

Business Case for Deeper Future Storyboard Analysis

The business case for expanding into emerging markets like China, India, Brazil, South Korea, Mexico, Indonesia, Saudi Arabia, Turkey, and Poland focuses on identifying growth opportunities and mitigating risks.

- **Who:** The firm targets these markets' governments, private sector clients, and multinational corporations.
- **What:** Key KPIs include GDP, consumption growth, capital investment, trade openness, savings rates, FDI inflows, inflation, and unemployment.
- **When:** The analysis covers 2003–2022, with a focus on post-pandemic recovery trends.
- **Where:** Target countries are selected for their economic growth, infrastructure investment, and trade potential.
- **Why:** These countries offer high growth potential, expanding middle classes, and opportunities in emerging sectors.

This strategy identifies markets with favorable economic conditions for investment and expansion.

Storyboard Plan (Based on Hypothesis and Analytical Journey)

1. Introduction:

- **Message:** Introduce the objective of exploring economic opportunities in emerging markets through the lens of macroeconomic KPIs, with a focus on the past two decades (including key crises: dot-com bubble, global financial crisis, and COVID-19).
- **Hypothesis:** "If GDP growth increases, consumption growth will also increase."
- **No visual required.**

2. Exploratory Analysis:

- **Message:** Present early exploration to identify key relationships between GDP growth, consumption, exports, imports, and unemployment. The aim was to identify patterns and correlations to guide further analysis.
- **Visual:** Use the pair plot (*Pairplot_GDP_Consumption_Unemployment.png*) to show these relationships.
- **Interpretation:** The pair plot highlighted weak and inconsistent relationships between GDP growth and other indicators, motivating deeper analysis through regression and clustering.

3. Linear Regression:

- **Message:** Explore the hypothesis using linear regression to test if GDP growth predicts consumption growth.
- **Visual:** Include the regression plot (*Regression_Line_GDP_vs_Consumption.png*).
- **Interpretation:** The regression results showed a weak fit ($R^2 = 0.29$), indicating that GDP growth alone is not a strong predictor of consumption growth. The model's performance was hindered by missing key factors, suggesting omitted variable bias (e.g., inflation, interest rates).

4. Cluster Analysis:

- **Message:** To address the limitations of the regression, k-Means clustering was employed to group countries into distinct economic profiles based on several macroeconomic indicators (GDP growth, exports, imports, FDI, consumption, and inflation).
- **Visual:** Show the elbow method plot (*elbow_plot.png*) to justify the selection of the optimal number of clusters.
- **Interpretation:** The elbow plot indicated that 3 clusters best segmented the countries, each reflecting unique macroeconomic profiles.

5. Cluster Analysis Results:

- **Message:** Present the clustering results, which divide countries into groups based on their economic characteristics. This segmentation helps identify countries with more stable vs volatile economies.
- **Visuals:**
 - *Exports vs Imports by Cluster (exports_vs_imports_clusters.png)*
 - *FDI vs Consumption by Cluster (fdi_vs_consumption_clusters.png)*
 - *GDP Growth vs Inflation by Cluster (gdp_vs_inflation_clusters.png)*
- **Interpretation:**
 - Cluster 0 represents countries with stable export-import growth and moderate consumption.
 - Cluster 1 highlights countries with more volatility in trade and lower consumption growth.
 - Cluster 2 includes countries with distinct economic behaviors, such as high inflation but moderate GDP growth. This clustering helped uncover deeper patterns missed by linear models.

6. Final Results, Recommendations, and Limitations:

- **Message:** Summarize key findings:
 - The regression showed that GDP growth is not a strong predictor of consumption, while the cluster analysis revealed meaningful economic groupings.
- **Recommendations:** Focus on countries in Cluster 0, which demonstrate economic stability (lower inflation, stable trade growth, moderate consumption growth). Avoid countries in Cluster 1 due to volatility.
- **Limitations:** The analysis only includes macroeconomic KPIs and excludes sector-specific KPIs, which may affect the accuracy of predictions. Additionally, the dataset from the World Bank may carry inherent biases.
- **Next Steps:** Expand the analysis to include other important variables, such as inflation rates, interest rates, and employment trends across sectors. Consider sector-specific indicators to improve precision in investment strategies.