# BRUNEI DARUSSALAM

## SELECTED ISSUES

September 2024

This paper on Brunei Darussalam was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed on August 20, 2024.

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# INTERNATIONAL MONETARY FUND

# BRUNEI DARUSSALAM

## SELECTED ISSUES

August 20, 2024

**Approved By**
**Asia and Pacific Department**

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# DRIVERS OF INFLATION[1]

*Inflation in Brunei has been on the downward trend since September 2022 being the first to hit disinflationary territory post-COVID amongst its regional peers. This appendix seeks to analyze the drivers of inflation in Brunei by employing an augmented Phillips curve model of inflation with global variables. By examining demand-side and supply-side factors, we aim to understand the relative importance of different inflation causes and their implications for economic policy. Our estimation reveals that rather sudden decline in Brunei over the recent quarters is driven by supply factors, more specifically global supply chain developments in addition to moderate impacts by demands side factors. This motivates us to keep conservative near term inflation outlook at 1.3 percent for 2024 as the global supply chain disruption is prone to substantial uncertainty and always evolving.*

## A. Introduction

**1.      Inflation in Brunei has been historically low and stable for the past decades, much lower than its regional peers (Figure 1).** In pre-COVID period (Jan 2011-Feb 2020), headline inflation averaged -0.1 percent annually, much lower than its regional peers averaging 2.1 percent. As of the latest in February 2024, inflation stands at -0.5 percent after peaking at 4.5 percent in August 2022 followed by a drop to -0.7 percent in September 2023.



**Figure 1. Brunei Darussalam: Consumer Price Index**
(In y-o-y percent)

Sources: CEIC Data and IMF staff calculations. Note: Pre-COVID = Jan 2011 - Feb 2020. Post-COVID = Mar 2020 - Present.

**2.      Brunei's inflation occasionally fluctuates in times of crisis, and it demonstrated a structural change during the episodes of COVID-19 pandemic and war in Ukraine.** Stark jump in average headline inflation during pre-covid period (-0.1 percent) vs. post-covid period (1.6 percent) has been visible and it is much larger than that of its peers (Fig 1 and 2). This change has been induced by a variety of factors, including both domestic and global. For ASEAN5, pre-COVID average is 2.5 percent and post-COVID average is 2.9 percent.



**Figure 2. ASEAN-5 + Brunei: Headline Inflation**
(In y-o-y percent)

Sources: CEIC, NYFED, and IMF staff calculations.

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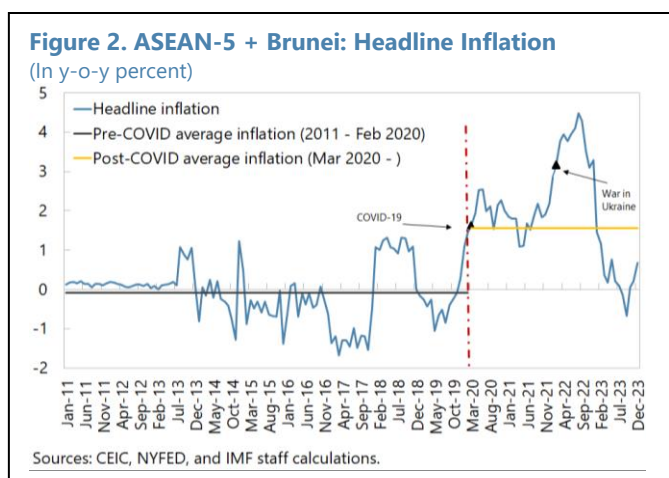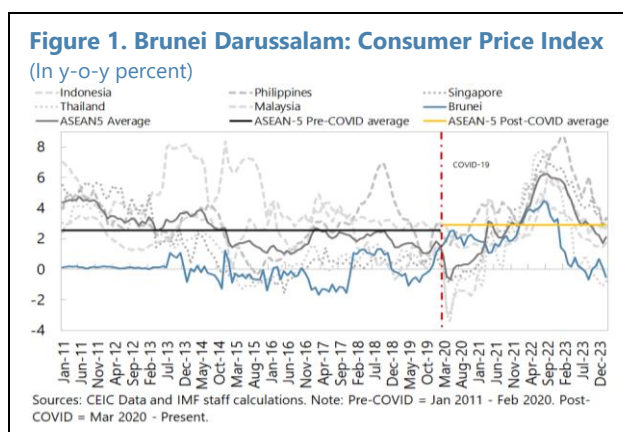
[1] Prepared by Ganchimeg Ganpurev.

**3.      The recent decline in headline inflation has been broad-based and persistent, however,**
**with some stickiness in food and non-tradeable**
**sectors (Figure 3).** The inflation broadness index,
which measures the percentage of items in the
consumer price index (CPI) basket rising more than
a threshold of 0.34 percent, has declined
continuously in the past year falling below pre-
COVID level (32 percent in February 2024 versus 47
percent in February 2020), and inflation
expectations remain well anchored. A threshold is
taken as an average headline inflation of 2 years
prior to COVID-19. Inflation in food, and restaurant
and hotels continue to remain sticky.

**Figure 3. Brunei Darussalam: Broadness Index**
(In percent)

Note: Brunei's monetary policy framework is based on the Currency Interchangeability
Agreement. The broadness index was normalized by a pre-COVID value of 0.34%, which is
taken as an average inflation of 2 years prior to COVID-19.  Sources: CEIC; IMF staff calculation.
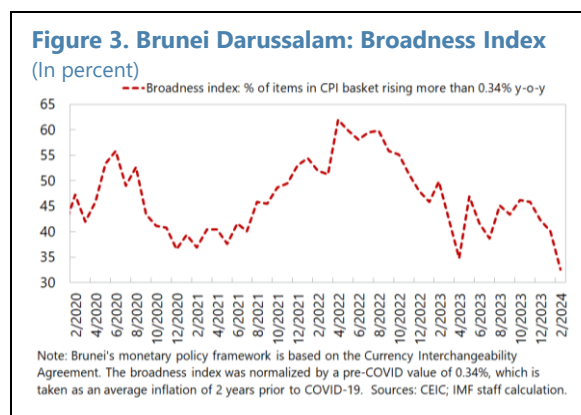
**4.      Global supply chain pressures have been one of the main drivers behind the recent**
**sharp decline in inflation in addition to easing of domestic demand side pressures**. The
potential causes of the inflation fluctuation come from both supply and demand sides, many of
which are shared globally. On the supply side, the global supply chain disruption due to widespread
COVID-19 lockdowns and travel restrictions, and
the war in Ukraine increased production and
shipping costs world-wide. The Global Supply Chain
Pressure Index (GSCPI) tracks the state of global
supply chains using data from the transportation
and manufacturing sectors and reached its decade
peak in December 2021, while Brunei's headline
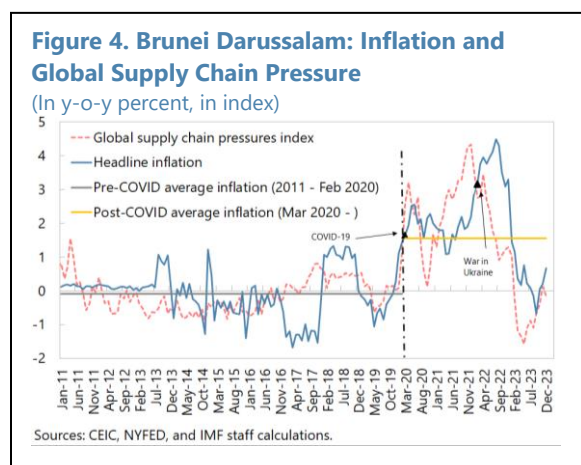inflation reached its peak in August 2022
suggesting possible lag (Figure 4). Similarly, global
commodity price has peaked in April 2022. GSCPI
reached its trough in May 2023, while Brunei's
inflation bottomed out in September 2023.
Consistent with these observations, food and
transport prices in Brunei have fluctuated in-tandem with movements in GSCPI and global
commodity prices.[2] On the demand side, the release of pent-up demand is winding now, and this
can be playing a role in recent inflation slide. The fiscal and monetary responses to COVID-19, while
helping to support businesses and households during the crisis, could have potentially increased
domestic demand, putting upward pressure on inflation. More importantly, after the pandemic
restrictions were gradually lifted starting late 2021, consumers who had been unable to spend
during the pandemic could spend again. This release of pent-up demand could in some cases
temporarily outpace the ability of businesses to expand production, leading to increased price
pressure especially for domestic non-tradables, the demand for which was significantly hampered

**Figure 4. Brunei Darussalam: Inflation and**
**Global Supply Chain Pressure**
(In y-o-y percent, in index)

Sources: CEIC, NYFED, and IMF staff calculations.

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[2] Food price increased 5.7 percent y/y in 2022. The increase in transport price peaked in 2021 at 6.6 percent on
average, while change in transport price was -2.6 percent in 2023 falling below pre-COVID level.

during the COVID-19 lockdown (Brunei AIV 2023). Nonetheless, observed price surge for the hospitality sector in Brunei, after the country reopened in mid-2022 continues to hold up.

**5. Aside from these factors, there are other drivers for inflation such as passthroughs from exchange rate appreciation**. The impact of appreciation is included in this appendix, yet the result suggests statistically non-significant. The impact of the passthrough is potentially muted by Brunei's pegged exchange rate regime and the latest appreciation of Brunei dollar against USD could have helped to keep a lid on inflation through reduced imported inflation.

## B. Methodology

**6. To study the impact of potential different causes of inflation in Brunei, we utilize an augmented Phillips curve model of inflation with global variables**. The augmented Phillips curve is particularly suitable for our analysis as it enables us to capture granular analysis by extending the standard Phillips curve. To do so, we introduce a series of global variables and develop a dynamic model of inflation. The inflation series is modeled to be a function of eight elements: (i) inertia (lagged inflation), (ii) domestic output gap, (iii) global output gap, (iv) appreciation of Brunei dollar (NEER), (v) global energy price, (vi) global food price, (vii) global supply chain pressure, and (viii) exchange rate for USD/SGD.

**7. We estimate an augmented Phillips curve model for Brunei following a specification similar to Binici et al (2023), with a focus on inflation momentum as follows:**

$$\Delta logCPI_t = \beta_1 \Delta logCPI_{t-1} + \beta_2 DomOutputGap_t + \beta_3 GlobalOutputGap_t + \beta_4 \Delta log(USD/BND)_{t-1}$$
$$+ \beta_5 \Delta log(GlobalEnergyPrice)_t + \beta_6 \Delta log(GlobalFoodPrice)_t$$
$$+ \beta_7 (GlobalSupplyChainPressure)_t + \varepsilon$$

$logCPI_t$ indicates year-on-year inflation rate on a quarterly basis as measured by the headline inflation; $logCPI_{t-1}$ is the first lag of inflation; $DomOutputGap_t$ and $GlobalOutputGap_t$ denote the domestic output gap and global output gap, respectively; $(USD/BND)_{t-1}$ is the exchange rate for Bruneian dollar against USD, which is lagged to account for the delay in exchange rate pass-through to consumer prices; $GlobalFoodPrice_t$ and $GlobalEnergyPrice_t$ are international food and energy prices, respectively; $and$ $GlobalSupplyChainPressure_t$ denotes global supply chain pressure.

**8. The global supply chain pressure is normalized and interpreted such that a zero implies that the index is at its average value,** with negative values reflecting how many standard deviations the index is below this average value. As a result, we expect a higher value of global chain supply disruptions to exert an upward pressure on headline and core measures of consumer price inflation.

## C. Data

**9. The sample period is from 2013Q1 to 2023Q4, and it is on a quarterly basis, of which are generated from monthly data where applicable.** We used Brunei's monthly data on CPI in the estimation. The sample period is from 2012M1 to 2023M12. We apply y/y change and then take

quarterly average to generate inflation for a quarterly basis. For independent variables starting with domestic output gap, we employed HP filter on quarterly GDP series. Global output gap was calculated based on world industrial production index taken from Baumeister and Hamilton (2019), using HP filter. NEER data is taken from IMF database. Global energy prices and global food prices are taken from IMF commodity prices database. Global supply chain pressures index is taken from Applied Macroeconomics and Econometrics Center (AMEC). Exchange rate for Singapore dollar against USD comes from IMF database.

## D. Results

**10.** **The estimation shows that the disinflation in Brunei over the recent quarters is mainly driven by developments in the global supply chain, measured in global supply chain pressure index (GSCPI).** Figure 5 presents coefficient estimates of the regression using the specified model above. The red bar represents the coefficient that is found to be statistically significant. Regarding the inflation decomposition, here are some of the key points to note:



**Figure 5. Brunei Darussalam: Augmented Phillips Curve**
(Coefficient Estimates)

Sources: IMF staff estimates over 2013Q1-2023Q4. **: Statistically significant at 5 percent.

- The recent disinflation in 2023 was driven by supply factors. More notably, it was driven by movements in global supply chain disruptions measured by GSCPI.

- The global supply chain variable, measuring supply chain disruptions across the world, has an inflationary effect. The GSCP variable measures comprehensive global supply chain disruption in which an increase in one standard deviation is associated with a 1.0 percent point increase in headline inflation. It is statistically significant at the 5 percent level. This is consistent with findings in Binici et al (2023) in which they showed that an increase in one standard deviation is associated with a 0.05 percent point increase in core inflation in Europe and it was statistically significant at the 1 percent level.

- This is consistent with our past study results that found that compared to Singapore, supply bottleneck had a more pronounced impact on inflation in Brunei for 2022 (Brunei AIV 2023). One possible explanation is that even after reopening, it still took time for domestic production capacity to recover to the pre-pandemic level, including for foreign workers who powered Brunei's domestic service sector to return.

- Conventionally, domestic factors most likely captured in the domestic output gap, and other global factors such as global food price are associated with price fluctuations. For example, Binici et al (2023) find that one percentage point increase in the domestic output gap is associated with an increase of 0.004 percentage points in both headline and core measures of consumer price inflation in Europe, which are broadly consistent with previous findings in the literature. In
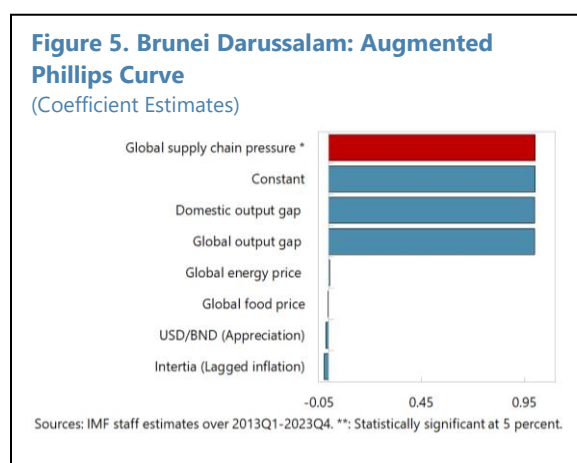
Brunei's case, no statistically significant association was found for these variables. This potentially could be due to a muted effect of those factors due to administrative price controls and generous social assistance measures that are in place, helping to keep a lid on inflation (AMRO 2023[3]). Approximately 16.4 percent of items in the CPI are under price control and social assistance measures (AMRO 2023).

## E.   Further Analysis

**11.      The potential presence of muted effects from domestic factors motivates us to expand our study by incorporating past study of inflation decomposition (Brunei AIV 2023) to investigate domestic factors closely.** A structural vector autoregression (SVAR) model was employed to analyze the drivers of inflation focusing on domestic factors as it assumes domestic supply and demand conditions are the main drivers of inflation (Brunei AIV 2023).

**Figure 6. Brunei: Decomposition of Inflation**
(In percent)

**12.      The estimation shows that the disinflation in Brunei over the recent quarters are driven by both demand and supply factors, but supply shocks seem to have dominated during the pre, and during pandemic periods**. Supply shocks continued to prevail post pandemic and ratcheted up inflation with the unleashing of pent- up demand shocks, post opening up of the economy (Figure 6)[4].
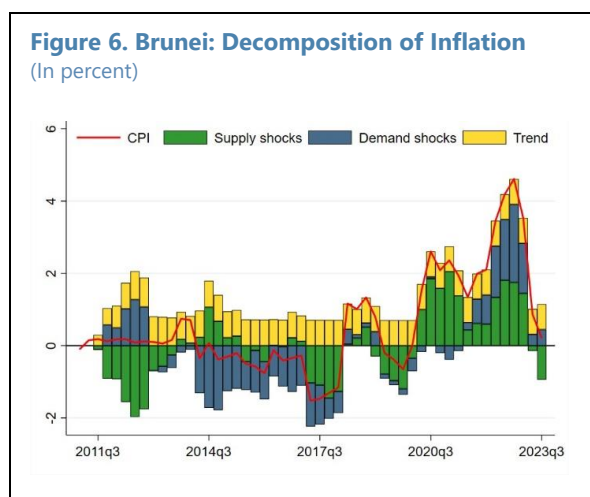
## F.   Conclusion

**13.      Results from augmented Phillips curve study suggests** that inflation path is subject to moderate level of fluctuation as global supply chain disruption is prone to substantial uncertainty and it continuously evolves. Therefore, we keep conservative stance on near term projection for inflation at 1.3 percent in 2024. This is comparable with the latest projection by AMRO where they keep it at 1.4 percent.

**14.      Looking ahead, a stable exchange rate,** underpinned by Brunei's longstanding currency board arrangement with Singapore stays appropriate in anchoring inflation expectations.

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[3] AMRO's 2022 Annual Consultation Report on Brunei Darussalam

[4] The green and blue bars, in Figure 6, represent the contributions of supply and demand shocks to inflation and output respectively. The yellow bars are the contribution from lagged dependent variables.

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# LONG-TERM FISCAL TRAJECTORY BASED ON THE PERMANENT INCOME HYPOTHESIS[1]

*The volatility of the O&G prices, secular decline in O&G production and global decarbonization efforts have been putting pressure on Brunei's fiscal sustainability. The persistent gap between the baseline expenditure path and the sustainable spending levels that would ensure inter-generational equity highlights the need for accelerating fiscal consolidation efforts.*

1.      **The PIH analysis is used for identifying a sustainable fiscal path for resource-rich countries like Brunei.** The framework decides PIH norms that are "sustainable" income flows from net wealth of a country which can be spent each year while keeping wealth (adjusted for inflation and sometimes, population growth) constant, based on the net wealth measured as net financial wealth plus resource wealth (the present value of future O&G revenues).

2.      **The analysis is based on IMF staff forecasts (Table 1) until 2029 and assumptions for the long run (beyond 2029).** It assumes status quo on policy settings, constant O&G production from 2029 until the depletion of O&G reserves in 2050, 1 percent increasing O&G prices each year, and other long-term macro-fiscal assumptions including 37 percent of government's share in total value of O&G output, 0.42 percent of population growth rate, 1 percent of long-term inflation rate, and 2.6 percent of real interest rate, etc.

3.      **The current baseline differs significantly from the long-term PIH fiscal anchor according to the analysis, and the gap needs to be closed with a fiscal adjustment.** Should the PIH anchor (a constant annuity in real terms) be attained immediately, about 20 percentage points of consolidation in non-O&G deficit is needed. A gradual transition scenario (10 percentage points of consolidation over the medium-term), which is more realistic, would bring the non-O&G deficit up to -17.3 percent of non-O&G GDP in 2029 from -27.3 percent in the baseline forecasts.



**Figure 1. Brunei Darussalam: Non-O&G Deficit Path** (Immediate transition scenario, Percent of non-O&G GDP)

Baseline
Baseline PIH norm
Net Zero PIH norm

Sources: IMF staff estimation

**Figure 2. Brunei Darussalam: Non-O&G Deficit Path** (Gradual transition scenario, Percent of non-O&G GDP)

Baseline
Baseline PIH norm
Net Zero PIH norm

Sources: IMF staff estimation

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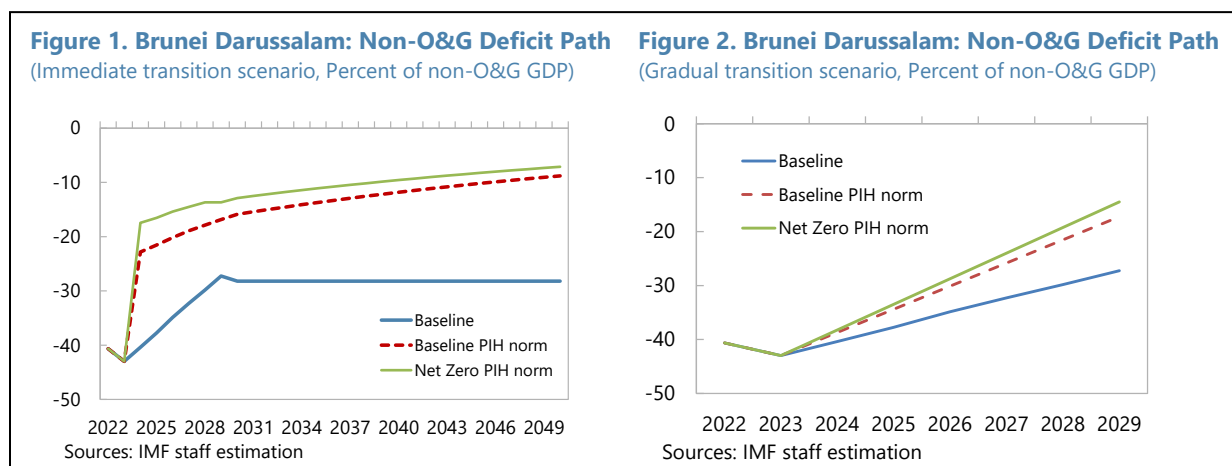
[1] Prepared by Jonghyun Kim and Ritu Basu (APD).

**4.** **Alternative PIH anchor under Net Zero Emissions (NZE) by 2050 scenario would imply even higher adjustment needs for Brunei.** In this scenario, we assume O&G demand decreases 70 percent and prices gradually decline to 25 USD per barrel and 3.8 USD per MBtu from 2030 to 2050 in line with World Energy Outlook 2023 of the International Energy Agency (IEA). The required size of consolidation to close the gap between the baseline and the NZE PIH anchor is estimated to be at 25.5 percentage points. The above results elevate the need for urgent action to accelerate fiscal consolidation, to avoid a delayed or disorderly green transition.

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# BRUNEI FINANCIAL SECTOR[1]

*The financial sector in Brunei is stable, dominated by banks and has strong capital buffers and abundant liquidity. Credit to households and offshore loans appear to have grown rapidly in 2023. The share of credit to the O&G sector has been increasing and a large share of offshore assets continues to characterize key risk-portfolio of Brunei's financial sector. Against this background, the authorities have been strengthening their macroprudential policies, particularly for Domestic Systemically Important Banks (D-SIBs).*

1.      **In Brunei, banks make up for most of the financial sector with the top two banks dominating most financial transactions, making them systemic.** Banks represent 82.8 percent of total financial sector assets (98 percent of GDP), with the two largest banks, an Islamic domestic bank and another domestic bank, holding 72% of total bank assets. Following banks, finance companies hold 8.7 percent (10 percent of GDP) and insurance/Takaful companies hold 8.4 percent (10 percent of GDP) of total assets, respectively, representing around 118 percent of GDP as of the end of 2023[2]. Banks invest a significant portion of assets abroad, accounting for about 52 percent of GDP or 53 percent of total assets as of end-2023.

2.      **While banks are largely funded by domestic deposits, domestic lending and intermediation are limited. Banks prefer to invest and lend abroad due to absence of capital controls, currency convertibility, and current high interest rates.** Domestic deposits[3] in banks amounted to 67 percent[4] of total assets in 2022, while domestic lending represented only 26 percent of total banking assets in 2022. Conversely, loans to foreign borrowers and offshore investments increased to 7 percent and 18 percent of total assets in 2023 from 3 percent and 10 percent in 2019, respectively, nearly doubling from pre-COVID-19 levels. Meanwhile, due from banks offshore decreased to 29 percent of total assets in 2023 from 39 percent in 2019. Consequently, 53 percent of banking sector assets as of the end of 2023 were invested abroad. Notably, government deposits, held mainly with commercial banks, heavily influence banks' total assets and liabilities, managed through adjustments in unremunerated excess reserves at the central bank, or balances due from offshore banks.

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[1] Prepared by Shohhei Kawase (OAP) and Ritu Basu (APD).

[2] There are seven commercial banks, one Islamic trust fund, one custodian banking license, bank Usahawan, two finance companies, seven insurance companies and four takaful operators. In addition, there are capital market intermediaries such as securities companies, but their activities are limited. Among seven banks, two largest are headquartered in Brunei, both connected to the government, and others are foreign banks whose headquarters are based in the United Kingdom, China, Malaysia, or Singapore.

[3] Resident household, public and private sector deposits up to 50,000 Brunei dollars (BND) are covered by the deposit protection scheme, which constituted 14 percent of total deposits in 2017. Banks and finance companies are covered by the scheme provided by Brunei Darussalam Deposit Protection Corporation

[4] This share excludes the deposits from central government which is 15 percent in 2022.

| **Table 1. Brunei Darussalam: Financial Sector Assets/Liabilities** | | | | | | |
|---|---|---|---|---|---|---|
| in million BND | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
| **Banks** | | | | | | |
| Assets | 18,331 | 18,609 | 18,272 | 19,362 | 20,681 | 19,811 |
| ( as percentage of GDP) | ( 100% ) | ( 101% ) | ( 110% ) | ( 103% ) | ( 90% ) | ( 98% ) |
| Notes and coins held and balances with the central bank | 1,624 | 2,294 | 1,689 | 2,701 | 2,763 | 1,696 |
| ( as percentage of banks' assets) | ( 9% ) | ( 12% ) | ( 9% ) | ( 14% ) | ( 13% ) | ( 9% ) |
| loans to households | 2,910 | 3,080 | 2,835 | 2,775 | 2,811 | 2,927 |
| ( as percentage of banks' assets) | ( 16% ) | ( 17% ) | ( 16% ) | ( 14% ) | ( 14% ) | ( 15% ) |
| loans to non-households | 2,367 | 2,256 | 2,405 | 2,547 | 2,771 | 2,869 |
| ( as percentage of banks' assets) | ( 13% ) | ( 12% ) | ( 13% ) | ( 13% ) | ( 13% ) | ( 14% ) |
| foreign lending | 196 | 552 | 584 | 769 | 797 | 1,307 |
| ( as percentage of banks' assets) | ( 1% ) | ( 3% ) | ( 3% ) | ( 4% ) | ( 4% ) | ( 7% ) |
| Liabilities 1/ | 18,331 | 18,609 | 18,272 | 19,362 | 20,681 | 19,811 |
| domestic deposits 2/ | 13,000 | 13,810 | 13,510 | 13,867 | 13,959 | - |
| (as percentage of banks' assets) | ( 71% ) | ( 74% ) | ( 74% ) | ( 72% ) | ( 67% ) | |
| of which resident households | 6,396 | 7,403 | 6,980 | 7,218 | 7,194 | - |
| of which public and private sector | 3,654 | 3,387 | 3,998 | 4,082 | 4,330 | - |
| of which state-ownded corporations | 2,317 | 2,385 | 1,685 | 1,765 | 1,849 | - |
| of which insurance and other FIs | 292 | 352 | 436 | 261 | 310 | - |
| of which finance companies | 341 | 283 | 411 | 541 | 276 | - |
| deposits from central government 2/ 3/ | 2,009 | 1,745 | 766 | 2,139 | 3,192 | 1,478 |
| (as percentage of banks' assets) | ( 11% ) | ( 9% ) | ( 4% ) | ( 11% ) | ( 15% ) | - |
| due from domestic banks and Finance companies 2/ | 469 | 755 | 1,051 | 965 | 655 | - |
| due from non-residents 2/ | 477 | (403) | 253 | (351) | (211) | - |
| Capital funds and other liabilities | 2,376 | 2,702 | 2,692 | 2,742 | 3,087 | 3,205 |
| | - | - | - | - | - | |
| **Finance companies** | | | | | | |
| Assets | 1,988 | 1,911 | 2,096 | 2,233 | 1,999 | 2,089 |
| ( as percentage of GDP) | ( 11% ) | ( 10% ) | ( 13% ) | ( 12% ) | ( 9% ) | ( 10% ) |
| loans | 1,539 | 1,522 | 1,558 | 1,571 | 1,596 | 1,702 |
| Deposits | 1,661 | 1,572 | 1,784 | 1,918 | 1,635 | 1,734 |
| **Insurance/Takaful companies** | | | | | | |
| Assets | 1,626 | 1,762 | 1,954 | 1,976 | 1,882 | 2,020 |
| ( as percentage of GDP) | ( 9% ) | ( 10% ) | ( 12% ) | ( 10% ) | ( 8% ) | ( 10% ) |
| **Total assets of the financial sector** | 21,945 | 22,282 | 22,323 | 23,571 | 24,562 | 23,921 |
| ( as percentage of GDP) | ( 120% ) | ( 121% ) | ( 135% ) | ( 125% ) | ( 107% ) | ( 118% ) |

Source: BDCB Statistical Bulletin (https://www.bdcb.gov.bn/) and IMF staff's calculations.

1/ Including capital funds and other liabilities.

2/ Numbers are from BDCB's Financial Stability Report 2022.

3/ the number for 2023 is approximated with the liabilities to the central government from the Other Depository Corporations Survey.

**3.     Brunei's financial sector has strong capital buffers and abundant liquidity benefited from the global high interest rate environment in 2023, and systemic risk is assessed to be contained.** In 2023, regulatory capital remained strong at around 21 percent, well above the required 10 percent. Gross non-performing loans decreased from 3.3 percent in 2022 to 2.6 percent in 2023, attributed to fewer NPLs and increased gross loans. Banks maintain ample liquidity, mainly from domestic deposits, which correlate with O&G prices. Return on assets (before tax) improved to 2.1 percent in 2023 from 1.3 percent in 2022 due to higher global interest rates, boosting earnings from net foreign assets despite valuation losses. Accelerated corporate and household credit growth is expected to close the credit-to-GDP gap. (Table 2/Figure 1).
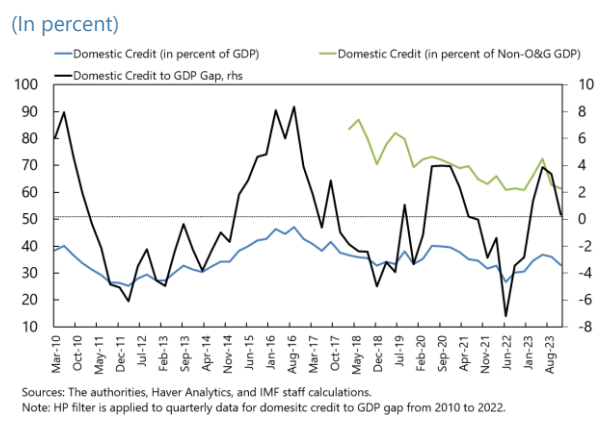
**Table 2. Brunei Darussalam: Financial Soundness Indicators**

|  | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|
| **Capital Adequacy 1/** | | | | | | |
| Tier 1 Capital to Risk-Weighted Assets | 18.9 | 20.5 | 21.2 | 21.8 | 20.6 | 21.1 |
| Regulatory Capital to Risk Weighted Assets | 19.3 | 20.9 | 21.5 | 22.1 | 20.9 | 21.4 |
| Non-Performing Loans/Financing (Net of Specific Provisions) to Capital Funds | 7.8 | 6.5 | 6.1 | 4.9 | 5.5 | 4.4 |
| **Assets Quality** | | | | | | |
| Non-Performing Loans/Financing to Gross Loans/Financing | 5.7 | 4.7 | 4.7 | 3.6 | 3.3 | 2.6 |
| Net Non-Performing Loans/Financing (Net of Provisions) to Gross Loans/Financing | 2.9 | 2.4 | 2.4 | 1.9 | 2.1 | 1.6 |
| Provision Coverage (Specific Provisions to Total NPLFs) | 49.5 | 48.1 | 48.2 | 47.1 | 37.8 | 37.2 |
| **Profitability** | | | | | | |
| Return on Assets (Before Tax) | 1.5 | 1.8 | 1.5 | 1.3 | 1.3 | 2.1 |
| Return on Equity (After Tax) | 11.2 | 12.6 | 10.5 | 8.9 | 9.3 | 13.7 |
| Non-Interest/Profit Expense to Gross Income (Efficiency Ratio) | 48.9 | 47.4 | 51.2 | 57.1 | 57.7 | 46.1 |
| Net Interest/Porfit Margin to Gross Income | 77.7 | 73.4 | 71.5 | 67.9 | 80.2 | 82.3 |
| **Liquidity** | | | | | | |
| Liquid Assets to Total Assets | 51.7 | 46.8 | 48.3 | 45.5 | 43.7 | 43.6 |
| Liquid Assets to Total Deposits | 61.8 | 55.5 | 60.3 | 54.0 | 51.8 | 53.2 |
| Liquid Assets to Demand and Savings Deposits (Non-bank customers) | 126.0 | 102.9 | 95.9 | 84.0 | 94.9 | 91.9 |
| Loans/Financing to Deposits Ratio | 35.7 | 37.2 | 39.7 | 37.3 | 36.5 | 43.7 |

Sources: BDCB.

1/ Data excludes finance companies, which is classified as depository corporations. Numbers are for Q4 of each year.
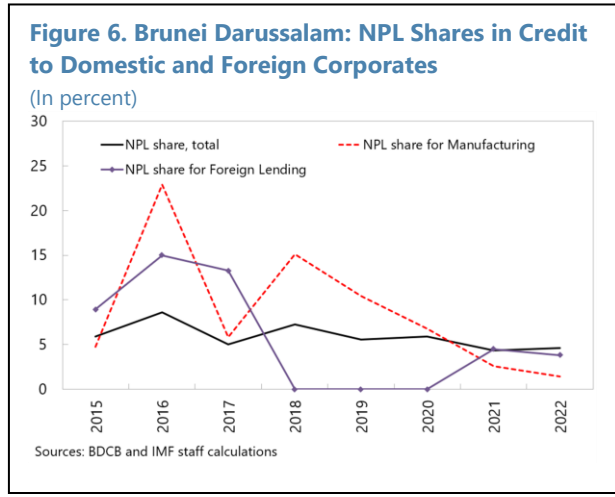
**4.    In 2023, banks' domestic credit continued to expand in both household and corporate sectors.** Overall domestic credit by banks rose by 3.8 percent year-on-year in 2023, down slightly from 4.9 percent in 2022. Furthermore, the broader definition of credit to households, including loans from finance companies, suggests that the growth in credit to households reached a peak of 5 percent year-on-year, like 2013, following the pre-2014 peaking of oil prices. Further acceleration in household credit along with the tightening of the credit gap in the volatile interest rates and oil prices could present risks.[5,6] (Figure 2).

**Figure 1. Brunei Darussalam: Domestic Credit**

(In percent)



Sources: The authorities, Haver Analytics, and IMF staff calculations.
Note: HP filter is applied to quarterly data for domesitc credit to GDP gap from 2010 to 2022.

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[5] Data are available from 2012.

[6] Finance companies take certain types of deposits and deal primarily with car financing. In principle, institutions that take customer deposits should be treated like banks but, for the purpose of this appendix, we describe banks as those excluding finance companies as used also by BDCB because of data limitation and dominance of banks in the financial sector. Finance companies have several restrictions on accepting certain deposits or grant certain credit by article 18 of the Finance Companies Act.

**5.** **Foreign lending (offshore loans by banks based in Brunei) surged by 64 percent year-on-year in 2023.** In 2022, this was driven mainly by loans to offshore financial and commercial property sectors. Combined credit to domestic and foreign corporates raised the share of credit to the O&G sector to 40 percent in 2022 from 24 percent in 2018, increasing vulnerability to oil price declines, and despite a low non-performing loan (NPL) share in the corporate sector (Figures 3-6).[7,8]

**Figure 2. Brunei Darussalam: Credit Growth to Households from Banks and Finance Companies**
(In percent y/y)



Sources: BDCB and IMF staff calculations

**Figure 3. Brunei Darussalam: Loan Composition**
(LHS: In BND Billion, RHS: In percentage y/y)



Sources: The authorities and IMF staff calculations.

**Figure 4. Brunei Darussalam: Share of O&G Sector in Credit to Domestic and Foreign Corporates**
(In BND Million)



Sources: BDCB and IMF staff calculations

**Figure 5. Brunei Darussalam: Banks' Susceptibility to Oil Price**
(In percent y/y, 3-month MA)



Sources: BDCB; and IMF staff calculations

**Figure 6. Brunei Darussalam: NPL Shares in Credit to Domestic and Foreign Corporates**
(In percent)



Sources: BDCB and IMF staff calculations

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[7] Destination data are only available for 2022 from BDCB's FSR 2022 as of now.

[8] Kawase (2023) finds that VAR results show that NPL growth increases 0.455 percentage point with a lag of three quarters after one percentage point decline in oil price growth, indicating credit risk increases when oil prices decrease with some lag.

**6.      Tail risks to banks' offshore portfolio from interest rate rise and liquidity shortages, seemed to have decreased somewhat since 2023**(Figure 11).[9] Nevertheless, banks' large investment portfolio (¶ 2) exposes them to heightened interest rate risks (Figures 7, 8, 9 and 10). While predominantly funded by domestic deposits, a significant portion is invested offshore, including deposits to foreign financial institutions, offshore loans, and securities investments (see para. 2). This structure exposes Brunei banks to potential liquidity tail risks during extreme stress, concerning the availability of offshore liquidity. (Figure 12).[10]



Figure 7. Brunei Darussalam: Trends in Composition of Offshore Placements (Due from Banks Offshore) and Investments by Currency
(In percent)
Sources: 2022 Financial Stability Report by the BDCB



Figure 8. Brunei Darussalam: Trends in Composition of Offshore Placements (Due from Banks Offshore) and Investments by Country/Region
(In percent)
Sources: 2022 Financial Stability Report by the BDCB



Figure 9. Brunei Darussalam: Trend of Banking Sector Balance Sheet Assets
(In percent of total assets)
Sources: BDCB; and IMF staff calculations



Figure 10. Brunei Darussalam: Interbank Overnight Interest Rates
(In percent)
Sources: Haver analytics, and IMF staff calculations.
Note: SFDR= Standing Facility Deposit Rate; SFLR=Standing Facility Lending Rate.

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[9] See Kawase (2023) for the methodologies used in the interest rate stress test.

[10] See Kawase (2023) for the methodologies used in the liquidity stress test.

**Figure 11. Brunei Darussalam: Mark-to-Market Losses for the Largest Banks by Interest Rate Hikes**
(In percent of risk-weighted assets)
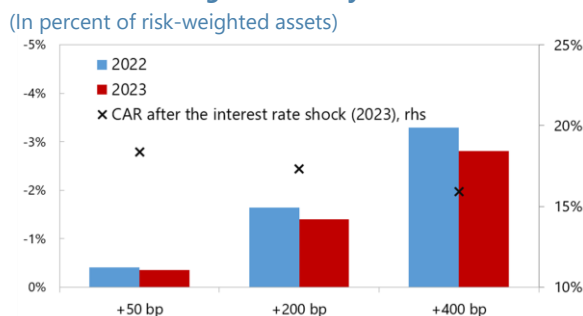
Note: The capital adequacy ratio (CAR) of one of two banks would have fallen below 10 percent in 2023 if there was an interest rate shock of +1,200 bp. Interest rate in 2023 is assumed 4 percent. Maximam duration of investment portfolio across two banks is assumed 3.2 years.
Sources: Banks' Financial Statements and IMF staff calculations.



**Figure 12. Brunei Darussalam: Stress Test Impact on Bank Liquidity Coverage Ratio**
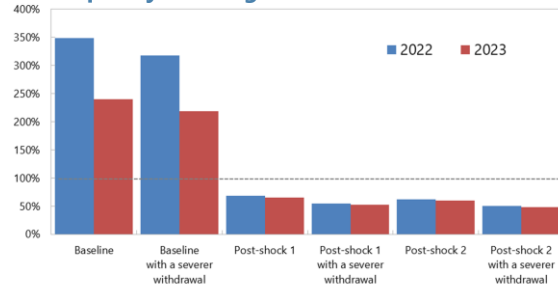
Sources: Banks' Financial Statements and IMF staff calculations.
Note: Presented results are for aggregated two largest banks in Brunei. Baseline is calculated as available domestic and foreign liquid assets with maturity up to one month divided by an outflow of 10 percent of domestic liabilities plus 5 percent of foreign liabilities (or 20 percent of foreign liablites, for Baseline with a severer withdrawal). The case of Post-shock 1 is calculated as available domestic liquid assets with maturity up to one month divided by the same outflows used in the baseline. The case of Post-shock 2 is calculated as 80 percent of available domestic assets with maturity up to one month divided by the same outflows used in the baseline.

**7.      The authorities have been strengthening their macroprudential policy**. Risk-based supervision has been initiated and all three pillars of the Basel II have been implemented[11]. BDCB has employed macroprudential tools to tackle household indebtedness, including implementing a loan-to-value (LTV) ratio cap in 2012 and Total Debt Service Ratio (TDSR) in 2015[12]. During the 2023 Article IV consultation, they acknowledged to plausible tail risks given the current global and financial market uncertainty and they undertake stress tests for financial institutions at least annually. In line with the Brunei Darussalam Central Bank's (BDCB) commitment to manage and mitigate systemic risks in the financial sector, identified Domestic Systemically Important Banks (D-SIBs) for 2023 have been subjected to additional policy measures, such as Higher Loss Absorbency (HLA) capital requirements to further enhance their resilience. The authorities plan to implement Basel III liquidity standards between 2023 and 2024 and other elements of the Basel III framework in phases[13].

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[11] The Pillar I requirement became effective from 15 March 2017 and requires all banks both conventional and Islamic banks to maintain a minimum capital adequacy ratio (CAR) of 10 percent. This requirement was extended to finance companies in 2022. Under the Pillar II requirement, banks are required to prepare an Internal Capital Adequacy Assessment Process (ICAAP) and to submit the ICAAP documents on an annual basis since 30 June 2019. Additionally, banks have been required to provide enhanced disclosure on risk and capital management in line with the requirement under the Pillar III since March 2019.

[12] The macro prudential toolkit includes: (i) a Total Debt Service Ratio (TDSR); borrowers' monthly total debt obligation relative to net income should be less than 70 percent; (ii) Cap on Unsecured Personal loans: unsecured personal credit facilities are restricted to 18 times of the borrowers' net monthly income; and (iii) Minimum Cash Balance requirement (reserve requirement) at 6 percent. A cap on loan-to-value ratios was revoked in late 2016.

[13] Statement by Raja Anwar, Alternate Executive Director, and Nadiah Abu Bakar, Advisor to the Executive Director, on Brunei Darussalam September 11, 2023, printed in 2023 Article IV consultation report.

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BDCB, 2023. "2022 Financial Stability Report." Brunei Darussalam Central Bank, Bandar Sheri Begawan.

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# AUGMENTING GROWTH PROSPECTS: THE ROLE OF FIRST-GENERATION STRUCTURAL REFORMS[1]

## A. Introduction

**1.      Brunei is pursuing the development of a more diversified and sophisticated economy, with reduced reliance on its oil and gas sector, higher productivity, output, and enhanced longer-term growth potential.** In 2007, authorities launched the long-term development plan '*Brunei Vision 2035*' which includes as one of its three key objectives the creation of a more dynamic and sustainable economy, with a focus on economically diversifying beyond the oil and gas sector, raising productivity, attracting investment, creating jobs, and enhancing output, and thereby enhancing macroeconomic stability. Since then, national development policies such as the 11th National Development Plan (2018-23), or the Digital Economy Master Plan 2025, among others, promote the furthering of this objective.

**2.      Despite progress, potential remains to further enhance diversification, productivity, and output, particularly in the non-oil sector.** As of 2023, the share of O&G sector accounted for 46.4 percent of the country's nominal gross domestic product (GDP) and  75 percent of fiscal revenues(FY2023/24), leaving the economy vulnerable to fuel price volatility. Over the medium term, price uncertainty and global decarbonization pressures could further impact growth and revenue outcomes, impacting fiscal space and buffers for the economy. At the same time, since 2021, downstream diversification efforts have shown growth dividends. Non-oil sectors like telecommunications, wholesale and retail trade have improved, along with a temporary finance sector boom, due to the high interest rate environment and tight global monetary conditions in 2023. To sustainably enhance macroeconomic stability in the long run, it is however paramount to identify and adopt policies further augmenting Brunei's growth prospects.

**3.      A recent IMF Staff Discussion Note (SDN) by Budina et al. (2023) provides guidance on structural reforms that can help accelerate growth and support green transition in emerging markets and developing economies (EMDEs).** Structural reforms can play a critical role for promoting the transition to a low-carbon, resilient economy. The SDN finds that packaging and sequencing of reforms matter for amplifying their growth impact and to ease policy trade-offs. Prioritizing 'first generation' reforms—foundational structural reforms like governance, external sector, and business regulation—before implementing 'second generation', more specific reforms—such as domestic finance and labor market reforms—can yield larger gains in terms of output and foreign investment. These first-generation reforms can also help facilitate the green transition and ease growth-climate trade-offs.

**4.** **Against this backdrop, this paper analyzes Brunei's performance vis-à-vis indicators of first-generation reforms and suggests key areas of improvement.** First, we collect indicators regarding three structural reform areas (trade, market regulation, and governance) and identify Brunei's performance vs. peers. Second, we analyze drivers of sub-optimal performance and suggest a prioritized set of structural reform efforts. Finally, we leverage a standard econometric framework to assess the impacts of reforms on economic growth and Foreign Direct Investment (FDI) following Budina et al. (2023).

## B.   Measuring Structural Gaps with Peer Countries

**5.** **We categorize Brunei's structural reform areas in three main categories: trade, market regulation, governance.** Trade indicators include three sub-indicators: trade restriction data from the IMF Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER), trade facilitation indicators from the OECD, and trade openness indicators from the World Economic Forum Global Competitiveness Index (WEF-GCI). Market regulation indicators include several sub-indicators form the WEF GCI such as regulatory burden, the extent of market dominance as well as distortive effects of taxes/subsidies, as well as the indicator on regulatory quality from the World Bank Worldwide Governance Indicators (WB-WGI). Third, to gauge the level and quality of governance, four sub-indicators are taken from the WB-WGI: government effectiveness, rule of law, control of corruption, and regulatory quality. Each indicator is rescaled to range from 0 to 10 (a higher value implying a better performance). Aggregate indicators represent the simple average of their sub-indicators.

**6.** **We measure Brunei's performance along these indicators and compare them with its peers ASEAN-6 and the Gulf Cooperation Council (GCC), both in terms of Brunei's position in a distribution of scores, as well as the difference to the top performer in each respective category.** With Brunei being an ASEAN member, the ASEAN-6 makes for a natural comparator set of peers. The Gulf Cooperation Council (GCC) has been selected as the second peer group, which mirror's Brunei's position as hydrocarbon exporting country. Scores, when aggregated, are simple averages. The performance gap is defined by the difference between Brunei's score with the best performer in each peer group, a positive number implying a performance gap of Brunei vs. peers, whereas a negative gap implies that Brunei's performance is ahead of its peer. While many of the indicators are based on public perception (see Table 1), implying that the underlying factors cannot always be directly identified, it is important to acknowledge that perceptions are often caused by factors which give rise to structural reform needs.

**Table 1. Brunei Darussalam: Indicators of Structural Reforms**

| Category | Sub-category | Source | Availability | Note |
|---|---|---|---|---|
| 1. Trade | Trade restrictions | IMF AREAER | Up to 2021 | 22 sub-indicators |
| | Trade facilitation performance | OECD | Up to 2022 | 11 sub-indicators |
| | Trade openness | World Economic Forum Global Competitiveness Index (WEF GCI) | Up to 2019 | 4 sub-indicators (partially survey-based) |
| 2. Market regulation | Regulatory burden | WEF GCI | Up to 2019 | Survey-based |
| | Extent of market dominance | " | " | " |
| | Distortive effects of taxes and subsidies on competition | " | " | " |
| | Regulatory quality | Worldwide Governance Indicators | Up to 2022 | " |
| 3. Governance | Government effectiveness | Worldwide Governance Indicators | Up to 2022 | Survey-based |
| | Regulatory quality | " | " | " |
| | Control of corruption | " | " | " |
| | Rule of law | " | " | " |

## C.  Trade

**7.        Analysis of trade indicators suggests that Brunei could benefit from structural reforms enhancing trade facilitation, reducing non-tariff barriers, and reducing trade restrictions.** As illustrated in Figure 1 below, Brunei scores below the median of both its peer groups (ASEAN-6 and GCC) on the OECD trade facilitation indicators, illustrating room for improvement. As for trade restrictions measured by 22 sub-indicators of the IMF AREAER database, Brunei scores well vs.

**Figure 1. Brunei Darussalam: Trade Indicator Performance vs. Peers and Gap vs. Peer Top-Performer**

**Brunei Darussalam:  Structural Gap for Trade Indicator vs. Peer Top-Performer**



**Brunei Darussalam: Trade Indicator Performance vs. Peers**



Sources: IMF AREAER, World Economic Forum (WEF) GCI, OECD Trade Facilitation, and IMF staff calculations.

Note: The red bars indicate Brunei's standing.

ASEAN-6 peers, but below median of GCC countries. Brunei performs well on perceived trade openness as compared to its peer groups. Consequently, while trade openness does not seem to be perceived as weakness compared to peers, focused structural reforms addressing trade facilitation

weaknesses and (specific) trade restrictions will be beneficial for Brunei. The remainder of the section will examine each area in more detail.

**8.      A closer review of trade openness data suggests that Brunei's favorable performance vs. peers may be driven by competitive tariff levels and structure, but there is potential to reduce non-tariff barriers and border clearance efficiency.** Trade openness is measured by 4 sub-indicators from the WEF GCI: prevalence of non-tariff barriers, border clearance efficiency, trade tariffs, and complexity of tariffs. Figure 2 shows that structural gaps, compared to the top performing peer in the group, are minimal for trade tariffs and complexity of tariffs vis-à-vis ASEAN-6 and GCC top performers. However, gaps prevail for non-tariff barriers and for border clearance efficiency vis-à-vis ASEAN-6 and GCC top performers, suggesting potential to enhance trade performance through structural reforms in these two areas.

**Figure 2. Brunei Darussalam: Trade Openness - Brunei Darussalam can Benefit from Greater Trade Openness, Especially Through Reduced Non-tariff Barriers and Enhanced Border Clearance Efficiency**



Brunei Darussalam: Structural Gaps for Trade Openness vs. Peer Top-Performer

Brunei Darussalam: Trade Openness vs. Peers

Sources: WEF GCI, and IMF staff calculations. Note: The red bars indicate Brunei's standing.

**9.      Results suggest that Brunei would benefit from structural reforms to reduce non-tariff barriers (NTBs), which encompass a broad range of trade restrictions that can significantly impact international trade and economic efficiency.** NTBs can include import quotas, complex customs procedures rising cost of doing business, national standards and regulations posing trade obstacles, subsidies to local industries creating an uneven playing field, or government procurement policies that favor domestic companies. Examining and potentially reducing these non-tariff barriers could open new trade opportunities for Brunei, enhancing competitiveness, and stimulating economic growth. By fostering a more accessible and equitable trading environment, Brunei can more easily attract foreign investment, boost its export economy, and reap the comprehensive benefits of increased international trade.

**10.     OECD's trade facilitation indicators for Brunei suggests some scope for improvement, supporting the WEF-GCI data on lower than desirable border clearance efficiency.** Brunei's

performance vs. peer group top performers illustrates areas where structural reforms could yield the largest impact (Figure 3). Gaps vis-à-vis top performers in ASEAN-6 are largest for appeal procedures, Involvement of the trade community, Governance and impartiality and Documents. A similar, but slightly less pronounced pattern of gaps emerges vis-à-vis GCC top performing countries for the above 4 sub-indicators, painting an overall consistent picture. Brunei should therefore focus on structural reforms in these four areas, while also addressing remaining weaknesses to enhance trade facilitation holistically. Box 1 includes a comprehensive list potential measures to improve trade facilitation as provided by the OECD.

**Figure 3. Brunei Darussalam: Trade Facilitation. Brunei Darussalam Could Become More Efficient by Modernizing and Digitizing Trade Facilitation**
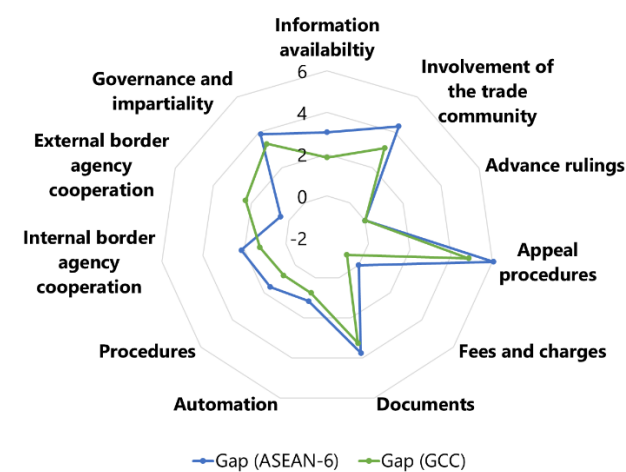


Sources: OECD Trade Facilitation, and IMF staff calculations.

**11.     Brunei would benefit from reform efforts to further reduce trade restrictions, specifically those on imports as well as payments and proceeds (Figure 4).** Based on the modified Measure of Aggregate Trade Restrictions (MATR)[2], derived from the IMF AREAER database, Brunei performs relatively well compared to its GCC peers and in line with its ASEAN-6 peer group on trade restrictions overall. The MATR consists of 5 main categories: (i) exchange measures, (ii) restrictions to payments, (iii) import restrictions, (iv) export restrictions, and (v) payments, and proceeds for invisibles, currency repatriation and surrender requirements. At a more granular level, Brunei performs well on restrictions to exports and payments when compared to both peer groups. Scope to improve exist in the imposition of import restrictions and payments and proceeds for invisibles. Brunei's performance is consistently weaker than the average of both peer groups in import restrictions, which include both tariff and non-tariff restrictions. Additionally, Brunei could further liberalize restrictions for payments and proceeds for invisibles across both peer groups.

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[2] MATR is a measure for assessing areas of possible restrictions for the international trade of goods and services, see IMF (2022), A Measure of Aggregate Trade Restrictions and their Economic Effects, IMF Working Papers. MATR is the unweighted sum of up to 22 possible binary variables in IMF's AREAER. For this analysis, summation was rescaled to range from 0 to 10 to obtain the modified MATR. A higher value implies a higher degree of economic freedom linked to trade.

**Box 1. Brunei Darussalam: Potential Measures to Improve Trade Facilitation**

- **Streamlining border procedures** – could benefit from the following:
  - ➢ Increasing the share of trade transactions covered by pre-arrival processing.
  - ➢ Reduce the share of goods undergoing physical inspections through a more efficient and automatised application of the risk management system.
  - ➢ Increase the share of goods that benefit from prior release to the final determination and payment of Customs duties, taxes, fees, and charges.
  - ➢ While the Customs agency appears to be implementing an automated risk management system, border controls of other relevant border agencies do not appear to be supported currently by a risk management system.
  - ➢ Low share of post-clearance audits carried out compared to other economies (below 2 percent of trade transactions in Brunei Darussalam)
  - ➢ Authorised Operators could be covered by a more comprehensive set of benefits provided, while issues around the transparency of the criteria for qualifying as an Authorized Operator and the procedures for submission and review of applications for AO status seem to have an impact on the ability of businesses to apply for this status.
- **Automation of border processes** – could benefit from the following:
  - ➢ Pre-arrival processing supported by the possibility to lodge documents in advance in electronic format remains in the process of implementation.
  - ➢ Automated processing for Customs declarations is not yet available full-time at key border posts.
- **Information availability** – could benefit from the following:
  - ➢ Required trade-related documentation are not all easily available for downloading online.
  - ➢ Information only for selected new or adjusted trade-related regulations is published in advanced of their entry into force.
  - ➢ More comprehensive information needs to be provided through the Customs website: e.g., publication of decisions and examples of Customs classification; advance rulings; appeal procedures decisions on Customs matters; there is an overall need to improve the user-friendliness of the Customs website.
- **Involvement of the trade community** – could benefit from the following:
  - ➢ Introduce general notice-and-comment framework procedures in place that are applicable to trade and border issues.
  - ➢ Introduce guidelines and procedures in place for governing the public consultation process.
  - ➢ Drafts are available before entry into force of a rule, but the trading community is not involved at the stage of drafting new trade related legislation.
  - ➢ Information is not available on how public comments are being dealt with by authorities.
- **Appeal procedures** on Customs matters – could benefit from the following:
  - ➢ There are no set periods specified in the laws and regulations for providing a decision on appeal or review.
  - ➢ Information about the motives of the administration's decision is not provided.
  - ➢ There appears to be no possibility of a judicial appeal following, or independent of, the administrative appeal of customs decisions.

In terms of **fees and charges**, Brunei Darussalam performs well, and we did not include any particular recommendations in this area.

Source: OECD Trade Facilitation Indicators.

**Figure 4. Brunei Darussalam: Trade Restrictions. Brunei Darussalam Could Liberalize Import Restrictions for Payments and Proceeds of Invisibles (2020)**

**Modified Measure of Aggregate Trade Restrictions (MATR): ASEAN-6**

ASEAN-6  GCC
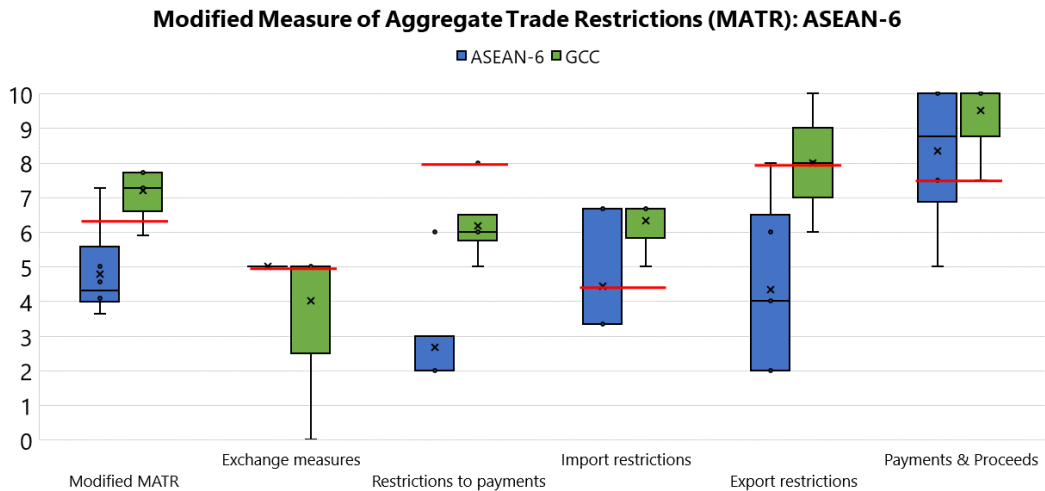


Source: IMF AREAER 2020.
Note: ASEAN-6 countries include Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam. GCC countries include Bahrain, Oman, Kuwait, Saudi Arabia, and Qatar. No data is available for UAE.

## D.  Market Regulation

**12.      Reforms to reduce regulatory burden and market dominance will promote Brunei's market regulation, enhancing domestic competitiveness and facilitating FDI attraction.** World Bank WGI and WEF-GCI data shows that Brunei performs well vs. peers on regulatory quality, but has room to reduce regulatory burden, market dominance, and distortive taxes and subsidies (Figure 5). Brunei should therefore continue to review the regulatory framework to identify reforms
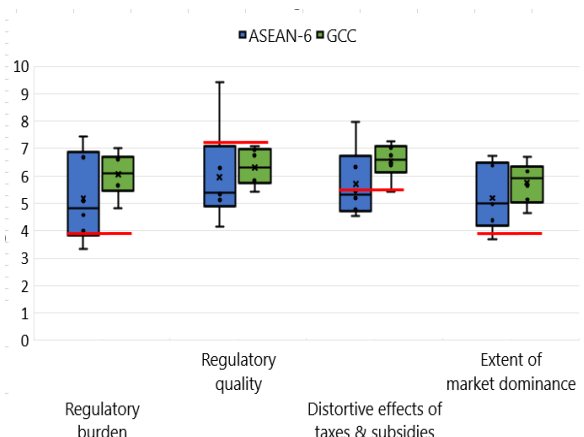
**Figure 5. Brunei Darussalam: Market Regulation Indicator Performance vs. Peers and Gap vs. Peer Top-Performers**

**Brunei Darussalam: Structural Gaps for Market Regulation Indicator vs. Peer Top-Performer**

**Brunei Darussalam: Market Regulation Indicator Performance vs. Peers**
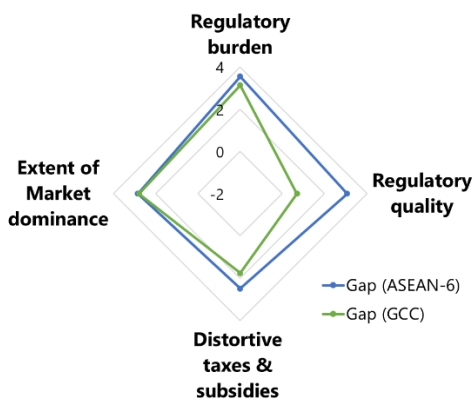


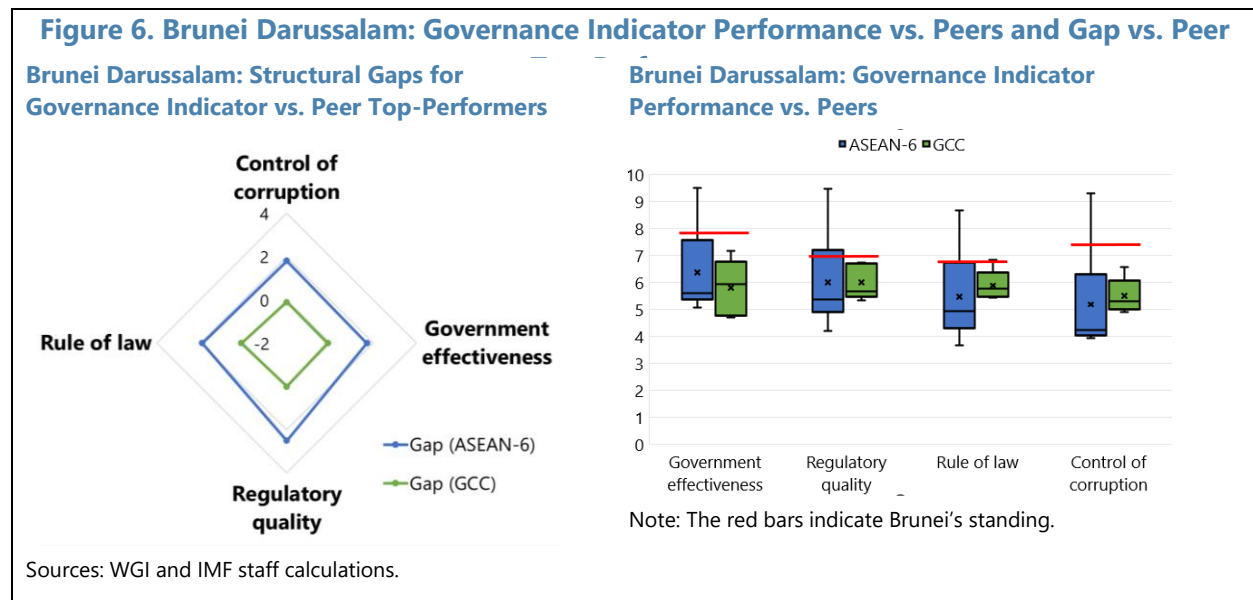Sources: WEF GCI, WGI, and IMF staff calculations.

Note: The red bars indicate Brunei's standing.

providing a level playing field for the private sector and ensure that regulations, subsidies, and taxes do not unduly benefit select enterprises (e.g., GLCs)[3].

## E.   Governance

**13.      According to governance indicators in 2021, Brunei is among the top performers among GCC peers, and only moderately below top performers in ASEAN-6, demonstrating the progress authorities have made thus far.** Governance indicators comprise four sub-indicators of the World Bank Worldwide Governance Indicators (WB-WGI) (Daniel Kaufmann and Aart Kraay (2023).): (i) government effectiveness, (ii) regulatory quality, (iii) control of corruption, and (iv) rule of law. Brunei performs relatively well when compared with ASEAN-6 top performers, with moderate gaps towards top performers. The data indicates that while there is always room to improve, this area may not be an immediate priority for first generation structural reforms. That said, the absolute performance on rule of law and control of corruption suggests that these areas should also not be ignored. To facilitate private sector led, sustainable growth, the authorities could consider structural reforms to enhance transparency and accountability of the public administration and the judiciary, to promote efficiency of enforcing rules, contracts, and property rights. Typical reforms include digitalization and modernization of administrative and judicial procedures, promoting access to information, lowering transaction cost, and reducing the potential for corruption.

**Figure 6. Brunei Darussalam: Governance Indicator Performance vs. Peers and Gap vs. Peer**



Note: The red bars indicate Brunei's standing.

Sources: WGI and IMF staff calculations.

## F.   Quantitative Analysis of Structural Reforms in Brunei Darussalam

**14.      Following a framework provided by the IMF Staff Discussion Note (SDN) by Budina et al. (2023), first generation structural reforms can help accelerate growth, attract foreign investment, as well as support the green transition.** Prioritizing these first-generation reforms—

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[3] These could build on the success of past measures, such as streamlining the process for land transactions by reducing approval procedures to less than half the time needed in 2020.

governance, external sector, and business regulation reforms—before implementing second-generation reforms—domestic finance and labor market reforms—can bring larger upfront gains in terms of output, help facilitate the green transition, and ease trade-offs between growth and climate.

**15.** **We use a standard econometric framework to assess the impacts of reforms on economic growth and foreign direct investment (FDI).** We employ the local projection method proposed by Jorda (2005) to estimate dynamic effects of reforms on outcome variables, consistent with the previous empirical literature on the economic impact of some structural reforms in EMDEs (Budina et al., 2023). We define major reforms as episodes for which a change in the relevant indicator is at least two standard deviations of the distribution (of annual changes in the relevant indicator across the whole sample), consistent with previous work (e.g., Budina et al., 2023 and IMF, 2019). Uncaptured policy reforms that may be implemented simultaneously can influence the estimates, but some endogeneity issues are addressed by controlling for past growth outcomes and past reforms. The equations below are estimated via OLS for each k = 0, …, 4 and the estimated coefficients of interest, $\beta\_k$, are used to generate impulse responses.

**Figure 7. Brunei Darussalam: Potential Reform Impact on Output and Net FDI Inflows**

**Brunei Darussalam: Effect of Reforms on Output (Full sample)**



**Brunei Darussalam: Effect of Reforms on Net FDI Inflows (Full sample)**



Sources: IMF, World Bank, and IMF staff calculations.
Note: X-axes represent the time horizon where t=0 is the year of the shock. Y-axes represent the percentage changes of output or net FDI inflows from time t=-1. The lines denote the responses to a major historical reform (two standard deviations) at time t=0. Dashed lines denote 90 percent confidence bands.
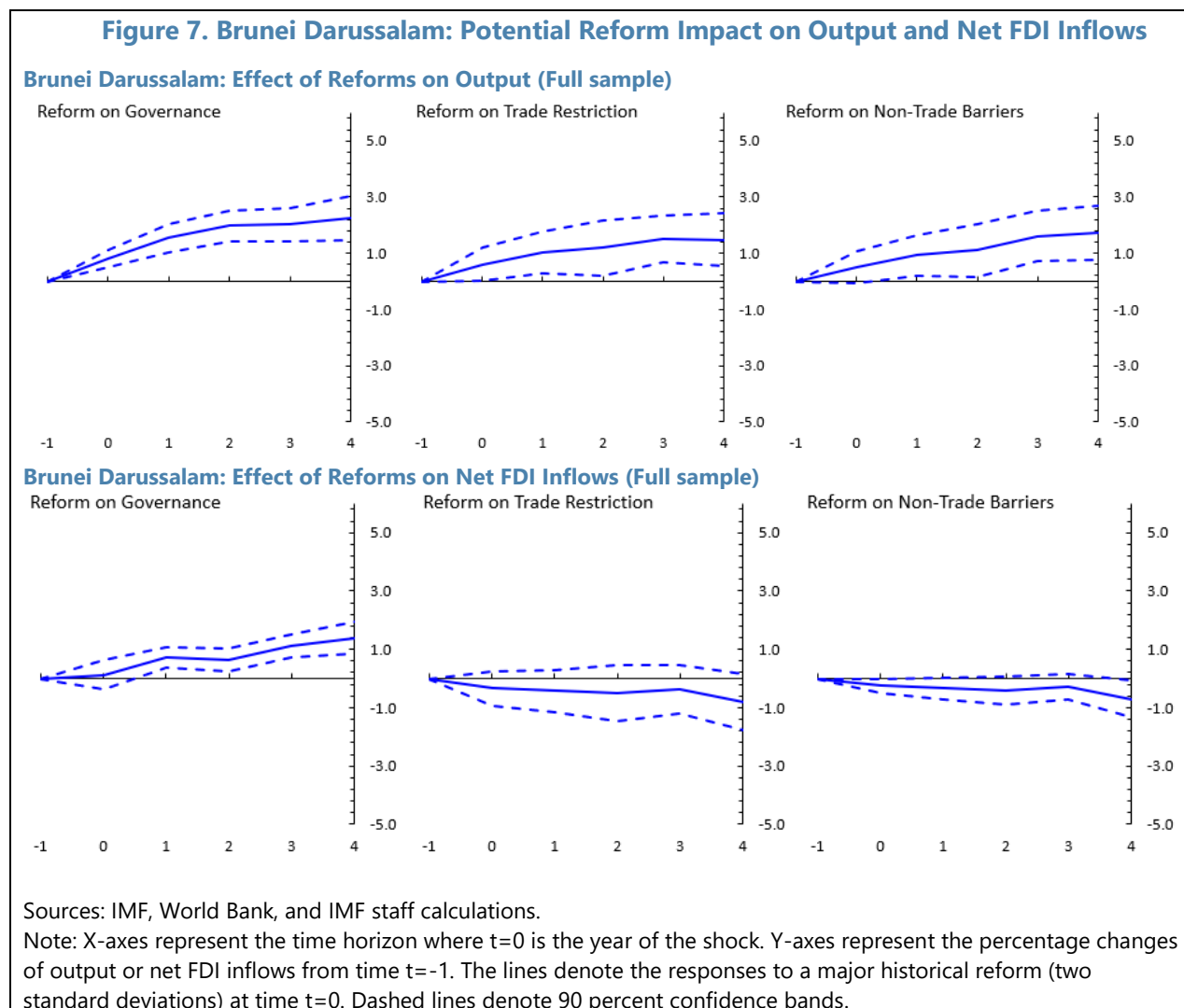
$$Y_{i,\,t+k} - Y_{i,t-1} = \alpha_i + \gamma_t + \beta_k SR_{i.t} + \theta X_{i.t} + \epsilon_{i,t}$$

where Y is the outcome variables with i indicates individual countries and t indicates years. SR stands for structural reform (see Appendix for a detail on structural reform variables used in the analysis), and X is a set of control variables including lags of past economic growth, and past reforms, while $\alpha_i$, $\gamma_t$ denote country fixed effects and year fixed effects respectively.

**16.      Empirical evidence suggests significant positive impacts from structural reforms on growth and FDI, even when the analysis uses pooled data for Brunei, ASEAN-6 and GCC countries.** The sample consists of 124 EMDEs, including Brunei, over the periods of 2000-20. The baseline estimation shows positive output effects from major governance and trade related reforms. The results from alternative dataset of Brunei-peers also point to positive output effects from major governance reforms but the effects from trade related reforms are muted. The baseline and alternative estimation for the effect on net FDI inflows shows positive from major governance reforms but no or negative from major trade related reforms, which could imply a role for trade incentives for attracting FDI.

## G.   Conclusion

**17.      Brunei has made good progress toward a diversified and sustainable economy since 2007, yet further structural reforms can significantly upgrade its growth potential**. On aggregate, Brunei performs well compared with its ASEAN-6 and GCC peers in most areas analyzed in this paper. However, Brunei should consider structural reforms to enhance performance in select priority areas identified throughout this paper to lift long-term growth potential.

**18.      Priority areas include the enhancement of trade facilitation, reviewing possibilities to reducing non-tariff barriers and restrictions to imports as well as payments and proceeds, leveling the playing field through market regulation reforms to reduce the regulatory burden, and distortive taxes and subsidies.** Rationalizing non-tariff barriers such as certification requirements and furthering trade facilitation by reducing export/import documentation process and improving timeliness of appeal procedures would be examples of measures which can help reduce the gaps in the external sector. In terms of market regulation, reducing regulatory burden for firms such as business licensing and permits, reforming taxes and subsidies that create distortive effects in the product market, and lowering market dominance of large firms, especially GLCs, are important. Improving quality of regulation would also contribute to boosting growth.

**19.      Economic theory suggests large and significant positive effects of these reforms on economic growth and foreign direct investment including public private partnerships, in direct support of Brunei's long-term economic and developmental objectives.** With a level playing field, efficient and digitalized administrative procedures, and free trade all underpinning a private sector led growth model, Brunei can facilitate its transition into a more diversified, sustainable economy which is less dependent on the oil and gas sector, promoting sustainable macroeconomic stability, and providing the basis for an elevated quality-of-life which Brunei's authorities intend to provide for their citizens.

# Appendix 1. Quantitative Analysis

**1.      We use governance, trade restriction, and non-tariff barriers indicators and assess their impacts on output and FDI. An indicator for governance is** constructed from four sub-indicators published by the World Bank (Worldwide Governance Indicators): (i) government effectiveness, (ii) regulatory quality, (iii) control of corruption, and (iv) rule of law. Four sub-indicators are simple-averaged for an aggregate reform indicator. Indicators for trade restrictions is from IMF Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER). Measure of Aggregate Trade Restrictions (MATR) is the unweighted sum of up to 22 possible binary variables in IMF's AREAER, which is used as an indicator for trade restriction. An indicator for non-tariff barriers is constructed by excluding exports/imports tariffs and taxes from aggregate MATR. Each indicator is rescaled to range from 0 to 10 (a higher value implying a better performance). Our outcome variables are output, the log of GDP based on purchasing power parity, and FDI, net FDI inflows as percentage of GDP.

**2.      Impulse responses are generated to graphically show how much output or FDI would have changed over time before major structural reforms were implemented. The e**quations below are estimated via OLS for each k = 0, ..., 4 and the estimated coefficients of interest, $\beta\_k$, are used to generate impulse responses to a major reform shock, two standard deviations of the distribution of annual changes in the relevant indicator across sample used.

$$Y_{i,t+k} - Y_{i,t-1} = \alpha_i + \gamma_t + \beta_k SR_{i.t} + \theta X_{i.t} + \epsilon_{i,t}$$

where Y is the outcome variables with i indicates individual countries and t indicates years. SR stands for structural reform (a change in reform indicators from t=-1 to t=0), and X is a set of control variables including lags of past economic growth, and past reforms, while $\alpha_i$, $\gamma_t$ denote country fixed effects and year fixed effects respectively.

Following the local projection method proposed by Jorda (2005), $\beta_0$ in the regression model (1) below corresponds to the point estimate of the percentage change of Y from t=-1 to t=0, the year when major reforms were implemented.

$$Y_{i,t} - Y_{i,t-1} = \alpha_i + \gamma_t + \beta_0 SR_{i.t} + \theta X_{i.t} + \epsilon_{i,t} \cdots (1)$$

$\beta_1$ in the regression model (2) below corresponds to the point estimate of the percentage change from t=-1 to t=1, one year after major reform were implemented.

$$Y_{i,t+1} - Y_{i,t-1} = \alpha_i + \gamma_t + \beta_1 SR_{i.t} + \theta X_{i.t} + \epsilon_{i,t} \cdots (2)$$

In the same manner, $\beta_2, \beta_3, \beta_4$ are estimated to demonstrate the estimated percentage changes over time from the year before major reforms were implemented. Dashed lines in the charts denote 90 percent confidence bands calculated from the standard deviation of the estimates for respective $\beta_k$.

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