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Biman Prasad
Monash University, Australia, bcprasad91@gmail.com

Prof. Paresh K. Narayan
Monash University - Australia, pareshkn@yahoo.com

Joel Abraham
Fijian Competition and Consumer Commission, joel.abraham@ymail.com

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HOW EFFECTIVE ARE PRICE REGULATOR'S PRICE CONTROL MEASURES?

Biman Prasad*, Joel Abraham**, and Paresh Kumar Narayan***

*Ministry of Finance, Fiji, Adjunct Prof. Monash University, and Adjunct Prof. James Cook University. Email: bcprasad91@gmail.com
**Fijian Competition and Consumer Commission. Email: joel.abraham@ymail.com
***Corresponding author. Monash University. Email: paresh.narayan2014@gmail.com

ABSTRACT

The Fijian Competition and Consumer Commission (FCCC) is Fiji's independent price regulatory institution. If price control measures are effective, they could contribute to inflation mitigation. This note tests the effectiveness of FCCC's price controlling role by proposing that it does not lead to inflation. Using time-series regression models, we establish the effect of FCCC's regulatory effectiveness and show that it contributes to a reduction in prices at least five months after regulated prices come into force. We find that inflation declines by 0.5% or 26% of the sample annualized inflation (which is 1.93%).

Keywords: Price regulatory; Inflation.

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I. INTRODUCTION

A large volume of studies is devoted to understanding what contributes to inflation (see Bec and De Gaye, 2016; Neely, 2015; Gao *et al*. 2014). This is not surprising because controlling inflation is not only a policy objective of central banks' and governments fiscal policies, but it is also an important instrument in investment decisions, economic growth, and social welfare enhancement. Fiji is no different when it comes to inflation. Both the central bank and regulatory institutions, like the Fijian Competition and Consumer Commission (FCCC)—the main price regulator in the country, aim to mitigate inflationary pressures. Doing so has not only social and economic ramifications but political also. The political economy literature also recognizes the politics-inflation nexus.

Our point of entry is not to take issue with the conventional determinants of inflation. In the case of Fiji, this research has been done elsewhere (see Narayan *et al*. 2013, for instance). Our investigation is directly on the role of FCCC in Fiji's inflation dynamics. The key question is: Does FCCC's price regulatory behavior contribute to inflation in Fiji? In related works, there is a study that examines the effect of price regulations on rent and their effect on rental prices. O'Toole *et al*. (2021) find that rental growth rate declined by 1-2 percentage points following regulations.

Using multiple time-series regression models, we evaluate FCCC's regulatory effectiveness. More specifically, we show that FCCC's price regulations contribute to a reduction in prices at least five months after regulated prices come into force. We find that inflation declines by 0.5% or 26% of the sample annualized inflation (which is 1.93%). Therefore, we conclude that FCCC's role as a price regulator has had a deflationary effect and has contributed to Fiji's macroeconomic stability.

II. MOTIVATION

Figure 1 plots Fiji's annualized inflation rate, computed from the consumer price index, for the period 2011 to 2022. Two dashed lines are drawn—one at 3% and one at the 5% levels of inflation. These rates indicate the Reserve Bank of Fiji's policy of inflation controls. Identified also on the plot are those phases over which the inflation rate is above the top threshold of 5%.

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Figure 1.
Annualized Inflation for Fiji, 2011 to 2022

Figure 1 represents the annualized inflation rate for Fiji computed from the consumer price index over the period 2011 to 2022.

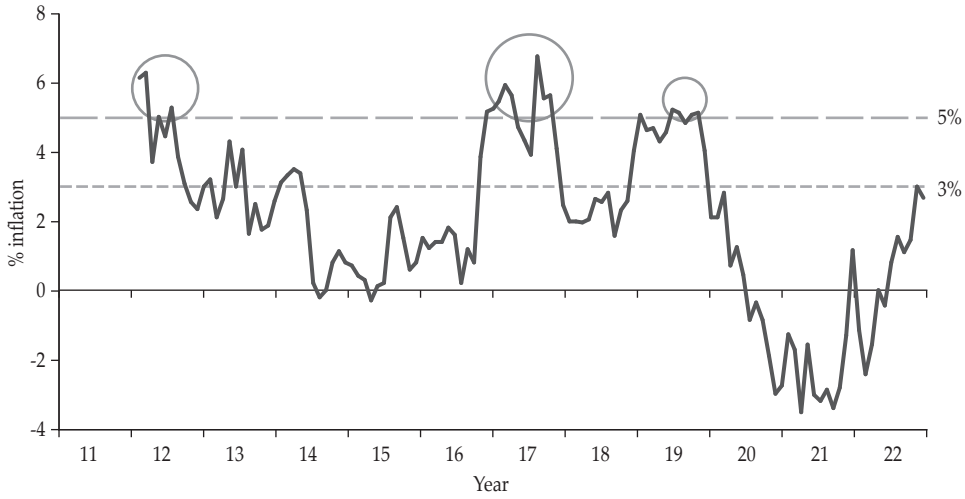

Figure 2 on the other hand maps out the specific dates of price regulations announced by FCCC. This is depicted in dashed lines. From January 2011 to December 2019, there were a total of 37 price control measures announced by FCCC. And, from January 2020 to March 2022, there was price controls exercised every month (the shaded region on the plot).

The obvious graphical message is that inflation and FCCC's price control measures have a correlation—are these statistically relevant? Have they led to inflationary pressures?

Figure 2.
Inflation and FCCC Price Regulations

III. ECONOMETRIC FRAMEWORK

We have the following time-series regression model that we estimate using ordinary least squares estimator:

$$INF_t = \propto + \beta FCCC_t + e_{INF,t} \quad (1)$$

Here, as explained earlier, *INF* is the percentage change in the consumer price index obtained from the Reserve Bank of Fiji and *FCCC* is the dummy variable that takes a value one in months price regulations are announced and zero in the rest of the months. The regressions are based on monthly data that covers the sample January 2011 to March 2022.

IV. RESULTS

We begin with some casual analysis. We have in mind an exploration of the effect on inflation in months in which price regulations were imposed in comparison to those months when price controls were not imposed. There are 59 months in our sample in which price controls were imposed. Annualized inflation, on average, over those 59 months was 0.93% (*t*-statistic = 2.74) and a standard deviation of 2.64. By comparison in the 61 months in which there were no price controls, annualized inflation was 2.83% (*t*-statistic = 12.86) and a standard deviation of 1.68%. We also test the null hypothesis that the difference in inflation between the two periods was zero; we reject the null hypothesis that the difference was zero, with a *t*-statistic of 4.72. This statistical test implies that from an inflation perspective, the two periods—one marked by the price control measures and the other free of price controls are statistically relevant samples. In other words, FCCC's price controls matter to curb inflation.

In the next set of results, we start by entertaining Equation (1), which produces the following results:

$$INF_t = \underset{(1.80)^*}{0.16} + \underset{(0.31)}{0.04 * FCCC_t} + e_{inf,t} \qquad R^2 = 0.07\%$$

$$INF_t = \underset{(1.91)^*}{0.25} + \underset{(0.27)}{0.04 * FCCC_t} + \underset{(-0.42)}{-0.06 * FCCC_{t-1}} + \underset{(0.44)}{-0.12 * FCCC_{t+1}} + e_{inf,t} \qquad R^2 = 0.8\%$$

$$INF_t = \underset{(2.23)^{**}}{0.30} + \underset{(0.30)}{0.04 * FCCC_t} + \underset{(1.46)}{0.35 * FCCC_{t-1}} - \underset{(0.44)}{0.29 * FCCC_{t+1}} + \underset{(0.71)}{0.17 * FCCC_{t-2}} - \underset{(-2.14)}{0.51 * FCCC_{t+2}} + e_{inf,t} \qquad R^2 = 4.6\%$$

The first regression tells that in the month of FCCC price control, there is no effect on inflation. The null hypothesis that FCCC (DUMMY) is zero cannot be rejected with a *t*-statistic = 0.31. The second equation examines the effect of the FCCC price regulation a month before and a month after the price was regulated. The effect again turns out to be statistically insignificant with the effect of *FCCC(t+1)* having a *t*-statistic of only 0.44. This implies that one month after the price is regulated there is no effect on inflation. Regression three examines the effect of the FCCC price regulation two months after price come into effect and discovers a statistically significant negative effect. Specifically, two months after FCCC's price regulation there is a 0.51% deflationary effect on inflation.

If the effect of FCCC's price regulation lasts two months after regulation came into effect, the question is: do the effects last over a longer horizon; that is, do the effects of FCCC's actions have deflationary effects in the future, beyond two months? Table 1 has results for up to six months after the price regulation came into effect. In other words, this table reports the lead-lag effects of FCCC's price control measures on inflation. The dummy variable (DUMMY) takes a value one in months when FCCC imposes price controls and a value of zero in all other months. *t-1* and *t+1* indicate a one-month lag and one month lead effects, respectively. In other words, *t-1* implies the effect one month before FCCC's price regulation came into effect while *t+1* indicates one month after the price regulation came into effect. Similarly, *t-6* indicates a period of six months before the price regulation came into effect and *t+6* implies the effect of FCCC's price regulation six months after the price came into effect. By comparison *FCCC(t)* represents the effect of FCCC's price regulation in the month it came into effect. The regressions are estimated using ordinary least squares over a sample of monthly data spanning January 2011 to March 2022. We estimate the effects of FCCC's price regulation effectiveness up to 6 months after the prices have come into effect. We find that five months after the regulated prices are in effect, FCCC's intervention has a deflationary effect. That is, five months after the price regulation comes into effect, inflation declines by 0.5%. Given sample mean (annualized) inflation of 1.9%, for every FCCC price intervention inflation falls by around 26% of its sample mean.

Table 1.
Effects of FCCC's Price Control on Inflation

This table reports the lead-lag effects of FCCC's price control measures on inflation. The dummy variable (DUMMY) takes a value one in months when FCCC imposes price controls and a value of zero in all other months. t-1 and t+1 indicate a one-month lag and one month lead effects, respectively. In other words, t-1 implies the effect one month before FCCC's price regulation came into effect while t+1 indicates one month after the price regulation came into effect. Similarly, t-6 indicates a period of six months before the price regulation came into effect and t+6 implies the effect of FCCC's price regulation six months after the price came into effect. By comparison Dummy(t) represents the effect of FCCC's price regulation in the month it came into effect. The regressions are estimated using ordinary least squares and * (**) denote statistical significance at the 10% (5%) levels. The regression is estimated over the time period January 2011 to March 2022.

Variable	Coefficient	*t*-statistic
C	0.38**	2.66
FCCC(t)	0.05	0.18
FCCC (t-1)	0.39	1.41
FCCC (t+1)	0.12	0.44
FCCC (t-2)	0.33	1.17
FCCC (t+2)	-0.18	-0.66
FCCC (t-3)	-0.49*	-1.75
FCCC (t+3)	0.43	1.54
FCCC (t-4)	0.07	0.28
FCCC (t+4)	-0.34	-1.34
FCCC (t-5)	-0.36	-1.42
FCCC (t+5)	-0.50**	-2.02
FCCC (t-6)	0.20	0.81
FCCC (t+6)	-0.18	-0.73
R^2		16.50%

IV. CONCLUDING REMARKS

The objective of this note was to explore the effectiveness of FCCC's price control and supervision regulations. Using multiple time-series regression models, we judge FCCC's regulatory effectiveness. More specifically, we show that FCCC's price regulations contribute to a reduction in prices at least five months after regulated prices come into force. We find that inflation declines by 0.5% or 26% of the sample annualized inflation (which is 1.93%). Therefore, we conclude that FCCC's role as a price regulator has had a deflationary effect and has contributed to Fiji's macroeconomic stability. The main policy implication is that FCCC should be considered part of any future fiscal-monetary policy coordination efforts. Our paper's results suggest that Fiji's macroeconomic stability and fiscal policy effectiveness will benefit from greater coordinated monetary-fiscal policies. Relevant authorities should consider our proposal.

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