RIETI Discussion Paper Series 23-E-070

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RIETI Discussion Paper Series 23-E-070

**October 2023**

# Macroeconomic Shocks and Economic Performance in Malaysia: A sectoral analysis※

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Abstract

COVID-19, the Russia-Ukraine War, inflation, contractionary U.S. monetary policy, and other shocks have buffeted the world economy. To examine how these shocks impact Malaysia, this paper examines how they affect Malaysian sectoral stock returns. The results indicate that inflation, U.S. monetary policy, exchange rates, and other macroeconomic variables are exerting second order effects on Malaysian industries. The paper then compares the performance of sectoral stock returns during the three and a half years since the pandemic began with returns forecasted based on five macroeconomic variables. The results indicate that industrial metals and banks are performing well. Food producers, healthcare providers, medical equipment suppliers, tourist-related companies, and semiconductor firms are suffering. This paper considers several policy steps that could help firms in hard-hit sectors to recover and be resilient. These include encouraging exports of tropical fruits and halal foods and promoting medical tourism. In addition, attracting foreign direct investment (FDI) to facilitate learning and progression to sophisticated segments of the electronics value chain would increase firms' robustness. Seeking inbound FDI is important now as multinational corporations attempt to diversify out of China and as countries seek to friendshore their semiconductor supply chains.

Keywords: Malaysia; Stock market exposures; Foreign direct investment; the COVID-19 pandemic; Exports

JEL classification: F10, G10



※This study is conducted as a part of the project "Economic Shocks, the Japanese and World Economies, and Possible Policy Responses" undertaken at the Research Institute of Economy, Trade and Industry (RIETI). The draft of this paper was presented at the DP seminar of the Research Institute of Economy, Trade and Industry (RIETI). I thank Keiichiro Kobayashi, Guanie Lim, Masayuki Morikawa, Masato Mizuno, Shujiro Urata and other colleagues for invaluable comments. Any errors are my own responsibility.

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## 1. Introduction

Many shocks have buffeted the world economy. These include the COVID-19 pandemic, the Russia-Ukraine War, inflation, contractionary U.S. monetary policy, and the threat of a global slowdown. This paper investigates how these events have impacted Malaysia's economy.

The coronavirus pandemic hit Malaysia hard, with real GDP falling 5.6% in 2020. Malaysia then rolled out a successful vaccination program, with 95% of adults fully vaccinated by the end of 2021[1] Malaysia closed its borders on 18 March 2020 and re-opened them on 1 April 2022. The Malaysian economy then grew 8.7% in 2022. As the IMF (2022) noted, however, the recovery has been uneven.

The recovery has also been complicated by the war in Ukraine that started in February 2022. The IMF (2022) observed that the resulting higher crude oil prices could benefit a resource-rich country such as Malaysia by improving its terms-of-trade. The IMF also noted, however, that higher food and energy prices from the war could have deleterious effects by increasing inflation.

Contractionary monetary policy in the U.S. could also harm the Malaysian economy. Arteta et al. (2022) observed that a rise in U.S. interest rates can generate capital outflows from emerging markets (EM). Higher interest rates and a stronger U.S. dollar can then increase EM debt burdens and impede debt repayments. This can harm EM banking systems by causing more of their customers' debt to be at risk and by forcing banks to increase their loan loss provisions.

Capital outflows that generate banking sector difficulties are a concern in ASEAN because these contributed to the virulence of the 1997-98 Asian Financial Crisis (AFC). Krugman (2001) described the AFC as an open economy application of the Bernanke-Gertler

[1] Data on vaccination rates in Malaysia are available at: https://covidnow.moh.gov.my/ .

model. Bernanke and Gertler demonstrated that a negative macroeconomic shock can be amplified if it restricts credit creation.[2] Because of asymmetric information, a shock that weakens firms' balance sheets will worsen the terms on which they can obtain credit. This is because difficulties in providing down payments and posting collateral increase the agency costs associated with borrowing. If U.S. interest rate hikes raise EM debt burdens, they can also restrict the flow of credit to EM firms through this channel. This in turn can force them to curtail spending and output.

To investigate how the COVID-19 pandemic, the Russia-Ukraine War, inflation, contractionary U.S. monetary policy and other factors affect the Malaysian economy this paper investigates how they affect stock prices. Stock prices are useful for examining sectoral impacts since finance theory indicates that stock prices are the expected present value of future cash flows. Black (1987, p. 113) observed that, "The sector-by-sector behavior of stocks is useful in predicting sector-by-sector changes in output, profits, or investment. When stocks in a given sector go up, more often than not that sector will show a rise in sales, earnings, and outlays for plant and equipment." McMillan (2021), using quarterly data from 1973 to 2017 for 12 countries, found that stock prices have predictive power for future GDP in several cases. Examining the impact of the pandemic and macroeconomic shocks on sectoral stock returns can thus shed light on how they are impacting individual sectors.

The results indicate that industrial metals such as aluminum have done well. Banks, after suffering as the pandemic began, are now profitable. Food producers and fruit companies are performing badly. The healthcare and medical supplies sectors gained as the pandemic struck but are now sputtering. Semiconductor and electronic equipment firms also benefited as the

[2] See, e.g., Bernanke, Gertler, and Gilchrist (1996).

pandemic fueled demand for information and communication technology (ICT) devices by individuals huddled-at-home. Now, however, they are underperforming.

These findings have clear policy implications. For instance, government attempts to strengthen the agriculture sector by promoting exports of fruits and halal products are of particular moment (SERC, 2022). Encouraging medical tourism would also benefit the healthcare sector and firms providing related services (ACCCIM, 2022). In semiconductors, Malaysia should seek to attract foreign direct investment (FDI) and advance from downstream semiconductor chip assembly and packaging towards higher-value added tasks (Wang and Lim, 2021).

In previous work the IMF (2022) found that COVID-19 disproportionately burdened Malaysian firms operating in contact-intensive sectors. Tourism suffered, with many firms concentrated in tourism-dependent areas. The food sector also struggled as inflation decreased the ability of consumers to purchase food and related items and as the pandemic disrupted the flow of migrant labor.

Blanchard et al. (2017) investigated how contractionary monetary policy in advanced economies affected emerging economies. They extended the Mundell-Fleming model to include both bond and non-bonds. They reported that contractionary monetary policy abroad, by generating capital outflows from emerging economies, increases the rate on non-bonds. This exerts a contractionary impact on emerging economies by increasing the cost of financial intermediation.

Arteta et al. (2022) investigated how hawkish Federal Reserve policy and other shocks impact emerging market financial markets. They employed a sign-restricted vector autoregression over the January 1982 to June 2022 period to identify episodes when the Fed

reaction function changed to emphasize fighting inflation. They then used a panel local projection model over the 1997Q2 to 2019Q4 period to examine how shifts in Fed policy preferences and other factors affect emerging market equity prices, interest rates, and exchange rates. They found that anti-inflationary shifts in Fed policy lowered equity prices, increased bond yields, and depreciated currencies in emerging economies. They thus concluded that tighter U.S. monetary policy harmed emerging economies by worsening their financial conditions.

Estrada et al. (2015) examined how news of the taper tantrum, when Fed Chairman Bernanke announced that he would start tapering bond purchases, affected aggregate stock prices in 22 developing economies. Bernanke's announcement was viewed as news of contractionary U.S. monetary policy. Estrada et al. represented tapering news using daily dummy variables set equal to 1 from 22 May 2013 to the time when stock prices troughed at the end of June and equal to 0 for the rest of 2013. Within Asia, they reported that the news only affected equity prices in China, Hong Kong, South Korea and Singapore but not in India, Indonesia, the Philippines, Thailand, and Vietnam.

Chen et al. (2014) examined how Fed policy news affected emerging market asset prices both during the tapering period and before. They decomposed Fed policy news into "signal shocks" that affect expectations of future short-term policy rates and "market shocks" that affect longer-term rates through other channels. Estimating a panel regression model for 21 emerging market economies, they reported that news of contractionary policy measured either way during the tapering period lowered stock returns, raised bond yields, and depreciated exchange rates in emerging markets.

Ready (2018) investigated how price changes driven by oil supply shocks affect consumer stocks in Malaysia and other countries. Using monthly data between 1986 and 2011, he found that oil price increases driven by supply shocks harm consumer stocks in Malaysia and other countries. He concluded that oil price increases reduce consumer spending.

The World Bank (2023a) found that inflation depressed retail sales in ASEAN. It reported that much of Malaysia's inflation after the pandemic was driven by increases in food and beverage prices. It found that high oil prices supported growth in oil exporters such as Malaysia. It presented evidence that financial tightening in the U.S. could reduce growth in countries such as Malaysia because it reverses short-term capital inflows.

The next section presents the data and methodology. Section 3 contains the results. Section 4 draws policy implications. Section 5 concludes.

## 2. Data and Methodology

This paper examines how shocks that have impacted the world economy affect different sectors of the Malaysian economy. If focuses on six shocks: those to the Malaysian economy, the world economy, Malaysian inflation, U.S. monetary policy, exchange rates, and crude oil prices. It examines how these shocks affect Malaysian sectoral stock returns. It then estimates a model of sectoral stock returns up until the pandemic impacted the Malaysian stock market in February 2020, and employs actual out-of-sample values of the macroeconomic variables to forecast how sectoral stock returns are expected to perform during the three and a half years since the pandemic started. By comparing actual returns with forecasted returns, it is possible to shed light on sectors that have outperformed or underperformed as the COVID-19 pandemic, the Russia-Ukraine War, and other factors have buffeted the economy.

Data on sectoral stock returns, returns on the Malaysian and world stock market, the Malaysian ringgit/U.S. dollar exchange rate, and the spot price of Dubai crude oil are obtained from the Datastream database. Data on Malaysian inflation news are obtained from regressing the Malaysian consumer price index inflation rate (obtained from CEIC) on lagged values of the inflation rate and using the residuals to represent unexpected inflation. Data on U.S. monetary policy surprises are measured using the Bauer and Swanson (B&S) (2022) variable. Monetary policy news is captured by the first principal component of the change in the first four Eurodollar futures contracts over the 30 minutes bracketing Federal Open Market Committee (FOMC) announcements. B&S then aggregate these data to a monthly frequency. Contractionary surprises are indicated by increases in the B&S variable.

As a robustness check U.S. monetary policy is measured using the method of Bu, Rogers, and Wu (BRW) (2021). BRW employed instrumental variable techniques and Fama and MacBeth's (1973) two-step regression approach to isolate monetary policy news from the response of U.S. Treasury bond yields to Federal Reserve actions. Their variable captures the changes in the three key policy instruments: interest rate targets, quantitative easing, and forward guidance.

Data on the B&S variable are available until December 2019. The sample period thus extends from February 2001 until December 2019. [3] The estimated equations take the form:

$$\Delta R_{i,t} = \alpha_0 + \alpha_1 \Delta R_{m,Malaysia,t} + \alpha_2 \Delta R_{m,World,t} + \alpha_3 Inf t_t + \alpha_4 Mon_t + \alpha_5 \Delta(\frac{ringgit}{dollar})_t + \alpha_6 \Delta Dubai_t, \quad (1)$$

[3] In cases where the data are not available in February 2001, the regressions start of the first date when data are available.

where $\Delta R_{i,t}$ is the monthly stock return for Malaysian sector *i*, $\Delta R_{m,Malaysia,t}$ is the change in the log of the price index for Malaysia's aggregate stock market, $\Delta R_{m,World,t}$ is the change in the log of the price index for the world stock market, $Inft_t$ represents news about inflation, $Mon_t$ is the Bauer and Swanson (2022) or Bu, Rogers, and Wu (2021) measure of U.S. monetary policy surprises, $\Delta(\text{ringgit/dollar})_t$ is the change in the log of the nominal ringgit per dollar exchange rate, and $\Delta Dubai_t$ is the change in the log of the spot price for Dubai crude oil.

To forecast returns after COVID-19 began, the model is estimated over the February 2001 to February 2020 period. The pandemic began impacting the Malaysian stock market at the end of February 2020. Actual values of the independent variables are then used to forecast sectoral returns over the March 2020 to June 2023 period. Actual returns are compared with forecasted returns over the period after the pandemic began.[4]

## 3. Results

The return on the aggregate Malaysian stock market is first regressed on the other macroeconomic variables. The results, with heteroskedasticity and autocorrelation consistent standard errors in parentheses, are:

$$\Delta R_{m,Malaysia} = \underset{(0.05)}{0.08}*\Delta R_{m,World} - \underset{(0.42)}{0.84}**Inft + \underset{(0.08)}{0.07}B\&S - \underset{(0.10)}{0.62}***(ringgit/dollar) + \underset{(0.03)}{0.08}**\Delta Dubai$$

Adjusted R-squared = 0.166, Standard Error of Regression = 0.038, Sample period = February 2001 – December 2019. *** (**) [*] indicates significance at 1% (5%) [10%] levels.

The results indicate that all of the variables except the B&S U.S. monetary policy variable impact the aggregate Malaysian stock market. Results including the BRW variable, available on

[4] Since the B&S and BRW variables are not available all the way to June 2023, they are excluded from the forecasting exercises. This should not affect the results much as the B&S and BRW variables are not statistically significant in the regression for the aggregate Malaysian stock market and in most of the sectoral regressions.

request, also indicate that U.S. monetary policy does not impact the aggregate Malaysian stock market. Thorbecke (2016) found that news of contractionary U.S. monetary policy harmed aggregate stock returns in Indonesia, the Philippines, and Thailand but not in Malaysia. The positive impact of oil price increases on Malaysian stock returns confirms the World Bank's (2023a) observation that higher oil prices benefit oil exporting countries such as Malaysia.

Table 1 reports the exposure of Malaysian sectoral stock returns to the macroeconomic variables including the B&S measure of U.S. monetary policy.[5] The model performs well, with the adjusted R-squareds across the sectors averaging 0.356.[6] All of the sectors exhibit strong exposure to the Malaysian aggregate stock market. There is little additional exposure to the other macro variables.[7] Contractionary U.S. monetary policy (column (6)) benefits Malaysian banks and harms Malaysian food and fruit and grain producers. Contractionary monetary policy in the U.S. that triggers contractionary monetary policy and higher interest rates in Malaysia can benefit banks by increasing the spread between the interest rate they earn on assets and the interest rate they pay on deposits (see Petralia et al., 2019). There is thus no evidence that contractionary monetary policy in the U.S. is harming the Malaysian financial sector through the channels highlighted by Krugman (2001) and Bernanke et al. (1996). Thorbecke (2016) also found that contractionary U.S. monetary policy harms Malaysian food producer stocks.

Inflation benefits the aluminum sector (column (8)). There is a long literature showing both theoretically and empirically that inflation benefits metals and other sensitive commodities (see, e.g., Frankel and Hardouvelis, 1985). Inflation also harms the food producer sector (at the

[5] Results with the BRW measure of monetary policy indicate that few sectors are affected by this variable. These results are available on request.

[6] Adjusted R-squareds for the individual sectors are available on request.

[7] Because the macroeconomic variables impact the return on the Malaysian stock market and the return on the Malaysian stock market affects sectoral returns, the macroeconomic variables affect sectoral returns through this channel. However, calculations of these effects, available on request, indicate that this indirect impact of macroeconomic variables on sectoral returns is small.

10% level). The World Bank (2023a) found that much of Malaysia's inflation was driven by food and beverage inflation and noted that inflation decreases the ability of consumers to purchase food and related items. Inflation is also negatively related to marine transport and other transportation sectors.[8]

Exchange rate depreciations (column (10)) harm sectors such as brewers and chemicals that rely on imported inputs. They benefit sectors such as electric and electronic equipment that are active exporters. Although not reported in Table 1, crude oil betas are not statistically significant for any of the sectors.

Figure 1 shows actual sectoral returns and predicted sectoral returns since the pandemic began. The figure is ordered from the sector with the largest positive difference between actual and predicted returns in June 2023 (construction) to the sector with the largest negative difference (medical supplies). The sectors in Figure 1 can be categorized into those that: 1) initially gained when COVID-19 appeared and then fell, 2) those that initially gained and then kept gaining, 3) those that initially lost and then recovered, and 4) those that initially lost and continued losing.

The first category includes medical supplies, healthcare, and semiconductors. Medical supplies stocks (panel w) more than doubled in value between February and July 2020. Malaysia is a leading supplier of medical supplies (e.g., rubber gloves) and demand for these soared during the pandemic. Medical supply stocks then tumbled and fell logarithmically to more than 100% below their forecasted values by June 2023. Healthcare stocks in panel v) closely mirrored the performance of medical supply stocks. Semiconductor stocks in panel s) fell in March 2020 but then gained more than 100% as demand for ICT devices by people working from home drove

[8] For a discussion of the relationship between inflation and marine shipping costs, see Carrière-Swallow et al. 2022.

demand for semiconductors. Between November 2021 and June 2023, however, semiconductor stocks fell 60%. One problem facing the Malaysian semiconductor sector is that it is mired in low value-added niches of the semiconductor industry such as assembly and packaging (Wang and Lim, 2023).

Aluminum (panel b) is an example of the second category. After falling briefly in March 2020, it has grown steadily and in June 2023 was 40% above its forecasted value. Demand for and prices of industrial metals have soared, and Malaysia metal producers have benefited.

Many sectors initially suffered and then recovered. These include banks (panel e), the financial sector (panel f), and automobiles (panel g). The IMF (2023) reported that Malaysian banks are profitable and the financial system stable. The banking sector's total capital ratio at the end of 2022 equaled almost 19%, its common equity tier 1 equaled 15%, and its share of nonperforming loans and household debt under repayment assistance both equaled 1.7%. The financial system also has sufficient liquidity. A strong banking sector is important for Malaysian firms, given their dependence on bank credit. The demand for automobiles, after falling as the pandemic arrived, increased as individuals shunned public transportation.

Other sectors suffered initially and then continued to perform badly. These include food producers (panel p), fruits and grains (panel q), brewers (panel t), and soft drink makers (panel u). As people stopped visiting restaurants during the pandemic, these sectors suffered. Then as the Russia-Ukraine War raised food prices and as inflation forced consumers to economize, these sectors continued to underperform.

Tourism-related sectors such as airlines (panel h), travel and leisure (panel k), and casinos and gambling (panel m), after suffering when the pandemic arrived, are now performing as predicted. It is important to note, however, that they are performing worse than before the

pandemic arrived. Airlines stock in June 2023 were 19% below their level in February 2020 and travel and leisure and casinos and gambling were both 17% below their February 2020 levels.

The results indicate that several sectors are underperforming three and a half years after the pandemic struck. These include healthcare, medical supplies, semiconductors, food producers, fruits and grains, and tourism-related sectors. The next section considers how to promote economic activity in these sectors that have been hit by economic shocks and often suffered through no fault of their own.

## 4. Policy Implications

The previous section identified sectors that have been hit hard since the pandemic began. Before turning to these sectors it is helpful to consider general principles for promoting economic activity in Malaysia. Kawai and Lee (2015) noted that, by focusing on short run issues, the longer run needs of firms are often overlooked. They highlight that policymakers should seek to nurture competition and entrepreneurship and to increase productivity. Education plays a key role in these endeavors.

Ferlito (2020) noted that an entrepreneurial mindset can be promoted in Malaysia by studying history, philosophy, geography, literature, and other humanistic subjects. Steve Jobs similarly said, "Technology alone is not enough – it's technology married with liberal arts, married with the humanities, that yields us the results that make our heart sing" (Carmody, 2011). Sawa (2013) reported that Japanese engineers working during the golden era of the Japanese electronics industry received training not only in math and science but also in literature, philosophy, and history. To foster creativity and nurture entrepreneurs who can identify profitable opportunities, Malaysia should provide students with a well-rounded education.

There is also a need to invest in education after the pandemic. The IMF (2022) reported that schools were fully closed for 46% of the time during the first ten months after COVID-19 hit and partially closed for an additional 18% of the time. To make up for this and ensure the long-term preparedness of future workers, it is necessary to offer remedial education, increase schooling hours, and enlist parents to provide additional training outside of school hours (World Bank, 2023b).

The IMF (2022) also recommended labor market policies to train and upskill workers who suffered during the pandemic. SERC (2022) documented that 90% of Malaysia's small and medium sized enterprises (SMEs) are in the service sector. Kawaii and Lee (2015) noted that modern services are more skill-intensive than manufacturing or agriculture, and that consequently attention to education is crucial. Half of Malaysian SMEs surveyed also reported that inadequate skills are the greatest threat they face when competing in world markets (ACCCIM, 2022). So targeted spending on improving skills, as Malaysia is aiming for under its 12$^{th}$ Malaysia Plan, would benefit Malaysian firms.

The results in the previous section indicate that both the healthcare and tourism sectors are struggling. One way to stimulate both sectors would be to promote medical tourism. As Kawaii and Lee (2015) noted, healthcare in Asian countries can be much cheaper than in other countries and thus can attract tourists. SERC (2022) observed that medical tourism in Malaysia offers opportunities for an array of firms, including hotel operators, travel agents, ferry companies, wellness providers, and tourism companies.

ACCCIM (2022), surveying stakeholders, identified several obstacles to firms involved in medical tourism. One is a lack of coordination between ministries responsible for healthcare and tourism. A second is onerous procedures for renewing medical visas, requiring patients to

resubmit visa applications every 30 days. A third is inadequate government promotion of medical tourism abroad. A fourth is insufficient knowledge and financial resources among SMEs in this sector. To realize the potential in medical tourism, the government should address these issues.

The Malaysian Rubber Board can increase the demand for medical and household rubber gloves by researching and spreading knowledge about manufacturing biodegradable gloves. The lion's share of rubber gloves is thrown away. Environmentally friendly gloves would be desired by many consumers and businesses throughout the world.

The results in the previous section indicate that the semiconductor sector is underperforming. Wang and Lim (2023) noted that the Malaysian semiconductor industry is mired in low value-added labor-intensive activities such as assembly and packaging. Interviewing key observers, they found that the lack of a robust engineering ecosystem prevented Malaysian semiconductor firms from advancing into more complex tasks. They reported that there was insufficient FDI and that technical collaboration between Malaysian semiconductor firms such as Silterra and Taiwanese firms such as ProMos Technologies did not generate knowledge transfers to Malaysian firms. Hill et al. (2012) observed that Malaysia's affirmative action programs favoring indigenous Malaysians (*bumiputera*) over ethnic Chinese and Indian Malaysians deterred foreign investors. Wang and Lim also noted that insufficient spending on research and development (R&D) disadvantaged the Malaysian semiconductor industry.

Experience in economies such as Taiwan indicates that a robust semiconductor industry provides abundant opportunities for firms to participate in the value chain. Malaysia should seek to strengthen this sector. It should train more engineers. It should also seek to attract FDI. One key step would be to ease the affirmative action policies that have prevented the best candidates

from becoming CEOs, the most qualified firms from receiving grants, and the most promising students from obtaining scholarships (Rasiah, 2010, 2017). Another step would be to recruit workers endowed with tacit knowledge from abroad. For instance, Lim and Pek (2023) have suggested that Malaysia recruit Japanese retirees to promote human capital development in Malaysia. A third would be to boost spending on R&D. As MNCs are seeking to relocate away from China, creating an attractive environment for foreign investors in these and other ways would help Malaysia to seize the opportunity and grow its semiconductor sector.

SERC (2022) has offered several suggestions for promoting R&D in Malaysia. It noted that while private companies undertake the lion's share of R&D in advanced economies, in Malaysia the private sector accounts for only 43.9% of R&D expenditures. It observed that innovation depends on the government's funding of science and research. Malaysia should imitate the example of Taiwan, where government research institutes, science parks, private firms, and universities work together in close proximity to help disperse technical knowledge across the economy.

The results in Section 3 indicate that the fruits and grains sector is underperforming. SERC (2022) noted that Malaysia has favorable climate and soil conditions for tropical fruits, including pineapples, bananas, guavas, mangoes, papayas, coconuts, durians, watermelons, and coconuts. ACCIM (2022) reported that that the food and farming sector is dependent on costly inputs. It argued that both the private sector and the government should promote learning and technology assimilation to reduce this dependence. It also noted that only 5.5% of planted areas produces fruits and vegetables. It observed that the government could increase the land used for fruit and vegetable farming by providing 30-year leases to new farmers if they agree to farm the

land for a certain period of time. It also advocated providing leases of 30 years or longer to existing farmers to encourage modernization and re-investment.

The findings in the previous section indicate that food producers have been hit hard over the last three years. SECR (2022) reported that there are 1.9 billion Muslims in the world, and that Malaysia is well positioned to export halal foods and products to them. Halal certification reassures consumers that the goods have been produced according to Shariah law.

SERC (2022) recommended several steps that Malaysia could take to promote the halal industry. First, the Department of Islamic Development Malaysia (JAKIM) lacks manpower and can thus be slow to provide halal certification and can provide poor monitoring and enforcement. Delays in certification hinder businesses from being competitive and poor monitoring and enforcement open the door for businesses to provide fake certification. Fake products can in turn tarnish the reputation of the entire Malaysian halal sector. SECR observed that some find the JAKIM guidelines confusing and have to pay extra to navigate the procedures. Other businesses do not apply for halal certification because they believe that the process is too complicated and time-consuming. To help Malaysian entrepreneurs to take advantage of the opportunities of producing halal food, JAKIM should remedy these issues. JAKIM should also work with halal certification agencies abroad to harmonize standards and streamline trade.

## 5. Conclusion

The COVID-19 pandemic buffeted the Malaysian economy, contributing to a fall in real GDP of 5.6% in 2020. Malaysia then vaccinated 95% of its adult population be the end of 2021 and opened its border in 2022. While the Malaysian economy recovered in 2022, the IMF (2022) noted that the recovery has been uneven. The Russia-Ukraine War beginning in February

2022 also unleashed a rise in prices for oil, food, and other items that impacted Malaysia. In addition, anti-inflationary monetary policy in the U.S. could generate capital outflows from Malaysia that raise interest rates, depreciate the ringgit, and increase corporate indebtedness.

To investigate how these and other shocks are impacting the Malaysian economy this paper investigates they affect sectoral stock prices. Finance theory indicates that stock prices equal the expected present value of future cash flows. Thus examining how these shocks affect sector-by-sector stock prices can shed light on how they are affecting sector-by-sector sales and profits (see Black, 1987).

The results indicate that contractionary U.S. monetary policy does not harm the Malaysian economy and even benefits the banking sector. This is contrary to the predictions of Blanchard et al. (2017) and to what one might expect from an open economy version of the Bernanke-Gertler model (see, e.g., Krugman, 2001). The impact of oil price changes, Malaysian inflation, and rest of the world demand is also small.

Comparing sectoral performance over the three and a half year since the pandemic struck with that forecasted based on a set of macroeconomic variables, the results indicate that healthcare, medical supplies, semiconductors, food producers, fruits and grains, and tourism-related sectors are underperforming.

The semiconductor sector is of particular moment for Japan and the U.S. Both countries are seeking to friendshore production of key items such as semiconductors. Malaysia is currently mired in low value-added labor-intensive activities such as assembly and packaging. If they could develop a vibrant semiconductor sector, this would help the U.S. and Japan to diversify their semiconductor value chains. Malaysia could strengthen its semiconductor sector by training more engineers, relaxing its affirmative action policies that have deterred foreign

investors, recruiting workers from abroad endowed with tacit knowledge, and boosting spending on R&D. Taiwan, where government research institutes, science parks, private firms, and universities work together in close proximity to help disperse technical knowledge across the economy, provides a good model for Malaysia.

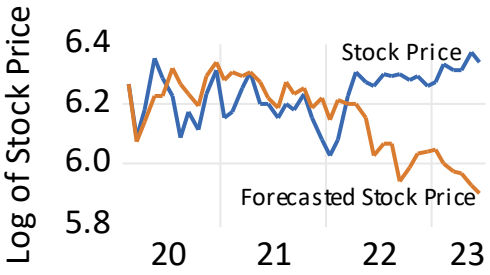
This paper also offers several recommendations to stimulate other sectors that have been hit hard by recent shocks. Many of these papers have suffered through no fault of their own. Finally, the paper argues that providing a well-rounded education would foster creativity and nurture entrepreneurs who can identify and seize profitable opportunities going forward.

**Table 1**

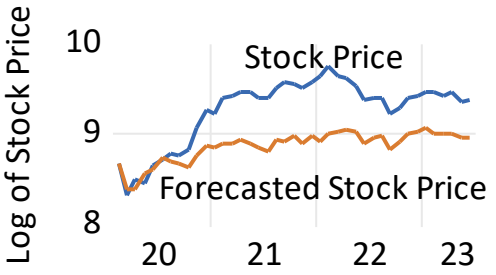
The Exposure of Malaysian Sectoral Stock Returns to Macroeconomic Variables

| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
|---|---|---|---|---|---|---|---|---|---|---|
| Sector | Exposure to Malaysian Stock Market | S.E. | Exposure to World Stock Market | S.E. | Exposure to Contractionary U.S. Monetary Policy | S.E | Exposure to Malaysian Inflation | S.E | Exposure to Ringgit/dollar Exchange Rate | S.E. |
| Airlines | 1.29*** | 0.33 | 0.03 | 0.23 | 0.24 | 0.28 | -1.42 | 1.63 | -0.43 | 0.42 |
| Aluminum | 1.84*** | 0.32 | 0.04 | 0.16 | 0.00 | 0.17 | 3.93** | 1.64 | -0.43 | 0.38 |
| Automobiles | 1.06*** | 0.13 | -0.08 | 0.08 | -0.15 | 0.09 | 1.00 | 0.93 | -0.41 | 0.29 |
| Banks | 1.13*** | 0.05 | -0.03 | 0.04 | 0.06** | 0.03 | -0.06 | 0.38 | -0.00 | 0.06 |
| Brewers | 0.54*** | 0.09 | 0.00 | 0.06 | 0.02 | 0.05 | -0.88 | 0.69 | -0.32** | 0.13 |
| Casinos/Gambling | 0.79*** | 0.10 | 0.10 | 0.07 | -0.06 | 0.06 | -0.65 | 0.77 | -0.07 | 0.15 |
| Cement | 1.16*** | 0.17 | 0.11 | 0.13 | -0.27 | 0.12 | -0.78 | 1.30 | -0.06 | 0.26 |
| Chemicals | 0.64*** | 0.09 | 0.04 | 0.05 | 0.00 | 0.04 | 0.34 | 0.53 | -0.33** | 0.14 |
| Construction | 1.51*** | 0.18 | 0.05 | 0.06 | -0.13* | 0.08 | -0.02 | 0.55 | -0.13 | 0.14 |
| Consumer Discretionary | 1.07*** | 0.06 | 0.00 | 0.05 | -0.05 | 0.04 | -0.06 | 0.68 | -0.20** | 0.09 |
| Electrical & Electronic Equipment | 1.27*** | 0.18 | -0.08 | 0.14 | -0.03 | 0.16 | 0.71 | 2.02 | 0.81*** | 0.30 |
| Financials | 1.14*** | 0.04 | -0.02 | 0.04 | 0.04* | 0.02 | -0.24 | 0.39 | 0.02 | 0.05 |
| Food Producers | 0.88*** | 0.11 | 0.07 | 0.07 | -0.10** | 0.05 | -0.12* | 0.86 | -0.14 | 0.10 |
| Fruits and Grains | 0.79*** | 0.11 | 0.05 | 0.08 | -0.21*** | 0.07 | -0.29 | 0.57 | 0.08 | 0.157 |
| Healthcare | 0.89*** | 0.19 | 0.03 | 0.13 | -0.04 | 0.17 | -0.92 | 0.98 | 0.31 | 0.24 |
| Ind. Transport | 0.68*** | 0.09 | 0.04 | 0.05 | -0.04 | 0.04 | -1.54** | 0.60 | 0.02 | 0.14 |
| Marine Transport | 0.62*** | 0.12 | 0.04 | 0.07 | -0.03 | 0.05 | -1.47** | 0.75 | -0.12 | 0.25 |
| Medical Supplies | 0.92*** | 0.20 | 0.05 | 0.14 | -0.04 | 0.17 | -1.01 | 1.17 | 0.59* | 0.32 |
| Office REITs | 0.54*** | 0.17 | 0.09 | 0.06 | 0.01 | 0.07 | -2.07*** | 0.49 | 0.17 | 0.17 |
| Semiconductors | 1.21** | 0.53 | -0.32** | 0.17 | 0.07 | 0.29 | 0.24 | 0.43 | 0.24 | 0.43 |
| Soft Drinks | 0.32*** | 0.09 | 0.01 | 0.07 | -0.05 | 0.05 | -0.76 | 0.70 | -0.01 | 0.15 |
| Transport Services | 0.65*** | 0.09 | 0.08 | 0.05 | -0.10* | 0.05 | -1.50** | 0.63 | 0.07 | 0.10 |
| Travel & Leisure | 1.14*** | 0.08 | -0.01 | 0.06 | -0.02 | 0.05 | -0.19 | 0.88 | -0.19 | 0.12 |

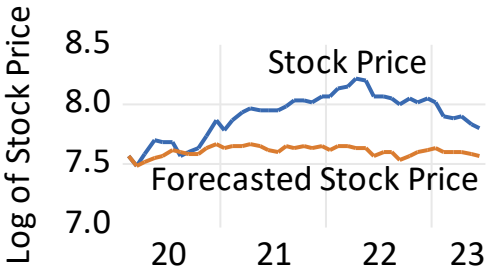
*Notes:* The exposures represent the regression coefficients from a regression of stock returns for the sectors listed in column (1) on 1) the return on the Malaysian stock market (column (2)), 2) the return on the world stock market (column (4)), 3) the Bauer and Swanson (2022) measure of surprises to U.S. monetary policy (column (6)), 4) news about Malaysian consumer price index inflation (column (8)), 5) the change in the log of the ringgit/dollar exchange rate (column 10), and 6) the change in the log of the dollar spot price for Dubai crude oil (not reported). The regressions are run over the February 2001 to December 2019 period. S.E. represents heteroskedasticity and autocorrelation-corrected standard errors. *** (**) [*] denote significance at the 1% (5%) [10%] levels.



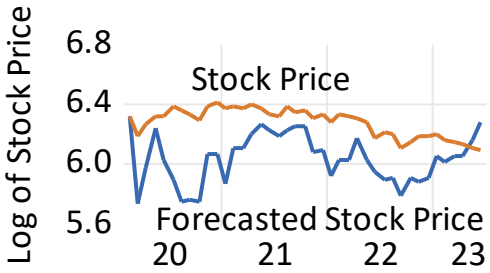
a) Construction



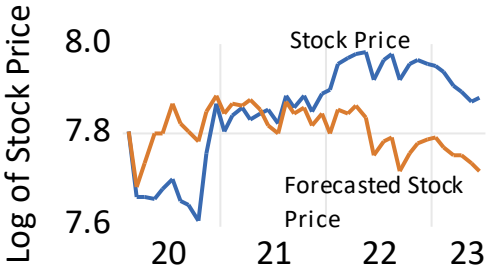
b) Aluminum



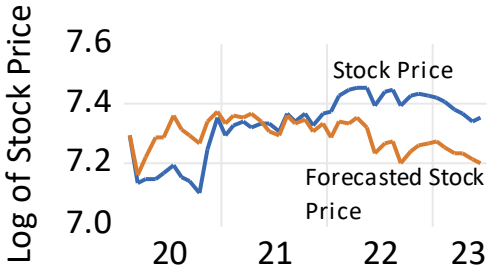
c) Chemicals



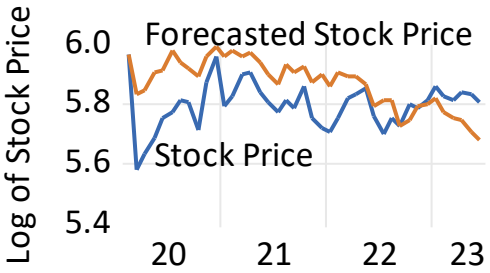
d) Cement



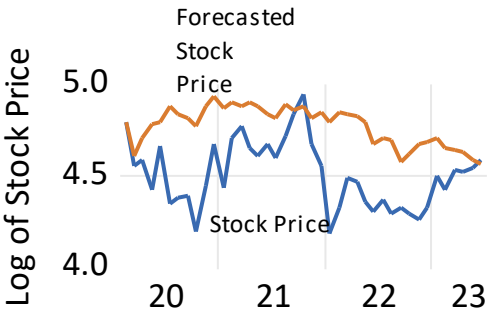
e) Banks



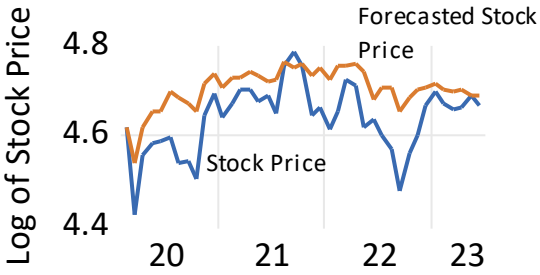
f) Financials



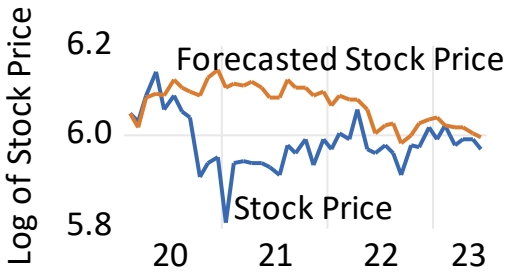
g) Automobiles



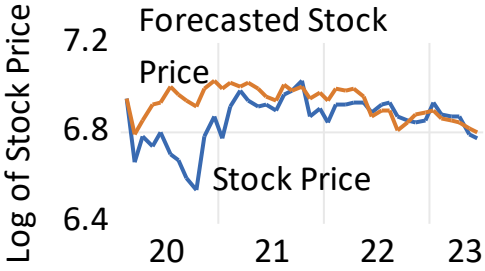
h) Airlines



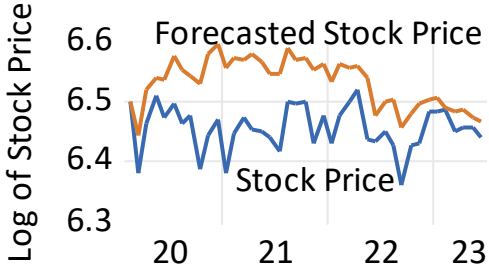
i) Transportation Services



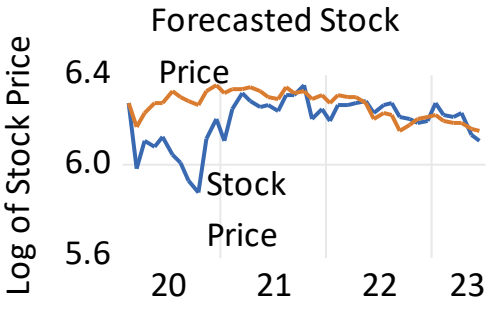
j) Marine Transportation



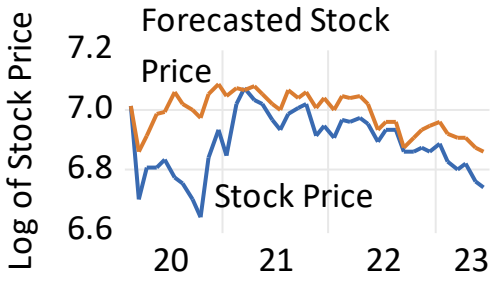
k) Travel & Leisure



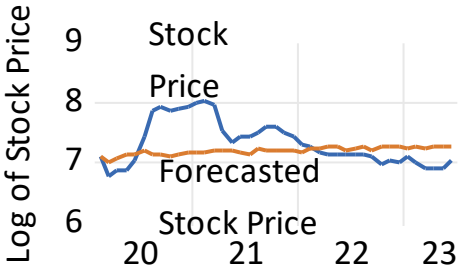
l) Industrial Transportation



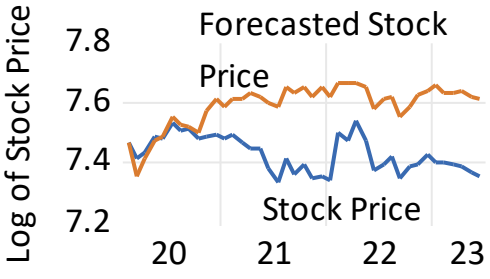
m) Casinos & Gambling



n) Consumer Discretionary



o) Electrical & Electronic Equipment



p) Food Producers

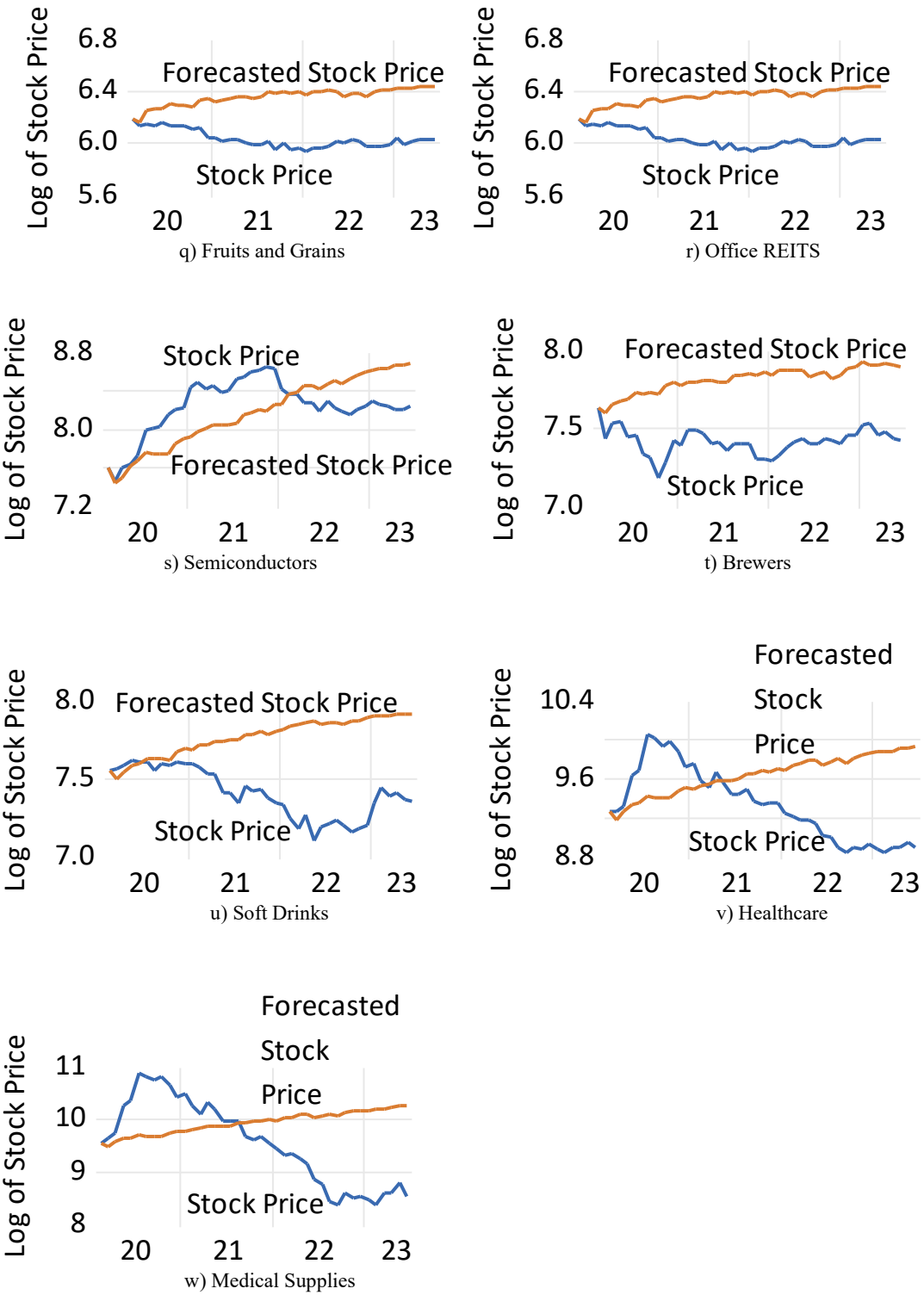



**Figure 1.** Actual and Predicted Malaysian Stock Prices since the COVID-19 Pandemic Began.
*Notes:* The blue line represents actual sectoral stock prices and the orange line represents forecasted sectoral stock prices. Forecasted stock prices are obtained from a regression of the sectoral stock returns on 1) the return on the Malaysian stock market, 2) the return on the world stock market, 3) news about Malaysian consumer price index inflation, 4) the change in the log of the ringgit/dollar exchange rate, and 5) the change in the log of the dollar spot

price for Dubai crude oil. The regressions are run over February 2001 to February 2020 period. Actual out-of-sample values of the right-hand side variables are then used to forecast stock prices (the orange line) over the March 2020 to June 2023 period.

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