Diploma Programme
Programme du diplôme
Programa del Diploma

Economics
Higher level and standard level
Paper 2

12 May 2026

Zone A afternoon | **Zone B** afternoon | **Zone C** afternoon

1 hour 45 minutes

Instructions to students

- Do not open this paper until instructed to do so.
- You are permitted access to a calculator for this paper.
- Unless otherwise stated in the question, all numerical answers must be given exactly or correct to two decimal places.
- You must show all your working.
- Answer one question.
- Use fully labelled diagrams and references to the text/data where appropriate.
- The maximum mark for this examination paper is **[40 marks]**.

2226 – 3223

9 pages

Answer **one** question.

1. Read the extracts and answer the questions that follow.

Text A — Overview of Pakistan's economy and the impact of climate change

1 Economic growth in Pakistan has been uneven and rather slow in the 21st century, relative to other economies in Asia. Absolute poverty has been significantly reduced because more jobs are becoming available in non-agricultural sectors and because many Pakistanis have earned higher incomes from working overseas. However, about 20 % of the population is estimated to lack sufficient food.

2 Inflation continues to be high. Partly due to inflation, the rupee (PKR, Pakistan's currency) has depreciated against the US dollar. Trade protection policies are used to try to decrease imports. Import tariffs on some food products are as high as 150 %. Furthermore, subsidies are given to Pakistan's sugar producers, affecting the quantity of sugar imported. However, average import tariffs have been gradually reduced from 15 % to 12 %.

3 The ratio of tax revenue to gross domestic product (GDP) is very low. Consequently, there is a persistent budget deficit and it is difficult for the government to finance new projects. However, with financing from the World Bank, a large hydropower dam is being constructed. Designed to generate electricity, this project will provide clean and affordable energy. Furthermore, its construction is leading to improved additional infrastructure such as roads, which give local communities easier access to health services and education.

4 Investment by Pakistan's government in infrastructure and **human capital** is relatively low. However, the government provides large subsidies for agriculture, energy production and exports. The subsidies provided to some firms may have different effects on stakeholders. For example, there is financial support for large-scale farmers, but not for all small-scale farmers. Furthermore, large firms producing chemical fertilisers receive support, while smaller firms who produce natural fertilisers do not.

5 Climate change is damaging agricultural production, even though Pakistan was responsible for only 0.88 % of global emissions in 2020. The disastrous impact of climate change is demonstrated when there is severe heat and droughts or floods. Millions of people are at risk of losing their homes, land or jobs because cattle, cotton, sugarcane and rice crops are destroyed. Pakistan has made a commitment to lower its greenhouse gas (GHG) emissions by 15 % by 2030.

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(Question 1 continued)

Text B — Migration to towns and cities

1 Nearly 40 % of Pakistanis live in towns and cities. This percentage is rising as people are forced to migrate from agricultural areas in search of work. Environmental changes result in many farm workers losing their jobs or sources of energy and food.

2 With an increasing population, some urban areas lack basic services, such as water, sanitation and waste removal, which harms public health. Moreover, transport, industry, waste management and the energy use cause high GHG emissions and air pollution, reducing workers' efficiency. Pakistan has the fourth-highest level of air pollution globally, which contributes to a lower average life expectancy (Table 2).

Text C — Sustainable Development Goal of ensuring healthy lives and promoting well-being for all (SDG #3)

1 Living standards in Pakistan have not improved significantly, despite the decrease in poverty. Government spending on education and health is less than 3 % of GDP. Inequalities have persisted or widened between the rich and the poor, between men and women, and between rural and urban areas (Table 2).

2 In particular, the education of girls in rural areas is inadequate. Safe transportation to schools, improved water and sanitation facilities, and cash payments conditional on school attendance would raise school attendance rates. However, some positive changes have occurred, such as a reduction in mortality rates for mothers and children.

3 Greater government investment in human capital would raise GDP by increasing labour market participation (especially among women) and by making labour more skilled and healthier. However, such improvements would cause a rise in GHG emissions because households with increased incomes usually consume more energy. As emissions rise and climate change intensifies, there may be more climate-related disasters leading to increased poverty rates. Additional financial and technical assistance from overseas will be necessary to make Pakistan more resilient to climate change.

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(Question 1 continued)

Table 1: Economic data for Pakistan

	2012	**2022**
Real GDP per capita (USD)	1310	1697
Inflation rate (annual %)	9.7	19.9
Nominal interest rate (%)	11.5	15.4
Balance of trade in goods and services (USD billion)	–17.53	–37.63
Current account balance (% of GDP)	–3.3	–0.9
Government expenditure (% of GDP)	17.1	16.5
Government taxation revenue (% of GDP)	10.3	11.4
Exchange rate (PKR per USD)	93.40	204.87

Table 2: Development data for Pakistan

	2012	**2022**
Population (million)	202.21	235.82
Human Development Index (HDI)	0.504	0.540
HDI ranking	158	164
Gini coefficient	0.295	0.307*
Absolute poverty (% of population with income below USD 2.15 (2017 PPP) per day)	7.4	4.9*
Life expectancy at birth (years)	64.8	66.4
Number of vaccinations of one-year-old children (millions)	3.92	5.42
Primary education completion rate (% of children)	55	68
Literacy rate (% of adult population)	57	58
Labour force participation rate, female (% of female population, ages 15–64)	23	26
Labour force participation rate, male (% of male population, ages 15–64)	81	84

* estimate

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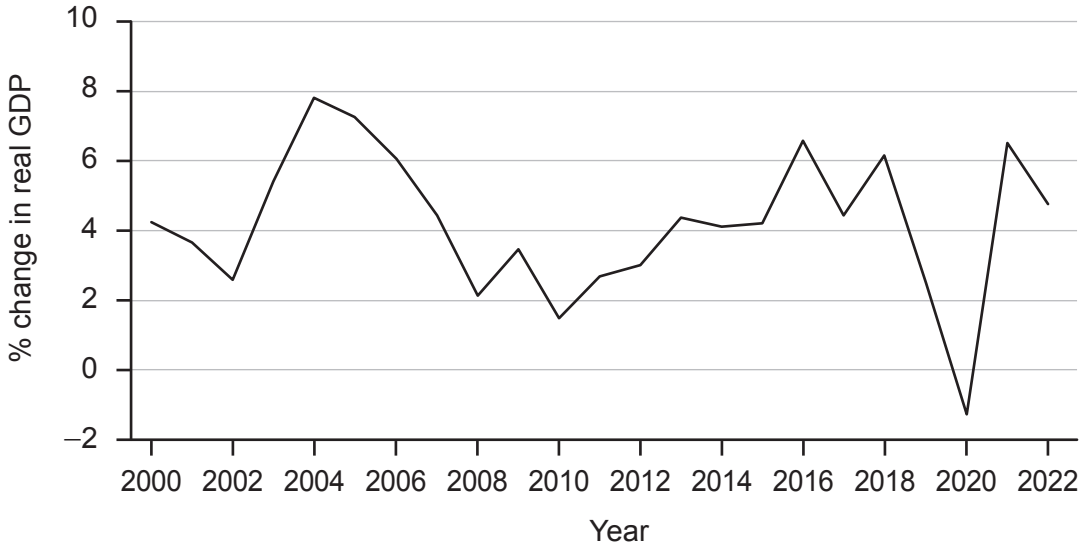
(Question 1 continued)

Figure 1: Economic growth in Pakistan: annual percentage change in real GDP between 2000 and 2022



(a) (i) Define the term *human capital* indicated in bold in the text (**Text A**, paragraph **4**). [2]

(ii) Define the term *Gini coefficient* indicated in bold in **Table 2**. [2]

(b) (i) Using information from **Table 1**, calculate Pakistan's real interest rate in 2022. [2]

(ii) Average real incomes (GDP per capita) in Pakistan increased by 29.54 % between 2012 and 2022. Using information from **Table 2**, calculate the income elasticity of demand (YED) for vaccinations for one-year-old children between 2012 and 2022. [2]

(iii) Using **Figure 1**, identify whether real GDP increased **OR** decreased **OR** stayed constant in Pakistan between 2004 and 2006. [1]

(c) Using an international trade diagram, explain how a subsidy for Pakistani producers is likely to affect sugar imports into Pakistan (**Text A**, paragraph **2**). [4]

(d) Using an exchange rate diagram, explain why the value of the PKR (Pakistan's currency) might increase as a result of the World Bank financing the hydropower project (**Text A**, paragraph **3**). [4]

(e) Using a demand and supply diagram, explain the likely effect of floods on the price of rice in Pakistan (**Text A**, paragraph **5**). [4]

(f) Using a production possibilities curve (PPC) diagram, explain the likely effect of environmental changes on Pakistan's production possibilities (**Text B**, paragraph **1**). [4]

(g) Using information from the text/data and your knowledge of economics, discuss whether Pakistan is making effective progress towards achieving good health and well-being for all (Sustainable Development Goal #3). [15]

2. Read the extracts and answer the questions that follow.

Text D — Overview of Brazil

1 Brazil is an upper-middle income country located in South America. It is the largest producer of coffee in the world and has become a major exporter of products such as soybeans, petroleum, and automobiles. About 90 % of imports are manufactured goods, including machinery, chemicals, and parts for motor vehicles. Brazil's top trading partner is China, followed by the USA and Argentina.

2 The Central Bank of Brazil introduced a floating exchange rate system in 1999. However, it intervened in 2022 and sold the Brazilian real (BRL, Brazil's currency) to reduce a large current account deficit on the balance of payments.

3 Brazil has experienced long periods of currency depreciation. Consequently, the export sector has grown, leading to an expansion of Brazilian agricultural output. Brazil's total exports of goods rose by 6.7 % between 2015 and 2019 after a sharp drop in the exchange rate of the BRL.

4 Soybean farmers in Brazil have gained significantly from the depreciation of the BRL. The prospect of increased revenues from exports has led to the expansion of soybean plantations and has made Brazil the world's largest exporter of soybeans. Increasing demand for soybeans from China has added to the beneficial effects of depreciation for the primary sector. Brazil's dependency on export revenues has increased, and vast areas of forest have been destroyed to make way for soybean farms.

5 Industries that rely on foreign inputs can become unprofitable during a period of currency depreciation. For example, the profits of Brazilian sugarcane farmers are likely to fall because they rely on imported fertilizers. Depreciation might therefore negatively affect economic growth and could also lead to inflation.

6 Brazil has been able to shield itself from some of the effects of higher input prices caused by depreciation. One example is the growth of the automobile parts sector, largely funded by foreign direct investment (FDI). Foreign vehicle manufacturers that operate in Brazil are therefore able to purchase auto-parts from the Brazilian domestic market. However, automation has contributed to structural unemployment in the Brazilian automobile industry.

7 Despite the benefits of a depreciating BRL, overall employment in agriculture and industry has been falling. The Brazilian government has tried to increase employment in agriculture by setting minimum prices on products such as coffee and wheat. Excess supply at the minimum price is purchased by the government. In the service industries, employment is increasing. Services accounted for 70 % of the workforce and over 50 % of gross domestic product (GDP) in 2021.

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(Question 2 continued)

Text E — Deforestation in Brazil

1 Roughly 60 % of the Amazon rainforest is located in Brazil. Large areas of forests have been cleared in order to make profits for the agriculture, mining and logging companies. This activity, known as deforestation, has allowed Brazil to increase its output of agricultural products, minerals and wood.

2 Cattle farming is an important reason for deforestation in the Amazon. Brazil is the world's largest exporter of beef, with exports valued at USD 7.2 billion in 2023. Deforestation has also enabled Brazil to become the largest producer of soybeans in the world. About 80 % of soybeans produced in the Amazon are used as animal feed, an important resource for Brazilian farmers.

3 The US-China trade dispute that started in 2018 led to a significant increase in soybean exports from Brazil to China. Higher tariffs imposed by China on imports of US soybeans have made Brazil's soybean exports more competitive, leading to further deforestation of the Amazon. As a result, Brazil has considerably expanded its road infrastructure in the Amazon so that soybeans can be transported to ports for export.

4 There are concerns about the environmental impact of deforestation. Significant negative externalities are present, including global warming and the loss of plant and animal species. Brazil's government has made a commitment to end deforestation in the Amazon by 2030.

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(Question 2 continued)

Table 3: Economic data for Brazil

	2012	**2022**
Inflation rate (annual %)	5.4	9.3
Real GDP per capita (BRL)	20 592	20 128
GDP growth (BRL, annual %)	1.9	3.0
Unemployment (% of labour force)	7.3	9.2
Exchange rate (BRL per USD)	1.76	5.16
Exports of goods and services (% of GDP)	11.9	19.6

Table 4: Development data for Brazil

	2012	**2022**
Forest area (% of land area)	60.8	59.3
Absolute poverty (% of population with income below USD 2.15 (2017 PPP) per day)	4.5	3.5
Gini coefficient	0.537	0.520
Human Development Index (HDI)	0.730	0.760

Table 5: Real GDP and exchange rate data for Brazil

Year	**2015**	**2021**
Real GDP per capita (BRL)	20 039	19 629
Exchange rate (BRL per USD)	3.33	5.39

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(Question 2 continued)

(a) (i) Define the term *real GDP* (gross domestic product) indicated in bold in **Table 3**. [2]

(ii) Define the term *Human Development Index (HDI)* indicated in bold in **Table 4**. [2]

(b) (i) Using information from **Table 5**, calculate the change in Brazil's real GDP per capita in USD between 2015 and 2021. [2]

(ii) Using information from **Table 4**, identify whether income inequality in Brazil has increased **OR** decreased **OR** was constant between 2012 and 2022. [1]

(iii) Using information from **Table 3**, sketch an AD/AS diagram to show how the price level changed in Brazil in 2022. [2]

(c) Using an exchange rate diagram, explain why the Central Bank's intervention in the foreign exchange market was beneficial to Brazil's export sector (**Text D**, paragraph **2**). [4]

(d) Using a demand and supply diagram, explain how higher tariffs on US soybean exports to China have increased soybean production in Brazil (**Text E**, paragraph **3**). [4]

(e) Using an externalities diagram, explain how continued deforestation of the Amazon rainforest could lead to greater market failure in Brazil (**Text E**, paragraph **4**). [4]

(f) Using a production possibilities curve (PPC) diagram, explain the likely effect of new road infrastructure in the Amazon on production possibilities in Brazil (**Text E**, paragraph **3**). [4]

(g) Using information from the text/data and your knowledge of economics, discuss the likely consequences of the depreciation of the BRL (Brazil's currency) on Brazil's economic growth and inflation rate. [15]

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References:

Text A

International Monetary Fund, 2024. *IMF Country Report No. 24/105 Pakistan: Second and Final Review Under the Stand-by Arrangement*. [online] International Monetary Fund. Available at: https://www.imf.org/en/Publications/CR/Issues/2024/05/10/Pakistan-Second-and-Final-Review-Under-the-Stand-by-Arrangement-Press-Release-Staff-Report-548741 [Accessed 22 August 2024]. Source adapted.

WFP World Food Programme, 2024. *Pakistan Country Brief* [online] Available at: https://www.wfp.org/countries/pakistan [Accessed 27 August 2024]. Source adapted.

World Bank, 2024. *The World Bank in Pakistan; Overview* [online] Available at: https://www.worldbank.org/en/country/pakistan/overview [Accessed 19 August 2024]. Source adapted.

Rehman, M.S.U., 2020. *Sugar Annual*. [pdf] USDA Foreign Agricultural Service. Available at: https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=Sugar%20Annual_Islamabad_Pakistan_04-15-2019 [Accessed 24 August 2024]. Source adapted.

World Bank, 2024. *Pakistan: World Bank Approves $1 Billion Additional Financing for DASU Hydropower Project to Support the Transition to Clean and Affordable Energy*. [online] Available at: https://www.worldbank.org/en/news/press-release/2024/06/09/pakistan-world-bank-approves-1-billion-additional-financing-for-dasu-hydropower-project-to-support-the-transition-to-cle [Accessed 19 August 2024]. Source adapted.

Janjua, H., 2023. A year on, the devastating long-term effects of Pakistan's floods are revealed. *The Guardian* Available at: https://www.theguardian.com/global-development/2023/aug/05/a-year-on-the-devastating-long-term-effects-of-pakistans-floods-are-revealed [Accessed 19 August 2024]. Source adapted.

Text B

World Bank, 2022. *Pakistan Country Climate and Development Report (Summary)*. Available at: https://openknowledge.worldbank.org/entities/publication/614ddc2b-ca31-53c9-b59c-6bf12a56d336 [Accessed 20 August 2024]. Source adapted.

Text C

Ersado, L., Hasan, A., Geven, K.M., Kathuria, A.K., Baron, J., Bend, M., and Ahmed. S.A., 2023. Pakistan Human Capital Review: Building Capabilities throughout Life. Washington, DC: World Bank. License. Available at: https://www.worldbank.org/en/region/sar/publication/pakistan-human-capital-review-building-capabilities-throughout-life [Accessed 25 June 2025]. Source adapted.

Table 1

World Bank, n.d. *Pakistan*. [online] Available at: https://data.worldbank.org/country/pakistan [Accessed 1 August 2024]. Source adapted.

International Monetary Fund, 2024. *IMF Country Report No. 24/105 Pakistan: Second and Final Review Under the Stand-by Arrangement*. [online] International Monetary Fund. Available at: https://www.imf.org/en/Publications/CR/Issues/2024/05/10/Pakistan-Second-and-Final-Review-Under-the-Stand-by-Arrangement-Press-Release-Staff-Report-548741 [Accessed 22 August 2024]. Source adapted.

Table 2

World Bank, 2023. *Poverty and Equity Brief – Pakistan*. [pdf] Available at: https://databankfiles.worldbank.org/public/ddpext_download/poverty/987B9C90-CB9F-4D93-AE8C-750588BF00QA/current/Global_POVEQ_PAK.pdf [Accessed 26 August 2024]. Source adapted.

UNDP Human Development Reports, 2024. *Specific Country Data- Human Development Reports*. [online] Available at: https://hdr.undp.org/data-center/specific-country-data#/countries/PAK [Accessed 22 August 2024]. Source adapted.

The Sustainable Development Report, 2024. *Sustainable Development report: Pakistan*. [online] Available at: https://dashboards.sdgindex.org/profiles/pakistan [Accessed 24 August 2024]. Source adapted.

Climate Watch, n.d. *Historical GHG emissions (in Pakistan)*. [online] Available at: https://www.climatewatchdata.org/ghg-emissions?calculation=PER_CAPITA&end_year=2021&regions=PAK&start_year=1990 [Accessed 23 August 2024]. Source adapted.

World Bank, n.d. *Pakistan*. [online] Available at: https://data.worldbank.org/country/pakistan [Accessed 1 August 2024]. Source adapted.

Figure 1

World Bank, n.d. *Pakistan*. [online] Available at: https://data.worldbank.org/country/pakistan [Accessed 16 August 2024]. Source adapted.

Text D

World Bank, 2024. *Brazil Overview: Development news, research, data*. [online] Available at: https://www.worldbank.org/en/country/brazil/overview [Accessed 24 August 2024]. Source adapted.

Economic Research Service U.S. Department of Agriculture, 2020. [online] *Brazil's Currency Depreciation and Changing Macroeconomic Conditions Determine Agricultural Competitiveness and Future Growth*. Available at: www.ers.usda.gov/amber-waves/2020/october/brazil-s-currency-depreciation-and-changing-macroeconomic-conditions-determine-agricultural-competitiveness-and-future-growth [Accessed 26 August 2024]. Source adapted.

Trading Economics, 2024. *Brazil Imports, 2024*. [online] Available at: https://tradingeconomics.com/brazil/imports [Accessed 31 August 2024]. Source adapted.

CEIC (Global Economic Data, Indicators, Charts and Forecasts), 2020. *Brazil's Automotive Sector Poised for Strong Growth*. [online] Available at: https://info.ceicdata.com/brazil-automotive-sector-poised-for-strong-growth [Accessed 3 September 2024]. Source adapted.

The Brazil Report, 2023. *Brazil's auto industry steps on the investment accelerator*. [online] Available at: https://newsletters.brazilian.report/p/auto-industry-steps-investment-accelerator [Accessed 3 September 2024]. Source adapted.

World Bank, 2024. *Industry (including construction), value added (% of GDP)-Brazil*. [online] https://data.worldbank.org/indicator/NV.IND.TOTL.ZS?locations=BR [Accessed 4 September 2024]. Source adapted.

World Bank Open Data, 2024. *Services, value added (% of GDP). All Countries and Economies*. [online] Available at: https://data.worldbank.org/indicator/NV.SRV.TOTL.ZS [Accessed 4 September 2024]. Source adapted.

World Bank, 2024. *Employment in services (% of total employment) (modeled ILO estimate)-Brazil*. [online] Available at: https://data.worldbank.org/indicator/SL.IND.EMPL.ZS?locations=BR [Accessed 3 September 2024]. Source adapted.

Cunha, A.M., Lélis, M.T.C., Prates, D.M., 2009. Exchange rate management in Brazil. *CEPAL Review* 99, pp. 96–97. Source adapted.

Margulies, B., 2022. *Brazil makes first FX intervention of the year. Central Banking* [online] 26 September. Available at: https://www.centralbanking.com/central-banks/reserves/foreign-exchange/7953193/brazil-makes-first-fx-intervention-of-the-year [Accessed 31 August 2024]. Source adapted.

Food and Agriculture Organisation of the United Nations, 2020. *Brazil increases minimum prices*. [online] 2 March Available at: https://www.fao.org/giews/food-prices/food-policies/detail/en/c/1265945/ [Accessed 5 September 2024]. Source adapted.

Global Trade Alert, 2023. *Brazil: Government readjusts the minimum prices for oranges and coffee for the 2023/24 harvest*. [online] Available at: https://globaltradealert.org/intervention/119400 [Accessed 5 September 2024]. Source adapted.

Text E

Brown, S., 2023. World Bank: Brazil faces $317 billion in annual losses to Amazon deforestation. *Mongabay*. [online] Available at: https://news.mongabay.com/2023/05/world-bank-brazil-faces-317-billion-in-annual-losses-to-amazon-deforestation/ [Accessed 15 September 2024]. Source adapted.

Ferreira Santos, S., 2024. Amazon rainforest: Deforestation rate halved in 2023. *BBC News*. [online] Available at: https://www.bbc.co.uk/news/world-latin-america-67962297 [Accessed 15 September 2024]. Source adapted.

Irfan, U., 2019. Why It's Been So Lucrative to Destroy the Amazon Rainforest. *Amazon Watch*. [online] Available at: https://amazonwatch.org/news/2019/0830-why-its-been-so-lucrative-to-destroy-the-amazon-rainforest [Accessed 15 September 2024]. Source adapted.

Brink News, 2020. How important is the Amazon Rainforest for the Brazilian economy? *Trellis*. [online] Available at: https://trellis.net/article/how-important-amazon-rainforest-brazilian-economy/ [Accessed 15 September 2024]. Source adapted.

Table 3

World Bank, 2024. *Brazil Data*. [online] Available at: https://data.worldbank.org/country/brazil [Accessed 13 September 2024]. Source adapted.

World Bank, 2024. *Official exchange rate (LCU per $US, period average) Brazil*. [online] Available at: https://data.worldbank.org/indicator/PA.NUS.FCRF?locations=BR&page=5 [Accessed 13 September 2024]. Source adapted.

World Bank, 2024. *Exports of goods and services (annual % growth)-Brazil*. [online] Available at: https://data.worldbank.org/indicator/NE.EXP.GNFS.KD.ZG?locations=BR [Accessed 13 September 2024]. Source adapted.

Table 4 World Bank, 2024. *Brazil Data*. [online] Available at: https://data.worldbank.org/country/brazil [Accessed 13 September 2024]. Source adapted.

World Bank, 2024. *Gini index-World Development Indicators*. [online] Available at: https://data.worldbank.org/indicator/SI.POV.GINI [Accessed 14 September 2024]. Source adapted.

World Bank, 2024. *Human Development Index. Indicator Profile*. [online] Available at: https://data360.worldbank.org/en/economy/BRA?tab=Prosperity [Accessed 14 September 2024]. Source adapted.

World Bank, 2024. *Labor force, total-Brazil*. [online] Available at: https://data.worldbank.org/indicator/SL.TLF.TOTL.IN?locations=BR [Accessed 13 September 2024]. Source adapted.

Table 5 World Bank, 2024. *Brazil Data*. [online] Available at: https://data.worldbank.org/country/brazil [Accessed 13 September 2024]. Source adapted.

World Bank, 2024. *Official exchange rate (LCU per US$, period average)-Brazil*. [online] Available at: https://data.worldbank.org/indicator/PA.NUS.FCRF?locations=BR&page=5 [Accessed 13 September 2024]. Source adapted.