

Module 6 Assignment

Assignment (Short-Answer and Algebraic Questions): *(The numbers in square brackets give the breakdown of the points for various parts of each question. To receive full credit, please explain your answers. Total of 70 points.)*

1. Poland is a member of European Union (EU) and maintains free trade with other EU members. Your company has been considering the possibility of establishing a subsidiary in Poland to produce a product there for export to the rest of the EU. You had examined the project in 2014 and had concluded that it would just break even (i.e., it will recover all its costs, but will not make a profit in excess of a normal returns on capital). At that time, the Polish government was running a large budget deficit and the Polish currency, zloty (or PLN), was relatively strong vis-à-vis the euro and other European currencies. Under the circumstances, your company had decided to put the project on hold because the company's top officers had become concerned that the continuation of the situation could make the project unprofitable. However, you re-examine the situation of the Polish economy now and observe that PLN has depreciated by more than 20% and stayed low in the past four years. You also discover that the government has systematically reduced its expenditure while keeping net taxes constant. The evidence convinces you that, in all likelihood, the shift in government policy is permanent, while the productivity levels in the supply of tradables and non-tradables in Poland have not been affected by this policy shift and have followed their past trends.
 - (a) Could the permanent reduction in government expenditure be viewed as a key factor in the long-run depreciation of the PLN in the long run, when prices are fully flexible? [10 points]
 - (b) What impact the permanent reduction in government expenditure is likely to have had on Poland's net exports? [7 points]
 - (c) How would the evidence of permanent policy shift in Poland affect the assessment of your company's project? That is, how would the evidence of permanent reduction in government expenditure affect the profitability of your company's project? Would you recommend the implementation of the project under the current policy situation in Poland? [18 points]
2. The American Society of Civil Engineers (ASCE) has recently published its new Infrastructure Report Card, <https://www.infrastructurereportcard.org/>, arguing that the infrastructure of the US economy is in poor shape and requires an annual investment of more than \$200 billion over 10 years to upgrade it to acceptable levels. The US policymakers (both current office holders and potential contenders for office in the coming years) have bought into this argument and are considering following ASCE's recommendation. See, for example, the news report, <https://thehill.com/homenews/campaign/447515-sweeping-plans-from-2020-contenders-come-with-trillion-dollar-price-tags>. Assume that the Federal Government plans to launch such a policy in 2020 and end it in 2029, investing \$200 billion per year in a series of infrastructure projects. Also, assume that the goods and services used for investment in these projects are mostly nontradables, and it takes three years for each investment project to mature

(i.e., reach a stage where it yields improved and expanded infrastructure services). Note that infrastructure services themselves are nontradable and investing in them ultimately raises the supply of non-tradables in the economy.

In the following questions, please compare the outcomes under *the infrastructure plan* of the Federal Government with a *base case* where no such plan is implemented. Assume that if the infrastructure plan is implemented, the *trends in other government expenditures, in money supply, and in all other policies and parameters in the US and abroad remain the same as in the base case*, unless explicitly mentioned. Finally, assume that the *aggregate price level* in the US and elsewhere will be the same in all years whether the infrastructure plan is implemented or not.

- (a) What is likely to happen to the real exchange rate of the US economy in the long run (after ten years) if the government proceeds with the infrastructure plan, as compared to the base case? How about the nominal exchange rate? Please explain how and why the nominal real exchange rate under the plan may differ from the one under the base case. [13 points]
- (b) Suppose the government proceeds with the infrastructure investment plan and decides to finance it by selling bonds. What is likely to happen to the nominal interest rate in the US economy in the short run (next year) under the government's infrastructure plan as compared to the base case? [9 points]
- (c) In the situation in part (b), can one clearly conclude whether the nominal exchange rate of the US dollar would appreciate or depreciate in the short run (next year) vis-à-vis foreign under the government's infrastructure plan as compared to the base case? How about the real exchange rate? Keep in mind that the long-run exchange rate that you found in (a) should serve as the expected exchange rate in the analysis of the short-run situation in this part. Please explain how and why the nominal and real exchange rates under the plan may rise or decline or remain the same compared to the situation under the base case. [13 points]