contracted by 3.9 per cent in March 2022 compared to an expansion of 14.7 per cent one year earlier when COVID-19 restrictions resulted in a build-up of deposits. M2 also declined by 0.9 per cent in March 2022 compared to a growth of 8.2 per cent in March 2021, mainly on account of contractions in time deposits as savings deposits expanded.

Foreign Exchange Market Developments

Foreign exchange market conditions remained tight, despite higher market supply

The local market for foreign currency remained tight thus far in 2022. Purchases of foreign exchange by authorised dealers from the public amounted to US$1,661.8 million over January to April 2022, an increase of 45.6 per cent relative to the same period a year earlier. Increased purchases followed a 54.7 per cent increase in conversions by energy companies relative to the same period in 2021. For January to April 2022, purchases from the energy sector accounted for 78.6 per cent of total foreign currency purchases over US$20,000 in value.

Sales of foreign exchange by authorised dealers to the public reached US$1,994.5 million over the four months of 2022, an increase of 37.6 per cent relative to the same period a year prior. Based on reported data for transactions over US$20,000, credit cards (30.2 per cent), retail and distribution (23.2 per cent), energy companies (15.3 per cent) and manufacturing firms (7.7 per cent) made up the bulk of foreign exchange sales by authorised dealers to the public. The net sales gap reached US$332.7 million during the period. To support the market, the Central Bank sold US$400.0 million to authorised dealers **(Table 1 and Chart 3.4).**

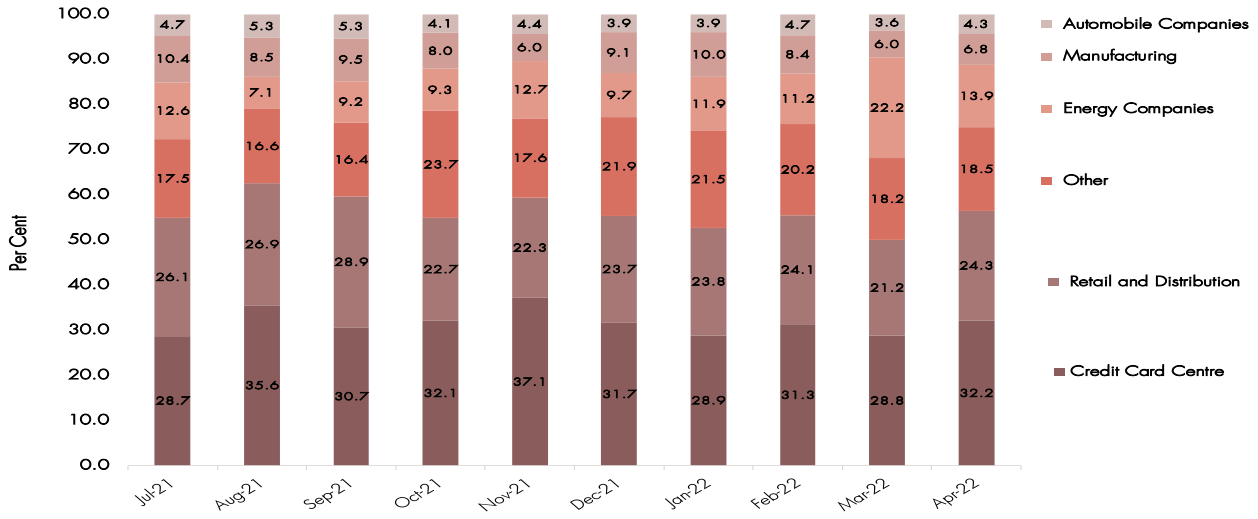
TABLE 1
Foreign Currency Aggregates of Authorised Dealers
(US$ Millions)

Date	Authorised Dealers Purchases from Public	Authorised Dealers Sales to Public	Authorised Dealers Net sales	Authorised Dealers Purchases from CBTT[1]
2016	4,274.7	5,776.8	1,502.1	1,811.6
2017	3,606.9	5,195.3	1,588.4	1,816.0
2018	4,101.4	5,677.4	1,576.0	1,501.0
2019	4,285.6	5,939.8	1,654.2	1,504.0
2020	3,298.2	4,504.1	1,206.0	1,292.2
2021	4,148.9	4,969.4	820.5	1,212.1
Jan - Apr 2021	1,148.5	1,464.0	315.5	412.1
Jan - Apr 2022	1,661.8	1,994.5	332.7	400.0
Y-o-Y Per cent Change	**44.7**	**36.2**	**5.5**	**-2.9**

Source: Central Bank of Trinidad and Tobago

1 Purchases from the Central Bank of Trinidad and Tobago include transactions under the Foreign Exchange Liquidity Guarantee facility, and excludes sales under the EXIM Bank and Other Public Sector provisional facilities.

CHART 3.4
Sales of Foreign Currency by Authorised Dealers to the Public *



Source: Central Bank of Trinidad and Tobago
* Represent sales in excess of US$20,000

Capital Markets

Primary and secondary government bond market activity was substantially lower over October 2021 to March 2022

Provisional data suggests that during the six-month period ending March 2022[16], activity in the primary debt market was notably lower **(Table 2)**. Over the period, only four private placements were observed, financing $3,437.8 million. The Central Government was the primary borrower, raising $3,100.0 million via two issues for budgetary support. One state enterprise financed $37.8 million, and one private enterprise raised $300.0 million. The same period one year prior recorded 16 private placements raising $9,291.8 million.

TABLE 2
Primary Debt Security Activity
(October 2021 to March 2022)[p]

Period Issued	Borrower	Face Value (TT$ M)	Period to Maturity	Coupon Rate Per Annum	Placement Type
Oct-21	Simpsons Finance Trinidad Limited	300.0	6.0 years	Fixed Rate 2.80%	Private
Nov-21	Central Government of Trinidad and Tobago				
	Tranche 1	600.0	4.0 years	Fixed Rate 2.50%	Private
	Tranche 2	800.0	7.0 years	Fixed Rate 4.25%	Private
	Tranche 3	600.0	21.0 years	Fixed Rate 6.55%	Private
Dec-21	Central Government of Trinidad and Tobago				
	Tranche 1	550.0	8.0 years	Fixed Rate 4.60%	Private
	Tranche 2	550.0	15.0 years	Fixed Rate 5.90%	Private
	Telecommunication Services of Trinidad and Tobago Limited (TSTT)	37.8	1.0 year	Fixed Rate 5.00%	Private

Source: Central Bank of Trinidad and Tobago

p Provisional

16 Provisional data suggests that primary debt market activity occurred during the final quarter of 2021, while no activity occurred during the first quarter of 2022.

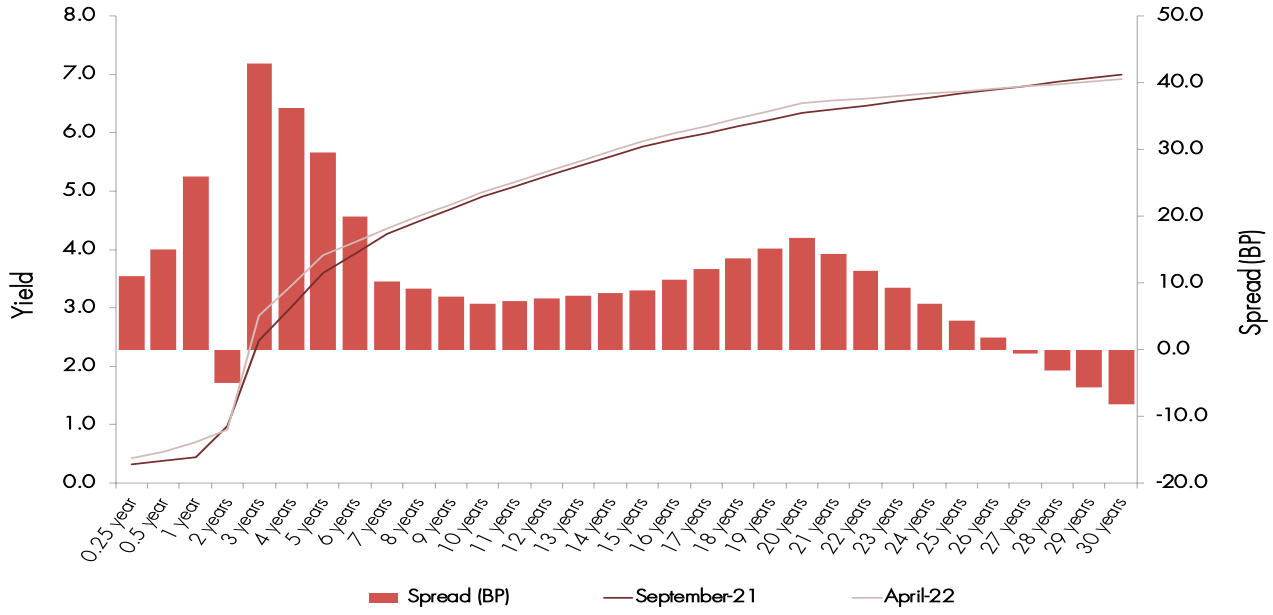
Activity in the secondary government bond market fell substantially during the seven months ending April 2022 compared to the same period one year earlier. Over the period, the market recorded only three trades at a total face value of just $2.0 million. These trades all occurred in October 2021, following which the Trinidad and Tobago Stock Exchange (TTSE) secondary government bond market recorded no trading activity. The reduced activity was likely due to the fall in government activity on the primary bond market and an absence of new publicly issued government bonds available to trade on the secondary market. The same period one year prior recorded 23 trades at a face value of $103.3 million. Conversely, activity in the secondary corporate bond market[17] continued to increase over the seven-month period ending April 2022, recording 223 trades at a face value of $106.7 million, compared to 105 trades at a face value of $39.2 million in the comparable period one year prior. The uptick in trades was likely due to the returns offered and relative safety of these bonds, compared to the low returns offered on commercial bank accounts and most mutual funds.

Reflecting the fall in excess liquidity conditions over the seven months ending April 2022, short- to medium-term rates on the Central Government yield curve steepened marginally (Chart 3.5). The 1-year rate jumped 26 basis points to 0.71 per cent, while the 5-year rate gained 30 basis points to end the period at 3.90 per cent. On the other hand, long-term rates continued to face upward pressures driven by sovereign fundamentals and higher inflation expectations. Over the period, the 10-year rate increased by 7 basis points to 4.98 per cent, while the 15-year increased by 9 basis points to 5.85 per cent.

CHART 3.5

Trinidad and Tobago Central Government Treasury Yield Curve

September 2021 to April 2022



Source: Central Bank of Trinidad and Tobago

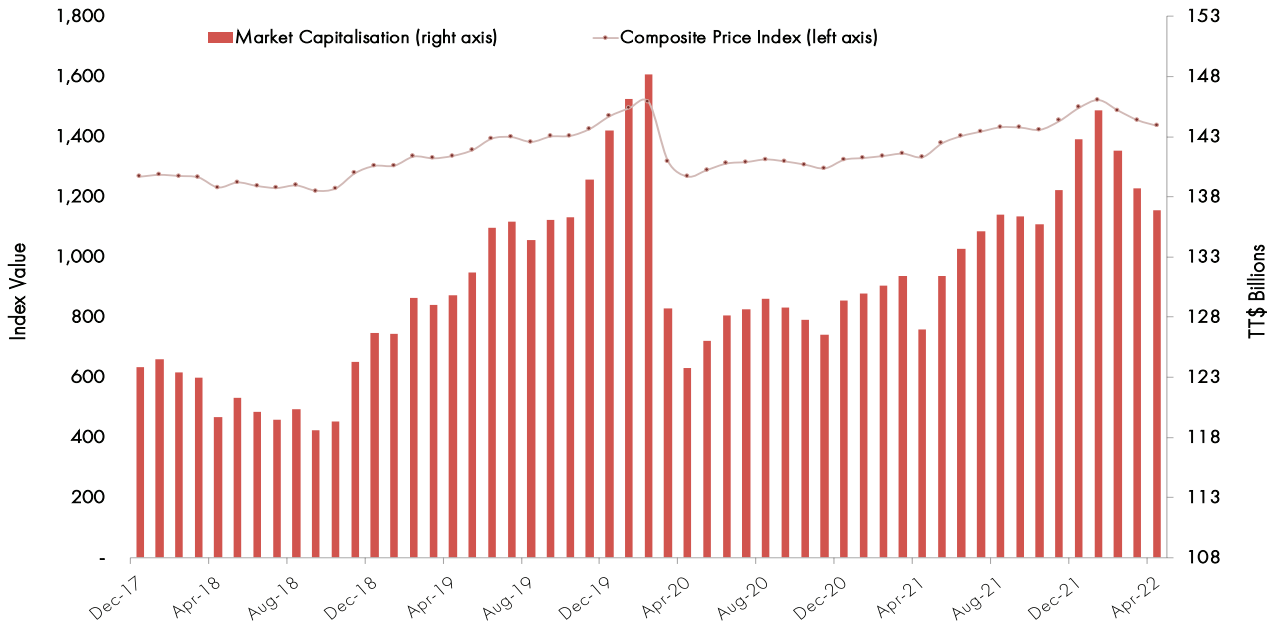
17 Activity on the TTSE corporate bond market records the price and yield movements of the three National Investment Fund Holding Company Limited (NIFHCL) bonds listed in September 2018.

The domestic stock market sustained its recovery, driven primarily by locally domiciled stocks

The domestic stock market recorded stable growth over the six months ending April 2022 **(Chart 3.6).** Over the period, the Composite Price Index (CPI) increased by 0.9 per cent, resulting in a total stock market capitalisation of $136.9 billion ending the period. The market was supported primarily by a 6.9 per cent increase in the All Trinidad and Tobago Index (ATI).

CHART 3.6

Movements in the Composite Price Index and Stock Market Capitalisation



Source: Trinidad and Tobago Stock Exchange (TTSE)

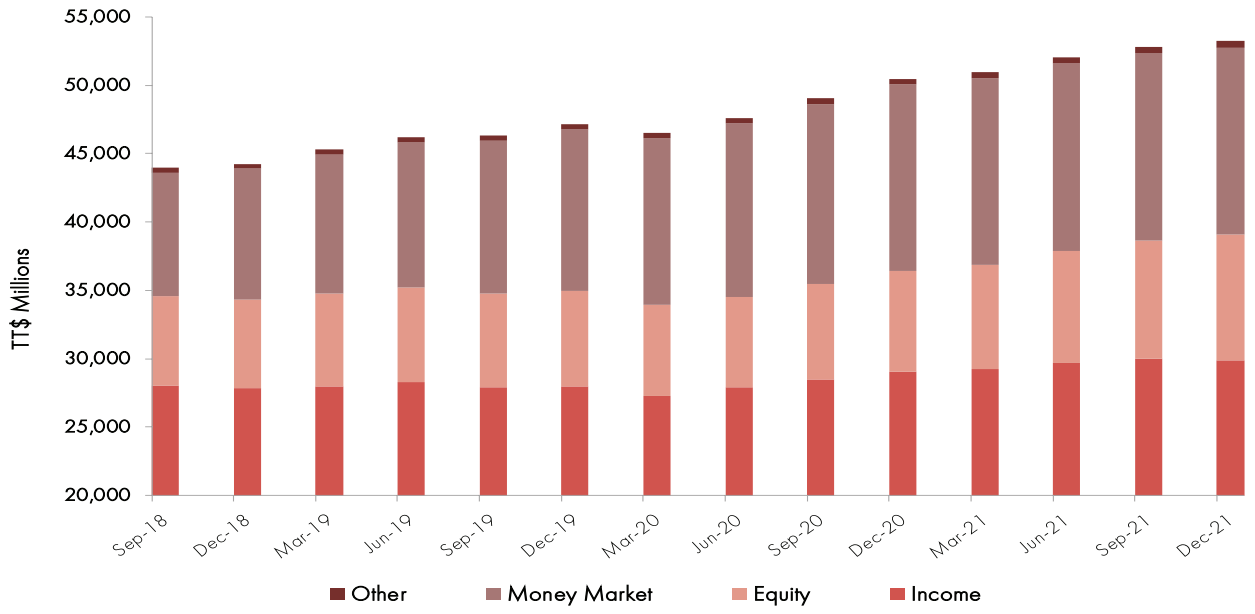
Conversely, the Cross Listed Index (CLI) recorded a decline of 13.5 per cent, reflecting conditions in the regional markets. The primary regional exchanges continued to face challenges, as the Jamaican Stock Exchange (JSE) index recorded a 0.5 per cent slip, while the Barbados Stock Exchange (BSE) index declined by 2.4 per cent over the same period. The resilience of domestic equities may have been supported by the low interest rate and high liquidity environment, which improved the attractiveness of equity market investments.

The domestic mutual funds industry continued to expand over the second half of 2021

Aggregate funds under management[18] expanded by 2.3 per cent to $53,254.7 million[19], driven by growth in most fund types **(Chart 3.7).** Income funds, the most significant component, grew by 0.8 per cent to $29,905.5 million; Equity funds increased by 11.8 per cent to $9,172.6 million; and funds classified as 'Other'[20] registered a 7.4 per cent increase to $478.8 million. However, Money Market funds recorded a negligible decline of 0.2 per cent to $13,697.9 million. In comparison, during the same period one year earlier, aggregate funds under management gained 6.1 per cent, supported by all fund types.

CHART 3.7

Trinidad and Tobago Mutual Funds Under Management by Fund Type



Source: Central Bank of Trinidad and Tobago

Reflecting the performance of local and international equity markets, floating Net Asset Value (NAV) funds witnessed an increase of 6.9 per cent to $15,585.0 million. In comparison, fixed NAV funds gained just 0.6 per cent to $37,669.7 million over the second half of 2021.

Over the same six-month period, the industry observed $879.3 million in net sales. This was primarily driven by $615.9 million in net sales to Equity funds, reflecting the improved performances of domestic and major international stock markets and a drive towards

18 Aggregate funds under management refer to mutual fund information collected by the Central Bank of Trinidad and Tobago, including funds managed by the Trinidad and Tobago Unit Trust Corporation, Royal Bank of Trinidad and Tobago, Republic Bank Limited and First Citizens Bank Limited.
19 As at the end of December 2021, this value accounted for 84.3 per cent of the total industry assets under management as given by the TTSEC CIS data.
20 Other funds represent high yield funds and special purpose funds.

higher yields. Income funds also recorded $293.2 million in net sales, despite $152.4 million in net redemptions from TT dollar income funds. Additionally, Money Market funds observed $38.2 million in net redemptions. Overall, floating NAV funds recorded $651.6 million in net sales while fixed NAV funds logged $227.7 million in net sales, likely due to floating NAV funds providing higher returns during this period.

Collective Investment Scheme (CIS) data[21] from the Trinidad and Tobago Securities and Exchange Commission (TTSEC) confirmed that the mutual fund industry expanded over the second half of 2021.

According to the TTSEC, total assets under management (AUM) increased by 2.8 per cent to $63,164.9 million, supported by total sales of $1,166.8 million over the six-month period. However, over the first two months of 2022, total AUM slipped by 0.6 per cent to $62,762.9 million, likely reflecting changes to the global monetary policy environment.

21 CIS data from the TTSEC represents 75 registered funds from 16 issuers.

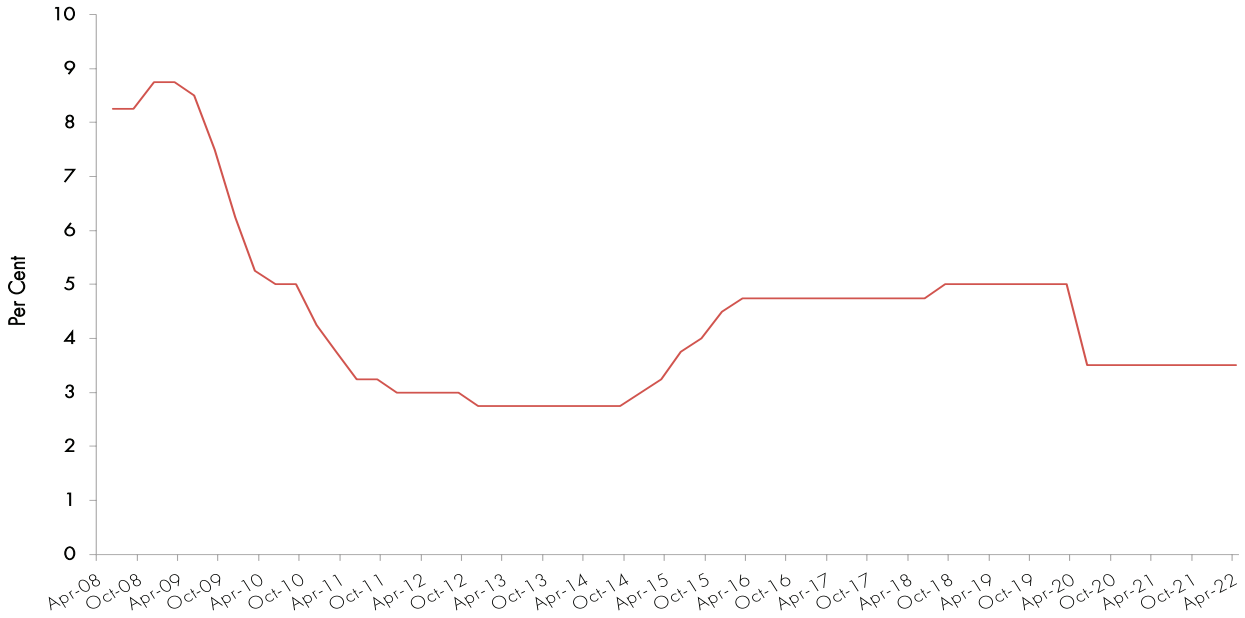
4. MONETARY POLICY ASSESSMENT (NOVEMBER 2021 – APRIL 2022)

The evolution of monetary policy in late 2021 and early 2022 has been primarily focused on supporting domestic economic recovery following the effects of COVID-19 while considering the potential impact of externally-driven inflationary pressures. As the pandemic unfolded, the Monetary Policy Committee (MPC) determined that the optimal set of actions would be to continue facilitating ample system liquidity with the aim of ensuring an uninterrupted supply of credit to the economy. Inflation dynamics and the movement in interest rate differentials may assume greater weight as the year progresses given shifting global economic and financial conditions.

The main policy tool of the Bank is the Repo rate, which has remained unchanged at 3.50 per cent after being lowered by 150 basis points in March 2020 (Chart 4.1).

CHART 4.1

Repo Rate

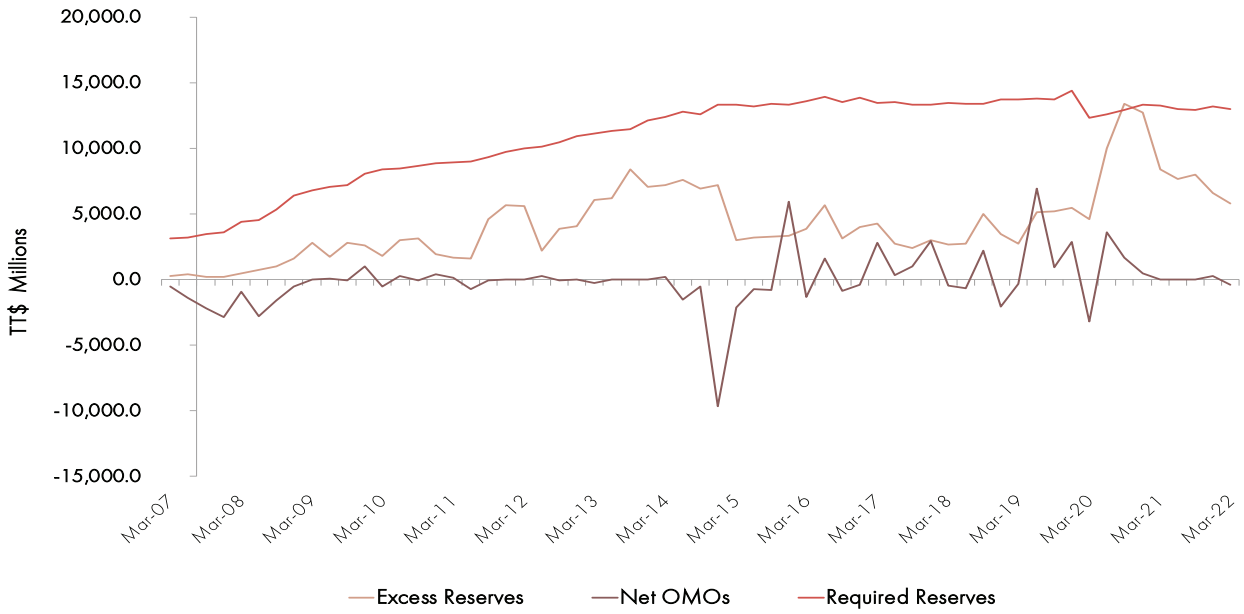


Source: Central Bank of Trinidad and Tobago

The reserve requirement, which targets the creation of narrow money through the money multiplier effect, has remained at 14 per cent since a 300 basis point decline in March 2020. Between June 2020 and April 2022, required commercial bank reserves with the Central Bank have fluctuated around an average of $13 billion, suggesting that narrow money has remained stable since the initial injection after the onset of the pandemic. OMOs, however, tend to affect broader measures of the money supply than the reserve requirement. Large injections via net maturities of OMOs were conducted at the onset of the pandemic. However, after a long period of neutrality from November 2020 to November 2021, OMOs were conducted steadily over December 2021 to April 2022, resulting in a comparatively small net maturity position. Changes in the money supply originating from the reserve requirement and OMOs tend to manifest as changes to excess liquidity. After the onset of the pandemic, the Bank prioritised the amplification of liquidity, and historically high levels were achieved via the management of narrow and broad money channels. While excess liquidity remains elevated, its management has resulted in a reversion to a level closer to historical trends, in the context of an emergent economic recovery and building inflationary pressures **(Chart 4.2).**

CHART 4.2

Liquidity Management



Source: Central Bank of Trinidad and Tobago

Bank lending rates stabilise

Among the wider set of policy actions, including lowering the Repo rate, amplification of liquidity in response to the pandemic was intended to result in lower commercial bank interest rates. With the cut in the Repo rate from 5.00 per cent to 3.50 per cent, commercial banks' WALR declined from 7.52 per cent in March 2020 to 7.04 per cent by September 2021. Ample liquidity conditions resulted in a decline of the WALR to 6.93 per cent in March 2022. The size and direction of the combined effect of the Central Bank's monetary policy tools on commercial banking rates can be related through the interest rate and money supply channels.

Chart 4.3 shows the evolution of the historical forecast error variance decomposition (FEVD) derived from a model[22] estimating the effect of the Repo rate and excess liquidity on the WALR against the WALR itself. When the values of the FEVD are positive, policy exerts pressure on the WALR to increase and vice versa. After March 2020, the combined effect of the monetary policy instruments on the WALR takes negative values, thus exerting pressure on the WALR to decline. This shows that the impetus for lowered commercial banking interest rates during the pandemic period was significantly influenced by monetary policy. This accommodation has facilitated the increase in business credit observed since late 2021. In this regard, careful monitoring of inflation developments becomes paramount as any premature adjustment to monetary policy would have direct consequences for interest rates and ultimately the sustainability of the economic recovery.

Excess liquidity is expected to remain ample over 2022 but will likely settle at levels closer to historical trends. Increased energy revenues are expected to drive improved fiscal conditions. In early 2022, this has already resulted in a tapering of borrowing activity by the Central Government. However, as indicated in the Government's Mid-Year Budget Review, higher energy revenues will translate into increased medium-term expenditure, resulting in increased fiscal injections. In the pre-pandemic era, the Bank generally adopted an accommodative stance with respect to the excess liquidity generated by fiscal injections. However, in the context of looming inflation, there may be a necessity for the Bank to adhere more closely to traditional bounds for liquidity.

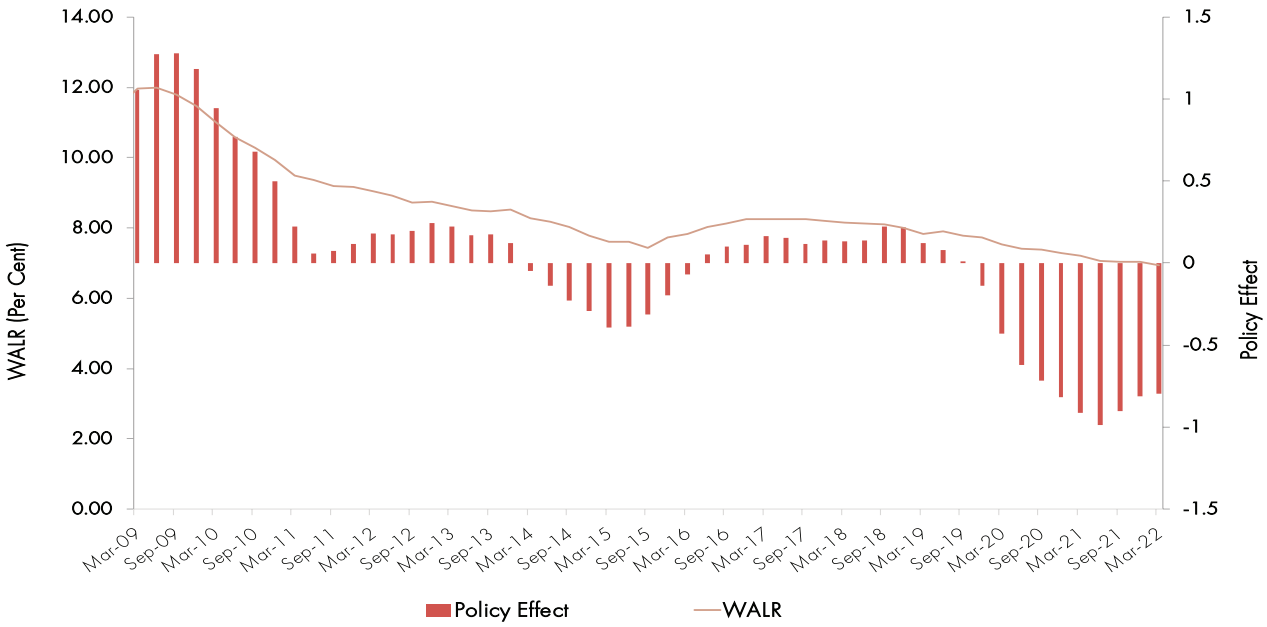
Commercial bank lending rates are still expected to remain stable throughout 2022 but will be underpinned by general liquidity conditions. Credit growth may become an increasingly important consideration for liquidity management in 2022 if current trends in business lending continue. Treasury rates may experience some upward pressures given the expected baseline trajectory of liquidity as well as rising inflation expectations both domestically and internationally. This does not imply that the TT-US long and short-term differentials will avoid further deterioration since external benchmark rates are also expected to increase in response to inflation and policy tightening.

22 Vector autoregression utilising data from March 2006 to March 2022.

In summary, improved energy sector performance coupled with the relaxation of lockdown measures underpin a nascent domestic recovery already apparent in credit markets and may result in increased money demand in the short to medium term. Monetary policy will likely have to balance considerations about facilitating the recovery against mitigating an inflation impulse. As evidenced during the pandemic, managing short-term policy rates as well as narrow and broad money channels serve as an effective approach to influencing conditions in the banking system. As such, monetary policy will adopt an increasingly data-driven stance in response to market developments.

CHART 4.3

Forecast Error Variance Decomposition



Source: Central Bank of Trinidad and Tobago

FEATURE ARTICLE

A FRAMEWORK FOR MEASURING INFLATION EXPECTATIONS IN TRINIDAD AND TOBAGO

Avinash Ramlogan, Karen A. Roopnarine, and Nikkita Persad[23]

Summary

Inflation expectations are fundamental in gauging the future evolution of prices and price volatility. Central banks gauge the degree to which inflation expectations are anchored to determine the policy actions needed to maintain price stability. Indicators of inflation expectations are a feature input in many central banks' monetary policy design and decision-making globally. There are varied approaches (survey-based, financial market based, econometric modelling and non-traditional approaches) used by central banks and researchers to measure inflation expectations which have shown that accurate and timely measurement is challenging. Given the centrality of inflation in monetary policy considerations, the Central Bank is exploring the development of an index of inflation expectations using an appropriate mix of approaches.

I. Introduction

Inflation and the measurement of inflation expectations (IE) are of interest for central bankers because of the shocks that have affected inflation trends in the global economy in recent years, such as commodities price fluctuations (2014-2017), those associated with climate change (El Nino 2015-2016), the COVID-19 pandemic (health crisis, commodity price fluctuations, supply chain disruptions 2020-2021), and most recently, the war between Russia and Ukraine. The control of and volatility of inflation are fundamental issues for any country given the socio-economic ramifications; hence, keeping inflation in check or near set targets is a primary objective for monetary authorities. Inflation expectations provide a signal of where the inflation rate is likely to be in the future, thereby influencing business and consumer sentiment as they relate to savings and investment decisions.

The formation process of inflation expectations is a fundamental aspect of the determination of monetary policy. Monetary authorities need to understand how monetary policy decisions are transmitted to expectations, for instance, via which economic channels and the speed of transmission, which in turn influence inflation and inflation expectations. A firm understanding of the monetary transmission mechanism enables central banks to design appropriate monetary policy strategies. Inflation expectations, in general, have two crucial roles in central banking. First, inflation expectations are essential inputs into wage and price-setting as they provide a summary statistic of the likely future magnitude and direction of inflation. Second, inflation expectations may be used to assess the credibility of a central bank's inflation objective.

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Trinidad and Tobago is a small open economy and a price-taker; consequently, external events often impact domestic prices and expectations. Empirical studies have shown that shocks to crude oil prices, US GDP, domestic wages, import prices and regional financial conditions have a significant pass-through effect on domestic prices (Roopnarine, Bowrin and Ramirez 2019) (Mahabir, et al. 2013). Currently, the uptick in domestic headline inflation is being driven by the volatility in domestic food inflation largely due to the surge in international food prices for sugar, wheat and edible oils, higher shipping costs and global transportation delays. In addition, the April 2022 rise in fuel prices at the pump will add to the upward pressure on domestic prices. Given these developments and the likely trajectory of inflation after years of benign outturns, measuring inflation expectations will undoubtedly assist with the formulation and implementation of a more effective monetary policy. Although the Central Bank of Trinidad and Tobago (the Bank) does not operate an inflation-targeting monetary policy framework, this Article aims to highlight the developmental work in expanding the Bank's monetary surveillance toolkit.

II. Inflation Expectations: Measurement Approaches

Inflation expectations and their degree of anchoring[24] cannot be directly observed; hence, monitoring and assessment are not straightforward (Guarín, Fernando Melo and González 2020). In practice, inflation expectations are commonly measured using surveys of specific sub-groups of the population and financial market-based measures. Survey-based measures involve collating responses from the specific sub-groups (for example, financial market agents, professional forecasters, firms, and consumers) on their views of future inflation. Financial market-based measures are computed by utilising the market prices of inflation-linked assets (for example, inflation-linked bonds, swaps, and options[25]). Although helpful in obtaining an indication of inflation expectations, both approaches have their respective limitations **(Table 1)** with no consensus in the literature regarding which is the better approach (Sousa and Yetman 2016, Kose, et al. 2019).

24 Inflation expectations are usually well-anchored when the central bank's credibility is strong.
25 These financial instruments do not exist in Trinidad and Tobago.

TABLE 1
Advantages and Disadvantages of Survey and Financial Market-based Measures

Approach	Advantages	Disadvantages
Survey-Based	More direct measure of expectations captured	Produced at a lower frequency
		Responses may be biased since respondents may overweigh responses to price changes to frequently purchased goods and services such as gas and food
	Wider market participants	The answers of some survey respondents may be strategic
	Avoids market distortions such as inflation and liquidity risk associated with market-based measures	Comparability issues across jurisdictions due to different methodologies applied
Financial Market Based	Data available at higher frequency	The underlying markets in which these instruments trade may be relatively underdeveloped and the prices may reflect the views of only a small subset of market participants
	Can reveal inflation expectations across a wider range of forecast horizons than surveys.	During periods of market stress, this could result in holding more liquid securities which could lower nominal yields placing downward pressure on measured break-even inflation rates
	Results not influenced by survey questions	

Source:(Kirchner, et al. 2008, Cunningham, Desroches and Santor 2010, Sousa and Yetman 2016, Kose, et al. 2019)

Financial market-based measures

Finlay and Wende (2011) measured inflation expectations in Australia by extracting inflation risk premia from a small sample of inflation-indexed bonds using a latent factor affine term structure model[26]. However, Finaly and Wende (2011) argued that the results must be interpreted with caution due to the model's complexity and data limitations.

In Latin America, due to a lack of inflation-linked financial instruments or underdeveloped financial markets[27]**, Fuertes, Gimeno, & Marques (2020) attempted to measure inflation expectations for Brazil, Chile, Colombia and Mexico from zero-coupon yield curve**. Similar to Finlay and Wende (2011), the authors applied an affine model to derive estimates of expected inflation from zero-coupon yield curve estimates for the studied countries. In 2020, the United States Federal Reserve developed an Index of Common Inflation Expectation that sought to capture agents' inflation expectations from surveys and financial market participants.

26 Affine models utilise zero-coupon yield curves to produce expectations and risk premia; however, given that data were not available, the model was reformulated to incorporate coupon bearing.
27 Financial markets are more developed and inflation-linked instruments exist in advanced economies (for example, United States, UK, Sweden, Australia and Japan). As a result, market-based measures are widely used in advanced economies compared to emerging markets and Latin America and Caribbean economies.

Aedney, Arsov & Evans (2017) warned that the financial market-based approach can predict inflation expectations accurately over the short term but has large forecast errors over long-term horizons. Similarly, Ahn and Fulton (2020) argued that survey and financial market-based measures *"differ along several key dimensions, including the type of economic agent, the horizon of the expectation, the source of data (survey versus market-based measures), and the associated inflation concept, which can make the co-movement of various expectations measures difficult to discern."*

Econometric methods or non-traditional measures

In recent times, online platforms have been solicited to aid in assessing inflation expectations. Hull, Lof and Tibblin (2017) utilised an undisclosed web-scraping technique involving Python programming to collect daily sales for selected fruits and vegetables from several Swedish online retailers. The data were then used to forecast the prices of fruits and vegetables. Gabrielyan, Masso and Uusküla (2020) developed an index of inflation expectations by utilising daily online news articles on inflation from the United Kingdom's newspaper, The Guardian. The authors compiled a dataset of key words (such as price, price increase, expensive, cheaper, cost, expense, bill, payment, oil, petrol, gas) extracted from the news articles. The dataset was further refined to elucidate the intensity of a given topic for each day and applied Least Absolute Shrinkage and Selection Operator modelling to derive inflation forecasts. The (European Commission 2020) noted that while non-traditional measures may be quite useful in obtaining real-time inflation on inflation[28], the technical knowledge in information technology needed (in particular, web scraping) reduces their current use.

In the Caribbean region, several studies attempted to estimate inflation expectations. Henry (2013) utilised a two-stage approach in measuring inflation expectations from data on Jamaican businesses and the Survey of Business Conditions. Firstly, a Seasonal Autoregressive Moving Average model approach was used to generate a time series of inflation expectations. The estimated inflation expectations series was modelled using a New Keynesian-type Phillips curve model. This model uses a reduced form equation to determine the major economic variables that assist in explaining movements in inflation expectations. The result provided a reasonable estimate of inflation expectations.

Most recently, Rohoia & Sharma (2021) utilised Generalised Methods of Moments to estimate a Hybrid New Keynesians Phillip curve model (HNKPC) as was done in Henry (2013) to examine inflation expectations in the Solomon Islands. According to the authors, the model derives the development of inflationary processes by considering current and past inflation rates and inflationary pressures. However, the HNKPC has come under criticism for producing specification bias and inaccurate results. Notably, the results indicate that fuel prices

28 Central banks' interest in big data have grown over the years. Studies have been done for Brazil and the United States that have applied machine learning to produce inflation forecasts (Araujo and Gaglianone 2020).

were important for assessing inflation expectations since the country is vulnerable to global price shocks due to its trade of this product.

III. Inflation Forecasting at the Bank

The aforementioned approaches hold promise for developing an inflation expectations index for Trinidad and Tobago, which could be a useful complement to the current approaches to forecasting inflation. The Bank's forecasting of inflation combines statistical analysis, anecdotal information from business contacts, newspaper reports about price-change announcements, websites of business associations and government ministries, and professional judgment. Within the last decade, the Bank also explored and tested various statistical tools to forecast inflation over the short- and long term.

Short-term inflation forecasting

For short-term forecasts (or one or two quarters ahead), a bottom-up approach of disaggregated data is employed to investigate the price behaviour of various categories that make up the Retail Price Index (RPI). For instance, from historical experience in analysing the RPI, the prices of items in the food category are quite volatile. In contrast, inflation rates in categories of items such as clothing and footwear, communication, education, and housing within the core inflation index, tend to be sticky. To make short-term forecasts, the Bank uses technical knowledge about how the sub-indices are constructed – for instance, whether some categories are surveyed monthly or quarterly or the date of the month the CSO's RPI surveys are performed. In making short-term forecasts, the Bank also utilises a wide range of information, such as websites of various companies and business associations, government ministries, newspaper reports about price-change announcements, and anecdotal information from business contacts. This approach is useful in that it assists in assessing and distinguishing transitory versus permanent price changes in the inflation forecasts.

Long-term inflation forecasting

When forecasting inflation at longer-term horizons, the Bank shifts focus to assessing more fundamental determinants of inflation. These determinants include movements in energy prices, exports and imports, government revenue and expenditure (including financing activities) patterns, and potential changes in employment, wages, money supply, producer prices, exchange rate and interest rates. Over the years, the Bank tested various statistical tools and models using these economic variables.

Two explored statistical indicators were the inflation diffusion index (IDI)[29] and the composite leading indicator of inflation (CLI)[30]. These indices were found to be effective

29 In 2013-2014, Bank staff tested an IDI for inflation analysis and forecasting. An IDI gives an indication of the number of price changes in the economy at a given date. It therefore, clarifies whether overall inflation is due to a high incidence of positive or fewer price changes within the individual components of the RPI.
30 The CLI of inflation was developed and calculated using a correlation function to examine potential candidate data series for correlation with a lead over inflation.

tools in predicting turning points in domestic inflation. The models tested differed in terms of their construction. However, these models did not permit sharp inferences. Forecasts also needed to be consistent with other sectors of the economy, and models did not return consistent forecasts. Attempts to analyse inflation dynamics and predict how inflation would respond to monetary policy were also made through a Vector Autoregressive/Vector Error Correction Modelling (VAR/VECM) approach. A major challenge was the lack of timely data on key macroeconomic variables (for example, the unemployment rate) for the model. Because of these challenges, the inflation forecasts over longer-term horizons to date have reflected information not exclusively derived from statistical models. The statistical tools and models tested over the last decade are discussed further below.

Confidence Indices

Consumer confidence is regarded as a leading indicator with the ability to predict economic activity in general and consumer expenditures in particular. In 2014, the Central Bank conducted a Consumer Confidence Index (CCI) survey. The survey represented the first attempt by the Bank to measure consumer sentiments and was the only consumer confidence measure for Trinidad and Tobago. At the time, the intention was to administer the survey quarterly to approximately 600 individuals over the age of 18.

The CCI developed using the survey was a diffusion index calculated as follows: *CCI = p – n*, where p is the percentage of positive responses and n is the percentage of negative responses to questions about past, current and expected or future conditions. They usually consisted of 5 to 10 questions, dealing with the cost of living, the purchase of major consumer durables, individual and household financial circumstances and the state of the economy. The index was bounded between -100 and +100. A positive value indicated consumer optimism, zero indicated neutrality, and negative values indicated consumer pessimism.

The survey contained two questions that focused on assessing consumers' perception about the cost of living for six months prior to the survey date as well as a six-month future horizon[31]. For each question, the respondents were not required to provide a numerical value of the expected change in the cost of living but to simply indicate "increase", "decrease" or "no change". Therefore, the survey results for these specific questions would have been beneficial in predicting future turning points in domestic inflation but not the magnitude of the change. However, there are a number of issues associated with the use of surveys to derive consumer perceptions about price movements. For instance, surveys do not provide complete data. Also, poor survey design can impact accuracy and lead to incorrect conclusions. The CCI survey was eventually discontinued.

31 The questions included in the Consumer Confidence Survey are as follows: How would you say the cost of living has changed over the last 6 months? How do you expect the cost of living to change over the next 6 months?

Statistical Models

One model used in the past was a moving average smoothing model or rolling average model, which is based on the assumption of a constant underlying mean. This model provides a good estimate of the mean of a series when the mean is constant or slowly changing. The model performed credibly for a few years, following which the model's forecast error began to grow significantly due to changes in the volatility of headline inflation. This rolling mean model was unsuitable for capturing inflation volatility because the use of a three-year observation period reduced the volatility of the forecasts of the sub-indices of inflation.

Another method to assess inflation dynamics was a VAR/VECM model proposed by Ramrattan and Cheong (2015). Specifically, the authors modelled broad money supply (M2), government spending (G), foreign inflation, the nominal effective exchange rate (NEER), and employment growth to assess their impact on inflation in Trinidad and Tobago. Foreign inflation was calculated as a weighted average of the price indices of Trinidad and Tobago's major import partners. The study revealed that the eclectic nature of inflation and the differing impact of the key determinants identified in the long-run and short-run created some challenges for the country's authorities who seek to manage domestic price pressures. While monetary policy can be used to contain (or expand, as the case may be) the growth in the money supply, any inflation management framework must delicately balance the upward pressures from government spending in the short run without limiting its long-run benefit. The paper suggested that coordination between monetary and fiscal policy is key to inflation management in Trinidad and Tobago.

Conclusion and Recommendations

A reliable measure of inflation expectations is essential to support the implementation of countries' monetary policy actions. However, research into typical approaches used by central banks and researchers shows that measuring inflation expectations accurately and timely is challenging. Central banks and researchers have tackled this task through surveys (consumers and firms), professional forecasting models, and inferences from market prices of financial instruments. All of these techniques come with their respective advantages and disadvantages. Given the usefulness of inflation expectations in forecasting inflation and for monetary policy decision-making, several approaches to capturing inflation expectations and improving inflation forecasting at the Central Bank of Trinidad and Tobago are being explored.

Given that financial markets are underdeveloped and data on inflation-linked assets do not currently exist, the Central Bank could improve its forecasting of and monitoring of inflation through indicators such as the IDI and the CLI. While valuable, these indicators possess limitations in terms of the information they convey. These measures can provide some indication of whether domestic inflation is becoming more or less entrenched or increasing or

decreasing (directional) but not the magnitude. In the past, the Bank conducted preliminary testing of these indicators. The tests found the IDI and CLI helpful in providing insights on the behaviour of inflation, but staff indicated that the methodology used for the indicators would require timely reviews and updates to ensure they are reliable. Notwithstanding the limitation, these statistics may assist by supplementing staff judgement and providing reliable forecasts.

Hull, Löf, & Tibblin (2017) postulated there is no one best approach to measuring inflation expectations and as such capturing inflation expectations may require the utilization and or modification of a range of measures. Therefore, the Bank intends to pursue development of an Index of Inflation Expectations via a two-pronged approach. This index will comprise data collected from two sources: web-scraping of local newspaper articles and financial market instruments (that is, the Central Government Yield Curve data). Enhancing technical capabilities in big data analytics appears a more contemporary approach as harnessing big data de-emphasizes the availability of traditional data sets – a perennial challenge when applying a modelling approach. The Bank intends to leverage these emergent approaches as it seeks to buttress its monetary policy surveillance toolkit in the coming years.

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