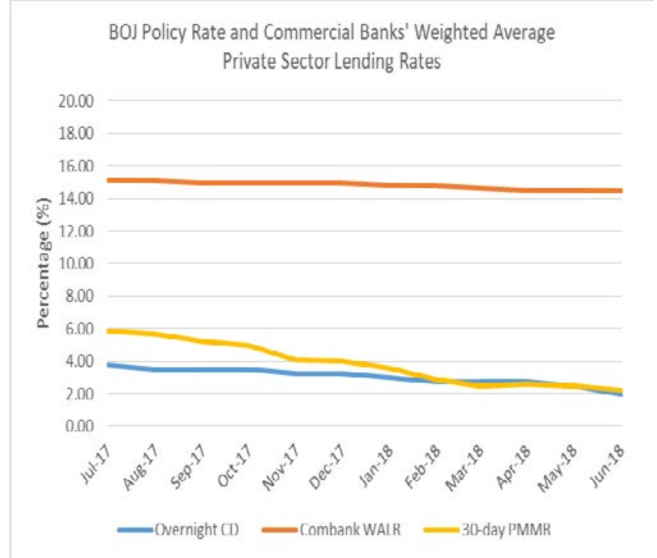
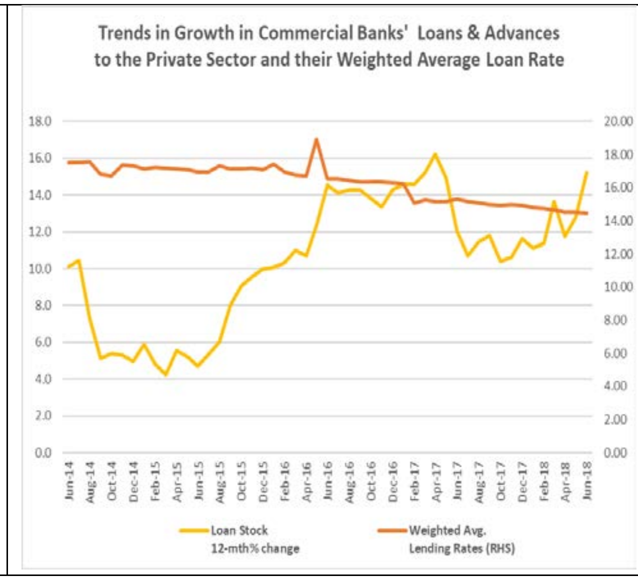
Appendix: The Pass-Through of Bank of Jamaica's Policy Interest Rate to Market Interest Rates

1. Bank of Jamaica conducts monetary policy with the objective of attaining its inflation target. The impact of changes in Bank of Jamaica's policy interest rate on the economy depends on the effectiveness of the transmission channel from the policy rate to the prices of goods and services. This transmission is through two channels: the credit channel and the exchange rate channel. The conventional view of the monetary transmission process through the credit channel is that a change in the Bank's policy rate influences money market interest rates, which then affects deposit and lending rates in the banking system, which changes credit flows, consumption and investment decisions, economic activity and, finally, the prices of goods and services. This appendix presents an overview of recent research on the pass-through from Bank of Jamaica's policy rate to bank lending rates. The overarching conclusion is that the pass-through to bank interest rates is weak.

2. Interest rate pass-through for the purposes of this note describes how changes in central banks' policy rates are transmitted to interest rates on loans and deposits. Estimates of pass-through coefficients diverge significantly across countries, markets and time. In the Jamaican context, the effectiveness (speed and size) of the pass-through of the transmission process has been less than optimal, particularly when compared to other countries.

3. The data suggest that, while money market rates in Jamaica have shown a clear response to the policy rate, lending rates appear to have been sluggish in response to monetary policy signals. However, there has been a noticeable growth in loans and advances despite the slow downward adjustment in the lending rates. The graph below shows the Bank's overnight policy rate, the weighted average lending rates of the commercial banks and 30-day private money market rates.





4. Foga and Murray (2013), using a vector autoregressive (VAR) model, showed that changes in the policy rate were transmitted to Treasury bill rates immediately.[1] Their results showed that an increase of 1 percentage point (ppt) in Bank of Jamaica's policy rate led to an immediate rise of between 0.02 ppt to 0.06 ppt in Treasury bill rates.

5. Dacass *et al* (2015) examined the other aspect of the transmission, which involves the pass-through of market interest rates to deposit and lending rates.[2] Their results confirmed that there was incomplete pass-through of money market rates to some loan rates.[3] In addition, there is some evidence that the pass-through is different for different segments of the credit market. The pass-through to corporate loans with maturities of 12 months and over was found to be almost complete while it was incomplete for personal loans. Specifically, it takes one year for most of the change in market rates to pass through to corporate loans (95 per cent) and personal loans (75 per cent)

[1] Foga C & Murray A (2013), A Proposed Framework for Monetary Policy Implementation in Jamaica: Transitioning to a Full-Fledge Inflation Targeting Regime, Unpublished work

[2] This was based on Dacass *et al* (2015), A Micro-econometric Examination of the Monetary Transmission Mechanism in Jamaica. Bank of Jamaica working paper

[3] Full or complete pass-through is characterised by a situation where a one to one change in the lending rate results from a change in the market rate, usually within a year. It is characterised as 1.0. The pass-through is defined as incomplete when the coefficient is less than 1.0 while more than 1.0 means a pass-through greater than the initial change. A pass-through of 0.3, for example, means that 30 per cent of the change in the market rate is transmitted within a year to the lending rate

when bank-specific and market-specific variables were controlled for.[4,5] With the exception of time deposits, interest rates on deposits appear to be sticky in the context of changes in the policy rate. Savings and demand deposits reflected pass-through of 37 per cent and 41 per cent, respectively, to market rates while pass-through on time deposits with maturities of 12 months and over was complete.

6. Overall, the finding of Dacass *et al* (2015) was that Bank of Jamaica's policy signals transmit more quickly and efficiently to market rates if the financial system is diversified. The paper suggested the need to pursue policies that reduce the concentration of deposits and market power in order to improve the pass-through.

7. A similar assessment by the IMF illustrates the weak pass-through of policy signals to economy wide interest rates.[6] Their results show that a reduction in Bank of Jamaica's policy rate by 1.0 ppt leads to a 0.4 ppt reduction in the rate that banks lend among themselves (the interbank rate) over three months, which is lower than both advanced and emerging market averages. The pass-through from the interbank rate to bank lending rates is even lower, at 0.15 ppt over three months, compared to 0.43 ppt and 0.90 ppt for advanced and emerging market countries, respectively. In addition, the pass-through has been lower in the more recent period (after 2010), which is likely a result of the debt exchanges and their impact on bank liquidity and profit.

8. The results of this recent research point to a weak response of bank deposit and lending rates to monetary policy in Jamaica. Bank of Jamaica has implemented a number of reforms to its operations, such as the introduction of a liquidity assurance mechanism and an interest rate corridor for short-term rates, in addition to enhanced communication, in order to improve the monetary

[4] These include relative asset size, measures of concentration, exchange rate volatility and the capital adequacy ratio (CAR). The measures of concentration investigated include the relative share of deposits, relative share of excess liquid assets and Herfindahl-Hirschman index on asset size.

[5] The close to complete pass-through to commercial loans was not surprising as the corporate loans market is largely competitive and controlled by commercial banks. Given the level of competition and the market share, the analysis suggests that of the three loan categories offered by commercial banks, the central bank may have a greater impact on corporate loans through changes in monetary policy. Furthermore, this finding indicates that the central bank may be able to influence investment more than consumption decisions.

[6] Published in Jamaica: 2016 Article IV Consultation, Eleventh and Twelfth Reviews Under the Extended Fund Facility and Request for Modification of Performance Criteria-Press Release; Staff Report; and Statement by the Executive Director for Jamaica – 21 June 2016 (Page 25) and can be found at http://www.imf.org/en/Publications/CR/Issues/2016/12/31/Jamaica-2016-Article-IV-Consultation-Eleventh-and-Twelfth-Reviews-Under-the-Extended-Fund-43999

transmission process. However, further analysis and policy actions appear to be required to unclog the transmission mechanism.