

**A predictive analysis on ASPI, Bank Industry and Consumer Services Industry indices based on macro-economic variables during the COVID environment of Colombo Stock Exchange**

**Final Dissertation Submission**

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## **Abstract**

With the rapid development of modern technology, predictive analytics is considered to be the way forward in the modern business world as it has already transformed the future of numerous business domains in the recent past. One such domain that could be highlighted as one of the top users of predictive analytics and machine learning is the financial sector. Most of the market participants in stock markets in developed countries adopts predictive models when making trading decisions.

The stock market is the market in which shares of publicly held companies are issued and traded either through exchanges or over the counter markets (OTC). The Colombo Stock Exchange (CSE) is the licensed market institution in Sri Lanka established to provide capital market infrastructure in order to facilitate capital raisings for business organizations, unlocking value for business owners while creating attractive investment opportunities for investors.

As investors and many scholars wanted to find out how the returns of stocks change or what mainly cause stock returns, much literature has been conducted. Many factors affecting stock performance were identified, and these included both firm specific and macro-economic indicators.

Covid 19 pandemic was a global phenomenon which affected Sri Lanka in March 2020. The pandemic challenged the economy as lock downs were imposed restricting both commercial and community movements. The government was forced to provide subsidies in order to boost economic activity by implementing several policy changes which primarily affected the macro-economic variables. Furthermore, concepts such as digitization became pivotal to operate any business and during September 2020, CDS account openings were digitized which reaped a staggering increase in CDS accounts. Both a subsidized economy and ease of access to online trading platforms, led to an increase in the stock market activity in a post covid era.

However, it was evident that there was a research gap as to what macro-economic factors affect the stock market indices, especially the sector indices in a post covid environment. When perusing through literature, this was not prevalent and new investors did not have a predictive model that they could rely on to take investment decisions.

Thus, this study intends to identify the pre-specified macro-economic variables that affect the All Share Price Index (ASPI) and selected sectorial indices {i.e. Banks Industry Group Index and Consumer Services Industry Group Index} using daily data for the period starting from April 2020 to March 2022 (Post pandemic era), analyze the identified macroeconomic variables' impact on the overall market and on the identified sector indices and build a machine learning model that is capable of predicting the sector indices given a set of macro-economic variables.

After a thorough literature review, six macro-economic factors namely overnight liquidity, exchange rate, interest rate, gold prices, oil prices and freight charges were identified for which the data was collected mainly from secondary sources such as CSE, Central Bank of Sri Lanka (CBSL). The researcher has then built 6 predictive models in order to identify the significant macro-economic variables and has chosen the optimum machine learning algorithm at the end of the research which can be utilized by investors to take informed decisions. The study will be conducted as a regression analysis and can be categorized as quantitative research.